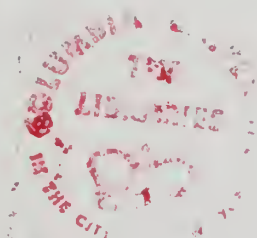


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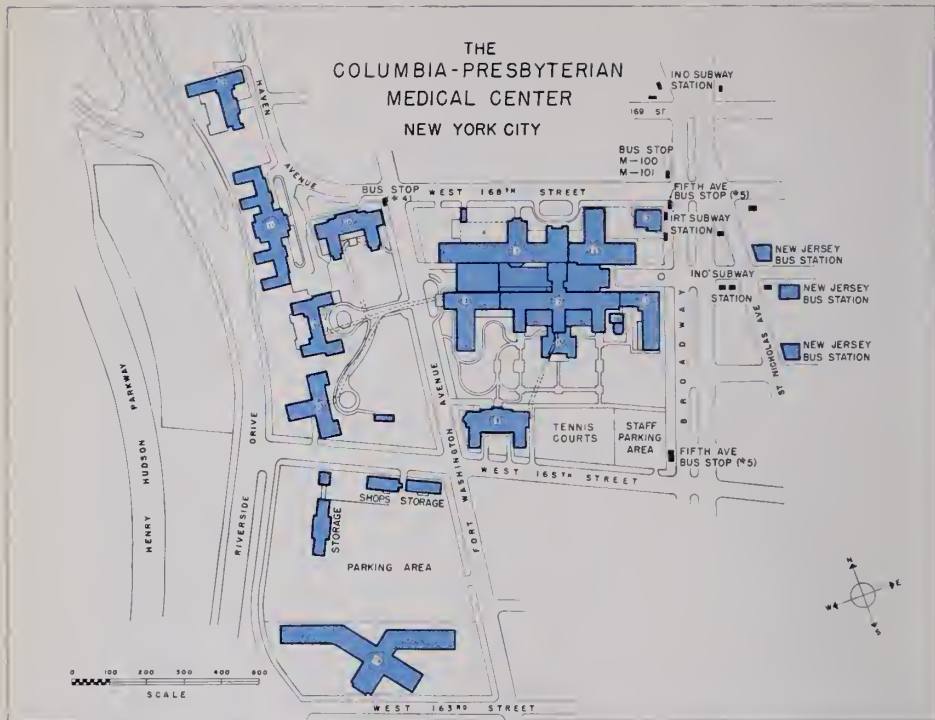
THE PRESBYTERIAN HOSPITAL  
COLUMBIA-PRESBYTERIAN



MEDICAL CENTER

1956 • ANNUAL REPORT • 1956

THE  
COLUMBIA-PRESBYTERIAN  
MEDICAL CENTER  
NEW YORK CITY



1. BABIES HOSPITAL
2. PRESBYTERIAN HOSPITAL  
N. Y. ORTHOPAEDIC HOSPITAL  
SLOANE HOSPITAL  
SQUIER UROLOGICAL CLINIC
3. HARKNESS PAVILION
4. POWER HOUSE
5. COLLEGE OF PHYSICIANS  
AND SURGEONS
6. VANDERBILT CLINIC  
SCHOOL OF DENTAL AND  
ORAL SURGERY
7. N. Y. CITY DEPT. OF HEALTH  
SCHOOL OF PUBLIC HEALTH  
AND ADMINISTRATIVE MEDICINE

8. INSTITUTE OF OPHTHALMOLOGY
9. MAXWELL HALL
10. NEUROLOGICAL INSTITUTE
11. N. Y. STATE PSYCHIATRIC  
INSTITUTE & HOSPITAL
12. BARD HALL
13. HARKNESS MEMORIAL HALL
14. FRANCIS DELAFIELD HOSPITAL, N.Y.C.
15. PAULINE A. HARTFORD MEMORIAL CHAPEL
16. BETATRON BUILDING

== PEDESTRIAN TUNNELS

*Cover photo was taken with a 35 mm. camera  
from the New Jersey side of the Hudson River*

# MEDICAL CENTER

## EIGHTY-EIGHTH ANNUAL REPORT



THE PRESBYTERIAN HOSPITAL IN THE  
CITY OF NEW YORK

*Including*

BABIES HOSPITAL • HARKNESS PAVILION

INSTITUTE OF OPHTHALMOLOGY • MARY HARKNESS HOME

NEUROLOGICAL INSTITUTE • NEW YORK ORTHOPAEDIC HOSPITAL

PRESBYTERIAN HOSPITAL • SLOANE HOSPITAL FOR WOMEN

SQUIER UROLOGICAL CLINIC • VANDERBILT CLINIC

Broadway and 168th Street

New York 32, N. Y.

*For the Twelve Months ended December 31, 1956*



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# Origin and Functions of the Medical Center

The Medical Center comprises a group of long established hospitals of high standing which, in affiliation with the College of Physicians and Surgeons of Columbia University, furnish an integrated program to provide the highest quality of medical care for the sick and injured, to advance knowledge about the cause, prevention and treatment of disease and disability, and to train men and women in the professions of medicine, dentistry, nursing, public health, and allied fields. Through the affiliation between the hospitals and the University the members of the staffs of the hospitals are nominated by Columbia University, and teaching and research are conducted in all the hospitals.

A brief description of the origin and functions of each hospital unit of the Medical Center follows:

## *The Presbyterian Hospital*

The Presbyterian Hospital, founded as a general hospital in 1868 by James Lenox, was originally located on the block bounded by Madison and Park Avenues between 70th and 71st Streets. On April 25, 1911, Presbyterian Hospital made its original arrangement with Columbia University's College of Physicians and Surgeons for coordinating the care of the sick with the educational and research program of the University. Now Presbyterian Hospital is the largest single unit of the Medical Center. The Hospital occupies a 22-story building in which are the wards of the Medical and Surgical Services, Obstetrical and Gynecological Service, Urological Service, Ear, Nose and Throat Service, Dermatological Service and the Orthopedic Surgery Service.

The Presbyterian Hospital in the City of New York is the corporate title for all the voluntary hospitals and clinics at The Columbia-Presbyterian Medical Center. The group consists of the following units:

## *Babies Hospital*

Babies Hospital, 167th Street and Broadway, founded in 1887, provides for general medical and surgical care of infants and children up to

their thirteenth birthday, and care for premature babies. The total capacity of the Hospital is 192. One floor is devoted to the care of private and semi-private patients. Both outdoor and indoor playrooms are provided for convalescent children. Laboratories are operated for the routine and research work of the Hospital in pathology, microbiology and chemistry. An X-ray and fluoroscopic department is operated under the direction of the Hospital radiologist. An outpatient department is maintained in Vanderbilt Clinic by the visiting and house staff of the Hospital. In addition to the general medical and surgical clinics, there are special clinics for children suffering from heart disease, tuberculosis, epilepsy, asthma and other diseases.

### ***Harkness Pavilion***

Harkness Pavilion, 180 Fort Washington Avenue, erected at the time of the establishment of the Medical Center, is available for the accommodation of 300 adult private patients of the attending staff.

### ***The Mary Harkness Convalescent Home***

Mary Harkness Convalescent Home, King Street, Port Chester, N. Y., opened in 1937 to provide convalescent care for adults. The new Strong Memorial Wing was opened in 1952 to care for handicapped children whose families are unable to provide the convalescent care following poliomyelitis, orthopedic, medical and surgical procedures. In a beautiful country setting, facilities are available for the convalescent care of 35 adults and 22 children.

### ***The Institute of Ophthalmology***

Institute of Ophthalmology, 635 West 165th Street, opened in 1933, has complete facilities for the medical and surgical treatment of adult and child patients with diseases of the eye. There are private, semi-private and ward facilities. The total bed capacity is 92. On January 1, 1940, the work of the Herman Knapp Memorial Eye Hospital was taken over by the Institute.

### ***The Neurological Institute***

Neurological Institute, 168th Street and Fort Washington Avenue, one of the first nongovernmental hospitals in this country for the treatment of nervous diseases, was founded in 1909. It moved from East 67th

Street to the Medical Center in 1929. Its affiliation with The Presbyterian Hospital has made possible a broad basic program of teaching and research in neurology and in the treatment of diseases of the nervous system and surgical conditions of the brain and nervous system. Facilities are provided for 201 beds, of which 110 are for ward patients.

### ***New York Orthopaedic Dispensary and Hospital***

The New York Orthopaedic Dispensary and Hospital opened its first dispensary in 1866 largely because of the interest taken in the care of the crippled by Theodore Roosevelt, father of the President of the same name. In succeeding years, the dispensary grew into a hospital with beds for ward and private patients. In 1911, the first Spine Fusion Operation for Potts Disease (tuberculosis of the spine) was performed by Dr. Russell A. Hibbs. This successful operation opened an entirely new era in the treatment of this disease. The Orthopaedic Dispensary and Hospital was located in its own buildings at 420 East 59th Street until December, 1950, when it moved to the Medical Center. On the 5th floor of the main building, 622 West 168th Street, facilities are available for the care and treatment of orthopedic conditions and fractures in children and adults.

### ***The School of Nursing***

The School of Nursing was founded in 1892 for the training of nurses. Since 1935 its educational program has been under the supervision of the Department of Nursing of the Faculty of Medicine of the College of Physicians and Surgeons of Columbia University. A three-year course in nursing is conducted, and the degree of Bachelor of Science is offered by the University to those properly qualified.

### ***The Sloane Hospital for Women***

Sloane Hospital for Women was built at West 59th Street and Amsterdam Avenue and presented to Columbia University by Mr. and Mrs. William D. Sloane in 1886. It now occupies three floors of the Presbyterian Hospital building for ward and semi-private patients and one floor in Harkness Pavilion for private patients. There are 181 beds, of which 116 are ward beds. The deliveries in the Hospital totaled more than 4,100 in 1956.

### ***The J. Bentley Squier Urological Clinic***

The J. Bentley Squier Urological Clinic occupies the 10th floor of the Presbyterian Hospital building and the 10th floor of Babies Hospital. There are 67 beds for the care of adults and 19 beds for children. There are laboratories fully equipped to do diagnostic, X-ray, bacteriological, pathological, fluoroscopic, and research work. This unit has two large, especially equipped, operating rooms. The urological outpatient department is in Vanderbilt Clinic.

### ***Vanderbilt Clinic***

Vanderbilt Clinic, Broadway and 167th Street, presented to Columbia University by the Vanderbilt family in 1888, is the common outpatient department and admitting service for all the wards of all the units of The Presbyterian Hospital. It is a fully equipped dispensary offering complete medical, surgical and specialty services. Eligibility to the Clinic is determined by the admitting physician and the clinic interviewer and is limited to those unable to afford a private physician. The Group Practice Clinic, organized in 1946, has proved a forward step in the diagnosis and treatment of patients.

### ***Other Patient Care Institutions Located at the Medical Center Are —***

The New York State Psychiatric Institute and Hospital, a 168 bed hospital, built and maintained by the State of New York with provisions for the study and treatment of all types of psychiatric disorders.

The Francis Delafield Hospital, built and maintained by the City of New York, is a 300 bed hospital for the treatment and study of cancer.

The Washington Heights Health and Teaching Center built and maintained by the City of New York.

**REPORT OF THE PRESIDENT**

# Report of the President for 1956

The year 1956 has been memorable because of the signal tributes awarded to a number of the staff members of the College of Physicians and Surgeons of Columbia University. The Presbyterian Hospital which is closely affiliated with the Medical School in the teaching of various branches of medicine and in clinical research rejoices with the University because of these distinctions.

The Nobel Prize in Medicine was awarded to Dr. André Cournand and Dr. Dickinson W. Richards. The award is in recognition of twenty-six years of research in the fields of heart-lung physiology. Dr. Cournand and Dr. Richards used a small catheter, introduced through a vein into the inner chambers of the heart. The device enabled them to make the first measures of blood pressure in the various chambers of the human heart, to measure the output of blood by the heart and to make other basic measurements subsequently proved indispensable in the understanding and diagnosis of many forms of heart and lung disease.

An Albert Lasker Award recognized Dr. Karl Meyer's years of study of connective tissue, including the discovery of a new class of enzymes, now isolated and used clinically. Dr. Meyer calls connective tissue "one of the largest organs of the body." His work throws light on such unvanquished diseases as arthritis and rheumatic fever which are derangements of this system.

The American Cancer Society gave its annual national award for distinguished service in cancer control to Dr. Gioacchino Failla and Dr. Edith H. Quimby. Modern radiation dosage measurement, the citation of the American Cancer Society stated, is the "direct result of the many years of collaboration of these scientists."

A number of other notable achievements and honors which concern members of the professional staff of Columbia University and The Presbyterian Hospital are mentioned in the reports of the directors of the various services.

It is this close collaboration between Hospital and College, comprising the Columbia-Presbyterian Medical Center, which continues to



advance the quality and wisdom of patient care, and which continues to vindicate the foresight and liberality of those who founded the Medical Center. The College contributes to the various services many doctors with special training and skills derived from research and scientific disciplines. For its part, the Hospital provides excellent facilities for patient care and study and furnishes for the classroom interesting and challenging diagnostic and therapeutic problems essential to a vigorous teaching program.

### *Benefits of Research*

Heart surgery was given great impetus when Dr. Cournand and Dr. Richards showed how to detect certain heart defects. Their studies encouraged heart surgeons here and elsewhere to devise surgical corrections. At present the "open heart" operation, based on the use of special equipment for supplying oxygen to the blood, offers hope to many who were formerly regarded as incurables.

An important area in medical research is the effect of radiation on human life, growth, and reproduction. Dr. Failla, whose work in defining the safe limits of radiation dosage in certain medical conditions was recognized by the American Cancer Society, is Chairman of the Atomic Energy Commission's Advisory Committee on Biology and Medicine. Both Dr. Failla and Dr. Quimby are responsible for research projects at the College which are adding to the understanding of vital processes in the body and their derangements in disease.

The Hospital's long-term metabolism studies, described in some detail elsewhere in this report, are an excellent example of still another field of research and achievement.

The above are only a few of the many activities that could be described of how research under way here is aiding in the conquering of disease. Equally important is the safe and judicious application of the newer knowledge to the care of the individual patient.

It is perhaps easiest to see the application of the fruits of research in one of the specialized clinics — for example, the Seizure Clinic for Children and Young Adults. Exact diagnosis and proper management for many types of epilepsy demand special resources, expensive equipment and team work among experts not ordinarily available to an isolated case except at great trouble and expense. However, once basic studies have been made, effective, safe treatment can be outlined, and the patient can be returned to the medical supervision of his family physician. Some 1,000 children are now being treated in this clinic, which also trains doctors and nurses who may staff such special clinics elsewhere.

***Distribution of Medical Care***

Wider distribution of medical care is a topic of general concern today. In addition to the obligation of a medical center to provide care without regard to ability of individuals to pay for it, there is the responsibility to train doctors who subsequently carry the knowledge and ideals which have been impressed upon them to many other areas, thus benefiting people far removed from the medical center.

Thus it can be said that philanthropy directed here not only contributes to the well-being of the patients who are treated in the Medical Center annually, but ultimately helps many others because of the vigorous programs for training interns, residents and others in the health professions, who subsequently engage in teaching, research, and practice in various parts of the country.

A great amount of capital has been invested in voluntary hospitals but, of course, there is no return on this investment to provide for expansion of activities. The rewards of those whose energy or philanthropy is vested in voluntary hospitals is measured by no financial yardstick. Rather they represent the return of health or life itself to individual patients; they share in the contributions made by the professional staff to the rising standards of healing and of hospital care. *Presbyterian Hospital has continuing need for the support of its friends in filling the gap between the cost of care and what the patients pay.*

Following is a summary of last year's financial results:

In 1956 The Presbyterian Hospital . . . .

provided	462,000	days of hospital care
for	37,800	in-patients
and clinic care for	62,500	out-patients
who made	406,700	clinic visits
this cost	\$11,179,000	for salaries
and	7,909,000	for supplies, services and depreciation
	<hr/>	
totaling	\$19,088,000	
we received	\$13,784,000	from patients
	3,773,000	from endowment income and gifts
	1,475,000	from other services
	<hr/>	
totaling	\$19,032,000	
the difference	\$ 56,000	must be made up from general funds

The cost of charitable services given by the Hospital exceeded payments received by \$3,600,000 in 1956. Also, the urgent needs for the specific purposes listed in the report for 1955 still continue and are becoming increasingly important.

It is a pleasure to announce the election of Roger M. Blough and Frederick R. Kappel to the Board of Trustees of The Presbyterian Hospital. Mr. John W. Hornor and Mr. W. E. S. Griswold, Jr., became Honorary Trustees.

With sorrow we record the deaths of two Honorary Trustees, Mr. Carll Tucker, who served for many years as Vice-President of the Board of Trustees of Presbyterian and Babies Hospitals; and Charles E. Adams, a long time trustee of the Neurological Institute, as well as of The Presbyterian Hospital.

The Hospital lost another devoted friend with the death of Mrs. Ernest R. Adee. Mrs. Adee was honorary president of the Board of Women Managers of Babies Hospital which she had served for 57 years.

Dr. Alan DeForest Smith, the distinguished director of the Orthopedic Surgery Service and widely known as the initiator of the "bone banks," retired at the end of June, becoming a consultant to the Hospital. He is succeeded as Director of the Orthopedic Surgery Service by Dr. Frank E. Stinchfield. Dr. William B. Seaman was appointed Director of the Radiology Service.

With profound gratitude for their understanding of the objectives of this Medical Center, we acknowledge the continued support over many years of our devoted friends. We enter the 89th year of service proud of the loyalty of so many friends, and the devotion and talent of the professional staff and personnel who are contributing so much to medical knowledge and progress.

CHARLES P. COOPER,  
*President*

March 1, 1957

## In Memoriam

### CARLL TUCKER

At the meeting of the Executive Committee of the Board of Trustees of The Presbyterian Hospital in the City of New York held August 13, 1956 the following minute was adopted by rising vote:

With deep sorrow the Board of Trustees of The Presbyterian Hospital in the City of New York records the death on July 29, 1956 of one whose devoted service has been influential in the growth of this Hospital for forty years.

Carll Tucker, a friend to many, was not content with his unusual opportunities for enriching the lives of those he knew personally. Throughout his life he insisted on taking his place in that larger community in which a man recognizes neighborly responsibility for those known to him not by face and name, but by need.

After his graduation from Yale, Carll Tucker began his long career of service to his community when he became a member of the Board of Babies Hospital in 1916. At the time, this Hospital was still struggling for the financial and other support it required to continue its important work.

Devoting his abilities to this young Hospital, as he was later to extend them to so many other causes, Mr. Tucker gave generously of his time and means to its support, resulting in his election in 1928 as Vice-President of the institution.

When Babies Hospital was consolidated with Presbyterian Hospital in 1943 Mr. Tucker became a vice-president of the Board of Trustees of The Presbyterian Hospital, and served continuously until 1953. This post gave even wider scope to his energy and resourcefulness in developing hospital and medical resources of the highest quality. In 1953, at the age of 71, he asked that his place as vice-president be taken by a younger man, and he became an honorary member of the Board of Trustees.

His unremitting service to our Hospital represented only one part of his many civic interests. He was president of the Northern Westchester Hospital and an active member of the Westchester Children's Association, becoming its president in 1941 and honorary chairman in 1952.

Mr. Tucker's warm friendship was a privilege all of us cherished. His deep concern for his fellowmen was a benefit and example to all with whom he came in contact. We remember his thoughtfulness, his tact, and his unfailing courtesy in all his associations with friends and acquaintances. We honor his service; its results, like his memory, will remain with us.

RESOLVED, that this minute be made a part of the records of this Hospital and that a copy be sent to his family.

THATCHER M. BROWN, JR.,  
*Assistant Secretary*

CHARLES P. COOPER,  
*President*

## In Memoriam

### CHARLES E. ADAMS

At the meeting of the Board of Trustees of The Presbyterian Hospital in the City of New York, held January 28, 1957, the following minute was read and adopted by rising vote:

The Board of Trustees of The Presbyterian Hospital in the City of New York desires to record its deep sorrow and great sense of loss in the death on January 27, 1957 of Charles E. Adams. He was a member of the Board of Trustees until 1949 and thereafter an Honorary Trustee.

Throughout every year of his trusteeship, Mr. Adams maintained great interest in and devotion to the affairs of the Hospital, despite an unusually active business life. Great as were the demands upon his time, his service to the Hospital was always generously given and was marked by a sympathetic response to the needs of others.

In 1935 he was elected to the Board of Trustees of the Neurological Institute. He was Chairman of its Finance Committee and a member of its Executive Committee.

He became a member of the Board of Trustees of The Presbyterian Hospital in 1938. He was a member of the Executive Committee, was Chairman of the Auditing Committee and a member of the Budget Committee. During his association with both Neurological Institute and Presbyterian Hospital he was a member of the Joint Administrative Board.

In carrying out every assignment of Board or Committee work, he evidenced a sense of dedication that will long be remembered by his associates.

For his many accomplishments in behalf of the Hospital, this Board wishes to express its admiration and gratitude. It also desires to make note of his warmth of personality, his courtesy and willing helpfulness that endeared him to every member of the Board.

THEREFORE BE IT RESOLVED, that this expression of our loss of Charles E. Adams be made a part of the permanent records of the Hospital, and a copy of this resolution be sent to his family.

THATCHER M. BROWN, JR.  
*Assistant Secretary*

CHARLES P. COOPER  
*President*

*REPORT OF THE TREASURER*

## EXHIBIT A

## THE PRESBYTERIAN HOSPITAL

## Balance

DECEMBER 31, 1956

## ASSETS

	<i>December 31</i>	
	1956	1955
<b>ENDOWMENT FUNDS ASSETS:</b>		
Investments:		
Bonds and stocks (approximate market quotation value, 1956, \$73,747,469) . . . . .	\$59,247,489	\$56,209,001
Mortgages receivable, etc. . . . .	361,801	524,592
Cash . . . . .	133,964	222,506
<b>TOTAL ENDOWMENT FUNDS ASSETS . . . . .</b>	<u>\$59,743,254</u>	<u>\$56,956,099</u>
<b>PLANT ASSETS:</b>		
Property and equipment at original cost (less accumulated depreciation, 1956, \$12,775,276; 1955, \$12,078,307) . . . . .	\$20,916,956	\$21,474,529
Replacement Fund — Bonds and stocks (approximate market quotation value, 1956, \$3,712,960) . . . . .	2,983,075	1,821,316
<b>TOTAL PLANT ASSETS . . . . .</b>	<u>\$23,900,031</u>	<u>\$23,295,845</u>
<b>CURRENT FUNDS ASSETS:</b>		
Investments — Bonds, etc. (approximate market quotation value, 1956, \$2,120,958) . . . . .	\$ 2,135,178	\$ 2,132,843
Cash . . . . .	392,789	235,754
Accounts receivable (less reserve, 1956, \$244,535; 1955, \$210,281) . . . . .	1,909,948	1,555,349
Supplies and materials . . . . .	386,191	312,353
Interest accrued and dividends receivable . . . . .	473,931	414,596
Prepaid insurance, etc. . . . .	26,146	49,698
<b>TOTAL CURRENT FUNDS ASSETS . . . . .</b>	<u>\$ 5,324,183</u>	<u>\$ 4,700,593</u>
<b>TOTAL . . . . .</b>	<u>\$88,967,468</u>	<u>\$84,952,537</u>



THE CITY OF NEW YORK

Sheet

6 AND 1955

## FUNDS AND LIABILITIES

	<i>December 31</i>	
	<i>1956</i>	<i>1955</i>
ENDOWMENT FUNDS (Exhibits C and D) . . . . .	<u>\$59,743,254</u>	<u>\$56,956,099</u>
PLANT FUNDS:		
Capital invested in property and equipment . . . . .	\$20,916,956	\$21,474,529
Replacement funds:		
Buildings . . . . .	909,594	642,230
Furniture, fixtures and equipment . . . . .	<u>2,073,481</u>	<u>1,179,086</u>
TOTAL PLANT FUNDS . . . . .	<u>\$23,900,031</u>	<u>\$23,295,845</u>
CURRENT FUNDS AND LIABILITIES:		
General fund (Exhibit C) . . . . .	\$ 2,722,007	\$ 2,565,668
Special expendable funds (Exhibit C) . . . . .	1,455,320	1,124,810
Undistributed income from investments . . . . .	240,829	166,136
Accounts payable . . . . .	396,429	371,211
Patients' credit balances . . . . .	72,174	64,852
Accrued payroll and other expenses . . . . .	<u>437,424</u>	<u>407,916</u>
TOTAL CURRENT FUNDS AND LIABILITIES . . . . .	<u>\$ 5,324,183</u>	<u>\$ 4,700,593</u>
TOTAL . . . . .	<u>\$88,967,468</u>	<u>\$84,952,537</u>

## EXHIBIT B

## THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

## STATEMENT OF INCOME

For the Years Ended December 31, 1956 and 1955

	<i>Year Ended December 31</i>	
	<i>1956</i>	<i>1955</i>
<b>OPERATING INCOME:</b>		
Care of patients.....	\$13,784,085	\$12,264,716
Other services .....	1,474,832	1,368,429
<b>TOTAL</b> .....	<b>\$15,258,917</b>	<b>\$13,633,145</b>
Transfer from special expendable funds (Exhibit C):		
For research .....	376,875	392,196
For other designated purposes.....	388,704	361,796
<b>TOTAL OPERATING INCOME</b> .....	<b>\$16,024,496</b>	<b>\$14,387,137</b>
<b>OPERATING EXPENSES:</b>		
Administration .....	\$ 220,969	\$ 210,664
Assistant Secretary-Treasurer .....	151,226	134,690
Comptroller .....	330,401	316,511
Public Interest .....	86,599	83,710
Convalescent Home .....	216,354	216,438
Non-Professional Services:		
Buildings and Grounds.....	2,439,281	2,180,482
Food Service .....	2,347,518	2,244,958
Personnel and Protective.....	224,806	213,690
Other Non-Professional Services.....	608,202	582,710
Professional Services:		
Nursing .....	4,819,589	4,540,560
Professional Staff, Doctors' Offices & Research..	2,403,914	2,259,211
Special Services .....	2,651,002	2,435,550
Vanderbilt Clinic and Other.....	1,314,594	1,188,469
Provision for Depreciation:		
Buildings .....	262,800	261,100
Furniture, fixtures and equipment ( <i>see Note</i> )..	1,010,700	641,100
<b>TOTAL OPERATING EXPENSES</b> .....	<b>\$19,087,955</b>	<b>\$17,509,843</b>
<b>NET OPERATING LOSS</b> .....	<b>\$ 3,063,459</b>	<b>\$ 3,122,706</b>
<b>OTHER INCOME FOR GENERAL PURPOSES:</b>		
Investment income .....	\$ 2,390,000	\$ 2,366,000
Contributions .....	617,673	591,342
	<b>\$ 3,007,673</b>	<b>\$ 2,957,342</b>
<b>NET Loss (charged to general fund — Exhibit C)...</b>	<b>\$ 55,786</b>	<b>\$ 165,364</b>

NOTE — 1956 includes appropriation of \$350,000 for a portion of the depreciation which occurred prior to the adoption of depreciation accounting in 1953.

## EXHIBIT C

## THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

## SUMMARY OF FUND CHANGES

For the Years Ended December 31, 1956 and 1955

	<i>Year Ended December 31</i>	
	<i>1956</i>	<i>1955</i>
<b>ENDOWMENT FUNDS</b>		
Balance, January 1.....	\$56,956,099	\$53,940,253
Add:		
Legacies and contributions.....	\$ 553,798	\$ 1,029,419
Gain from disposal of investments.....	2,183,033	1,983,846
Transfers from special expendable funds.....	50,324	2,581
	<u>\$ 2,787,155</u>	<u>\$ 3,015,846</u>
Balance, December 31.....	<u>\$59,743,254</u>	<u>\$56,956,099</u>
<b>GENERAL FUND</b>		
Balance, January 1.....	\$ 2,565,668	\$ 2,980,194
Add:		
Unrestricted legacies .....	\$ 311,697	\$ 77,823
Gain from disposal of investments.....	210	435
	<u>\$ 311,907</u>	<u>\$ 78,258</u>
Total .....	<u>\$ 2,877,575</u>	<u>\$ 3,058,452</u>
Deduct:		
Net loss (Exhibit B).....	\$ 55,786	\$ 165,364
Expenditures for property and equipment.....	99,782	327,420
	<u>\$ 155,568</u>	<u>\$ 492,784</u>
Balance, December 31.....	<u>\$ 2,722,007</u>	<u>\$ 2,565,668</u>
<b>SPECIAL EXPENDABLE FUNDS</b>		
Balance, January 1.....	\$ 1,124,810	\$ 1,025,544
Add:		
Legacies and contributions.....	\$ 683,195	\$ 492,448
Investments and other income.....	566,370	513,726
	<u>\$ 1,249,565</u>	<u>\$ 1,006,174</u>
Total .....	<u>\$ 2,374,375</u>	<u>\$ 2,031,718</u>
Deduct:		
Transfers to:		
Operating income (Exhibit B).....	\$ 765,579	\$ 753,992
Endowment funds .....	50,324	2,581
Expenditures for property and equipment.....	39,614	59,428
Miscellaneous .....	63,538	90,907
	<u>\$ 919,055</u>	<u>\$ 906,908</u>
Balance, December 31.....	<u>\$ 1,455,320</u>	<u>\$ 1,124,810</u>

## EXHIBIT D

## THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

## ENDOWMENT FUNDS

December 31, 1956

## THE PRESBYTERIAN HOSPITAL:

Anonymous .....	\$ 625,926
Anonymous — For Support of	
Residency Training .....	222,500
Arnstein, Daniel G. ....	65,000
Baker, Mrs. Frederick, Pathological Department	8,500
Briddon, C. K., Gold Medal. ....	2,559
Brookman, Henry D. ....	50,000
Cary, Caroline Catherine. ....	50,000
Coakley, Cornelius G., Trust. ....	601,856
Colgate, Hannah, Memorial. ....	60,794
Collins, Perry McDonough. ....	548,999
Columbia University for Vanderbilt Clinic and Sloane Hospital .....	1,400,000
Cook, William W. ....	119,498
Cragin Fund .....	68,819
Davis, Isabel G. ....	813,999
Delano, Moreau .....	4,000
Department of Surgery Research. ....	9,370
Dodge, The Cleveland H. ....	310,500
Dortic Memorial .....	99,024
Dows, Mrs. David. ....	7,700
Dows, Margaret E. ....	5,360
Educational and Scientific Work. ....	285,528
Eichner, Joseph Herman and Hannah, in Memory of. ....	8,576
Eidlitz, Otto M. ....	415,272
Eidlitz, Robert J. ....	152,500
Endowed Bed .....	1,705,155
Endowed Bed — Research .....	190,057
Faulkner, The Edward Daniels, Memorial for the Study and Treatment of Arthritis. ....	100,000
Fiske Fund .....	104,236
FitzGerald, Frederick H. and Josephine F. ....	141,363
Flagler, Alice Manderlick. ....	250,142
Foote, Edwin Bancroft. ....	175,949
Ford, George W. and Eliza Lawson. ....	330,911
General Endowment .....	257,400
Goldschmidt, Henry Philip. ....	5,000
Gondran, Sophie M. and Adolph L. ....	100,000
Griffith, Griffith W. and Mary Jones, Memorial.	1,319,573
Haller, Maria L. ....	2,609
Harkness, Edward S. ....	6,188,794
Harkness, Edward S., Memorial. ....	14,000,000
Harkness, Edward S., Research. ....	500,000
Harkness, Mary Stillman, Memorial Endowment	250,000
Harkness, Mary Stillman, Memorial Research. .	50,000
Harkness, The Mary S., for Convalescent Care. .	1,003,045
Harkness, William Hale, Memorial. ....	43,416
Hartford, The John A., Foundation. ....	300,000

## ENDOWMENT FUNDS, December 31, 1956 (Continued)

## THE PRESBYTERIAN HOSPITAL (Continued):

Hill, Marguerite S. ....	\$ 5,500
Institute of Ophthalmology, The. ....	3,412,942
Jesup, Morris K. and Maria DeWitt. ....	100,000
Jones, David, Memorial. ....	300,000
Jones, Margarette A. ....	166,255
Keller Memorial. ....	500
Kennedy, John Stewart. ....	1,828,714
Kinnicutt, The G. Herman, Flower. ....	5,000
Knapp, The Herman Memorial Eye Hospital Endowed Bed. ....	60,375
Lattimer, Dr. John K. ....	10,000
MacMillin, Isabel, Memorial. ....	1,285,563
Martin, Frederick Townsend. ....	10,000
Maxwell, Anna C., Memorial Library. ....	6,476
McCosh, Dr. Andrew J., Memorial. ....	100,192
McCready, Jeanne Campbell. ....	106,529
McGuire, Mary Madison. ....	260,006
Medical Laboratory Development Endowment. .	55,000
Medical Scientific. ....	317,226
Miller, Margaret G. ....	59,612
Ottman, for Cancer Research. ....	20,000
Quick, The Walter R. ....	15,060
Room "J" Trust. ....	5,294
Sage, Dean, Memorial. ....	28,253
Sage, Dean, Scholarship. ....	7,000
Sage, Russell and Margaret Olivia, Memorial. .	878,188
School of Nursing. ....	203,230
Sherry, The Bertha, Memorial. ....	653,401
Sidman Trust. ....	1,072
Sloane Hospital. ....	783,257
Sloane Hospital Babies' Alumni. ....	18,262
Sloane Hospital Research. ....	25,000
Squier Clinic. ....	113,636
Stilson, Ellen J. and Minnie. ....	21,029
Stone, William Ridgley, Memorial. ....	62,833
Surgical Fellowship. ....	60,000
Terry, John T., in Memory of. ....	40,767
Tod, J. Kennedy, Memorial. ....	100,102
Tolfree, The Caroline O. and James E., Memorial. ....	157,370
Valentine, Isaac E., Memorial. ....	563,227
Van Norden, Kathryn L. ....	2,609
Vanderbilt Clinic. ....	156,806
Webster, Dr. Jerome P., Library of Plastic Surgery. ....	29,861
Weinman, Moses. ....	5,360
Weisl, Alice. ....	43,500
Welles, Frances Swan. ....	10,000
Westlake, Emory H. and Caroline B. ....	25,092
Wheeler, The Dr. John M., Memorial. ....	73,791
Williams, William. ....	342,658

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 \$45,490,478

## ENDOWMENT FUNDS, December 31, 1956 (Continued)

## THE BABIES HOSPITAL:

Cleft Palate Cases.....	\$	1,000
Cribside Social Service Committee.....		12,828
Educational Therapy .....		1,000
Eichner, Joseph Herman and Hannah, in Memory of.....		8,576
Endowed Bed .....		32,426
General Endowment .....		10,000
Harkness, Edward S., Educational and Scientific		600,000
Harkness, Edward S.....		1,199,775
Harkness, Mary Stillman, Memorial Endowment		250,000
Kimball, Reuel B.....		57,738
Lambert, Dr. Charles I., Memorial.....		10,000
Rathbone, R. Bleecker.....		15,000
Rumson Fund .....		20,470
Videre, Leontine, Foundation.....		9,976
Wilcox, Herbert B., Memorial.....		2,000

2,230,789

## NEUROLOGICAL INSTITUTE:

Blair Memorial .....	\$	3,127
Endowed Bed — Research .....		165,800
Ogilvie, Clinton, Memorial.....		9,970

178,897

## NEW YORK ORTHOPAEDIC DISPENSARY AND HOSPITAL:

Bridgman, Statira .....	\$	2,500
Endowed Bed .....		625,246
Farrell, Dr. Benjamin P., in Memory of.....		7,656
General Endowment .....		833,259
Hibbs, Russell A., Memorial Library.....		36,068
Hurst, The Thomas D. and Kate.....		5,000
Kane, Annie C., Fellowship.....		1,000,000
Rathbone, R. Bleecker.....		15,000
Smith, Dr. Alan DeForest, Lectureship.....		6,451
Tower, Mary T., in Memory of.....		30,569
Watson, Emily A.....		2,502,256
White, Emily Vanderbilt.....		20,000
Willard, Mary Livingston.....		5,000

5,089,005

Gain from Disposal of Endowment Fund Investments  
since November 1, 1946.....

6,754,085

TOTAL ENDOWMENT FUNDS.....

\$59,743,254

## ACCOUNTANTS' CERTIFICATE

THE PRESBYTERIAN HOSPITAL  
IN THE CITY OF NEW YORK:

We have examined the balance sheet and supporting schedule of endowment funds of The Presbyterian Hospital in the City of New York as of December 31, 1956 and the related statement of income and summary of fund changes for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and schedule of endowment funds and the statement of income and summary of fund changes present fairly the financial position of the Hospital at December 31, 1956 and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied (except for the depreciation appropriation as explained in the footnote to the income statement) on a basis consistent with that of the preceding year.

HASKINS & SELLS  
*Certified Public Accountants*

New York  
January 28, 1957.

## REPORT OF THE AUDITING COMMITTEE

TO THE BOARD OF TRUSTEES OF THE PRESBYTERIAN HOSPITAL  
IN THE CITY OF NEW YORK:

Pursuant to Article VII of the By-Laws of The Presbyterian Hospital in the City of New York, the undersigned Auditing Committee appointed by your Board has chosen, with your approval, the firm of Haskins & Sells, as independent certified public accountants, to make an examination of the books and accounts of The Presbyterian Hospital in the City of New York for the fiscal year 1956.

We submit herewith, after due consideration by this Committee, a certificate of Messrs. Haskins & Sells dated January 28, 1957 relating to the Corporation's balance sheet and schedule of endowment funds as of December 31, 1956 and related statement of income and summary of fund changes for the year then ended, as the results of a satisfactory examination of the said books and accounts. Your Committee recommends that the Certificate and financial statements be accepted and approved.

THATCHER M. BROWN, JR., *Chairman*  
JOHN S. BURKE, JR.  
DORRANCE SEXTON

*Auditing Committee*

New York  
January 29, 1957.

## EXHIBIT E

**GROUP RETIREMENT PLAN ESTABLISHED BY  
THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK**

The retirement benefits provided by the Hospital under its Group Retirement Plan are partly provided by a Trust Fund established with the Guaranty Trust Company of New York and partly insured by the Travelers Insurance Company. The amounts set aside for retirement benefit purposes, which are not part of the assets of the Hospital, aggregated \$4,396,030 at December 31, 1956. In accordance with the Hospital's undertaking under the Group Retirement Plan the amounts already set aside are sufficient to provide for all retirement benefits to which employees now retired and employees now eligible to retire at their own request are or would upon retirement be entitled under the Plan. In addition, they include provision for that portion of future retirement benefits to employees not now eligible for retirement at their own request, which has been funded through December 31, 1956 under the systematic program followed by the Hospital in financing such benefits.

Following is the Trustee's report for the year ended December 31, 1956 of the Retirement Fund Trust established by the Hospital:

Assets in Fund — January 1, 1956.....	\$1,408,615
Payments to Fund.....	250,000
Net Income from Investments including Net Profit on Investments Disposed of.....	66,443
	\$1,725,058
Disbursements for Retirement Benefits.....	78,884
Assets in Fund — December 31, 1956.....	\$1,646,174

Book Value\*

Consisting of :

U. S. Government Obligations.....	\$ 81,465
Industrial, Railroad, Public Utility and Miscellaneous Bonds.....	980,057
Preferred Stocks.....	141,038
Common Stocks.....	432,394
Cash.....	11,220
	\$1,646,174

\* The cash and approximate market value of the securities held as of December 31, 1956 totaled \$1,717,502.

GUARANTY TRUST COMPANY OF NEW YORK,  
*Trustee*

By WILLIAM F. LACKMAN,  
*Vice President*

Following is a summary of the Retirement Fund Trust and the Travelers Insurance Company reserves at December 31, 1956:

Retirement Fund Trust — Guaranty Trust Company of New York, Trustee.....	\$1,646,174
Travelers Insurance Company Reserve for Annuities Purchased.....	2,749,856
Total.....	\$4,396,030



*REPORTS OF SERVICES*

# Anesthesiology

EMANUEL M. PAPPER, M.D., *Director*

Clinical responsibilities remain large in volume. As of December 31, 1956 the total number of anesthetics administered was 22,301, a modest gain over 1955 for a like period. The number of diagnostic and therapeutic nerve blocks was 704, which represents a definite and progressive increase. There have been several changes in clinical practice this year. The generous cooperation of Dr. Frank E. Stinchfield and his staff and the assignment of Dr. Brand to the Service of Orthopedic Surgery have increased the number of regional anesthetics. From the standpoint of patient care, this represents progress. From the standpoint of effective instruction in anesthesia, this is a very great gain since regional anesthetic methods had not been optimally developed.

## *New Methods*

The trend noted previously toward more precise measurements during anesthesia continued this year and was extended. Better measurements were facilitated by the modernization of the Cambridge Cardioscope to include facilities for electroencephalographic monitoring, the increased use of precise instruments to measure tidal exchange, total ventilation and oxygen concentration in inhaled atmosphere during anesthesia, and the acquisition of a Grass multi-channel recorder. All these devices have been made possible by the findings of basic research, and their use is an example of how such research leads to better patient care.

There was more frequent use of mechanical ventilation during general anesthesia in 1956 than previously. The respirators used during anesthesia have also proven of interest in solving the problems of artificial breathing in non-surgical apneic patients. Mechanical ventilators, under the supervision of the Anesthesiology Service, were used by several other Services in the care of patients comatose from a variety of causes. These devices have simplified nursing care. The most commonly employed of the mechanical ventilators was the Jefferson respirator. This method of artificial respiration has gained increasing acceptance and appears, in some degree at least, to have replaced the routine use of the tank type respirator for some of the respiratory problems encountered.

## *Staff Activities*

Members of the attending staff presented 86 lectures during the year. See page 205 for a list of papers published or in press.

During 1956 there were several changes in the attending staff of the Anesthesiology Service. Dr. Johannes Bartels resigned to assume a position of greater responsibility at New York University and Bellevue Hospital. Dr. Frederick W. Hehre, Jr. also resigned to accept a position at the Yale University School of Medicine. The Service is keenly aware of the loss of these two men but proud of their accomplishment in their new locations. Drs. Bartels and Hehre were replaced by Dr. Seamus Lynch, who joined the staff upon the completion of his military service with the Navy, and by Dr. Albert Levy, following the completion of his residency and a three-month special assignment at the University of Wisconsin. Dr. Robert M. Epstein became a Fellow of the New York Heart Association to continue his studies under the direction of Dr. Stanley E. Bradley of the Service of Medicine. Upon the completion of his Research Fellowship, Dr. Epstein will rejoin the attending staff of the Anesthesiology Service.

The pattern of relatively prolonged assignments of the attending staff to special surgical services continued to operate successfully. This principle of assignment has been further extended in 1956. Dr. Ernest Salanitro replaced Dr. Herman Schwartz with the Ophthalmology Service and Dr. Leonard Brand assumed charge of anesthesia for the Service of Orthopedic Surgery. Similar assignments to the Services of Neurology and Pediatrics will be made in the immediate future.

It is our hope that this method of assignment will improve patient care, promote better teaching of the resident staff, and improve inter-service relationships. It should also increase our ability to solve more of the vexing clinical problems associated with some of the surgical specialty services. The disadvantages of prolonged assignments will be largely overcome by providing for secondary rotation of other members of the attending staff through the special services.

The Anesthesiology Service was again fortunate in having as its guests distinguished visitors from this country and abroad. Among the foreign visitors was a group of anesthesiologists sent to us under the auspices of the International Cooperation Administration and under the supervision of the American College of Surgeons. These included Dr. Otto Mollestad, Chief Anesthetist at The University Hospital, Oslo, Norway; Dr. Ritsema van Eck, Director, Department of Anesthesia, Groningen University Clinics, The Netherlands; Dr. Gino M. Munilli, Anesthetist, University of Rome, Italy; Dr. Michelle Gruvel, Anes-

thesiologist, Children's Hospital, Bordeaux, France and Dr. Elsie Claud-Hannes, a physician from Luxembourg. Other visitors from abroad included Dr. John W. Dundee, University of Liverpool, England; Dr. M. Johnstone, Royal Infirmary, Manchester, England; and several of our Canadian colleagues.

Various members of the attending staff continued and expanded their activities in several organizations which are concerned with the clinical practice of anesthesiology and the related basic sciences. These include memberships on committees of the County and State Medical Societies as well as of the American Society of Anesthesiologists, the National Fire Protection Association, the newly formed Medicine and Biology Division of the Instrument Society of America, the Advisory Committee on Collaborative Studies in Cerebral Palsy and Other Neurological and Sensory Disorders of Infancy and Childhood of the National Institute of Neurological Diseases and Blindness, the Liaison Committees from the field of anesthesiology to the American Academy of Obstetricians and Gynecologists and to the American Academy of Pediatrics, and the Subcommittee on Anesthesia of the National Research Council. Advice was also given to the Armed Forces by members of the staff who were Civilian Consultants. Dr. Emanuel M. Papper was elected a Director of the American Board of Anesthesiology.

### ***Research Studies***

The research projects which will be summarized were usually joint enterprises with the College of Physicians & Surgeons of Columbia University. Financial support was provided for these projects by the generosity of the following:

Mr. Charles B. Wrightsman  
 Burroughs Wellcome & Co. (U.S.A.) Inc.  
 Abbott Laboratories  
 Department of the Army  
 National Foundation for Infantile Paralysis  
 National Institutes of Health  
 The Squibb Institute for Medical Research

Dr. Duncan A. Holaday continued his studies of acid-base balance during hypothermia. He developed a method for the calculation of the metabolic component of acidosis at reduced body temperatures. This contribution to our understanding of the total pattern of acid-base disturbances during hypothermia represents important progress. Patient care has also benefited, particularly in the anesthetic management of

patients undergoing operation to correct large cerebral vascular malformations. Dr. Holaday's studies of hypothermia in the dog showed that there was a significant metabolic acidosis when body temperature was lowered. It was demonstrated that severe hyperventilation with sharp reductions of arterial blood CO<sub>2</sub> tension could minimize but not abolish this metabolic acidosis.

Dr. Holaday observed, in hypothermic patients, that the maintenance of a respiratory alkalosis by mechanical hyperventilation and a moderate depth of anesthesia also tended to diminish the incidence of cardiac arrhythmias. No precise knowledge was added to the very important problem of the prevention of ventricular fibrillation during operation upon the heart itself.

#### MECHANICAL OXYGENATOR

Dr. Holaday collaborated with Dr. Ralph A. Deterling, Jr. and Dr. Shivaji B. Bhonslay of the Surgical Service in studying the efficiency of a mechanical pump oxygenator designed for artificial circulation and open heart surgical procedures. Dr. Holaday's aspect of this joint study was a consideration of acid-base alterations during the period of artificial perfusion. It was shown clearly that there was adequate oxygenation of the blood and rapid removal of carbon dioxide. Dr. Holaday also showed that there was a rapidly developing metabolic acidosis which was related to the duration of artificial circulation.

Dr. Holaday continued his studies of the four phase research model respirator which has been described in earlier reports. The instrument was designed to study the influences of a variety of precisely controlled respiratory patterns upon physiological activity in the experimental animal and in patients. In this instrument, frequency, velocity of air flow, acceleration of air flow, peak pressures, the interval between breaths and the sequence of events are independently variable. Considerable testing of the instrument indicated that all the functions desired could be obtained except for technical difficulties with the flow meter and insufficient control over the shape of the inspiratory flow curve. Appropriate adjustments are under construction to correct these defects. It is hoped that physiological studies with this instrument will shortly be undertaken.

In collaboration with Mr. George Katz of the Surgical Service, Dr. Holaday developed a six-channel polygraph incorporating the Offner dynagraph circuit. This instrument will be used primarily to facilitate the studies of Drs. Virginia Apgar, Leonard Stanley James, with Dr. Irwin Morton Weisbrot, Visiting Fellow, Service of Pediatrics, on

the physiology of the newborn infant. This instrument should also be suitable when a reliable and rugged polygraph is required for clinical studies during operating room conditions. Dr. Holaday also investigated the accuracy and reliability of spectrophotometric analysis of the blood oxygen saturation. The method presents a possible means of observing rapid changes of blood oxygen saturation during anesthesia and in the newborn infant with the accuracy of the manometric methods but with much greater simplicity. Spectrophotometric analysis of whole blood has been accurate within 4 per cent of that obtained by manometric analysis.

#### CONTINUOUS pH MONITOR

Dr. Holaday also continued the development of a continuous flow pH meter for the monitoring of arterial blood. If the apparatus operates as it is expected to do, it will be possible to analyze blood samples as small as 0.1 cc. and will make possible continuous studies of arterial blood pH changes without requiring the heparinization of the subject. This technique will be useful for the pursuit of studies when continuous monitoring of the pH is desirable, and will be applicable to the problems of other medical and surgical specialties.

Dr. Holaday and Drs. Herbert Rackow and Ernest Salanitro continued their efforts to develop a chromatographic method for the identification of organic acids during anesthesia. Several methods were explored and finally a liquid phase chromatographic method employing a celite column was found to have many advantages over other methods previously tried. Preliminary studies indicate that this method has reasonable sensitivity, good stability and satisfactory recoveries of known acids. Early experiments in animals suggest that the intracellular content of organic acids can be modified by respiratory acidosis, anoxia, and general anesthesia. Current studies are designed to confirm or deny the previous hypothesis that respiratory acidosis produces a metabolic acidosis by causing the accumulation of organic acids derived from the Krebs cycle. The studies of acid-base balance during anesthesia in man were aided by the precise control of  $\text{CO}_2$  tensions with the instrument developed by Dr. M. Jack Frumin and Mr. Arnold Lee. In these studies the deliberate establishment of a moderate respiratory acidosis also resulted in a decrease in the buffer base which returned to normal only after the respiratory acidosis was relieved.

Dr. Holaday and Dr. Lester C. Mark continued their efforts to make a practical, simple, and accurate device for the measurement of cardiac output. Dr. Holaday has been most generous, as in past years, in offering his advice and active assistance to other members of the attending staff

in the Anesthesiology Service as well as investigators in other departments of the University and the Hospital.

#### PHYSIOLOGY OF THE NEWBORN

Drs. Apgar and James, with Dr. Weisbrot of the Service of Pediatrics, made significant progress in their studies of the newborn. The mode of placental transfusion in vaginal deliveries was studied and shown to be closely related to the umbilical venous pressure, gravity playing a lesser role. The major portion of the placental blood passed into the infant within 45 seconds of delivery. The pressures in the circulatory system of normal newborn infants, with placental transfusion of 100-120 cc., were shown to adjust to the same levels as those of infants receiving no transfusion. This adjustment is complete in 6-24 hours. The hematocrit of those infants who receive no transfusion is significantly lower than the transfused group. The venous pressure in infants with respiratory distress is high.

A pneumotachograph ideally suited to measure respiration in healthy and sick infants was developed and the mechanism of respiration studied. Respiration occurs spontaneously within seconds of delivery with oxygen saturations as low as 8 per cent in the umbilical artery. Apnea at birth, not caused by oversedation or anesthesia, has been correlated with metabolic acidosis and a reduction in buffer base. The degree of metabolic acidosis at birth appears to be an indication of the duration of hypoxia and  $\text{CO}_2$  retention before and immediately following birth. The quantity of blood shunted through the ductus arteriosus and the direction of flow appear to be different in healthy infants and in those with respiratory distress. These important investigations should bring much knowledge in a field where relatively little is known. Particular appreciation is due Dr. Howard C. Taylor, Jr. and Dr. Rustin McIntosh for their generous help and cooperation in the support of this work.

Dr. Edgar C. Hanks continued the search into the details of the cessation of heart action during anesthesia and operation. Together with Dr. William S. Howland of the Memorial Cancer Center he is collecting data regarding those patients who were successfully re-operated upon after having cardiac arrest. Dr. Hanks and Dr. Holaday are planning a joint study on problems in respiratory and metabolic acidosis in man with and without mechanical respirators.

#### OPHTHALMIC STUDIES

Dr. Herman Schwartz studied the aqueous humor dynamics in glaucoma with Dr. Andrew deRoeth, Jr. of the Institute of Ophthal-

mology. They found that hexamethonium caused a transient fall in intraocular pressure due to a decrease in the rate of flow of aqueous humor. Thiopental sodium caused a marked fall in intraocular pressure because of the increased facility of aqueous outflow. Drs. Schwartz and deRoethth showed that parenteral atropine and scopolamine in therapeutic doses are safe to use as premedication for patients with acute and chronic glaucoma. Drs. Schwartz and deRoethth are extending their studies of intraocular pressure in glaucoma by studying the effects of succinylcholine. Thus far it appears that this drug causes a sharp, transient rise in intraocular pressure in normal eyes, presumably due to the contraction of extraocular muscles during the depolarization phase of neuromuscular block. There was no change in intraocular pressure when succinylcholine was given to patients with chronic glaucoma. Drs. Schwartz, Shih Hsun Ngai, and Emanuel M. Papper completed a Manual of Anesthesiology for residents and medical students, which will be published by Charles C. Thomas shortly.

Dr. Herbert Rackow has been studying the problem of diffusion anoxia at the end of anesthesia with Drs. M. Jack Frumin and Norman A. Bergman. At the present time, Dr. Rackow and his colleagues are measuring the effects of gases other than  $\text{CO}_2$  on the infra red analyzer as a preliminary phase to the study of gas diffusion at the end of anesthesia.

#### EFFECTS OF NITROUS OXIDE

Dr. M. Jack Frumin continued his studies with the Autoanestheton. The mechanical system of this instrument has been improved so that precise deliveries of known concentrations of nitrous oxide and oxygen can be depended upon over many hours of operation. The new mixing system has increased the usefulness of this instrument in evaluating certain changes in electroencephalographic behavior and pulmonary function. With Dr. John F. Schweiss, and with Dr. Eli S. Goldensohn of the Service of Neurology, Dr. Frumin conducted a study of the electroencephalographic patterns during light, nitrous oxide-oxygen anesthesia in patients who were immobilized with succinylcholine. They found that 65 per cent nitrous oxide produced amnesia in the majority of patients together with electroencephalographic patterns which were frequently indistinguishable from those of the normal, awake patient. However, there was frequently a depression of alpha activity both in frequency and in voltage. With 80 per cent nitrous oxide, amnesia was always produced and the alpha activity was usually replaced by a combination of medium voltage fast activity and 5 to 7 cycle per second waves



arising chiefly from the frontal areas. The fast activity was similar to that produced by ether analgesia.

The use of muscle relaxants with ether in the analgesic state permitted the performance of surgical procedures even though patients were partially responsive to verbal command. Since the lightest level of anesthesia is possibly the least harmful to the physiological activity of patients, the analgesic state has great interest. This clinical state is of interest to the Subcommittee on Anesthesia of the National Research Council who requested that we undertake a systematic study of the physiological effects of the analgesic state. The Subcommittee is interested in this problem as one of fundamental importance. They also have in mind the practical aspects of providing analgesia to many patients in the event of mass casualties from either civilian or military disaster.

Dr. Frumin also continued his studies on the effects of intermittent, positive pressure on pulmonary gas exchange. Dr. Frumin and Dr. Holaday conducted a study of arterial blood saturation before and during artificial respiration with the Autoanestheton. Subjects were provided various concentrations of oxygen and the  $\text{CO}_2$  tension was adjusted to between 20 and 40 mm. Hg in the end exhalation samples. The oxygen tension gradient between alveolar air and arterial blood was calculated. It was found that some patients exhibited abnormally high oxygen tension gradients before and during artificial respiration. They were exaggerated with the inhalation of high oxygen tensions. The imposition of a resistance to exhalation appeared to reduce the gradient in a few patients. Hyperventilation tended to obscure this phenomenon.

In the course of the study it was found that there was a discrepancy between chemical measurements of arterial blood  $\text{CO}_2$  tension and the determinations of an infra red gas analyzer on end of exhalation samples. These conflicting observations led to a study of interferences with the infra red detection of  $\text{CO}_2$ . This problem has been studied by Dr. Frumin in collaboration with Drs. Rackow and Bergman. The "collision broadening" effect is of fundamental importance since this source of error has not been considered by previous workers in this field despite the fact that an error as high as 10 per cent may be introduced into the measurement of  $\text{CO}_2$  tension by this apparatus.

Dr. Frumin was associated with Dr. Dominick F. Purpura of the Department of Neurological Surgery in some preliminary studies on the effect of nitrous oxide on the cortical activity in man and in the cat. There is sufficient evidence to suggest that nitrous oxide may not alter electrical excitability of the apical dendrites in both species studied. The importance of this work lies in the suggestion that nitrous oxide

may not depress consciousness at the cortical level and does suggest that investigation of other sites of action of at least this anesthetic is warranted.

#### INTRAVENOUS ANESTHETICS

Dr. Lester C. Mark continued his studies of the intravenous anesthetic agents in collaboration with Drs. B. B. Brodie and J. J. Burns of the National Heart Institute and Dr. Leonard Brand of the Anesthesiology Service. The studies of the blood-brain barrier with respect to intravenous anesthetics were continued. Comparisons were made of the relationship between concentrations in body fat and plasma, the rates of bio-transformation and the rates of passage into brain by a number of the ultra short-acting anesthetics. In each drug studied a high localization of the anesthetic in the body fat was observed together with rapid passage across the blood-brain barrier and the transient action of small doses of these drugs. This pattern of drug distribution and behavior has implications of clinical value in that high fat solubility appears to be associated with the production both of rapid onset of action and short duration of action.

Dr. Mark and his colleagues continued their collaborative study with Dr. Joseph F. Artusio, Jr. and Dr. Valentino D. Mazzia of the New York Hospital on the relationship between the concentration of thiopental in the plasma and electroencephalographic activity. A great variability has been encountered between the electroencephalographic patterns and the plasma concentrations. Two possible explanations have been entertained. First, the electroencephalographic patterns with thiopental may not be related to the depth of anesthesia, despite work elsewhere to the contrary. Second, the lack of correlation may be due to acute tolerance since there appears to be a tendency for plasma levels of thiopental to rise in the face of a maintained electroencephalographic pattern. These questions will be answered, it is hoped, by further study.

#### AIRWAY STRUCTURES

Dr. B. Raymond Fink continued his studies of laryngeal function in collaboration with Drs. Robin Rankow of the Surgical Service and John J. Conley of the Otolaryngology Service before and after radical resections of the neck and oral cavity. The studies were extended to provide the basis for defining the minimal structures which must be left behind after operation for the preservation of the ability to swallow. Dr. Fink also continued his interest in the mechanism of sound production in the larynx and, in collaboration with Dr. Frank Kirschner of the

Acoustics Department of the General Electric Company, studied some of the physical principles which are involved. Dr. Fink is testing the hypothesis that the unique arrangement of the vocalis muscle in man allows utilization of the Bernouilli effect and thus reduces the air pressure necessary for phonation, providing for economy of effort in the production of sound. Dr. Fink is also planning joint studies in the function of the larynx with Dr. William B. Seaman of the Radiology Service.

Dr. Fink continued his development of the special vallecular extension airway which is now ready for commercial production for clinical use. Dr. Fink's studies on the electromyographic effects of airway obstruction continued in collaboration with Dr. Holaday. Results thus far suggest that obstruction to respiration produces an immediate reflex increase in muscle activity which may be mediated in part through pathways other than that of the vagus nerve.

Dr. Vance Lauderdale, Jr. continued his testing of local anesthetic agents developed by E. R. Squibb & Sons in collaboration with Dr. Richard C. Fowler of the School of Dental and Oral Surgery. They employed a screening and double blind technique with mandibular nerve block for dental surgery as a test object. Results in a small number of patients suggest that one of the new local anesthetic agents is as effective as xylocaine. This anesthetic shows great clinical promise because of its efficacy and low toxicity.

Dr. Marilyn M. Kritchman is reviewing the clinical records of patients with familial dysautonomia (Riley-Day syndrome). These patients are almost desperate anesthetic risks and no knowledge of a precise nature exists on the safest or the best way to anesthetize them. Although the disease is a rare one it will be most useful to have a better understanding of a more rational method of anesthetic conduct.

Dr. Rita Ann Jacobs conducted precise testing of a group of new topical anesthetic agents produced by E. R. Squibb & Sons by the method developed by Clark. One of these new agents was found to be useful for the production of surface anesthesia. Further testing is indicated to establish the clinical value of this agent.

### *Thoughts for the Future*

The attending staff in the Anesthesiology Service look upon the recent developments in the Medical Center with great interest and enthusiasm. The reappraisal of educational activities and the earnest desire to make the physical facilities as efficient as possible for all Services are most encouraging notes. We wish respectfully and eagerly to enlarge

collaborative activities with our professional colleagues and a friendly and cooperative administration to improve our services to the sick, to improve the quality of training of young physicians, and to widen the scope and broaden the fundamental nature of our investigations into areas where knowledge is scanty or absent.

# Dermatology

CARL T. NELSON, M.D., *Director*

In 1956 the Service of Dermatology opened a new dermatological ward and treatment room unit in The Presbyterian Hospital. Adjoining staff offices to house the administrative function of the Service were also completed. These integrated and efficient new quarters enable the staff to render improved dermatological in-patient care, and also promise to be a substantial aid in clinical investigation and teaching, as well as in the training of house staff and nurses. The completion of these facilities on the eighth floor of the Hospital corrects a deficiency which had existed in the Medical Center since its establishment.

Another development which permitted the staff to meet the needs of in-patient and out-patient care more effectively was the assignment of a fourth resident to the Service of Dermatology. All who are immediately responsible for the care of patients with cutaneous diseases are very grateful to the officers and trustees of Presbyterian Hospital for their sympathetic approach to the solution of these problems.

Over the year in the Dermatology Out-patient Department in Vanderbilt Clinic patient visits numbered 36,607. There were 106 admissions to the Dermatological Service in Presbyterian Hospital and 956 patients were treated in consultation with other services. The serological research laboratory performed 1,556 treponemal immobilization tests for patients admitted to the various services of the Medical Center, and the Division of Mycology examined 3,119 specimens.

For reasons of health, Dr. Rhoda W. Benham, Mycologist to The Presbyterian Hospital and Associate Professor in the Department of Dermatology of the College of Physicians and Surgeons, retired from active duty in June, 1956.\* Dr. Benham gained international recognition for her contributions in mycology and for her rare abilities as a teacher. A generation of physicians benefited from the kindly and patient teachings of this remarkable scientist. She will be sorely missed, not only because of her accomplishments in the study of fungous diseases, but also because of her qualities of humility, integrity, and generosity. Another

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\* Word of Dr. Benham's death on January 17, 1957 was received while this volume was in press.

change in the staff was the resignation of Dr. Royal M. Montgomery, Assistant Dermatologist in Vanderbilt Clinic.

### **Research Studies**

As in the past, the research activities of members of the Service of Dermatology utilized both the clinical facilities of The Presbyterian Hospital or Vanderbilt Clinic, and the laboratories of the College of Physicians and Surgeons. These activities again reflected a wide variety of interests. Dr. George C. Andrews and Dr. Anthony N. Domonkos continued their study of the effectiveness of the protective measures employed at the present time in the treatment of dermatological patients with X-rays and radium. Dr. Domonkos also extended the study of neutron activation analysis of arsenic in cutaneous epitheliomas and keratoses. Although the development of certain types of cutaneous epitheliomas and keratoses is known to follow the ingestion of inorganic arsenic, the results of this study thus far do not disclose a direct relationship between this phenomenon and the arsenical content of the cutaneous lesions.

Dr. Benham, in collaboration with Mrs. Christine K. Alexio and Mr. J. Dennis Pollack, completed a study of the antigenic structure and serological behavior of the genus *Candida*. Dr. Bohdan Dobias began an investigation of the factors related to the pathogenicity of *C. albicans* and has succeeded in preparing an endotoxin which reproduces in experimental animals some of the hematologic changes found in generalized moniliasis.

Dr. Margarita Silva continued her studies of the nutritional requirements of the dermatophytes, with special reference to the relationship of amino acid utilization and the morphological characteristics of *T. rubrum* and *E. floccosum*. With Dr. Beatrice M. Kesten, Dr. Silva also extended an investigation of the epidemiology of infections with *T. rubrum*, particularly with regard to the familial incidence and duration of such infections. The Mycology Division of Vanderbilt Clinic again provided much of the clinical material for these studies.

Dr. Helen O. Curth, in collaboration with Dr. Bertha Aschner, continued the long-term study of the relationship of acanthosis nigricans to visceral cancer. With Dr. Paul Gross and Dr. Aschner, Dr. Curth also initiated a clinical investigation of the genetic inter-relationships of psoriasis.

Dr. J. Lowry Miller, in collaboration with Dr. Marvin Brodey and Dr. Justina H. Hill, extended the study of the premonitory clinical significance of persistent biologic false-positive reactions with the standard

serologic tests for syphilis. Dr. Brodey, with Dr. Nelson, also continued the long-term follow-up study of patients with pemphigus who have received treatment with corticosteroids in the Hospital.

Dr. Leo Schweich and Dr. John T. McCarthy initiated an investigation of the comparative value of various antimalarial agents in the treatment of chronic discoid lupus erythematosus. In collaboration with Dr. E. William Jewell, Dr. McCarthy also studied the clinical value of absorbable gelatin spones with powdered antibiotics in the local treatment of chronic cutaneous ulcers of vascular origin. Dr. Dabney Moon-Adams and Dr. Meyer H. Slatkin completed a clinical study of familial hyperpigmentation with dystrophy of the nails.

Dr. Joseph S. Shapiro began an investigation of the effectiveness of certain tranquilizing drugs in the treatment of chronic urticaria and dermatoses of presumably psychogenic origin. Dr. Benjamin Schwimmer and Dr. Nelson completed further studies on the specificity of the Kveim test in sarcoidosis. The results indicate that the Kveim reaction is highly specific for sarcoidosis and that it is rarely positive in other diseases.

### **Staff Activities**

During the year, 19 papers were published by members of the staff of the Service of Dermatology (see bibliography, p. 206). In addition, the Spanish and Italian editions of Dr. Andrews' textbook, *Diseases of the Skin*, were prepared for publication. Members of the staff also continued their active participation in the proceedings of various scientific and educational organizations. Twelve members of the Service gave presentations before various scientific assemblies during the year.

A number of distinctions and honors also came to members of the staff during the past year. Dr. Andrews was Chairman of the Panel on Cutaneous Malignancy of the American Academy of Dermatology and Syphilology, and also served as a member of the Committee on Membership of the American Dermatological Association. Dr. Kesten again served as Secretary of the American Board of Dermatology, and Dr. Miller was Secretary of the New York Dermatological Society. Dr. Paul Gross addressed the Greensboro, North Carolina Academy of Medicine and Dr. Andrews delivered 14 lectures on various aspects of cutaneous malignancy throughout the United States. Dr. Miller was a guest speaker before the New Orleans Graduate Assembly and also participated in the International Symposium on Venereal Diseases in Washington. Dr. Nelson became a member of the Subcommittee on the Cutaneous System of the National Academy of Sciences and again served as a member of the Committee on Cosmetics of the American Medical Association. Dr.

Gross, Dr. H. O. Curth, and Dr. Aschner were invited to participate in the First International Congress of Human Genetics in Copenhagen. Seven members of the Service lectured before various other assemblies during the year, and Drs. Andrews, Domonkos, Kesten, Miller and Nelson participated in the postgraduate educational programs and symposia of the American Academy of Dermatology and Syphilology.

The annual alumni dinner for graduates of the Service of Dermatology of The Presbyterian Hospital and Vanderbilt Clinic was again held in Chicago. Dr. John F. Daly of Burlington, Vermont, Dr. Domonkos, Dr. Harry Wechsler of McKeesport, Pennsylvania and Dr. Emmett S. Lupton of Greensboro, North Carolina served as the Committee on Arrangements for this dinner which was held in conjunction with the meeting of the American Academy of Dermatology and Syphilology.

It is again a pleasure to express sincere thanks to the members of the professional staff and to the nursing and administrative staffs of The Presbyterian Hospital for their cooperation during the past year. Their interest in promoting the welfare of this Service and in furthering the care of patients is greatly appreciated.



# Medicine

ROBERT F. LOEB, M.D., *Director*

It is with pride and deep satisfaction that the awarding of the Nobel Prize for Medicine to Dr. Dickinson W. Richards and his colleague Dr. André Cournand, also Professor of Medicine in the College of Physicians and Surgeons, is recorded. The studies of the function of the heart and lungs in health and disease by techniques developed by them and carried out in the wards and laboratories of The Presbyterian Hospital, Bellevue Hospital and at the College of Physicians and Surgeons have contributed enormously to the betterment of the lot of man. Basic observations made over the course of years ultimately bore fruit in the development of diagnostic methods now employed throughout the world which constitute the basis for both medical and surgical treatment in a variety of diseases of the cardiorespiratory systems.

Gratifying also is the acknowledgment of another Lasker Award, again to the Medical Service, this time to Dr. Karl Meyer. This award was made in recognition of his fundamental and pioneering studies on the chemical nature of connective tissue. The connective tissue forms one of the largest components of the body and is the supporting tissue of all organs. Disturbances in the connective tissue are responsible for a great variety of diseases, including rheumatoid arthritis, rheumatic fever and disseminated lupus erythematosus which are objects of study in collaboration with Dr. Charles A. Ragan, Dr. Ralph H. Boots and other members of the Edward Daniels Faulkner Arthritis Clinic. The nature of the connective tissue is extraordinarily complex but with ingenuity of experimental approaches and patience over years Dr. Meyer and his collaborators have made notable contributions to the elucidation of its chemical composition. From these studies there may be anticipated a better understanding of the rheumatic diseases.

## ***Metabolism Studies***

Last year mention was made of the modernization of the Metabolism Ward. In view of serious problems currently confronting the most effective utilization of this facility, comments on the history of its development and function are appropriate. In 1921 Drs. Walter W. Palmer and Dana W. Atchley established a metabolism unit within the framework

of the Medical Service. This unit consisted at the start of two beds with a special dietician and special nurses. In time this was expanded to twelve beds, but when the facility was relocated in its splendid new quarters on the ninth floor the total, because of limitations of space, was reduced to ten beds.

The Metabolism Unit has served the Hospital, the staff and mankind well over the past thirty-five years. The primary function, as originally conceived and as currently visualized, is to make possible detailed and quantitative studies of certain metabolic processes in normal subjects and in patients with a variety of disease states. Through the means of precisely controlled diet and accurate measurements of the fate of various foods and inorganic substances it is possible not only to detect and measure abnormalities, thereby clarifying the nature of disease processes, but also to determine beyond all speculation the beneficial and at times untoward effects of drugs, diet and other therapeutic agents. Among notable contributions which have emerged from studies on the Metabolism Ward may be mentioned the revolutionary high carbohydrate diet developed in the early days of insulin therapy and the classic study of the disturbances of salt and water metabolism resulting from uncontrolled diabetes and acidosis. These studies constitute the present day basis for eminently successful management of diabetic acidosis. Also may be mentioned the discovery of control of salt and water metabolism by the adrenal glands and the life-saving effect of salt in Addison's disease. The effects of oxygen on electrolytes and water metabolism in cardiac failure and various non-tuberculous diseases of the lungs were also studied with great profit as have been the metabolic effects of ACTH and a variety of steroids in patients with arthritis. Significant studies have also been made in the Metabolic Ward on patients with thyroid disease and other endocrine disorders as well as on hypertension.

Studies of the type mentioned are perforce of a nature frequently requiring hospitalization over periods of weeks and even months. The laboratory tests involved are almost innumerable. They are at times both costly and time-consuming. More significant, the studies are often of an exploratory nature so that direct benefit to the subject of investigation may not be apparent and in the exploratory phase the studies cannot properly be supported financially on a project basis. In other words, these long-term observations fall into the category of financial "risk research." Until recent years the Hospital assumed all costs for these exploratory studies on the Metabolism Ward, including the costs of dietitians, nurses, patient hospitalization, and technical assistance in the College laboratories where chemical determinations are carried out.

With rapidly increasing costs of patient care and of laboratory study and with attempts to separate sharply functions of Hospital and College in terms of patient care, teaching and research, this priceless heritage from the past is suffering seriously and it becomes progressively more difficult to carry out the exploratory studies which lead to the acquisition of new knowledge because of understandable financial limitations. It is earnestly hoped that large funds and more endowed beds for research may become available in the near future to assure the advance of medical science in its exploratory phases as was possible in earlier days. The urgency of these needs cannot be over-emphasized.

Beyond the above mentioned research function, the Metabolism Ward also serves as an area for the routine treatment of patients with severe diabetes and diabetic acidosis, the latter including private patients requiring continuous and complex therapy. It is gratifying to be able to report that the mortality in this grave disorder has, in recent years, been reduced to 2 per cent among patients treated in the Metabolism Unit – a truly notable record. In this achievement a major role has been played by Miss Margaret Hawthorne, Supervisor, whose dedication to the care of patients and participation in research during the past twenty-five years is recognized with profound appreciation.

### ***Staff Honors and Activities***

In the past year Dr. Stanley E. Bradley was elected President of the American Society for Clinical Investigation and Dr. William B. Sherman became President-elect of the American Academy of Allergy and a member of the executive committee of the American Foundation for Allergic Diseases and a member of the Board of Allergy of the American Board of Internal Medicine. Dr. Robert L. Levy was elected President of the New York Academy of Medicine. Dr. Yale Kneeland, Jr. visited the American University of Beirut, Lebanon, at a Trustees meeting and continued as Chairman of the Scientific Advisory Committee of the Common Cold Foundation. Dr. Karl Meyer lectured at the International Symposium on Macromolecular Chemistry in Israel and at the CIOMS conference on connective tissue in London. He also delivered a Harvey Lecture. Dr. Alfred Linker was appointed as an Established Investigator of the American Heart Association and Dr. Nicholas P. Christy was made a Markle Scholar. Dr. John V. Taggart was made Associate Editor of the *American Journal of Medicine* and was named "Alumnus of the Year" by the University of Southern California Medical School. Dr. George A. Perera served as a Consultant to the Committee on Educational Research and Services of the Association of American

Medical Colleges to review the Medical College admissions tests and represented the College of Physicians and Surgeons at the Association's Teaching Institute. Dr. Perera also participated in a symposium on hypertension at the Postgraduate Medical College in London. Dr. Kermit L. Pines became a Director of the New York Diabetes Association. Dr. Wallace V. Epstein, working in Dr. Charles A. Ragan's laboratory, was awarded the Joseph Mather Smith Prize of Columbia University for his immunochemical studies in rheumatoid arthritis. Dr. Ragan became Chairman of the Committee on Fellowships of the Arthritis and Rheumatism Foundation. Dr. Joseph W. Jailer became a member of the Council of the American Endocrine Society. Dr. Robert F. Loeb served on the Medical School Grants Advisory Committee of the Ford Foundation and was elected Foreign Honorary Member of the Association of Physicians of Great Britain and Ireland. As in other years, members of the Medical Service lectured in many of the Medical Schools of the country.

Following the death of Dr. Kenneth B. Turner last year, Dr. Howard G. Bruenn graciously consented to take his place on an *ad interim* basis as Director of the Electrocardiographic Laboratory. Dr. M. Irené Ferrer has now been appointed to this position. Dr. Richard J. Cross has taken on the responsibility of Director of the general Chemical Diagnostic Laboratories of the Hospital and has developed plans for expansion which are vital for the effective functioning of this important facility.

Dr. Ralph H. Boots retired in June as Attending Physician and became Consultant to the Hospital. Dr. Boots' efforts combined with those of the late Dr. Martin H. Dawson and Dr. Ragan were responsible for the development and distinguished record of accomplishment of the Edward Daniels Faulkner Arthritis Clinic. Dr. Henry E. Marks retired after many years of devoted service to patients in the diabetic clinic and on the Metabolic Ward. Dr. Franklin A. Stevens died after many years of association with the allergy clinic. As in former years the Medical Service has been host to a large number of distinguished foreign visitors and to a large group of fellows from overseas and from various fellowship granting groups in this country.

### **Research Studies**

The research program, except for the studies in the Cardiorespiratory Laboratory of the Hospital, has, as in the past, continued to be carried on in the laboratories of the College of Physicians and Surgeons by the staff which serves both The Presbyterian Hospital and the College. The salaries of the staff and costs of research are paid either from generous

gifts to the Hospital, including among others the Daniel G. Arnstein Fund, the Alice Weisl Fund, the Fleitas Fund and the Avalon Foundation Fund or from the monies of Columbia University. This interdigitation of effort is not only highly desirable but essential for the effective prosecution of the research program here at the Medical Center. There follows a brief outline of some of the research activities of members of the Medical Service during the past year.

Dr. Bradley's work on the physiology of the splanchnic circulation continued during the past year in collaboration with Drs. Burton Combes, Henry O. Wheeler and Alfred W. Childs. Rose bengal labelled with radioactive iodine was found of value in the measurement of hepatic blood flow during examination of hepatic uptake of Bromsulfalein (BSP). Movement of BSP from blood to bile appeared to involve a transfer maximum mechanism which is not appreciably affected by dinitrophenol. Investigation of the splanchnic circulation time yielded results suggesting that intrahepatic arteriovenous short circuits may develop in the course of the changes produced by cirrhosis. Dr. Wheeler initiated a study of the discrete distributions of blood flow and volume within separate components of the splanchnic vasculature in the dog. He found no evidence of sequestration in direct measurements of the distribution of red cells labelled with  $\text{Cr}^{51}$  in the canine liver. An investigation of the effect of the upright position in hypertensive subjects before and after lumbodorsal sympathectomy indicated that adjustment in splanchnic blood volume depends upon the integrity of autonomic innervation. Progress along this line was made in an evaluation of the effects of various anesthetic agents and hypercapnia, with the cooperation of Drs. Emanuel M. Papper and David V. Habib of the Services of Anesthesiology and Surgery.

Dr. Roscoe R. Robinson, visiting fellow, and Dr. Robert M. Epstein, together with Dr. Eric S. Snell, a fellow from St. Mary's Hospital, London, undertook an examination of the splanchnic metabolic and vascular adjustments in dogs during irreversible hemorrhagic shock. Drs. Childs, Combes and Wheeler made further studies of "nephron delay" in patients with renal insufficiency. Delay is greatly increased presumably because tubular urine flow is slowed as the result of excessive glomerular damage. An investigation by Dr. Childs of the excretion of dextrans and plasma proteins in the course of renal disease indicated that glomerular damage is randomly distributed and changes in glomerular function — as in orthostasis — affect all macromolecular moieties proportionately.

As in previous years, Dr. Meyer and his associates continued studies on mucopolysaccharides of connective tissue and other hexosamine-

containing substances and their derivatives. The major effort has been directed towards the isolation of the unknown uronic acid of chondroitin sulfate B, one of the major constituents of the cement substances of connective tissue. In collaboration with Dr. Philip Hoffman of the Department of Biochemistry and Dr. Linker, the uronic acid was shown to be L-iduronic acid, a carbohydrate never before found in nature. The structure of chondroitin sulfate B is being studied in collaboration with Dr. Edward Korn of the National Heart Institute, by use of a bacterial enzyme which Dr. Korn isolated. The possible importance of chondroitin sulfate B in pathological processes is indicated by the isolation in large quantities of this polysaccharide from the urine of a case of gargoylism. In collaboration with the same group, a study of the structure and degradation of heparin and a new polysaccharide related to heparin, and named by them heparitin sulfate, is being undertaken. Heparitin sulfate has been isolated from amyloid liver and from bovine and human aorta. Decisive experiments carried on by Dr. Meyer and Mr. Ralph Heimer, based on the enzymatic splitting of sialic acid into its component parts and on chemical analysis, made it possible to propose the structure of this biologically very important and widely distributed compound. Dr. B. E. C. Nordin, a fellow from the Postgraduate Medical School of London, working under Dr. Meyer, carried out a valuable study on bone salts with Dr. C. Andrew Bassett of the Service of Orthopedic Surgery. Another fellow from abroad, Dr. Gerald Loewi of Oxford University, has begun a study on the mechanism of sulfation of mucopolysaccharides.

The members of the Enzyme Laboratory, under the direction of Dr. Taggart, are continuing their studies of metabolic aspects of active transport systems. In an attempt to uncover the physiological role of the renal transport mechanism responsible for the tubular excretion of organic acids, Drs. Irving H. Goldberg and John H. Bryant of the resident house staff began studies on the renal excretion of various sulfate conjugates. Although the majority of ethereal sulfates are hydrolyzed rapidly by enzymes within the body, evidence for the active tubular excretion of one such compound, resorcinol disulfate, was obtained in mammalian species. Dr. William J. Hensley, a Rockefeller and Fulbright Fellow from the University of Sydney, and Dr. Edwin P. Maynard III of the resident staff studied the transport of sugars and amino acids *in vitro* through the use of sacs of everted small intestine from the hamster. Active transport was demonstrated in this system, and the effects of various metabolic inhibitors and of deficiency states on transport are under investigation.

Dr. Geoffrey M. Kellerman, also a Rockefeller Fellow from the Uni-

versity of Sydney, and Dr. Alvin Essig, a New York Heart Association Fellow, are engaged in studies of the biosynthesis of various adenylylates, particularly with reference to their possible importance in renal transport. Dr. Cross in association with Dr. Taggart is studying the nucleotides of kidney tissue in an attempt to determine how the chemical energy of these compounds is utilized for renal work. Considerable information is now available as to how the potential energy of foodstuffs is converted to the high-energy phosphate bonds of certain nucleotides; but little is known of how this energy is utilized by the cells of the renal tubule in establishing concentration gradients between plasma and urine. In an attempt to elucidate some of these mechanisms Dr. Cross is comparing the nucleotide content of normal kidney tissue with that of tissue obtained from animals poisoned with dinitrophenol, a compound known to interfere with both the formation of high-energy phosphate bonds and the performance of certain types of renal work.

Dr. Perera, continuing his interests in hypertensive vascular disease, studied some of the newer compounds recommended for treatment. Mecamylamine and an isoindoline derivative were shown to have only slight advantages over other ganglionic blocking drugs. Preliminary studies of groups of patients exhibiting "malignant" hypertension indicate significant differences in certain constitutional characteristics of the men and women developing this disorder. Dr. Perera's observations in patients with pheochromocytoma continue to support the concept that retinal changes are not always indicative of the accelerated ("malignant") form of hypertension. Dr. Perera is also collaborating with several other clinics in the re-valuation of the role of sympathectomy in the management of hypertensive disease. With Dr. William H. Hulet, a National Heart Institute Trainee, Dr. Perera demonstrated that small doses of serotonin may give rise to sodium retention, a mechanism possibly involved in edema occasionally induced by rauwolfia alkaloids.

During the past year Dr. John H. Laragh and Dr. Helen M. Anderson continued their interest in electrolyte metabolism. A study was completed with Dr. Herbert C. Stoerk of the Merck Institute which demonstrates that, in the dog, sodium depletion does not give rise to increased aldosterone activity unless adequate potassium intake is provided. The work suggests that serum potassium is an important stimulus to aldosterone activity. Further studies are being carried out on animals with experimental edema. These animals appear to excrete increased amounts of aldosterone; efforts to make measurements of this hormone in the adrenal venous blood were initiated with the help of Dr. Shivaji B. Bhonslay of the Service of Surgery and Dr. Perry B.

Hudson of the Service of Urology. In addition, metabolic balance studies on human subjects were carried out in an effort to define further the sodium wasting seen in certain disease states. Dr. Laragh and Dr. Anderson were also occupied with a study of the hyperkalemia which has been observed in certain disease states associated with sodium depletion. Experiments were designed to observe the capacity of the kidney tubule to secrete potassium under conditions of hyponatremia.

Dr. Jailer in collaboration with Dr. Christy, Drs. Donald Longson of the University of Manchester, Dorothy T. Krieger and Adele D. Hofmann, fellows in the Department of Medicine, extended investigation of the basic mechanism of Cushing's syndrome resulting from bilateral adrenal hyperplasia. (Both Dr. Krieger and Dr. Hofmann are now members of the Hospital staff, the latter in the Service of Pediatrics.) These studies suggest that it results from the over-production of an "ACTH potentiating factor" by the pituitary gland. A factor was detected in the plasma of patients with this type of Cushing's syndrome which is capable of maintaining adrenal weight at least partially in hypophysectomised rats. This factor does not appear to be ACTH since it cannot be detected in the plasma of normal individuals, Addisonian patients, nor in the plasma from a patient with an adrenal carcinoma. It appears to be present in the plasma of pregnant women as might be anticipated since such individuals demonstrate an exaggerated response to ACTH similar to that found in Cushing's syndrome. The hypothalamic control of anterior pituitary secretion was also investigated by Dr. Krieger, who has produced hypothalamic lesions in cats which render the animals incapable of activating the pituitary-adrenal axis as a consequence of stress, whereas there is no evidence of pituitary insufficiency under resting conditions. In collaboration with Dr. Mary M. Knight of the New York Psychiatric Institute, Drs. Christy and Longson showed that pre-treatment with chlorpromazine of patients undergoing insulin shock will prevent the rise in plasma 17-OH-corticosteroids which usually results from the administration of large doses of insulin. It appears that this inhibition results from suppression of hypothalamic activity.

Dr. Abbie I. Knowlton and Dr. Emily N. Loeb, in conjunction with Dr. Stoerk, continued their investigations of the effects of adrenal steroids and their synthetic analogues upon the blood pressure of the rat. A "log. dose" response of the blood pressure was observed for these steroids in adrenalectomized animals maintained on a rigidly restricted sodium intake. The line obtained with increasing doses of hydrocortisone or cortisone differs significantly in its slope from the line for desoxycorticosterone (DOC). The slope of the lines for the analogues



is probably determined by the ratio of hydrocortisone-like to DOC-like activity present, inasmuch as appropriate combinations of 1-dehydrohydrocortisone and DOC permitted reduplication of the line for 9-alpha-chlorohydrocortisone. In addition, tissue analysis studies continued, comparing the effects of DOC and of cortisone upon the water, fat, sodium, potassium, chloride and nitrogen content of the adrenalectomized rat carcass. Preliminary studies indicate that hypertension in the DOC-treated rats on a high sodium intake is associated with an increase in both body water and sodium, while the most severely hypertensive cortisone-injected rats (i.e., those on a low-sodium intake) exhibited a decrease in body water and in potassium. The carcasses of rats made hypertensive by the renal damage of unilateral nephrectomy with a partial arterial infarction of the remaining kidney had an increased body water content whether maintained on a high or low sodium intake. In addition, those on a high sodium intake had increased carcass sodium and chloride values and decreased potassium, while the restriction of sodium prevented these electrolyte changes.

A new method for quantitating simultaneously adrenaline and nor-adrenaline was developed by Drs. Marcel Goldenberg and Gerald Cohen of the College staff and applied to the determination of adrenaline and nor-adrenaline levels of plasma. At the present time the method is reliable for concentration as low as 0.005 micrograms of nor-adrenaline and 0.003 micrograms of adrenaline per 15 cc. plasma. Recoveries are in the 80 per cent range. Preliminary results have shown that the presently accepted levels of nor-adrenaline in the plasma are at least 20-fold too high, while those of adrenaline are at least 5- to 10-fold too high. Urinary adrenaline and nor-adrenaline excretions have been studied in sixty patients with pheochromocytoma. Plasma levels were studied in seven cases and these were found to be useful for diagnostic purposes. In certain phases of pheochromocytoma high urinary excretions of these hormones with the absence of hypertension were observed. The suspicion that, at times, large quantities of secreted nor-adrenaline may be neutralized by a vasodilator substance or blocked has been tentatively verified by the study of plasma levels and the demonstration of abnormal quantities of vasodilators in the urine.

Dr. Joseph C. Turner continued his studies of venom hemolysis. It appears that there are two dominant mechanisms: The first involves venom enzymes not capable of attacking the red cell directly but able to form lysins (lysophosphatides) from white cells or platelets that may be present. The second concerns a direct hemolysin, probably a lecithinase, which can destroy the red cells of some animal species but

not others. Evidence is accumulating that this fact reflects species differences in the phospholipid composition of the red cell membrane. With Mrs. Elaine F. Vorhaus, a third year medical student, Dr. Turner examined the behavior of avian red cells upon transfusion into rodents, and described a curious phenomenon in the spleens of recipient guinea pigs. This is extrusion of the avian red cell nuclei. The finding appears to be limited to the spleen and may reflect some singular property of that organ. It is also of interest in showing that nuclei may be extruded, leaving behind an apparently intact, unlysed red cell membrane and its contained pigment.

Dr. Helen M. Ranney extended studies of the hemoglobin differences in inbred strains of mice in collaboration with Dr. S. Gluecksohn-Waelsch of the Albert Einstein College of Medicine; at present this study is concerned with the biochemical differences between the hemoglobin of the offspring and parents. An investigation of the incorporation of isotopic iron into the two varieties of hemoglobin of heterozygous individuals was undertaken; preliminary results indicate that different hemoglobins may under certain conditions be manufactured at different rates in the same individual. A clinical and genetic study of individuals heterozygous for both thalassemia and an abnormal hemoglobin is nearing completion. Together with Dr. Alfred Gellhorn, Dr. Ranney made observations on the effectiveness and limitations of the treatment of the acute leukemia of adults with massive doses of adrenal steroids.

Dr. George A. Hyman carried forward joint studies between The Presbyterian Hospital and the Francis Delafield Hospital on the clinical application of chemotherapeutic agents in neoplastic diseases. Papers were published on the effectiveness of myleran and chlorambucil as well as the combination of trimethylamine and radiotherapy in patients with retinoblastoma. The latter study was carried out in conjunction with Dr. Algernon B. Reese of the Institute of Ophthalmology. Dr. Hyman also extended his observations on the mechanism of anemia in malignant neoplastic disease.

Dr. Calvin H. Plimpton and Dr. Gellhorn at the Presbyterian and Delafield Hospitals described a syndrome of hypercalcemia in patients with neoplastic disease without clinical or autopsy evidence of skeletal metastases. It was also shown that this hypercalcemia disappears promptly following the removal of the primary tumor. The mechanisms involved in this abnormality in calcium metabolism are under study. Dr. Plimpton is also pursuing his investigations on the mechanisms of osteoporosis.

Dr. Pines studied the mechanism by which sodium phytate reduces

the level of serum calcium. It appears that this may be the result of marked increase in phosphate absorption from the intestine. Dr. Pines also, with Dr. Jailer, studied the effect of sulfonamides, recently recommended as substitutes for insulin, on the course of diabetes and on the adrenal and thyroid glands. These studies have been terminated because of toxic reactions resulting from these compounds.

Dr. Epstein, a Fellow of the American Rheumatism Foundation and Dr. Alan M. Johnson of Westminster Hospital in London, during the course of their studies of the serologic reactions found in rheumatoid arthritis, and in collaboration with Dr. Ragan, developed a precipitin reaction between human gamma globulin and the rheumatoid factor. This apparently follows accepted immunochemical criteria for a true precipitin reaction and opens the field to quantitative immunochemical methods. Dr. Epstein has moved to the University of California and is continuing his investigation there. Dr. Charles L. Christian, a Public Health Service Trainee, is continuing work on this problem in the Edward Daniels Faulkner group. Study of fibroblasts in tissue culture is continuing in the histochemical laboratory of the Orthopedic Service under Drs. Henry D. Grossfeld and Gabriel Godman. This includes the study of the production by these cells of several acid mucopolysaccharides, identified by Dr. Meyer, as well as the modification of their growth by adrenal and other steroids.

The retrospective study of juvenile rheumatoid arthritis by Drs. Albert W. Grokoest, Felix E. Demartini and Arthur I. Snyder, is almost completed. Dr. Demartini is continuing studies on the metabolism of salicylates. In association with Dr. Christian, Dr. Daniel L. Larson began the characterization of the factors involved in serological tests for rheumatoid arthritis mentioned above. In association with Mr. Donald A. Gerber, a fourth year medical student, studies were made of the factors which will inhibit the appearance of a positive serological test for rheumatoid arthritis. During the past year Dr. Larson studied certain characteristics of C-reactive protein. It has been shown that sera from patients with acute rheumatic fever may demonstrate at least three separate components reacting with rabbit antiserum to C-reactive protein. The distribution of these reacting components is being studied by the use of continuous flow curtain electrophoresis. In association with Dr. Thomas B. Tomasi, Jr., studies on the isolation and characterization of the "lupus-erythematosus factor" were started by Dr. Larson. The L.E. activity was demonstrated in the gamma globulin fraction obtained by electro-convection techniques. In association with Dr. Edward E. Fischel of the Bronx Hospital, studies are in progress on an attempt to

isolate the type-specific "M" protein from Group A hemolytic streptococci using electrophoretic techniques.

Under the direction of Dr. Alfred P. Fishman, the Cardiorespiratory Laboratory completed its reorganization for the study of the interrelations between respiration and circulation in man. The central theme is the identification of factors which affect the exchange of gases between the pulmonary capillaries and alveoli in normal subjects and in patients with various types of heart and lung disease. Since the anatomic location of the gas-exchanging surface of the lung precludes direct measurement, methods have been set up to separate the characteristics of the membrane from the contribution of the pulmonary circulation and of the respiration.

The professional staff of the Cardiorespiratory Laboratory includes six full-time Research Fellows, three part-time investigators who join the laboratory to share in particular studies, and a nurse. Individual investigators are exploring circumscribed aspects of the general problem of respiratory gas exchange. Thus, Dr. Gerard M. Turino, Senior Fellow, New York Heart Association, is focusing primarily on the diffusing characteristics of the alveolar-capillary membrane. Dr. Martin Brandfonbrener, Fellow, Public Health Service, is studying transcapillary exchange of various substances in the lungs. Dr. A. Gregory Jameson, Fellow, New York Heart Association, is exploring some factors which regulate pulmonary capillary perfusion. Dr. Gustave A. Laurenzi, Fellow, Public Health Service, concerned primarily with the gas phase of the lung, has modified the residual volume method of Drs. Robert C. Darling, Cournand and Richards and is attempting to dissociate distribution from diffusion characteristics of the lung. Dr. Roberta M. Goldring, Trainee, Public Health Service, and Dr. Robert P. Cameron, Fellow, Public Health Service, are applying the research techniques to specific disease states which are characterized by impairment of gas exchange. Dr. Aaron Himmelstein of the Service of Surgery is responsible for the combined bronchorespiratory and cardiac catheterization studies which make possible the separate measurement of the diffusing characteristics of each lung. In the course of the physiologic studies, considerable insight was gained into various cardiopulmonary syndromes. Alveolar hypoventilation represents one type of physiologic abnormality which was investigated in patients with a variety of clinical abnormalities, including kyphoscoliosis, ankylosing spondylitis, obesity, and injured respiratory center. Several problems involve the conjoint efforts of members of other departments.

Drs. Vincent V. Glaviano, Fellow of the New York Heart Association, James R. Golub, Fellow of the Dazian Foundation, Gerd Muelheims

and Robert Jreissaty, working with Dr. René Wégria, continued their study of problems concerned with the regulation of the coronary circulation, cardiac work and metabolism under varied conditions. It was found that in auricular tachycardia of progressively increasing rates, cardiac work and efficiency decrease, whereas coronary blood flow and cardiac oxygen consumption increase. During tachycardia, the consumption of glucose, lactate and/or pyruvate by the myocardium generally increases. These findings would seem to indicate that tachycardia leads to an inability of the myocardium to transform adequately the energy liberated into useful mechanical work. Preliminary experiments were conducted on the effect of epinephrine, nor-epinephrine, pitressin, nicotine and bile salts on coronary circulation and cardiac work, efficiency and metabolism. Preliminary experiments on the effect of valvular disease (mostly mitral insufficiency) on the hemodynamics of the circulation and the metabolism of the heart were performed. In collaboration with Dr. Bradley and Dr. Wheeler, the effect of occlusion of the hepatic artery on the hepatic circulation is being studied.

Dr. Kneeland and Mrs. Katherine M. Price reported the conclusion of studies of the phenomenon of capsular swelling of *Micrococcus pyogenes*, var. *Aureus*. Currently they are conducting some studies of active immunity to staphylococcal infection, using both encapsulated and unencapsulated strains. Dr. Kneeland and Mrs. Price also initiated an intensive study of the bacterial flora of the lungs of patients at autopsy with special reference to the use of antibiotic therapy.

The past year marked the tenth year of the release of I<sup>131</sup> from Oak Ridge and the tenth year of its use at The Presbyterian Hospital. In this period, a series of 525 patients have been treated and followed by Dr. Sidney C. Werner. This work has been summarized in collaboration with Dr. Edith H. Quimby of the Department of Radiology, Dr. Robert McC. Day of the Eye Institute, and Dr. Bento Coehlo, a Visiting Fellow. The evident efficacy of the therapy has thus far not been complicated by grave side-effects. Dr. Werner, in collaboration with Dr. Richard Block of the Boyce Thompson Institute and Dr. A. A. H. Kassenaar of the University of Leyden, Holland, studied a child with mild hypothyroidism, congenital goiter, and a high serum precipitable iodine level. A possible inborn error of metabolism, namely, a defect in the enzymatic coupling of diiodotyrosine, was found as the pathogenetic mechanism. As a by-product of this work, a method for paper chromatographic study of the iodinated compounds in serum has been developed, involving doses of only 125 uc. I<sup>131</sup> instead of 5 or more millicuries required in other observations. Studies were also pursued of the quantitative aspects of

thyroid function; of the metabolic actions of tetrac and triac; and, in conjunction with Dr. Melvin M. Grumbach of the Pediatric Service, of the placental transfer of thyroxine and triiodothyronine in the human fetus at term.

The study of orally administered vitamin  $K_1$  was continued and extended by Dr. Stuart W. Cosgriff. This agent appears to be uniformly successful in reducing excessive hypoprothrombinemia to a safe range within 12 hours in most patients and within 24 hours in practically all patients. This agent constitutes an appreciable addition to the safety of anticoagulant therapy. A study has been carried out by Dr. Cosgriff of more than 90 serious hemorrhagic complications occurring during the administration of anticoagulants. There is a significant correlation between the occurrence of serious hemorrhagic complications and a prothrombin time in excess of 35 seconds at the time when hemorrhage occurred. Therefore it would seem that a very great effort should be exerted to prevent prothrombin time elevation above 35 as far as possible. The ambulatory anticoagulant therapy program continues to prove satisfactory. The Thrombo-Embolic Clinic meeting weekly supervises the anticoagulant care of these patients. Individuals being studied include patients with recurrent venous thrombo-embolic disease, multiple cerebrovascular accidents, rheumatic and arteriosclerotic heart disease with embolism originating from intracardiac thrombi, and multiple coronary occlusions.

Dr. Alvan L. Barach, with the collaboration of Drs. Hylan A. Bickerman and Gustav J. Beck, carried out studies with a patient-controlled Pneumatic Breathing Aid which increases alveolar ventilation by expiratory compression of the lower ribs, with a resultant prompt reduction of the respiratory rate, both in patients with poliomyelitis as well as those with pulmonary emphysema, and a concomitant relief of dyspnea. New techniques of providing continuous positive pressure breathing were found to increase the effectiveness of coughing by maintenance of a more patent bronchiolar air-way. With the use of discontinuous acclimatization to hypoxia, inhibition of tumor growth was studied and measurable success achieved in mice exposed to altitude hypoxia; the latter studies were carried out with the additional collaboration of Dr. Samuel Graff of the Delafield Hospital.

The principal research of the Allergy Clinic during the past year dealt with the release of antihistamine from blood of allergic patients when exposed to external antigen. This work was initiated by Dr. Paul Van Arsdel, a Public Health Service Fellow and is being continued by Dr. Elliott Middleton, Jr. in association with Dr. William B. Sherman.

Mr. Henry Buchwald of the fourth year class also took an active part. During the ragweed season a trial was made of milk from cows immunized with pollen as a treatment for hayfever in view of favorable reports in the literature. The results of this study were entirely negative.

In association with Drs. Paul F. A. Hoefler and Lewis P. Rowland of the Service of Neurology, Dr. Henry Aranow concluded a study of the action of octa-methylpyrophosphoramidate (OMPA) in myasthenia gravis. It appears to have a definite place in the management of patients with moderately severe myasthenia, but to be contraindicated in those whose disease is severe or rapidly progressive. In the clinic a number of patients were also treated with pyridostigmin (Mestinon) and ambenonium (Mytelase). These drugs have a moderately longer duration of action than neostigmin, but offer no other significant advantages. This group also studied the incidence of convulsive disorders in patients with myasthenia gravis and found nine in somewhat less than two hundred patients, which constitutes a much greater incidence than would be expected from the chance coincidence of the two illnesses. No basis has been determined for this relationship.

# Neurological Surgery

J. LAWRENCE POOL, M.D., *Director*

The Attending and Resident Staffs of the Service of Neurological Surgery have been extremely active in research as well as in clinical and teaching responsibilities.

Dr. J. Lawrence Pool continued his interest in the surgery of acoustic nerve tumors and in the use of hypothermia during operations for intracranial aneurysms. Cardiac changes during certain intracranial procedures were studied in the operating room and laboratory, and the application of stereotaxic techniques for the treatment of selected cases of advanced intractable tremors was pursued. In addition, the effects of hypophysectomy for the treatment of mammary carcinoma are currently under investigation.

Dr. John E. Scarff continued his successful treatment of median nerve lysis at the wrist.

Dr. Edward B. Schlesinger was active in research studies of the localization of brain tumors with radioactive isotopes, with Dr. Juan M. Taveras, Assistant Attending Radiologist, Dr. Edith Quimby, Professor of Radiology (Physics), Dr. Harold Rossi, Associate Professor of Radiology (Physics), and Dr. Halford Clark, biochemist; of correlation of enzyme activity of meningiomas and their rate of growth, with Assistant Resident Dr. Henry R. Liss; and of hydrocelic mechanisms in abnormal arteriovenous cerebral connections. Dr. Schlesinger is carrying out a study of pharmacological agents in dyskinesias at the Institute for the Crippled and Disabled, and is preparing a film showing the effects of muscle relaxants on motor disorders.

Dr. Lester A. Mount is investigating collateral circulation of the brain by arteriography, spontaneous subarachnoid hemorrhages and intracranial aneurysms, and the results of operative therapy for premature synostosis of the sutures of the cranial wall.

Dr. Fritz J. Cramer is conducting a study of special clinical and surgical problems relative to the spinal cord and spinal canal.

Dr. Joseph Ransohoff's projects for the year include: (1) production of experimental brain tumors in animals, with Dr. Alfred Gellhorn, Service of Medicine, and Dr. Hartwell G. Thompson, Clinical Fellow, Department of Neurology; (2) evaluation of the cerebro-spinal fluid protein



balance in hydrocephalus, with Dr. Robert A. Fishman; (3) study of chemopallidectomy for treatment of abnormal movements in children, with Dr. Pool and Dr. Sidney Carter; and (4) study of the treatment of hydrocephalus in infants, with Dr. Sidney Carter and Dr. Melvin D. Yahr.

Dr. Thomas J. Bridges continued his research on cerebral circulation and other vasomotor phenomena, and the effect of hypophysectomy for advanced prostatic cancer.

### *Laboratory Studies*

Dr. James B. Campbell was responsible for the following studies carried out in our Neurosurgical Laboratory: (1) development of apparatus for the employment of radioactive isotopes, stereotaxically, in man afflicted with certain dyskinetic states; (2) innervation of the musculature of the urinary tract; (3) technique for bridging gaps in peripheral nerves and prevention of neuroma in amputation stumps; and (4) development of apparatus and techniques for improving bladder function in the paraplegic state.

Dr. James W. Correll is studying peripheral neuritis with a view toward identification of a factor incident to the development of experimental allergic neuritis and encephalomyelitis; experimental study of the influence of the nervous system on lipid metabolism and other metabolic functions; metabolic or immunologic alterations of possible significance in relation to the clinical course of patients with pituitary tumors; occurrence of brain tumors in patients initially treated as psychiatric problems, with the aim of defining means of arriving at an earlier diagnosis, with Dr. Pool; study of abnormal intradural calcification and ossification, with Dr. Cramer; and improvement of techniques of vertebral arteriography.

Dr. Dominick P. Purpura, of the Department of Neurological Surgery, worked diligently in our Neurosurgical Laboratory during the year on a long-range program of basic research in the field of experimental neurophysiology. He has already contributed a great deal to our knowledge of biochemical and electrical effects on dendritic activity and inhibition within the cerebral cortex, and to what is known about the functions of the reticular substance. This work, it is expected, will ultimately lead to more effective treatment of mental illnesses, epilepsy and Parkinson's Disease.

### *Surgical Studies*

Dr. Frank M. Hudson participated in Dr. Cramer's myelographic study of the cervical canal, while Dr. Laibe A. Kessler, with Dr. Pool,

investigated electrocardiograph (EKG) changes that may occur during intracranial surgery. Dr. Hubert L. Rosomoff, Assistant Resident on leave of absence with the U. S. Navy, continued his experimental work on hypothermia and was invited to speak on this subject at the meeting of the Royal Society of Medicine in London this year. He was also awarded the annual prize of the American Academy of Neurological Surgery for an essay on this subject.

Finally, as a remarkably gratifying example of our concerted efforts to improve surgical techniques, we operated upon sixteen cases of acoustic nerve tumor without a single fatality during the past year, and with preservation of hearing in two cases. The results of pallidectomy for tremor and rigidity states are so far encouraging though not always to the hoped-for extent.

The warmest thanks are expressed for the generous help of the Donner Foundation, the Paul Moore Research Gift, the Mortimer and Harriet Marcus Research Gift, and to other generous donors to our Neurosurgical Research and Brain Tumor Research work. With the aid of these helpful grants clinical studies have been made possible in the Hospital, and laboratory research in the College of Physicians and Surgeons of Columbia University.

It is of interest to note that over 900 major neurosurgical operations and 405 minor procedures were done during the past year. Approximately two-thirds of these were cranial and about one-third spinal operations. A gratifying percentage of all our surgery moreover was done for curable conditions such as benign brain and spinal cord tumors, cervical and lumbar discs, relief of pain, mental illness, tremor states and epilepsy, for congenital disorders including hydrocephalus, or for intracranial hemorrhages and aneurysms.

### ***Travels and Lectures***

Dr. Pool attended the annual meeting of the Board of Scientific Directors, Yerkes Laboratories of Primate Biology, Orange, Park, Florida; the annual meeting of the American Academy of Neurological Surgeons, Phoenix; was Chairman of the Physiology Panel at a meeting of the Division of Biology and Medicine held by the Atomic Energy Commission at Brookhaven National Laboratory; and was a member of the Panel on Methods of Evaluation of Treatment of Subarachnoid Hemorrhages and Aneurysms, National Institute of Health, Bethesda. He also participated in the neuroanatomy course for first year medical students and the neurosurgical lectures for the fourth year medical students.

Dr. John E. Scarff completed a highly successful lecture tour in South

America, and efficiently reorganized our Neurosurgical Resident Teaching Program.

Dr. Edward B. Schlesinger participated in five panels including the American College of Surgeons Trauma Committee; the Symposium on Peripheral Nerve Injuries, New York and Brooklyn Regional Committee on Trauma, American College of Surgeons; the Conferences on Present and Future Use of Tranquilizers and the Management of the Painful Shoulder, at the New York Academy of Medicine; and Rehabilitation of the Cerebral Palsy Patient, at the Institute for the Crippled and Disabled.

Dr. Lester A. Mount attended the annual meeting of the Harvey Cushing Society in Hawaii, and was a member of the Conference on Methods of Evaluation and Treatment of Subarachnoid Hemorrhages and Aneurysms, National Institute of Health, Bethesda.

Dr. Joseph Ransohoff presented lectures during the year to the fourth year medical students, the Plastic Surgery Staff, and the Delafield Hospital Surgical Staff.

Dr. Thomas J. Bridges Jr. participated in a panel discussion on the management of advanced prostatic cancer before the American Cancer Society.

Dr. James B. Campbell attended several meetings, including the American Association of Genito-urinary Surgeons, and the Scandinavian Neurosurgical Society.

# Neurology

H. HOUSTON MERRITT, M.D., *Director*

The clinical work of the Service of Neurology continued at the high level of the year before. The improvement of facilities at the Neurological Institute discussed in our last report has not been carried out; definite plans for the Institute have been held in abeyance until a decision is reached by the Hospital and the Medical School as to the over-all need for facilities at the Medical Center. A joint committee was appointed to consider these needs and to make recommendations as to the optimum solution. In the meantime, the Department of Roentgenology under the direction of Dr. Juan M. Taveras and Dr. Donald J. Barnett has continued to be of invaluable assistance in the diagnosis and treatment of our patients in spite of almost insuperable difficulties.

Immediately after the first of the year, the Pediatric Neurology Division, under Dr. Sidney Carter, transferred its activities to Babies Hospital. This move has made an increased number of beds available to the Service of Neurology and has brought neurologists into closer contact with the pediatricians and their patients. It has also given our service increased responsibilities in that formal lectures and bedside teaching in pediatric neurology are given to the nurses and the medical students at Babies Hospital.

The Electroencephalographic Laboratories, under the direction of Drs. Paul F. A. Hoefler and Eli S. Goldensohn, continued to carry out the usual heavy load of clinical work. They have had a number of graduate students from this country and abroad, working on research projects or studying clinical electroencephalography. In addition, the residents on the Service have been regularly assigned to the laboratory for basic instruction in electroencephalography and electromyography. Dr. Hoefler again arranged a course in clinical neurology for orthopedic residents from various hospitals in New York City.

## ***Research Studies***

Dr. Hoefler, with Dr. Henry Aranow, Jr., of the Medical Service, continued a group of investigations of myasthenia gravis. In view of the discovery by Dr. Irwin B. Wilson of new chemical substances capable

of restoring enzyme activity after an otherwise lethal dose of anticholinesterase, the effects of alkylphosphate anticholinesterases are still under investigation. A new problem in this field is that of myasthenia gravis occurring after surgical removal of thymomas.

Dr. Goldensohn and Dr. Robert Katzman are investigating direct current potential distribution and changes in the brain of the dog especially in relation to brain metabolism. Dr. Goldensohn and Mr. Leonard Zablow continued work aimed at developing a method for recording of respiratory patterns by impedance changes. Dr. Goldensohn with Dr. M. Jack Frumin and Dr. John F. Schweiss of the Service of Anesthesiology, continued the study of the electroencephalogram during anesthesia and during hypothermia. A preliminary report on this work was published. Dr. Goldensohn is participating in a study with members of the Service of Psychiatry on electrical recording and stimulation within the brain substance.

#### MECHANISM OF GAMMA GLOBULIN INCREASE

Dr. Melvin D. Yahr, Dr. Elvin A. Kabat and Dr. William A. Sibley studied the effect of hydrocortisone on patients with multiple sclerosis and Schilder's disease with particular attention to alterations in gamma globulin content of blood and cerebrospinal fluid and to the recoverability of corticoids from cerebrospinal fluid. It is hoped that these studies will yield information as to the mechanism whereby elevation in gamma globulin takes place as well as the effect of steroid therapy on the course of these diseases. Drs. Yahr, Kabat and Sibley completed a long term study of multiple sclerosis in patients with elevated cerebrospinal fluid gamma globulin. The results may determine whether the course of this disease differs in those patients with elevated cerebrospinal fluid gamma globulin from those in whom it is normal. Dr. Yahr delivered the Poynter Day Lecture at the University of Nebraska.

Dr. Daniel Sciarra continued studies on muscular dystrophy and the evaluation of new drugs in the therapy of convulsive seizures.

Drs. Frederic T. Zimmerman and Bessie B. Burgemeister tested the effect of the so-called tranquilizing drugs on children with behaviour disorders and convulsive seizures. They found that these drugs favorably influenced the behaviour of these children but that there was no change in the frequency of seizures or in the intelligence quotient. Dr. Zimmerman continues his work on the clinical testing of new anticonvulsant drugs, particularly for petit mal epilepsy.

Dr. William Amols is engaged in a clinical study of new compounds for their muscle relaxant properties in patients with spasticity and rigidity

using the electromyograph as indicator of their efficacy. He is also studying the effect of the tranquilizing drugs on functional speech disorders.

Dr. Robert A. Fishman, Fellow of the National Multiple Sclerosis Society, continued his studies of the "blood-brain barrier." The normal transport time of  $\text{Na}^{24}$  between plasma and cerebrospinal fluid in dogs has been determined. The influences of the administration of various adrenal steroids, specific enzyme inhibitors, cholinergic and adrenergic drugs, and of changes in the intracranial pressure on this transport rate are now under study. Dr. Fishman, in collaboration with Dr. Joseph Ransohoff of the Service of Neurological Surgery and Dr. Elliot Osserman of the Service of Medicine, is also studying the exchange of protein between plasma and cerebrospinal fluid. Electrophoretic analysis of the cerebrospinal fluid from various sites and the study of the exchange of radio-iodinated albumin between plasma and cerebrospinal fluid revealed that the normal increasing gradient of protein along the neuraxis is due to increased permeability in the region of the lumbar sac. Study of electrophoretic fraction X in spinal fluid with regard to its site of origin is also in progress.

#### TUMORS IN CHILDREN

Dr. Labe C. Scheinberg, Dr. Dorothy H. Andersen of the Pediatric Service and Dr. Niels L. Low, made a study of nasal gliomas. A study of multiple sclerosis in children was completed by Drs. Low and Carter. Dr. Scheinberg, Dr. Mollie Allensworth, Assistant Resident in Pediatrics, and Dr. Carter completed a report on sciatic neuropathy resulting from antibiotic injections. Studies are being carried out on the problem of polyneuritis in children by Dr. Julia Schneider, Dr. Low and Dr. Carter. Dr. Bray and Dr. Carter are studying brain stem tumors in children. Dr. Allen and Dr. Carter are investigating subdural hematomas in children and are collecting data on the occurrence of Charcot-Marie-Tooth type of neuritis in early childhood.

Dr. Carter was appointed a member of the Neurology Training Grant Committee of the National Institutes of Health. His research activities include a study of new anticonvulsant drugs and a continued evaluation of the efficiency of hemispherectomy in the management of patients with infantile hemiplegia and uncontrolled seizures. This latter investigation is being carried out with Dr. Yahr and Dr. Ransohoff.

Dr. William F. Caveness, in association with Dr. Aaron J. Beller, Research Associate in Neurology, Dr. James MacD. Watson and Dr. Henry R. Liss, Assistant Resident in Neurological Surgery, continued the follow-up phase of the study of head injury from Navy and Marine

casualties of the Korean conflict. The Veterans Administration and the American Red Cross are collaborating in this study. In an effort to better understand the clinical observations in humans, a laboratory investigation was initiated to determine the relation of the reticular system of the brain stem to the cortex, in concussion of the Rhesus monkey.

Dr. Caveness in association with Drs. Nicholas Kopeloff and Lenore M. Kopeloff of the Department of Microbiology, Dr. Joseph G. Chusid, Attending Neurologist at St. Vincent's Hospital and Dr. Gertrude Van Wagenen, Research Associate in Obstetrics and Gynecology at Yale University School of Medicine, is making an attempt to induce seizures in infant Rhesus monkeys by the injection of alumina cream into the cerebral cortex. The evolution of seizure patterns in the immature brain is being studied by serial electroencephalograms in these animals.

Dr. Caveness, in association with Dr. Melvin B. Robbins, made a comprehensive evaluation of convulsive seizures coincident with sleep in twenty-one human subjects. Special attention was directed to the level of sleep in relation to onset of seizures, the appearance of interseizure abnormal electrical discharges, the effect of medication on level of sleep, seizures, and interseizure abnormal discharges.

Dr. Mavis Kaufman completed her studies of toxoplasmosis in man with Drs. Wolf and Cowen; allergic encephalomyelitis in monkeys with Drs. Wolf and Elvin A. Kabat; and of *Trypanosoma cruzi* infection in Indian monkeys with Dr. Wolf. Drs. Cowen and Wolf published an extensive study of cerebral atrophies and encephalomalacias in infancy and childhood. Drs. Wolf and Cowen and Dr. William Antopol of Beth Israel Hospital, New York City are reporting the results of their studies of the reduction of neotetrazolium by neural tissue. Experimental work in reproducing the effects of birth injury and of severe repeated convulsions in infancy are being carried forward by Drs. Wolf, Cowen and Dr. Lester Geller.

Dr. Lewis J. Doshay continues to test new drugs in the treatment of paralysis agitans. Dr. Doshay and Dr. Frederic J. Agate of the Department of Anatomy have continued their work on the construction of instruments for the measurement of rigidity and tremor in order to determine the effects of drugs on these symptoms.

#### ANTIBODIES VARY IN SIZE OF COMBINING SITE

Dr. Elvin A. Kabat is continuing work on the relationship between immunochemical specificity and chemical structure of various antigens. The dextran-antidextran system, because of its unique simplicity (e.g., the antigen-dextran is a polymer consisting exclusively of a single sugar,

glucose) has made it possible to estimate the size of the combining site on an antidextran molecule. By measuring on a molar basis the relative capacities of various oligosaccharides of the isomaltose series to inhibit precipitation of antidextran by dextran, Dr. Kabat found that the combining sites on antidextran molecules are not uniform but vary in the extent of their complementary areas; some are complementary to units as large as a hexasaccharide while others are complementary only to units as large as a tri- or tetrasaccharide. Each individual produces a population of antibodies with different proportions of antibody molecules with each size of combining site.

Dr. Kabat and Miss Ada E. Bezer used a series of dextran fractions of varying molecular weight to determine the lowest molecular weight dextran which would be antigenic in man. Materials with molecular weights of 90,000 or over were good antigens, but a sharp decrease in ability to induce antibody formation occurred with samples of lower molecular weight.

Mr. Peter Z. Allen, a graduate student in Microbiology, and Dr. Kabat studied the kinds of antibody formed in response to dextrans with varying proportions of non 1-6 linkages. Evidence has been obtained for the presence of antibody specificity involving 1-4 linkages and the 1-3 like linkages in certain dextrans. In addition levan has been found to be antigenic in man.

#### BLOOD GROUP CHEMISTRY

Another major area of investigation of Dr. Kabat involves the chemistry of the Blood Group A, B and O substances. Dr. Kabat's book, *Blood Group Substances — Their Chemistry and Immunochemistry*, published by Academic Press in January 1956, summarized work in this area up to that time. Dr. Mary E. Carsten, formerly Research Associate in Microbiology, now at the University of California in Los Angeles, and Dr. Kabat studied the amino acid composition of the blood group substances. This work will appear shortly in the *Journal of the American Chemical Society*. Dr. Calderon Howe of the Department of Microbiology and Dr. Kabat studied the purification of blood group A and O substances from hog gastric mucin and with Dr. John MacLennan of the same department examined the way in which enzymes from *Clostridium tertium* break down blood group substances.

Dr. Frederic C. McDuffie, and Dr. Kabat completed a study of antibodies to A and B substances in various human antisera with respect to whether or not they give a positive Coombs test beyond the agglutination end point as titered in saline. It has been possible to classify various



kinds of anti-A and anti-B into two groups based upon this procedure. Since anti-A and anti-B sera of both kinds were produced by deliberate immunization, the validity of tests of this kind to distinguish between immune and natural antibodies is questionable. Dr. McDuffie and Dr. Kabat also completed a study of the various methods of analyzing antigen-antibody precipitates and established the range and limitations of each technique; these include the Biuret, ninhydrin, Folin and ultraviolet absorption methods. Dr. McDuffie and Dr. Kabat are investigating the relationship between gamma globulin and human anti-A using antisera prepared in rabbits to A anti-A specific precipitates; anti-A is considered to be of higher molecular weight than ordinary gamma globulin.

Dr. Kabat was invited to participate in a symposium at the Second International Congress of Allergy at Petropolis, Brazil in November 1955. He spoke on: "Immunochemical Techniques in Allergy."

Dr. Frederick A. Mettler continued his studies on the physiology of the cerebellum and the basal ganglia. With Dr. Fernando L. Orioli he determined the effect of section of the rubrospinal tract, the restiform body and the olivary decussation. Dr. Mettler, Drs. Henry R. Liss and George H. Stevens of the Veterans Administration Hospital, Bronx, New York made a study of the blood supply of the striopallidum. Dr. Mettler, Dr. Liss and Mr. Waller V. Morgan devised a method for the permanent implantation of electrodes in the spinal cord of animals for the purpose of recording spontaneous action potentials, and potentials coincident with abnormal movements. Drs. Mettler, Harry Grundfest and Dr. Orioli have traced the spinal course of the descending limb of the brachium conjunctivum and its inter-relation with the rubrospinal system. Dr. Mettler was on sabbatical leave the latter half of the academic year, and spent a considerable portion of this time studying the nature and frequency of neurological disorders in mental hospitals.

#### NEW FINDINGS ON BIOELECTRICITY

Dr. Grundfest had earlier demonstrated that the membrane which generates the spike in conductile cells is capable of being transformed to produce only graded responses which are propagated decrementally for short distances. New work by Dr. Grundfest and his co-workers established the existence of the same property in giant fibers of the earthworm, crayfish, and squid. The phenomenon has now been analyzed and appears to be related to a similar change which can be produced at synapses by certain drugs. A theory was proposed in 1954 that the cell membrane involved in synaptic transmission is not electrically excitable. This theory has led to a number of new findings in the central nervous system

of invertebrates and mammals. Studies by Dr. Grundfest and by Dr. Dominick P. Purpura, of the Department of Neurological Surgery, showed that the potentials which are the major components of the electroencephalogram are generated at the post-synaptic membrane of dendrites. The synaptic organization and electrogenesis of the dendrites were studied in the cerebral and cerebellar cortex, disclosing a number of new facts, including satisfactory explanations for the action of several types of drugs. Another test of the theory was made by the studies of Dr. Grundfest on certain giant fibers of the earthworm and crayfish nerve cords. Those fibers which are endowed with direct axono-axonal synaptic connections develop post-synaptic potentials distributed along the axons and exhibiting the properties of such potentials observed elsewhere. Other giant axons of the crayfish, which do not have distributed synapses, do not develop post-synaptic potentials.

Previous work by Dr. Grundfest had shown that a number of species related to the electric eel continuously discharge pulses of remarkably regular, high frequency. These create an electric field around the fish. The discharges are controlled by the central nervous system and appear to be useful for orientation of the fish with respect to objects. Dr. Grundfest, with Professor A. Mauro of Yale University School of Medicine, has surveyed the types of discharges of a number of species. The frequency and degree of regularity of the discharges appear to be highly characteristic for each species and the organs which generate the activity have characteristically different structures and orientations. Work is now in progress to analyze the mechanisms of these discharges and of their role in the biology of the fishes.

Dr. Yoshigoro Kuraiwa is engaged in an electrophysiological analysis of the connections of the basal ganglia and other central structures. Dr. Stanley Crain is continuing studies on the electrophysiology of tissue-cultured neurons, a technique which he was the first to use successfully. Work is continuing on the evaluation and properties of local anesthetics by Dr. Grundfest and Professors Joseph Fiasconara and Harold Sherman of the Dental Faculty.

Dr. Grundfest delivered the first George H. Bishop lecture at Washington University, St. Louis, on "Bio-electricity in the nervous system." He also participated in conferences on "The microneurophysiology of the synapses" at the University of Washington, Seattle and on "Electronic instrumentation in surgery" held by the Medical Electronics Center at the Rockefeller Institute of Medical Research. Dr. Grundfest delivered lectures at California Institute of Technology, Pasadena; University of California, Los Angeles; University of Illinois, Chicago; Marine Bio-

logical Laboratory, Woods Hole, Massachusetts; and Wellcome Research Laboratory, New York.

Dr. David Nachmansohn and his group continued their studies on the elementary processes underlying the generation of bioelectric potentials and nerve impulse conduction. An important step in the progress of these studies is the introduction of an entirely new preparation obtained from the electroplax of electric eel. Electric organs have been used by Dr. Nachmansohn during the last twenty years in his investigations, in which many biochemical and biophysical events were correlated. During the last few years Dr. Mario Altamirano has developed microtechniques which made it possible to use single electroplax for these studies. Dr. Altamirano and Dr. Ernest Schoffeniels, Fulbright Fellow from Liege, Belgium, developed a preparation where one single electric cell, an electroplax, is mounted in a lucite chamber formed by two pools of fluid and fixed by thin plastic sheets in a way that all exchange between the two pools has to pass through the membranes of the electroplax. Suitable electrodes permit recording of the potentials of the cell. In contrast to the cylindrical cell of the axon the conducting membrane of the electroplax has a rectangular shape. All ions moving from one pool to the other must cross this membrane. Thus, a preparation has been developed which permits, for the first time, the direct study of ion flux across the conducting membrane of a single cell. The preparation offers an unique method for the study of chemical and physical factors controlling the ion flux at rest, during activity and in recovery, the problem paramount for understanding nerve function.

#### ENZYME SYSTEMS IN ION TRANSPORT

Dr. Max Eisenberg initiated a program of studies of the enzymes of the glycolytic and citric acid cycles in electric tissue. These studies will provide a basis for investigating the role of these enzyme systems in the transport of ions across the conducting membrane, especially in recovery, where this transport occurs against the concentration gradient and requires a considerable amount of energy. The newly developed electroplax preparation will be used for these tests.

Dr. Irwin B. Wilson continued his studies on the molecular forces acting in the surface of acetylcholinesterase and on the reaction mechanism between alkylphosphates and the enzyme. He designed a compound, 2-pyridine aldoxime methiodide (PAM) which was synthesized by Dr. Sara Ginsburg and was found to be more than a thousand times as potent a reactivator of alkylphosphate inhibited esterase than any previously known. Dr. Helmut Kewitz, Ford Foundation Fellow from the Depart-

ment of Pharmacology of the Free University, Berlin, tested PAM as an antidote against the insecticide paraoxon and the "nerve gas" diisopropyl fluorophosphate (DFP). All animals which had received a lethal dose of paraoxon or DFP survived when PAM was injected just before or after the administration of these alkylphosphates. The effects of PAM were greatly increased when given along with atropine, which in itself has little protective action.

Dr. Wilson and Dr. Kewitz tested the ability of PAM to restore acetylcholinesterase activity *in vivo*. Brain and diaphragm were selected as samples for testing the central and peripheral effect of PAM. New methods were applied to determine the intracellular activity of the enzyme, since previously used methods did not eliminate the alkylphosphate retained extracellularly in fat tissue. They found that PAM increased acetylcholinesterase activity in peripheral tissue (diaphragm). Thus a real "repair" of the chemical "lesion" takes place.

Dr. H. Claire Lawler developed simplified and standardized techniques for the preparation of highly purified acetylcholinesterase from electric tissue. The aim of this work is to obtain the enzyme in crystalline form which would permit many interesting studies in regard to shape, molecular weight and number of active centers.

Dr. Volker Vossius, a Fulbright Fellow from the University of Munich, Germany, developed spectrophotometric methods for the identification of the amino groups in proteins with the aid of color-forming coupling agents. These new techniques are being used for identifying groups in the active surface of acetylcholinesterase.

Dr. Annemarie Weber continued her studies on the role of adenosine triphosphate in the elementary process of muscular contraction. Recent observations by some investigators seem to challenge the role of ATP in the primary event. Spectrophotometric methods recently developed offer a highly sensitive method for testing early metabolic changes in intact muscle. If ATP is released during muscular contraction, changes in the DPN-cytochrome system should occur and should be detected readily by these methods. The steady state of the various cytochromes has been determined and the changes during contraction are now under investigation.

### ***Teaching and Other Staff Activities***

Dr. Wilson was invited to a meeting of the Faraday Society in Oxford, England, and gave a report at the Third International Congress of Biochemistry at Brussels. Dr. Nachmansohn was invited by the American Chemical Society to give a lecture in Rochester, New York.

Dr. H. Houston Merritt was elected President of the American Neurological Association and Vice-President of the Sixth International Neurological Congress which will be held in Brussels in July, 1957. He was invited to give lectures and clinics at the University of Brazil in Rio de Janeiro and also lectured at the Universities of Washington, Oregon, California, and Rochester.

The training program in Neuropathology under a United States Public Health Service Grant to the Medical School was continued under the direction of Drs. Abner Wolf and David Cowen with Dr. Mavis Kaufman as the Senior Trainee and Dr. Lucretia Allen as the Junior Trainee. Dr. Hirotugu Shiraki, Assistant Professor of Neuropsychiatry at Tokyo University Medical School, was a Fellow in Neuropathology under a Rockefeller Foundation Grant.

As in former years a number of American and foreign fellows received clinical and laboratory training on the Service of Neurology. Dr. Fuad Sabra, Professor of Neurology of the American University of Beirut, Lebanon, was with the Service as a Visiting Scholar for nine months; and Dr. Nitya N. Gupta, Professor of Neurology of the University of Lucknow, India, for three months. Both were Fellows of the Rockefeller Foundation. Dr. Sabra and Dr. Gupta spent most of their time on the wards and in the electrophysiological laboratories. Dr. Vesselin Savic of Belgrade, Yugoslavia spent six months at the Medical Center studying recent advances in American neurology and psychiatry. Dr. Patrick F. Bray, Fellow of the National Foundation for Infantile Paralysis, and Dr. Richard J. Allen, Fellow of the United Cerebral Palsy Associations worked with Dr. Carter in pediatric neurology.

Visitors to the Service during the year included: Professor George Bishop of Washington University, St. Louis, Missouri; Professor Hirotugu Shiraki, Tokyo, Japan; Professor Max Minkowski, University of Zurich, Switzerland; Professor A. Brodal, University of Oslo, Norway; Professor H. Pette, University of Hamburg, Germany; Professor Masaya Araki, University of Kyoto, Japan; Professor Sigwald Refsum, University of Oslo, Norway; Dr. T. Rowland Hill of London and Dr. Leonard Kurland, United States Public Health Service, Washington, D. C.

Drs. Beverley Chaney and Irving J. Sands retired on June 30, 1956, and Dr. Sands became a consultant to the Hospital. Drs. Chaney and Sands were with the Neurological Institute before it was moved to the Medical Center. They have given unstintingly of their time and self to the development of the Service. Dr. Maurice Frocht, who has given faithful service for over twenty-five years, also retired on June 30.

We report with deep regret the death of Dr. Michael Teitelbaum,

Dr. William Mayer. Drs. Teitelbaum and Mayer were associated with the service for many years and acted in the capacity of Chief Psychiatric Consultants to the patients in the wards of the Neurological Institute.

It gives me great pleasure to express my thanks to the entire staff for their sincere cooperation throughout the year. Special thanks are extended to the administrative and nursing staffs of the hospitals for their invaluable assistance. We are particularly indebted to Dr. J. Lawrence Pool and the staff of the Service of Neurological Surgery for the fine spirit of cooperation in the care of patients and the instruction of the resident staff of the Service of Neurology.

The research work of the various members of the service has been aided by grants to the College of Physicians and Surgeons from American Philosophical Society, Army Chemical Center — United States Army, Association for the Aid of Crippled Children, Atomic Energy Commission, Foundations Fund for Research in Psychiatry, Oscar Lazrus Foundation, Benjamin Lazrus Foundation, Matheson Commission, Muscular Dystrophy Association of America, National Science Foundation, Office of Naval Research, Sergievsky Fund, Teagle Foundation, United Cerebral Palsy Association, United States Public Health Service, Abbott Laboratories, Ciba Pharmaceutical Company, Eli Lilly and Company, E. R. Squibb and Sons, McNeil Laboratories, Parke, Davis and Company, Riker Laboratories, Inc., Sharp and Dohme (Division of Merck and Co., Inc.), Smith, Kline and French Laboratories and Wallace Laboratories.

# Nursing

ELEANOR LEE, R.N., *Director*

The Nursing Service is making a concentrated effort toward the better utilization of its nursing personnel. One of the problems which the profession of nursing faces is making the most effective use of the specialized nursing knowledge and experience of the graduate nurse. To accomplish the best use of professional nursing skills means some sort of team by which certain tasks are taken over by auxiliary workers.

During the past year a composite of the figures for the staffing of all units shows that 44 per cent of the nursing care was given by graduate nurses, 21 per cent by student nurses, 8 per cent by practical nurses and 27 per cent by auxiliary workers. The proportion of care given by each of these four groups differs on the various clinical services.

## ***Recruitment Program***

The maintenance of an adequate staff to meet the nursing needs of the patients is a major responsibility of the Nursing Service. Nurses are attracted to the Medical Center because of its fine reputation for providing the best in patient care, its wide variety of clinical experience, its educational atmosphere and its progressive personnel practices. The recruitment program has been facilitated by the availability of modern apartments which the hospital administration has continued to make possible. Additional apartments were secured during the year at Cabrini Terrace and Linwood Park in order to meet the increasing demand. The new furnishings installed in the Linwood Park apartments during the summer are a great asset. Arrangements have been completed for ten additional apartments at Park Terrace East to be available in January, 1957. A housing survey of the graduate nurse staff indicated that over 50 per cent are living in apartments furnished by the Hospital and that the remaining group seem satisfied with their present arrangements.

Another recruitment aid, started in October, was the tuition scholarship plan for graduate nurses doing part-time university study in addition to full-time employment at The Presbyterian Hospital. During the fall term fifty-five nurses received scholarship assistance for one-half of their tuition expenses up to six credits, 80 per cent registered at Colum-

bia University, the remainder at four other universities; 75 per cent were studying toward a Bachelor of Science degree and the others on a Master's level. The effect of this new project has already been reflected in a better prepared staff, both for patient care and promotion.

Every effort is made to place new staff members in the clinical area of their choice. An orientation program introduces the new nurse to the Medical Center and to the particular clinical service to which she is assigned. An active hospitality and social program is also provided. This is an important factor in maintaining a high morale and in lessening the turnover. Presbyterian's turnover figure of 43.8 per cent for graduate nurses during 1956 is the lowest of the voluntary hospitals in this area.

A summary of the full complement of general duty nurses in November showed that 55 per cent of the staff nurses were graduates of 135 schools of nursing in twenty-six states, including Puerto Rico; 23 per cent were graduated from 70 schools of nursing in Canada or Great Britain and from 6 schools in foreign countries and 22 per cent were our own graduates of the Department of Nursing.

### *In-Service Training*

An active in-service educational program for all levels of nursing personnel is maintained. Nursing Service committees study the needs of patients, personnel and hospital facilities. The problems of the entire nursing staff, those concerned with auxiliary workers as well as those of the graduate nurse, have been under constant study in order to make the best use of nursing aides, attendants, other auxiliary personnel and the service departments of the Hospital and thus to keep nurses at nursing.

A nursing service workshop for all supervisors, head nurses and assistant head nurses responsible for patient care was held during May. Approximately 125 nurses attended each of the meetings. Senior members of the Nursing Service administrative staff acted as discussion leaders. Each session was opened by a panel of head nurses who presented examples of some of the newer patterns of patient assignment. Some of the recommendations have already been put into effect.

Miss M. Cyrilla Page, a graduate of New York University-Bellevue Hospital School of Nursing 1951; B.S., New York University 1955, was appointed Administrative Assistant, Nursing Service, on October 1st. Miss Page is assisting Miss Lillian Oring with the in-service education of auxiliary personnel.

A course for volunteer nurses' aides, given at The Presbyterian Hospi-



tal under the auspices of the New York Chapter of the American Red Cross, was completed during the fall by fourteen volunteers. These volunteers received practical experience on the wards at Presbyterian under the supervision of Miss Page. In Vanderbilt Clinic volunteers helped with the transportation of patients and acted as messengers. The bed-time program on the Pediatric Service made a valuable contribution to nursing care.

During the summer months, June through the middle of September, some of the vacancies on the staff were filled by the temporary employment of 28 college students, who functioned as nursing aides and attendants. A planned program of instruction was given to this intelligent and enthusiastic group whose contribution to nursing care was outstanding.

### *Advances in Patient Care*

The new patient care units opened in January include modern equipment and facilities in two-bed and four-bed units which have resulted in better nursing care. Among the units reconstructed were the metabolism units of the Medical Service, now on the ninth floor of the Hospital, the west ward on the Service of Orthopedic Surgery, and the center ward on the Service of Otolaryngology. The complete unit for the Service of Dermatology provides in addition to two four-bed wards and a day room, a treatment tub and the variety of materials so essential in meeting the special needs of these patients. A nursing staff for this Service was organized with the appointment of Miss Jean Piersol as head nurse, under the leadership of Mrs. Beatrice A. Kraeck, supervisor of the men's medical service.

A new rooming-in unit was started in March in a five-bed semi-private ward on the Obstetrical Service, 15-East. This is a family centered service where the mother and baby are cared for in the same unit and the father can share in the care of the new baby. The new program in maternity nursing for graduate nurses has made a great contribution to the nursing care on this service.

Group nursing for patients who need constant observation and skilled nursing has been extended during this year to meet the increasing demand for intensive nursing care. A special care unit was opened in November on the pediatric service with the employment of four additional staff nurses. The occupancy in the unit indicates the need for this type of service for patients whose condition warrants the care of an especially trained staff. One great advantage is that the need for private duty nurses for ward patients is reduced to a minimum.

Another example of grouping patients who need expert nursing care

is the small recovery room for pre- and post-operative care of children having neurosurgery. This was established on the ninth floor of the Neurological Institute in January. Children with neurological conditions are now admitted to Babies Hospital but transferred temporarily to the Neurological Institute if neurological surgery is required.

### ***Future of Private Duty Nursing***

The rapid and continuing decrease in the number of private duty nurses would indicate that the future of private duty is unpredictable. During 1956, 1,333 more calls were filled than during the same period in 1955 and 1,857 more than in 1954. However, the total number of unfilled calls for private duty nurses during this period was 3,296 with 50 per cent of the unfilled calls for evening duty. Six additional staff nurses were employed in December 1955, for assignment to private duty in Harkness Pavilion, five on evening duty and one on night duty. In addition, regular staff nurses were assigned to special private patients when requests for private duty were unfilled by the Registry. Forty per cent of these assignments were on a group basis, two patients sharing one nurse. As a result of this supplementary coverage a total of 1,140 calls were filled by staff nurses, 750 of these calls were for evening duty.

Since September a small group of medical students has been working one evening per week on a private duty basis, assigned to carefully selected patients. Classes and demonstrations by a graduate nurse have been arranged for this group.

Dr. Wilder G. Penfield, director of the Montreal Neurological Institute, was the speaker at the graduation exercises for the Class of 1956, held in the garden outside The Pauline A. Hartford Memorial Chapel on June 7th. Dr. Willard C. Rappleye, dean of the Faculty of Medicine, Columbia University, gave the class an inspiring message. Mr. W. E. S. Griswold, Jr., secretary of the Hospital, presided and Mrs. Frederic F. deRham, member of the Board of Trustees, presented the diplomas to the 101 members of the class. The Baccalaureate Service was held in the Chapel on the Sunday before graduation and the speaker was the Reverend Herman Barbery, Associate Minister of the Marble Collegiate Church.

### ***Visitors and Staff Activities***

Three Greek nurses were among the international visitors: Miss Afrodite Vardaki from Salonika, Miss Calipi Efthymiou and Miss Vassiliki Lamprinopoulou from Athens. They spent February and March

here studying the care of premature infants and the use of isolettes, also new ways of caring for normal newborn infants. Miss Hsen-Ling Shen, recipient of the Anna C. Maxwell Fellowship for graduate study, was a guest in Maxwell Hall until her return to Taiwan in August.

Members of the Nursing Staff attended the following meetings: Miss Lucille D. Manning, American Hospital Association Institute on Evening and Night Nursing Service Administration, Chicago, January; Misses Marguerite P. Jansen and Mary Martha Schunck, Third Annual Conference of Association of Operating Room Nurses, Boston, January; Misses Ellen L. Gubler and Rose Mary Hoynak, Sectional Meetings of Convention of American College of Surgeons, Philadelphia, February; Misses Mary E. Windrow, Joyce Miller, Dorothy Redfern and Mrs. Mary Ericson, National Health Council Forum, New York City, March; Misses Susanne Schneider, Eleanor Outerson, Jane McConville, Eastern States Health Education Conference, New York City, April; Miss Cecile Covell, National Association for Practical Nurse Education, Chicago, May; Misses Eileen McLarnon, G. Lois Gebhardt, Marion D. Cleveland and Eleanor Lee, American Nurses' Association Annual Convention, Chicago, May; Miss Mary Moore and Mrs. Elizabeth Egan, Annual Convention of the Practical Nurses of New York, Inc., New York City, May; Miss Marilyn Johnson, Department of Hospitals' Workshop on Care and Management of Poliomyelitis, New York City, June; William DeWald, United Hospital Fund Workshop for Instructors of Auxiliary Personnel, New York City, July; Misses Andree L. Powell and Martha E. Haber, American Hospital Association Convention, Chicago, September; Miss Gladys Eastman, New York State Nurses' Association Institute on Chronic Disease, Albany, September; Miss Yvonne Trebilcock, New York State League for Nursing Biennial Convention, Albany, October; Misses Mary I. Crawford and Mary E. Windrow, American Hospital Association Institute on Nursing Service Administration, Cincinnati, November; Misses Jane F. McConville and Karen H. Clippinger, Irvington House Conference on The Rheumatic Child and His World, New York City, November; Miss Dorothy E. Robinson, American Hospital Association Institute on Obstetric Nursing Administration, Toronto, December.

At the March meeting of the Nursing Committee the recommendation was made that the present Nursing Committee be discontinued. A vote of thanks was given to Mr. Griswold for his interest, cooperation and leadership as chairman of the Nursing Committee since 1950.

We are happy to report that Miss Margaret Eliot, R.N., Director of Nursing until her retirement in 1955, was awarded the honorary degree

of Doctor of Humane Letters by Temple University, Philadelphia, on June 15, 1956.

The cooperation and interest of the Assistant Directors of Nursing in all nursing service problems have been most effective. To Miss Marion Cleveland a special debt of gratitude is acknowledged for her untiring efforts toward better patient care.

The nursing staff wishes to express appreciation for the interest and support given to nursing by the professional staff and the administrative staff.

# Obstetrics and Gynecology

HOWARD C. TAYLOR, JR., M.D., *Director*

The year of 1956 has been a somewhat uneventful one on the Obstetrical and Gynecological Service, marked chiefly by a maturing of research plans rather than by the undertaking of many new projects. There have been no appointments to major positions on The Presbyterian Hospital staff and few resignations. The year has been one of consolidation of previous gains.

On the Services of affiliating teaching hospitals major changes are, however, to be noted. Dr. Albert H. Aldridge, Director of the Woman's Hospital Division of St. Luke's Hospital and Clinical Professor of Obstetrics and Gynecology in the College of Physicians and Surgeons, retired. His place was taken in both positions by Dr. Carl T. Javert, formerly Associate Professor of Obstetrics and Gynecology at the Cornell Medical School. Dr. Thomas C. Peightal, Director of the Gynecological Service at Roosevelt Hospital and also a Clinical Professor of Gynecology in the College of Physicians and Surgeons, likewise reached retirement.

Salome Gluecksohn-Waelsch resigned as Research Associate to become Associate Professor of Anatomy at the Albert Einstein College of Medicine. Jean-Pierre Rosselet, Dudipala V. N. Reddy and Joel Bitman resigned as Research Associates. Hyman Guthwin and Schlomo Burstein joined the staff as Research Associates. Dr. Donald L. Hutchinson, completing the chief residency on the Service, became Assistant Professor of Obstetrics and Gynecology at the University of California at Los Angeles.

## *Clinical Activities*

The clinical statistics for the Service for the past year show only minor changes when comparison is made with previous years. The important data are given in the accompanying tables on viable deliveries,

perinatal mortality, gynecological operations and out-patient department visits.

The total number of viable deliveries, 4,120, was by a small margin the largest in the Hospital's history. The increase was attributable to the ward service, the private and semi-private record being almost precisely what it was during the preceding year. The number of gynecological operations performed was also in the range of former years.

The number of out-patient department patients has also shown a high degree of consistency throughout the last five years, although a significant increase, especially in the visits of obstetrical patients, over the average for the decade of 1943-1952 is evident.

The perinatal mortality, that is to say the sum of all still births weighing over 1,000 grams and of all deaths of infants in the first month of life was 25.6 per thousand on the ward service, 15.3 per thousand on the private service. The figure of 15.3 per thousand is the lowest yet recorded in the Hospital. Both figures are to be compared with that of 41.2 for New York City as a whole for the year 1955. The difference between ward and private figures is a rather consistent phenomenon, observed in most institutions, and is in part at least dependent on social and economic factors.

There were again a number of losses, technically to be noted as "maternal deaths," although none was due to purely obstetrical causes. Two of the deaths followed sepsis in cases of abortion admitted to the Hospital in an already critical state. Two were in patients dying during pregnancy or at delivery in the terminal stages of cancer. One patient died of a rare medical disease, thrombotic thrombocytopenic puerpera, and one from an acute surgical complication, the rupture of an esophageal ulcer.

These cases attest the fact that the Medical Center is the institution of ultimate reference of many cases of severe illness and that a proportion of these will also be pregnant. Although these deaths were not strictly "obstetrical," nevertheless they must be counted for a rather high figure for "maternal mortality," namely, six deaths in 4,120 deliveries or a rate of 1.50 per thousand.

### *Clinical Statistics*

I. VIABLE DELIVERIES	1943-1952				
	(average)	1953	1954	1955	1956
Ward .....	1,978	2,328	2,515	2,671	2,815
Semi-Private .....	667	883	833	804	806
Private .....	664	557	501	493	499
Total .....	3,309	3,768	3,849	3,968	4,120

## II. GYNECOLOGICAL OPERATIONS

	1943-1952 (average)	1953	1954	1955	1956
Ward .....	730	899	906	782	845
Semi-Private .....	206	544	408	485	527
Private .....	497	457	554	430	386
Total .....	1,433	1,900	1,868	1,697	1,758

## III. PERINATAL MORTALITY

	1943-1952 (average)	1953	1954	1955	1956
Ward .....	30.8/M	17.4/M	24.9/M	24.8/M	25.6/M
Semi-Private and Private.....	22.7/M	22.2/M	17.9/M	19.3/M	15.3/M

## IV. CLINIC VISITS

	1943-1952 (average)	1953	1954	1955	1956
Obstetrical .....	20,835	23,323	23,409	24,404	24,502
Gynecological .....	14,072	16,794	18,679	17,086	16,499
Total .....	34,907	40,117	42,088	41,490	41,001

**Research Activities**

The investigative work of the Service has continued to be directed to various aspects of the medicine of human reproduction. In order to show progress and trends the report on this work will be given under the same headings as in previous years.

## PROBLEMS OF ENDOCRINOLOGY AND FERTILITY

Work in these areas continues under the direction of Seymour Lieberman, Ph.D., the biochemist of the Service, Dr. Joseph W. Jailer, Associate Attending Physician assigned to the Service, and Dr. Anna L. Southam, Assistant Attending in charge of the Sloane Hospital Endocrine and Sterility Clinics.

The investigation of the effect of chorionic gonadotrophin upon the nature of the ketosteroids excreted in urine is being continued under Dr. Lieberman and his group. In an effort to determine the mechanism by which this pituitary hormone influences the urinary 17-ketosteroids, the effect of estrogen administration to normal subjects is also being studied. The results available at present indicate that estrogen administration can also produce an increase in the excretion of 17-ketosteroid metabolites of hydrocortisone and therefore it seems reasonable to assume that chorionic gonadotrophin influences the adrenals via the pathway: chorionic gonadotrophin → gonads → estrogens → pituitary → ACTH → adrenals.

The excretion of the neutral 17-ketosteroids was studied in four patients with the Stein-Levanthal syndrome, a disorder of ovarian function causing abnormal hair growth, amenorrhea and sterility. One patient was studied during a control period and subsequently while on cortisone and estrogen therapy. It was found that in the four patients the excretion of these steroids was within normal limits and that their response to cortisone was similar to that seen in normal patients. Thus the symptoms present in these patients cannot be accounted for by adrenal abnormalities, at least as evidenced by these criteria.

Drs. Bitman and Raymond L. Vande Wiele studied the excretion of 17-ketosteroids in fifteen normal men and ten normal women in order to establish the normal limits of the individual 17-ketosteroids usually found in urine.

Drs. Rosselet and Bitman developed a spectrophotometric method which permits the quantitative analysis of binary mixtures of steroids which cannot be separated by any known method. The former has also studied the metabolism of several 21-deoxysteroids and has shown that some of the urinary metabolites of these substances are identical with those found in the urine of patients with adrenogenital syndrome.

Dr. Stanley Ulick, Visiting Fellow, developed a chemical assay possessing a sensitivity of 10 micrograms for the important adrenal hormone aldosterone and some of its metabolites in biological fluids.

Dr. Samuel Solomon, Research Associate, and Dr. Vande Wiele continued their efforts to elucidate some of the finer details of the *in vivo* biosynthesis of the steroid hormones. For example, it has been shown that pregnenolone is an intermediate between cholesterol and progesterone in hormonal biosynthesis occurring in the adrenals, placenta, follicles, and corpora lutea. In addition, the biosynthetic pathways of the two principal hormones of the ovaries, progesterone and estradiol, have been interrelated. Thus the biosynthesis of estrogens from cholesterol in the ovary can occur via the route: cholesterol → progesterone → 17-hydroxyprogesterone → androstenedione (testosterone) → estradiol. Dr. Solomon has also been studying the intermediates between cholesterol and pregnenolone.

Dr. Jailer has been working in collaboration with Dr. Nicholas P. Christy, of the Medical Service and a Markle Foundation Fellow, Dr. Donald Longson from the University of Manchester, Dr. Dorothy T. Krieger of the Medical Service and Dr. Adele D. Hoffmann of the Service of Pediatrics. Investigations into the basic etiology of Cushing's syndrome due to bilateral adrenal hyperplasia led to the speculation that this condition may be caused by the over-production of an "ACTH



potentiating" factor by the pituitary gland. A factor was detected in the plasma of patients with this type of Cushing's syndrome, which is capable of at least partially maintaining adrenal weight in hypophysectomized rats. However, this is not ACTH. No such biological activity was found in the plasma of normal individuals, Addisonian patients, nor in the plasma of a patient with an adrenal carcinoma. Apparently it is present in the plasma of pregnant women but this is not surprising since such individuals demonstrate an exaggerated response to ACTH similar to what has been found in Cushing's syndrome. It is hoped that the active principle can be concentrated and identified in the future.

The hypothalamic control of anterior pituitary secretion was also investigated. Dr. Krieger produced hypothalamic lesions in cats which render the animals incapable of activating the pituitary-adrenal axis as a consequence of stress, whereas, at the same time, there is no evidence of pituitary insufficiency under resting conditions.

Studies of various factors influencing reproductive potential and of methods of diagnosis and therapy in infertility, based on the past ten years of experience at The Sloane Hospital for Women, were completed. These will form the basis of a textbook entitled *Female Infertility* by Dr. Charles Lee Buxton, a former member of this staff and now Chairman of the Department of Obstetrics and Gynecology at the Yale University School of Medicine, and by Dr. Southam, to be published in early 1957.

#### PROBLEMS OF PREGNANCY

Studies of the problems of pregnancy concern the early phases of the development of the ovum, the growth and function of the placenta, the formation of the amniotic fluid, and certain alterations in maternal physiology as they affect the steroid hormones and certain constituents of the blood concerned with blood-clotting mechanisms.

Studies on early human developmental stages were continued by Dr. Landrum B. Shettles. In three individuals parthogenetic cleavage of the egg within the intact follicle was observed. The most advanced stage was a perfectly formed blastula of approximately 50 cells. Two reports were published describing a method by which the sex of the infant can be correctly ascertained before delivery by means of the nuclear morphology of the cells in the amniotic fluid.

The problem of the origin and fate of the amniotic fluid continues to occupy the major efforts of Dr. Albert A. Plentl and Dr. Mary Jane Gray. At present the work is being carried out largely with experimental animals.

The construction and equipment of Dr. Gilbert J. Vosburgh's laboratory, which will be devoted principally to studies of maternal and fetal physiology and biochemistry, are largely complete.

Investigations on aspects of the physiology of the mother during pregnancy have taken several directions.

Dr. Jailer and his collaborators have been studying adrenal activity during pregnancy. Not only are the levels of the resting plasma corticoids elevated but there is a hyper-responsiveness of the adrenal cortex of the pregnant woman to exogenous ACTH. In addition to elevated levels of hydrocortisone, corticosterone was found in the plasma during the third trimester of pregnancy.

Investigations on the variations of sodium space, total body water, as well as the total exchangeable sodium in normal and toxemic pregnancies are being continued by Dr. Plentl and his group. Tests to evaluate various pharmaceutical agents believed to have value in the treatment of anemias of pregnancy were completed. About 1,700 patients were studied throughout the whole period of gestation and the results have been interpreted statistically.

Dr. Louise L. Phillips, Research Associate, continued and extended the study of the factors of the fibrinolytic enzyme system involved in production of hypofibrinogenemia. This condition, resulting in hemorrhage from a failure of blood to clot, is encountered with some frequency in obstetrics, less commonly in connection with surgical procedures. Effort was given during the year to an investigation of the system in the plasma of normal subjects as well as of those displaying pathological conditions. Part of this investigation is being carried out in cooperation with the Surgical, Urological, Medical and Pediatric Services.

Clinical reports were completed on a number of the complications of pregnancy, the principal ones being: "Advanced Extra-uterine Pregnancy" by Dr. Clement Yahia; "Amniotic Fluid Embolism" by Dr. D. Anthony D'Esopo and Dr. Yahia; and "Placenta Accreta" by Dr. William N. Rotton. Dr. Alvin J. B. Tillman is working on a monograph on "Toxemia of Pregnancy" to be completed in 1957.

#### PROBLEMS OF LABOR

A new oxytocic agent, spartine sulfate (lupinidine), is being evaluated by Dr. Plentl, Dr. Gray and Dr. Emanuel A. Friedman on several hundred patients. Its usefulness for the induction of labor, treatment of primary and secondary inertia and in the immediate postpartum period was demonstrated. Because of the manner of administration (intramus-

cular injection) this drug is believed to represent a valuable addition to the armamentarium of obstetrical methods.

The study of the course of parturition, by continuously relating the degree of dilatation of the cervix to the elapsed time of labor, was developed into a method of graphicostatistical analysis by Dr. Friedman and is being applied to a number of clinical problems. The concept of the clinical trial of labor, previously ill-defined, was elucidated. The method was also used to aid prognostication in the occurrence of cephalopelvic disproportion, particularly where roentgenographic pelvimetry was indecisive. A controlled clinical study of various oxytocics currently available for use in combatting post-partum uterine atony and hemorrhage was satisfactorily concluded. The drugs studied included natural and synthetic oxytocin, ergonovine tartrate, methyletergonovine, dihydroergonovine, and sparteine sulfate.

Dr. Charles M. Steer continued his work on x-ray pelvimetry in relation to the outcome of labor, and began an investigation of the origin of the android pelvis. A study of the serum potassium in normal and abnormal labor was completed.

#### FETUS AND THE NEWBORN

The team of workers studying the problems of the newborn consists of Drs. L. Stanley James and Irwin M. Weisbrot, pediatricians and Visiting Fellows, Dr. C. Edward Prince, Macy Fellow in Obstetrics and Gynecology, and Dr. Duncan A. Holaday and Dr. Virginia Apgar of the Service of Anesthesiology. Their program developed rapidly in the last year.

The principal objective has been the study of the circulatory and respiratory adjustments in the infant that occur immediately after birth. The comparative effects of "placental transfusion" and immediate clamping of the cord were studied in forty infants. In a period of six hours, the inferior vena cava pressure is higher in the transfusion group, but thereafter there is no appreciable difference. Hematocrit levels are higher for several days also in those receiving the additional blood. Studies are projected to determine the important point of the possible effect of the transfusions on pulmonary pressures.

Pneumotachograph and intrasophageal pressures were recorded at times varying from one hour to several days after birth in an effort to standardize techniques and to obtain normal figures for flow rates and pressure tracings, from which compliance and resistance can be measured. Methods of micromanometry for clinical analysis, as well as physiological measurements, are being investigated, since all methods present

special problems because only small amounts of blood can be obtained and the various physiological alterations are measurable only in small units.

Important and necessary research is being carried on to determine the rate of transfer of the anesthetic, cyclopropane, across the placenta. Simultaneous blood samples were drawn from eighteen mothers and infants for quantitative analysis for cyclopropane. It is planned to increase this number to fifty pairs. The results will be reported at the American Medical Association meeting in June. At this point it appears that cyclopropane easily passes through the placenta, the shortest observed time interval being one minute, fifty seconds.

#### RESEARCH ON GYNECOLOGICAL CANCER

Investigations of the problems presented by gynecological cancer continued along several lines, namely, the biology and biochemistry of the phenomenon of degrees of differentiation, radio-sensitivity of cervical cancer and a variety of clinical studies.

The basis of differentiation in cancer tissue has been studied in particular relationship to the adenocarcinomas of the ovary, but is being extended to include carcinoma of the endometrium. Dr. Margaret E. Long, Research Associate, is working with histochemical methods to determine the principal sites within the cell of the activity of the enzyme, succinic dehydrogenase. With Dr. Fumio Doko, Damon Runyon Research Fellow, Dr. Long is also examining the nucleolar activity in endometrial cells and finding a significant increase in size and number of nucleoli with increasing degrees of malignancy. Dr. Saul Bader, Research Associate, continues his study of the desoxyribosenucleic acid of the nucleus by means of absorption microspectrophotometry.

In the series of gynecological tumors collected for the differentiation project, Dr. Helena de Roeth, Research Associate, observed increased glycolysis in the malignant, as compared with the benign neoplasms. She is also studying the  $C^{14}$  glucose incorporation into these tumors with subsequent determination of the radioactive amino acids and carbon dioxide produced. Dr. Reddy, Research Associate, completed a study on the *in vitro* incorporation of  $P^{32}$  into ribonucleic (RNA) acids and its nucleotides, desoxyribonucleic acid and phospholipids of benign and malignant ovarian tumors. In addition the nucleotide composition of ribonucleic acid isolated from the human ovarian tumors and some animal tissues was investigated. The relative specific activity of RNA was found to be significantly higher in the malignant tumors of the ovary than in the benign ones. Dr. Reddy also made the interesting observation

that human ovarian tumors inhibit the enzyme, D-amino acid oxidase.

Under the direction of Dr. Saul B. Gusberg, work on the correlation of cytochemical and cytological observations on the results of radiation therapy continued. This study of radiosensitivity is based on the work of a cytologist and a pathologist, and new efforts are now being made to quantitate observations by microphotometry. A good correlation between certain histological and chemical changes developing under radiation therapy was demonstrated and a project initiated to test the validity of the Graham method of predicting radiosensitivity by means of the study of desquamated cells of the vaginal mucosa.

Work on the heterologous transplantation, growth, and survival of human gynecologic tumors continues under Dr. Harold M. M. Tovell. It was shown that of fifty-seven malignancies from the female genital tract, 60 per cent were capable of surviving and growing in conditioned laboratory animals. A follow-up of previous work with ovarian cancer showed a correlation between patient survival and the ability of their cancers to grow in the anterior chamber of the guinea pig's eye.

In the cancer work, mention must also be made of the clinical studies of Dr. Henry Clay Frick, II on phases of the treatment of cancer of the cervix, and of Dr. David B. Moore in the development and management of a cancer follow-up system. The second edition of the book of Dr. James A. Corscaden, *Gynecologic Cancer*, appeared in 1956.

#### MISCELLANEOUS RESEARCH ACTIVITIES

The data-gathering phase of a project concerned with the psychiatric background of patients with functional pelvic pain was completed by Dr. Lothar Gidro-Frank, Assistant Attending Psychiatrist assigned to Obstetrics and Gynecology, and a preliminary report on reproductive performance of women with pelvic pain of long duration has been published, with Miss Thelma Gordon. Dr. Gidro-Frank is now conducting weekly conferences with the resident staff on the role of emotional factors in obstetrical and gynecological disorders.

Dr. Harold Speert completed a series of fifty essays on the origin of eponyms in obstetrics and gynecology, and the lives of the men whose names have become a part of the nomenclature of the specialty. As co-author with Dr. Alan Guttmacher, Clinical Professor of Obstetrics and Gynecology, Dr. Speert published a book entitled *Obstetric Practice*.

Dr. Oscar Karlis Adamsons, Jr. beginning his residency after several years of work under Dr. H. B. van Dyke in the Department of Pharmacology, published several articles on structure-activity relationships of the neurohypophyseal hormones, and is continuing in this joint project.

In collaboration with Dr. Frederic J. Agate, Associate Professor of Anatomy, Dr. Shettles worked out a technique for simultaneous measurement of the uterine, vaginal, cutaneous and mammary blood flow, together with recording of cervical and uterine movement. Asymptomatic and symptomatic patients are being studied.

For the development and maintenance of the research program in Obstetrics and Gynecology acknowledgment must be made for the financial aid from many sources. The MacMillan Fund of The Presbyterian Hospital has provided the means of supporting several of the key research workers in the cancer field. A grant from the Josiah Macy Foundation to the College of Physicians and Surgeons is making it possible to initiate a new kind of educational program for the scientific training of academic personnel for obstetrics and gynecology. Grants for specific research projects have come, through the medical college, from the Public Health Service, the American Cancer Society, the Damon Runyon Memorial Fund, the Ortho Research Foundation and from other private institutions and individuals. The research work of the Division would clearly be impossible without such generous assistance.

### ***The Sloane Hospital Bulletin***

The Bulletin of The Sloane Hospital for Women, under the editorship of Drs. D. Anthony D'Esopo, Harold M. M. Tovell and Robert E. Hall, continues to grow in circulation and prestige. It maintains a regularly recurring department entitled "Standard Practices at Sloane Hospital" which has proved to be of much interest to the alumni, and it is planned to add during the forthcoming year a new department which will appear as "Case Histories from the Weekly Staff Conferences of the Sloane Hospital." In addition to these, the Bulletin published original and review articles submitted largely by the members of The Columbia-Presbyterian Medical Center Staff who are working directly or indirectly in the field of reproduction.

The mailing list now includes over 1000 subscribers.

### ***Developments in the Teaching Program***

The first year of the Graduate Program in Maternity Nursing ended with a total of nine students completing the requirements for the course. Four of these students were in the Master of Science degree program and five in the Certificate of Training program. Opportunities for learning have been successfully developed in many important areas. Students had an opportunity to learn supervision of the normal pregnant mother by

actually taking the responsibility for the care and teaching of these mothers under close supervision from the doctor and nurse-midwife in the clinic. They had opportunity to follow these mothers through labor and delivery and their postpartum stay in the hospital. Each student had the experience of delivering from 4-8 multiparas, under the supervision of an attending obstetrician. Much progress in developing the Graduate Program was made in the past year and the lines of further development in the future can be foreseen.

A new step in the training of obstetricians and gynecologists for teaching and research positions has been made possible through a grant to the College of Physicians and Surgeons from the Josiah Macy, Jr. Foundation. This grant provides in the first place for small scholarships available to undergraduate medical students for work on problems, especially at a basic science level, concerned with the physiology and pathology of reproduction. Secondly, it provides support for graduates in medicine to obtain two years of research experience before, during, or after their clinical residency.

This program, it is believed, will help to overcome certain handicaps to the scientific development of the specialty. The clinical training to attain the technical skill in the management of obstetrical and gynecological conditions is already so costly, in respect to both time and money, that few young men or women, who have attained clinical proficiency, are able to afford the additional years needed to acquire the knowledge necessary to face the unsolved problems of the specialty. It is believed that these fellowships should make the desire to accept these extra years of work somewhat easier. At present two Macy Fellows are at work in the Service, Dr. Mary Jane Gray, who has completed her residency and now is a member of the staff and Dr. C. Edward Prince, who is about to commence his clinical training.

### *Staff Activities*

During the year there were more than the usual number of visitors from abroad. Visiting Fellows included Professor W. I. C. Morris of the University of Manchester on a Fulbright Fellowship; Dr. Prabhaker Nagardas Shah, of the Indian Cancer Research Center of Bombay under the sponsorship of the Rockefeller Foundation; Dr. Helena E. Hughes, from the University of Manchester, holding the Barnes-Foster Fellowship of the University; Dr. Fumio Doko, of the University of Okayama, on a Damon Runyon Fellowship; and Dr. Pentti Leppaluoto of Finland, under the sponsorship of the Institute of International Education. In addition, there were thirteen Visiting Scholars from nine countries.

Promotions in the last year have included Dr. William V. Cavanagh and Dr. Albert A. Plentl, from Assistant Attending to Associate Attending, and Dr. Anna L. Southam from Assistant to Assistant Attending.

Members of the staff continued to give frequent lectures in outside institutions and to participate actively in medical and scientific society activities. Mention may be made of Dr. Jailer's series of lectures at the University of Minnesota and elsewhere, of Dr. Stanley M. Bysshe's panel at the meeting of The American College of Surgeons in San Francisco, of Dr. Taylor's guest lectureship at the Japanese Congress of Obstetrics and Gynecology in Tokyo, and of Dr. Gusberg's papers before the American Gynecologic Society, the Intersociety Cytology Council and elsewhere.

Among new appointments to outside positions of responsibility may be noted Dr. Jailer's election to the Council of the Endocrine Society and Dr. Lieberman's designation as a member of the Advisory Committee on Research on the Etiology of Cancer of the American Cancer Society. Dr. Taylor has been made a Regent of The American College of Surgeons.

Of special interest is the work being undertaken by Dr. Earl T. Engle, during his sabbatical year's leave of absence under a grant made by the Josiah Macy, Jr. Foundation to the American Gynecological Society, to study the academic and scientific problems of Departments of Obstetrics and Gynecology. Special attention will be given by Dr. Engle to the means by which research interest and capacities may be increased in this specialty. This enterprise is consistent with the great increase in awareness of the unsolved scientific problems and the research opportunities present in the general field of the medicine of the reproductive process that is manifest in many of the university Departments of Obstetrics and Gynecology throughout the country.



# Ophthalmology

JOHN H. DUNNINGTON, M.D., *Director*

During 1956 there were 2,864 admissions to the Institute of Ophthalmology with 24,033 days of care and 2,669 operations performed. Although these figures compare favorably with the number of previous years there has been some decrease in ward admissions occasioned by the ever increasing coverage by insurance of patients formerly on ward service. To offset the smaller number of ward cases greater use is being made of the residents as assistants in the private and semi-private operations.

Since the last report this department has sustained two significant losses. First, in the death of our esteemed consultant, Dr. Arnold Knapp, we have lost a wise counsellor and loyal friend and, second, in the resignation of Dr. Ludwig von Sallmann, we have been deprived of the services of an indefatigable investigator whose knowledge of both clinical and research aspects of ophthalmology made him a most valuable member of this department.

Within the past year we had ten visiting scholars from foreign countries and the following three distinguished lecturers: Dr. W. A. H. Rushton of Cambridge, England, who spoke on "The Measurement of Visual Pigments in the Living Human Eye"; Professor H. J. M. Weve of Utrecht, Holland, on "Starfolds in the Retina" and Professor Hans Goldmann of Bern, Switzerland, on "Biomicroscopy of the Vitreous." All of these speakers gave instructive and illuminating discussions of problems of great interest.

## *Staff Activities*

During 1956 the members of this department made 21 contributions to the ophthalmic literature and took active parts in the proceedings of local, state and national meetings. At a recent meeting of the American Academy of Ophthalmology and Otolaryngology, ten members gave instructional courses and Dr. Algernon B. Reese and Dr. Bradley R. Straatsma won second prize for their exhibit on "Precancerous and Cancerous Melanosis of the Conjunctiva." To outline some of the extracurricular activities, the following may be mentioned: Dr. Reese was elected Chairman of the Eye Section of the American Medical Association for 1957, served on the Council of the American Academy of

Ophthalmology and Otolaryngology, received the Howe Medal of the New York State Medical Society and delivered the Snell Lecture at the University of Rochester with "Pigmented Tumors" as his topic. In addition he was the moderator of a symposium on "Tumors of the Eye" at a meeting of the Pan American Congress of Ophthalmology in Santiago, Chile.

Dr. Gordon M. Bruce continued his duties on the American Board of Ophthalmology and as Editor of the Transactions of The American Ophthalmological Society. Dr. Raymond L. Pfeiffer delivered the Curran Lecture under the sponsorship of the University of Kansas and served on the Editorial Board of the New York State Journal of Medicine. Dr. John P. Macnic continued to serve on the faculties of the Ophthalmological Study Council and the Home Study Course of the American Academy of Ophthalmology and Otolaryngology. Dr. Maynard C. Wheeler acted as Chairman of the Eye Section of the New York Academy of Medicine and Secretary-Treasurer of the American Ophthalmological Society.

Dr. Charles A. Perera addressed the Mexican Society of Ophthalmology on "Retinal Detachment" and participated in a symposium on Prevention of Complications of Ocular Surgery before the Eye Section of the New York Academy of Medicine. Dr. Raynold N. Berke was the guest speaker at the meeting of the Detroit Ophthalmological Society and the Buffalo Ophthalmological Club. Dr. Frank D. Carroll served as Chairman of the Section of Ophthalmology of the New York State Medical Society and was the guest speaker at the Meetings of the South Carolina Society of Ophthalmology and Otolaryngology and the Pennsylvania Academy of Ophthalmology and Otolaryngology.

Dr. George R. Merriam, Jr., presented a paper on Radiation Cataract before the International Congress of Radiology in Mexico City and discussed the vulnerability of the lens to radiation at the meeting of the Radiological Society of North America. Both he and Dr. Joseph A. C. Wadsworth were elected to membership in the American Ophthalmological Society. Dr. Wadsworth was appointed as Associate Editor of the American Medical Association Archives of Ophthalmology and as Civilian Consultant in Ophthalmology to the Surgeon General and delivered an address on "The Vitreous — Its Relationship to Detachment of the Retina" before the Southern Medical Association. Dr. John H. Dunnington participated in a symposium on Cataract sponsored by the New Orleans Academy of Ophthalmology and Otolaryngology and presented the Proctor Lecture under the auspices of the University of California on "Responses of the Ocular Tissues to Injury" and gave

addresses before the San Francisco Ophthalmological Society and the Eye Section of the New York Academy of Medicine. He also served on the Board of Directors of the National Society for the Prevention of Blindness and Recording for the Blind.

### ***Research Studies***

The clinical research activities continued with Dr. Willis S. Knighton and Dr. Andrew de Roeth, Jr., working on the clinical evaluation of tonography in glaucoma; Dr. Otto Lowenstein on pupillary changes in ocular diseases; Dr. Wheeler and Dr. Philip Knapp on ocular motor abnormalities; Dr. Berke on the surgical treatment of blepharoptosis; Dr. Carroll on the diseases of the optic nerve; Dr. Graham Clark on detachment of the retina; Dr. Robert McC. Day on exophthalmos and Drs. Dunnington and Ellen F. Regan on ocular wound healing. The members of our radiotherapy department, Drs. Reese, Merriam and Arnold Forrest, in collaboration with Dr. George A. Hyman of the Service of Medicine, reported their results on the use of radiation and triethylene melamine in retinoblastoma.

Among the more basic studies are those of Dr. Merriam in collaboration with Dr. Zacharias Dische of the Department of Biochemistry on the changes in the proteins of the lens in radiation cataract; Doctor Reese in collaboration with Dr. Gabriele Ehrlich on the growth of ocular tumors by tissue culture; Drs. Gertrude Rand, Charles J. Campbell, and Miss M. Catherine Rittler on dark adaptation; Dr. Clark on the responses of ocular tissue to various electrical currents; Dr. de Roeth on the metabolism of the iris and Dr. Knapp on the measurement of ocular motility with the electro-oculograph.

The members of the resident staff also took an active part in the investigative studies. Dr. Robert P. Burns, under the direction of Dr. Harry M. Rose of the Department of Microbiology, began work on tissue culture as a diagnostic aid in viral ocular diseases. Dr. Campbell continued his researches on electroretinography, flicker fusion and night myopia. Dr. John McTigue and Dr. Anthony Donn reported their results on radioactive phosphorus uptake in malignant melanoma. Dr. Straatsma in collaboration with Dr. Reese is studying the radioactive phosphorus uptake of precancerous and cancerous melanosis of the conjunctiva. Dr. David H. Rhodes, in addition to his studies on experimental vitreous hemorrhage, started investigations on color perimetry. Dr. Robert M. Ellsworth with the assistance of Dr. Merriam is attempting to measure visual acuity by X-rays and he and Dr. Straatsma have begun experimental work on corneal transplantation. Dr. Straatsma won the

William Warner Hoppin prize awarded by the Eye Section of the New York Academy of Medicine for the best presentation at its annual Resident Meeting. His topic was "Carcinoma of the Meibomian Gland."

### *Laboratory Analyses*

The pathology department under the supervision of Dr. Reese assisted by Drs. Wadsworth and Forrest examined over 500 specimens and gave instruction to the residents and ten visiting scholars. In the bacteriological laboratory, under the direction of Dr. Devorah Locatcher Khorazo, 25,107 examinations were made. She also completed her study on the ocular flora in 27,000 presumably normal eyes. The X-Ray Department, under the direction of Dr. Pfeiffer assisted by Dr. Jones, continued to render outstanding service by their interpretation of the roentgenological findings in various orbital lesions. The organization of a tumor clinic in the radiotherapy department with Drs. Wadsworth, Merriam and Jones participating has been effected. Its purpose is to correlate the clinical course with the pathological findings and to facilitate a long term follow-up.

### *Benefactions*

It is with profound gratitude that acknowledgment is made to the following benefactors for their generous aid: The Dunlevy Milbank Fund, The Harriman Fund, The Home Craftsman, The Marie Heye Clemens Fund, The Jack Kriendler Memorial Foundation, The New York Foundation, The Sloan Fund, The Snyder Fund, and the Whitehall Foundation. To those of our friends who wish to remain anonymous a special vote of thanks is extended. It is with particular pride that we point to the donation made by the Class of 1957 of the School of Nursing to help Dr. Clark in his studies on vitreous implant in the treatment of detachment of the retina. This manifestation of interest and support is greatly appreciated. For the continued loyal and faithful cooperation of all members of both the professional and personnel staffs I am extremely grateful.

# Orthopedic Surgery

FRANK E. STINCHFIELD, M.D., *Director*

During the past year Dr. Alan DeForest Smith retired as Director of the Service of Orthopedic Surgery and was appointed as consultant to the Hospital. Dr. Smith's wisdom, foresight, and dedication to the principles and ideals of orthopedic surgery have been cornerstones of The New York Orthopaedic Hospital. Through his desire for a more complete integration of teaching and the best care of the patient, the amalgamation of The New York Orthopaedic Hospital and Columbia-Presbyterian Medical Center was made possible in 1950. Patients, Resident Staff, Fellows, and Attendings all regret his retirement from active teaching but all are happy that he will continue to help in the teaching program and to give his experience and judgment to the Service when needed.

During the year there was further close integration of orthopedic surgery and fracture surgery. The West service was converted to semi-private accommodations and both fracture and orthopedic patients are now cared for on the Center and East services, as well as on the Babies Hospital service.

The question of extended hospital insurance has posed an increasingly difficult administrative problem inasmuch as it has reduced the opportunities for surgical training of residents and fellows. It becomes increasingly evident that some overall policy will have to be adopted by which the ward beds are not gradually reclassified as semi-private beds. This transition would legally prevent residents and fellows from performing surgery on patients occupying such beds. It would seem that this problem must be solved not on a local level but by a national program because of the wide extent and ramifications of the present insurance schemes.

## *Clinical and Basic Research*

The research program has expanded and within the past year specific responsibilities in the research laboratory were re-defined and assigned. Dr. C. Andrew Bassett was appointed chief of the clinical research laboratory, and Dr. Gabriel C. Godman was appointed chief of basic fundamental research. Within the past month Dr. Godman was appointed as

a member of the Department of Orthopedic Surgery of the College of Physicians and Surgeons assigned to do only basic research.

Dr. Godman continued to be extremely active during the past year. Some of his current investigations are:

*The cytochemistry of nuclear components in the course of cellular differentiation and division, in viral infection and in systemic lupus erythematosus.*

*The regeneration of striated muscle.*

*Characteristics, chemical differentiation and the effects of cortisone on certain connective tissue cell strains.*

Dr. C. Zent Garber continued to be a strong pillar in the field of orthopedic pathology and undertook considerable investigative work in the past year on the late effects of hemorrhage in bone and on radiation necrosis of bone. In collaboration with Mr. Abdel Said, he published a mathematical treatise on "The Theoretical Plate Concept in Chromatography." The practical applications of this study have excited the interest of chemists in the field of atomic energy.

Dr. Bassett continued his investigative work on the Bone Bank. Under his direction space was allocated on the 18th floor of The Presbyterian Hospital for the procurement, processing, and storage facilities of the Bank. Through the continuing cooperation of Massachusetts Institute of Technology, the services of the Van de Graff accelerator are provided for cathode ray sterilization of the grafts. Dr. Bassett worked in a collaborative effort with Dr. Karl Meyer of the Department of Medicine on the problem of mucopolysaccharides. Dr. Bassett also, in collaboration with Dr. Christopher Nordin in the Department of Medicine, studied mechanisms of calcium and phosphorus equilibrium between bone and extra-cellular fluid. Dr. James B. Campbell of the Service of Neurological Surgery and Dr. Bassett investigated a method for bridging gaps in peripheral nerves and preventing neuroma formation. This lends itself for further investigation on a clinical basis and is quite exciting in its possibilities.

Dr. Halford Hallock has been responsible for the undergraduate teaching schedule and, in conjunction with Dr. J. B. Jones and Dr. Kenneth C. Francis, completed a study of the effect of growth changes on spines where surgical fusion had been done in early childhood.

Dr. Harrison T. McLaughlin continued to work on the research problem of determining the viability of the femoral head following fractures of the femoral neck. His "Text Book of Trauma" is presently being written. He continued to be actively interested in the treatment of the painful shoulder, and read numerous papers on this subject during the year. He

participated in numerous panels and discussions and was chosen to give the oration on trauma for the American College of Surgeons in 1957.

Dr. Everett C. Bragg and Dr. Sawnie R. Gaston continued their interest in club foot and both at the present time are evaluating the results of various surgical corrections of club feet.

Dr. Frederick M. Smith continued his research problems in elbow injuries, tennis elbows, and elbow arthroplasties. He recently presented a paper at the American College of Surgeons on fractures of the elbow in children.

Dr. Melvin B. Watkins continued his interest in lumbosacral fusions. Dr. Watkins also continued to develop his technique in the posterolateral spinal fusion procedure and we have found this to be of great importance in the treatment of the difficult pseudoarthroses of the lower lumbar segments.

Dr. George B. Ambrose represented the Orthopedic Service on the Hospital's Wound Healing Committee and every effort is being made to minimize the wound infections. He has also done excellent work on the proper classification of wound infection and through his efforts the teaching of surgical principles in the training program has been markedly advanced.

Dr. Robert E. Carroll continued to develop the Orthopedic Hand Clinic. During the year 2,730 patients were seen in this clinic, 203 of which were given surgical corrections. The Orthopedic Hand Clinic has continued to contribute to orthopedic knowledge and is becoming well-known throughout the country.

Dr. Frederick S. Craig, in conjunction with Dr. Josephine Wells and Dr. Samuel H. Madell of the Service of Radiology, is doing basic research on vertebral body sclerosis in an attempt to better explain the changes seen in this condition.

Dr. Alexander Garcia, in conjunction with Dr. Ambrose and Dr. Charles S. Neer, II is doing research on the incidence of union in intracapsular fractures of the femur.

Dr. Neer completed a study of fractures of the femoral shaft in children and is now studying primary osteotomy for displaced fractures of the femoral neck and surgical pathology of the proximal humeral articulation.

Dr. Charles T. Ryder continued his research work in coxa plana and is also studying the development of the lower extremities in fetal life.

Dr. Francis was in the past year appointed Instructor in Orthopedic Surgery at the College of Physicians and Surgeons and Assistant Surgeon on the Orthopedic Service at The Presbyterian Hospital. Dr. Francis' chief interest lies in the field of bone tumors.

**Studies by Residents and Fellows**

It is of interest to note that the majority of Residents and Fellows are working on some clinical or basic research problem as listed below:

- Drs. Duke B. Baird (and Bragg): A study of 100 cases of ruptured disc followed by spinal fusion.
- Drs. Frank A. Bersani, Robert L. Samilson (Alan DeF. Smith and Balu Sankaran). The orthopedic management of neuropathic joints.
- Drs. Bersani and Samilson: Familial tarsal synostosis.
- Drs. Bersani, Samilson (and Watkins): Acute suppurative arthritis in infants and children.
- Drs. Bersani, Samilson (Hallock, Ryder and K. Francis): Congenital angulation of long bones.
- Dr. John E. Carroll, Jr.: Case study — An interesting lesion of the thigh.
- Dr. Marvin Lee Gordon: An internal fixation device for compression arthrodesis • An evaluation of the surgical treatment of bilateral degenerative hip disease • An analysis of fractures of the upper femur sustained by patients with arthrodesed hips.
- Drs. Rosamond Kane, John D. Le Bouvier (and Ryder): Review of coxa plana.
- Drs. John R. Mahoney (and K. C. Francis): Follow-up study of tibial tubercle transplants for recurrent dislocation of the patella.
- Drs. Mahoney (and Garcia): Follow-up study of fractures of the femoral shaft treated with intramedullary fixation.
- Drs. Leonard Marmor and Samilson: Review of scoliosis.
- Drs. Marmor (and Max Vechter): Review of torticollis.
- Dr. Samilson: Pathways tracked by dorsolumbar tuberculous abscesses.
- Drs. Samilson (Stinchfield and Sankaran): The effect of anticoagulant therapy on bone repair.
- Drs. Samilson (Watkins and Daniel McC. Winters): Acute suppurative arthritis.
- Drs. Samilson (and Bernard Cooperman): Shoulder arthrography.
- Drs. Samilson (and Bragg): Medial release for resistant club feet.
- Drs. Samilson (and William H. von Lackum): Scoliosis exhibit.
- Drs. Cyril E. Shea, Jr. (Stinchfield and Cooperman): Evaluation of Judet and Austin Moore arthroplasty of hip.
- Dr. R. Warner Wood, Jr.: Review of Ollier's multiple enchondromatosis. Design of a two-piece closed hip joint replacement prosthesis.



Plans are now being formulated for a complete revision of the basic science training program for the orthopedic residents.

A Post-Graduate Course on Orthopedic Surgery was given in January by members of The New York Orthopaedic Hospital staff. The four-day course was attended by 44 doctors.

During the past year the out-patient clinic treated 20,363 patients and 43,625 visits were made by our patients; 1,194 patients were admitted to the ward teaching service during the past year.

# Otolaryngology

EDMUND P. FOWLER, JR., M.D., *Director*

The year of 1956 in the Service of Otolaryngology will be remembered most for the conversion of the eleventh floor center ward into six modern two-bed units.

The conversion of this ward, which formerly housed only women, has proved to have many advantages. The two-bed units give us a great deal of flexibility. On this Service there is usually a heavier demand for beds for men than for women. These accommodations can be allotted to men or women patients as needed. As always, ward patients remain first choice for their occupancy. For the Service as a whole, the number of ward patients admitted and operated on has remained exactly the same as the total of the year before. This indicates that there has been no decrease in the opportunities for practical teaching.

However, when these new two-bed units are not in use for ward patients, they can be used as semi-private accommodations. Thus they help us to meet the increased need for semi-private rooms to care for the growing number of patients who have hospital insurance for surgery. Nor does assignment of patients to semi-private care divert the experience represented by these cases from some use for teaching purposes. Residents and assistant residents make initial observations of all kinds of ear, nose and throat surgery as provided to patients in this category.

The appointment of John J. Conley, M.D. as Chief of the Head and Neck Division strengthened the whole Service. Dr. Conley has continued and expanded the team approach in handling the problems of head and neck surgery.

## ***“Micro-Orthopedic” Surgery***

The Zeiss operating microscope acquired last year has become an extraordinarily popular instrument in the operating room. It makes possible a new specialty, “micro-orthopedic surgery,” if you will permit stapes mobilization and tympanoplasty such a name. Incidentally, it has been found useful in other more standard types of ear surgery such as radical mastoidectomy as well.

Dr. Milos Basek continued in the supervision of the Resident staff training program. He is also responsible for a program for removal and

collection of temporal bones for anatomical, histological and surgical studies. He and Dr. Vladimir Epanchin of the College staff produced a motion picture illustrating techniques for the removal of temporal bones, and intended for the education of pathologists. This collection of bone material has been particularly useful for the studies of various techniques of stapes mobilization and for teaching special as well as standard operations to the residents.

Dr. Edmund P. Fowler, Jr. and Dr. Basek completed a sound moving picture on the techniques of stapes mobilization. They have shown with slow motion cinematography that the basis for improvement of hearing with this operation is a fracture of the footplate of the tiny bone in the middle ear called the stirrup (stapes). This was shown at the American Academy of Ophthalmology and Otolaryngology in Chicago and there is now considerable demand for showing it throughout the country.

Dr. Franz Altmann was a guest of honor at the meeting of the Dallas Southern Clinical Society and also addressed the American Otological Society and American Laryngological, Otological and Rhinological Society on tympanoplasty and stapes mobilization. He gave a popular course on tympanoplasty at the Chicago meeting of the American Academy of Ophthalmology and Otolaryngology and presented a paper on vertigo before both the Los Angeles County Hospital Division of the University of Southern California and the Hawaii Ear, Nose and Throat Society in Honolulu.

These activities stemmed from research supported in part by the Hayden Fund for the Coakley Memorial Clinic and is paid by grants to Columbia University by the New York Foundation and the Central Bureau of Research of the American Otological Society for study in otosclerosis. These monies are gratefully acknowledged.

### *Other Staff Activities*

Dr. Daniel C. Baker, Jr. was reappointed to the Residency Review Committee in Otolaryngology of the American Medical Association for three years and was elected to membership in the American Laryngological Society. He delivered a paper before the American Bronchoesophagological Society in Montreal on diverticula of the esophagus. At the Chicago meeting of the American Academy of Ophthalmology and Otolaryngology he taught a course in chronic non-specific laryngitis. In Philadelphia he delivered a paper on emergencies in otolaryngology before the Seventh Armed Services Institute Medical Symposium. He was elected president of the New York Bronchoscopic Society.

Dr. Conley spoke in many cities in the U. S. as well as at the Pan-

American Congress of Otolaryngology and Bronchoesophagology in San Juan, Puerto Rico. He presided at a symposium on Surgery of the Parotid Gland and Diagnosis and Treatment of Cancer of the Head and Neck sponsored by the American College of Surgeons. He has been made a member of the James Ewing Society and a Founding Member of the Society of Head and Neck Surgeons.

Dr. Fowler served as president of the New York Otological Society. He spoke on stapes mobilization in a number of cities. He was made a member of the Committee on Bio-Acoustics of the National Research Council and served on the Committee on the Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology. At the Academy's annual meeting in Chicago he gave a course on Facial Nerve Repair for Traumatic Injury and Bell's Palsy and read a paper on histopathology of stapes ankylosis.

Dr. Robert M. Hui was active in the Conservation of Hearing Program in the City and State of New York and continued his researches on the methods of testing the hearing of small children.

Mr. Maurice Miller, Mrs. Shulamith Kastein and Mrs. Audrey Sprung have done research work and delivered papers on several topics involving speech and hearing.

Dr. Jules G. Waltner gave lectures on the basic physiology of the inner ear at the University of Turin and at the University of Padua, Italy.

Dr. DeGraaf Woodman was guest speaker at the Louisiana-Mississippi Otolaryngological meeting in New Orleans, and also at the Texas Southern Assembly in Houston.

During the year 3,146 new patients were treated in the Out-Patient Department. There were 1,615 admissions to The Presbyterian Hospital with 1,621 operations. There were 1,152 admissions to Babies Hospital with 1,144 operations. There were 2,025 consultations on other Services.

# Pathology

HARRY P. SMITH, M.D., *Director*

The operation of the autopsy service constitutes the largest responsibility of the Service of Pathology. However, the Service is also responsible for diagnostic study of tissue removed at operation from patients on the Services of Neurological Surgery, Orthopedic Surgery and Pediatrics. Certain members of the Service consult in the diagnosis and treatment of disorders in which they have particular interest and experience. The research activities, described in some detail in previous reports, require joint use of facilities of the Hospital and of the School of Medicine. Teaching, both of students and of House Staff, is also a joint enterprise in both institutions. This type of collaboration is made possible through joint appointments for virtually all members of the Staff — a principle identical to that prevailing in the clinical Service of the Hospital.

The staff has undergone relatively few changes during the year, except for the usual turn-over of the residency staff. At the senior level, Dr. George P. Vennart replaces Dr. Robert W. Coon, who left last year to become Pathologist-in-Chief at the University of Vermont.

The percentage of necropsies to deaths for the year ending December 31, 1956 follows:

Pediatrics .....	83
Dermatology .....	100
Private .....	39
Medicine .....	63
Neurology .....	49
Neurological Surgery .....	47
Obstetrics and Gynecology: Adults .....	38
Neonatal .....	71
Ophthalmology .....	0
Orthopedic Surgery .....	38
Otolaryngology .....	50
Psychiatry .....	0
Surgery .....	57
Urology .....	56
Vanderbilt Clinic .....	0
Average .....	59

# Pediatrics

RUSTIN MCINTOSH, M.D., *Director*

The year 1956 has been an unusually busy one for the pediatric service. On certain days of the autumn the number of in-patients reached peaks not previously attained in the records of Babies Hospital. Heaviest pressure for admission to hospital has been focused on the low-cost private, or semi-private, facilities. This represents no casual fluctuation, but an actual trend which deserves comment.

The remarkable growth of voluntary and semi-voluntary hospitalization insurance plans over the past two decades is a matter of common knowledge. In many of these schemes provision is made for defraying the cost of hospital treatment of infants and children. Under the provisions of most of these schemes, emphasis is laid on the importance of free choice of physician by the patient, and in addition it is implied that hospitalization under some sort of private patient arrangement makes for more effective treatment. While the truth of this latter statement, implying that less desirable care is given to patients on the ward service, is open to question, there can be no doubt about the prevalence of the underlying notion. Patients who have established contact with a physician in his office or through home visits, whether under an insurance scheme or not, strive to maintain that contact when admission to hospital is called for; and they know that on the private service their own physician can supervise the patient's care provided he is a member of the hospital staff, whereas when the patient is admitted to ward service no such assurance can be given. Provision on the part of the hospital for admission to the private services of the patients of the hospital's own staff constitutes an important element in successful maintenance of a capable professional staff under the principle of geographic full-time.

All of these forces, supporting one another, have brought about a situation in which, for days on end, the number of patients registered in semi-private accommodations far exceeds the announced capacity of the service. Over-occupancy to the extent of 50 to 70 per cent is by no means rare. Various devices have been adopted to meet this situation. Bed space has been borrowed freely from the private patient facilities in order to accommodate low-cost private patients. While this entails the potential risk of depriving the hospital of additional income from high

cost private patients, in the present circumstances of supply and demand the actual loss is not important. In the other direction, low-cost private patients have been temporarily admitted to ward patient facilities, an arrangement which appears to be satisfactory to the patients and their parents but which runs the risk of impairing the educational program for residents and medical students to which the ward service is committed. Those who carry responsibility for the teaching and research program must of necessity view this trend with some concern. The need for a careful study of the situation is obvious.

During 1956 the Pediatric Service provided 53,913 days of care for 4,911 patients, of whom 2,825 were on the ward service. Compared with 1955, these figures represent a 1.4 per cent decrease in number of ward admissions but a relative increase in all other categories, both individual patients admitted and patient days' care. The total days of care given to private and semiprivate patients combined exceeded the 1955 level by 27.2 per cent.

### *Advances in Patient Care*

Significant reorganization has been carried out in the provisions for diagnosis and treatment of patients with heart disease, in the management of neurological problems, in the pediatric-psychiatric service, and in the treatment of patients with endocrine disorders.

Developments in clinical physiologic study, in anesthesiology, surgery and radiology have continued to open up new and exciting fields in pediatric cardiology. Several steps have been taken to keep the professional staff abreast of progress and to encourage use of the newest diagnostic and therapeutic resources. With the close collaboration of the staff of pediatric radiology, Dr. Sidney Blumenthal and Dr. Dorothy H. Andersen organized a series of seminars on congenital malformations of the heart. These have not only attracted considerable attention but have also provided a better understanding of the potentialities for corrective surgery in conditions once regarded as beyond repair. The Medical Service generously granted additional facilities and working time for the study of pediatric patients in the Cardio-Pulmonary Laboratory, thereby enabling us to apply pertinent methods of study to a larger number of children. The Radiology Service likewise took steps to expand and refine diagnostic techniques of angio-cardiography. At the weekly combined cardio-vascular conferences, in which the chances of success in corrective surgery are carefully weighed, opportunity is afforded for the pooling of experience and the application of all relevant disciplines

to the study of cardiac malformations in children. The effect of all of these activities has been a greatly augmented interest on the part of the entire professional staff in the field of cardiology, and a considerably more aggressive and imaginative attack on clinical problems.

Since the beginning of the year, by mutual agreement among the pediatric and neurological services and the hospital administration, patients of pediatric age with neurological problems have been admitted to the ward service area of Babies Hospital, and the pediatric neurological service in Neurological Institute has been closed. Pediatric neurology patients are now distributed among the medical floors of Babies Hospital according to the patient's age, and private and semi-private patients are now admitted to our 10th and 11th floor facilities under the care of members of the staff of the Service of Neurology. Likewise, patients of the Service of Neurological Surgery, if they are under 13 years of age, are now cared for in Babies Hospital, being temporarily transferred to the Neurological Institute only for operation and immediate post-operative care. The accommodation of neurological patients in Babies Hospital is in part responsible, of course, for the high in-patient census in general and for at least part of the pressure for low-cost private patient admission. It also imposes upon the neurological staff an obvious hardship in accepting clinical responsibility for patients located at some distance from their home base. Against these disadvantages may be balanced an unquestioned improvement in nursing supervision and in general pediatric care, an invaluable enrichment of the pediatric teaching program at all levels, and an important enhancement of collaboration among the three Services of Neurology, Neurological Surgery and Pediatrics in the study and management of problems of mutual concern. Under the existing arrangement a considerably larger number of pediatric neurological patients can be accommodated than was possible beneath the roof of the Neurological Institute. The training opportunity afforded is in many respects unique. In the country as a whole, the number of competent pediatric neurologists is small in relation to the demand; and many openings for men with good training remain unfilled. Under the influence of Dr. Sidney Carter's enthusiasm and generous spirit of cooperation, and with his outstanding professional qualifications it is to be expected that this service will provide an important training ground for those interested in pediatric neurology.

Under Dr. William S. Langford's guidance, and with the close cooperation of Dr. Lawrence C. Kolb, director of the Service of Psychiatry, affiliation has been strengthened between the pediatric-psychiatric clinic of Babies Hospital and the children's psychiatric services of the



New York State Psychiatric Institute. A beginning integration of the two services has been brought about both at the level of clinical service to children and at the teaching level, undergraduate as well as resident. Integration has resulted in more prompt screening of the many children who come to the Medical Center in need of psychiatric help. It has also enabled the staff to provide closer liaison with the various community agencies which seek to refer patients to the Medical Center for psychiatric care. These functions have been provided in part through the establishment of a child psychiatry distributing committee, a child psychiatry treatment committee, and the organization of a child psychiatry brief consultation clinic. All of these ad hoc organizations are composed of personnel drawn both from the pediatric psychiatric clinic and from the staff of the Psychiatric Institute. Residents from the Service of Psychiatry play a more active part in the evaluation and care of patients, being at all times under supervision of the senior staff. Another innovation has been the routing of consultation requests from the pediatric in-patient service to the senior resident assigned to child psychiatry as the first contact. This brings consultations with the Service of Psychiatry in line with the practices commonly employed in consultations from other services, and makes for a more efficient utilization of the time of the senior staff. All of these organizational changes are designed to enhance the Medical Center's resources for the better care of young patients with emotional difficulties and for the training of child psychiatrists.

The pediatric endocrine and metabolism clinic, like the pediatric cardiac clinic, has in the past year undergone reorganization and experienced considerable growth. Dr. Melvin M. Grumbach and Dr. Ralph E. Moloshok have enjoyed close cooperation from other Services, especially those of medicine, psychiatry, radiology and urology, and with many projects in clinical research under active promotion have provided an important stimulus to both undergraduate and postgraduate teaching.

### *Staff Honors and Activities*

Members of the pediatric staff have won honors and have made important contributions in the advancement of their specialty. Dr. Hattie E. Alexander was awarded an Elizabeth Blackwell award, given under the auspices of the New York Infirmary. She has held the chairmanship of the Council of the American Pediatric Society. During April, May and June she served as acting director of the Pediatric Service.

During Dr. Dorothy H. Andersen's sabbatical leave, from February 10 to August 10, Dr. William A. Blanc was in immediate charge of

the pediatric pathology laboratory. Dr. Andersen spoke at the International Pediatric Congress in Copenhagen, at a conference on cystic fibrosis of the pancreas held in Iowa City, and lectured before the staff of the medical school of the University of North Carolina. Dr. Paul A. di Sant'Agnese gave a paper at both National and International Pediatric meetings. Dr. Grumbach was elected to membership in the Society for Pediatric Research and in the Endocrine Society.

Dr. Ruth C. Harris, on a trip around the world, lectured before the Tokyo Pediatric Society, the staff of the Atomic Bomb Casualty Commission, and the Staff of the 406th General Laboratory of the Far East Forces in Japan; and in India she addressed the staff of Christian Medical College of Ludhiana. Dr. Langford is president-elect of the American Academy of Child Psychiatry, and has served as treasurer of the American Orthopsychiatric Association and as chairman of its policy and planning committee. At the invitation of the Children's Aid Society he surveyed psychiatric treatment activities of their foster home services.

Dr. Conrad M. Riley is chairman of the Medical Advisory Board of the National Nephrosis Foundation, and chairman of the Medical Advisory Board of the Dysautonomia Association, Inc. He serves on the executive committee of the Committee on Public Health of the New York Academy of Medicine. At the July meeting of the International Pediatric Congress, held in Copenhagen, he presented a paper on familial dysautonomia and took part in a round table discussion of nephrosis. Dr. John Caffey was general chairman of arrangements for the annual meeting of the American Academy of Pediatrics, held in New York in October, the largest meeting in the history of this organization. In November he gave the Mackenzie Davidson Memorial Lecture before the British Institute of Radiology in London.

In early March Dr. Rustin McIntosh served as visiting professor at the Medical School of the University of Puerto Rico, making rounds on the pediatric service of the Municipal Hospital of San Juan. In the course of his visit he gave a talk before the Pediatric Society of Puerto Rico. He is chairman of the Scientific Advisory Board of the National Cystic Fibrosis Research Foundation, and of the Medical Advisory Board of the Nephrosis Foundation of New York and New Jersey. In October he retired from the Editorial Board of *Pediatrics*, on which he had served since its founding in 1947.

### **Research Studies**

The research activities of the pediatric staff continue to be hampered by limitations of space. The meager provisions for laboratory activities

included in the original design of the Babies Hospital building have long since proved themselves inadequate to meet the needs of a teaching hospital. Progressive growth of the laboratory requirements for routine diagnostic services has inevitably encroached on research facilities, to the point where the latter have been almost suffocated. Relief has not been forthcoming through the obvious resource of expansion into the medical school building. Limitation of research facilities has constituted a serious impediment to the recruitment of new staff, especially of full-time staff. Due acknowledgement must be made of the generous steps which the Hospital has taken to meet this urgent need by providing laboratory space for the pediatric service in areas not currently devoted to clinical purposes — for example, by consenting to the conversion of unused pantry areas into working laboratories. In view of the difficulties under which investigations involving laboratory procedures have been carried out, the contribution of the pediatric staff is perhaps all the more commendable.

In the course of the year 28 articles and one pamphlet have been published and two books edited by members of the staff of the Service of Pediatrics (see bibliography, p. 217).

#### GENETICS OF VIRUSES AND BACTERIA

In the field of microbiology particular interest has been focused on the genetics of viruses and bacteria. Together with Dr. Katherine Sprunt and Dr. Isabel Morgan Mountain, Dr. Hattie E. Alexander has been engaged in studies of genetic control of poliomyelitis viruses, employing various devices to alter their inherited properties under controlled conditions. In collaboration with Miss Grace Leidy, Dr. Alexander continues her studies of the control of inherited traits of bacterial cells, in which progress is being made in the chemical definition of the responsible factors. With Dr. Douglas S. Damrosch she has continued to explore the variables which affect results obtained in the treatment of miliary tuberculosis and tuberculous meningitis; and in a related study of prophylaxis, in which Dr. Saul Blatman also participates, the role of chemotherapy in prevention of serious complications of the initial infection with tuberculosis is under investigation.

The pediatric pathology laboratory has been active in carrying forward studies of morbid anatomy in relation to clinical syndromes. Under the authorship of Dr. Dorothy H. Andersen and Dr. Janice Kelly, a critical treatise on congenital endocardial fibroelastosis was published in which for the first time convincing evidence of the role of hydrostatic stresses within the chambers of the heart in the production of these lesions

was brought forward. A group of cases of familial cirrhosis of the liver with storage of abnormal glycogen was studied and described by Dr. Andersen. In collaboration with Dr. Howard H. Mason, of the consulting staff, she reported observations in a case of glycogen disease of the liver with hepatoma. Together with Dr. Niels L. Low and Dr. Labe C. Scheinberg, former members of the staff of the Service of Neurology, she described a group of patients with aberrant brain tissue existing in the nose and throat. Dr. William A. Blanc collaborated with Dr. William A. Silverman in a study of nuclear jaundice in premature infants following administration of chemoprophylaxis against bacterial infection. With Dr. Paul A. di Sant'Agnese, Dr. Blanc has published an important description of a distinctive type of biliary cirrhosis found in patients with cystic fibrosis of the pancreas, which in time may lead to the syndrome of portal hypertension. Dr. Paul H. Boyer demonstrated in a critical study, making use of biostatistical techniques, that the birth weight of infants with cystic fibrosis of the pancreas tends to be lower than average; and together with Dr. Andersen he completed a genetic study of celiac disease. Dr. Rodney S. Fowler investigated the distribution of extramedullary erythropoietic tissue in the livers of premature infants.

#### CYSTIC FIBROSIS

Dr. di Sant'Agnese's clinical studies of celiac disease and of fibrocystic disease of the pancreas continue to develop new leads of great interest. In investigations in which Dr. Zacharias Dische of the Department of Biochemistry has played an important role, an abnormal mucoprotein with atypical physicochemical properties has been encountered in the duodenal contents of patients with cystic fibrosis of the pancreas. Although much additional work needs to be done in order to map out the distribution of this substance and to define its characteristics, there is some indication even at this preliminary stage that progress has been made in explaining the origin of symptoms in this syndrome. In collaboration with Dr. John A. Wood and Dr. Alfred P. Fishman, of the Medical Service, studies of cardio-pulmonary function are being carried out in patients with cystic fibrosis of the pancreas and in relatives of these patients, with the intention of correlating physiological changes with alterations in the concentration of electrolytes in the sweat. Dr. Heinrich B. Waelsch, of the Department of Biochemistry, has cooperated with Dr. di Sant'Agnese in a highly promising study of the concentration of glutamic in the blood in celiac disease, in which preliminary observations indicate that these measurements may play an important role in diagnosis, especially of mild forms of the condition. Further studies are

being made of changes in the electrolyte composition of various body fluids in cystic fibrosis of the pancreas.

Dr. Melvin M. Grumbach worked with Dr. Blanc of the Pathology Department and Dr. Earl T. Engle of the Department of Obstetrics and Gynecology in a joint study of the sex chromatin pattern of patients with developmental defects of the gonads. In other studies of a closely related sort, in which emphasis is placed on early recognition of abnormalities of development of the sex apparatus and on the need for anticipation in the management of the associated psychodynamic problem, he has enjoyed the active collaboration of Dr. John K. Lattimer, Director of the Urology Service, and of Drs. Langford and Virginia Wilking of the Pediatric Psychiatric Clinic. Together with Dr. Sidney C. Werner, of the Medical Service, he has carried out an investigation of placental transfer of thyroxine, labeled with radioactive iodine, and of tri-iodo-thyronine from mother to infant in the late stages of pregnancy. With aid from Dr. Seymour Lieberman, of the Department of Biochemistry, he has continued to investigate the urinary excretion of steroid metabolites by infants who suffer from the salt-losing form of congenital virilizing adrenal hyperplasia.

#### PREMATURE BIRTH

Problems of liver function in early life continue to engage the attention of Dr. Ruth C. Harris who, in collaboration with Dr. John M. Bowman and Dr. Garrison Rapmund, made a study of the serum concentration of bilirubin in premature infants in relation to the pathogenesis of central nervous system injury. Using balance techniques in a metabolic study, she has investigated the utilization of nitrogen and copper in a patient with an incipient form of Wilson's disease. Under Dr. Conrad M. Riley's supervision Dr. Ruth Alice Davis and Dr. Peter R. Scaglione have collaborated in a co-operative analysis, using pooled data from a number of clinics throughout the country, designed to evaluate the results of various agents in common use in the treatment of nephrosis in childhood. Correlations are being investigated between the clinical status of patients with this disease and the protein components of their blood plasma, and between the results of treatment and the phase of the disease in which treatment is applied. In the premature nursery Dr. William A. Silverman has organized controlled experiments in which the effects of changes in the environment are weighed, with a view to establishing a definition of optimal conditions of atmospheric temperature, humidity and other characteristics under which these patients with immature adaptive mechanisms may best thrive. Dr. James A. Wolff has

supervised a series of controlled therapeutic experiments in which new agents are evaluated in their influence on the course of leukemia.

#### FETAL DEVELOPMENT

Dr. Gilbert Wylie Mellin and Dr. McIntosh have collaborated in the continuing analysis of data gathered in the search for factors which affect the embryological development of the growing fetus, and which thereby influence the incidence of congenital malformations. While much has been learned, in the area of animal experimentation, of the agents which may determine intrauterine injury and of the time factors involved, application of this information to human experience is not justified unless supported by direct observation of comparable sequences in man. Over a span of years the ordinary vagaries of human existence can be counted on to introduce by chance alone a sufficient number of "experiments of nature" to constitute an experience which lends itself to statistical analysis with some prospect of bringing to the fore the factors of significance. In this project generous cooperation has been given by the Service of Obstetrics and Gynecology and by many other clinical services.

#### *Acknowledgments*

Grateful acknowledgment is made of generous support given to our research program by a number of institutions, foundations and individuals. Among them may be mentioned the Dunlevy Milbank Foundation, Dysautonomia Association, Inc., the Fannie E. Ripple Foundation, the Hoffmann-La Roche Foundation, Loyal League Philanthropies, Inc., the Mary W. Harriman Fund, Mead, Johnson and Company, the National Cystic Fibrosis Research Foundation, the National Foundation for Infantile Paralysis, the National Institutes of Health of the Department of Health, Education and Welfare, Nephrosis Foundation of New York and New Jersey, Inc., the Nutrition Foundation, the Pfeiffer Research Fund, and the Victoria Foundation. In some cases, these have been grants to Columbia University and many of our research studies have been joint endeavors of the Hospital and the College of Physicians and Surgeons.

The pediatric staff and other friends of the Hospital joined forces to arrange a celebration marking twenty-five years' incumbency of the director. A scientific program at the Hospital was followed by a dinner and entertainment at the Cosmopolitan Club. Alumni of the intern and resident staffs came from widely separated parts of this country and Canada, participating in the program and contributing to a special research fund which was set up to mark the occasion. The director is humbly aware of his profound gratitude to his loyal friends.

# Physical Medicine and Rehabilitation

ROBERT C. DARLING, M.D., *Director*

The functions of this Service continue to be broadened by collaborative efforts with affiliated institutions and by activities of individual staff members in the larger community. These diversifications enliven and add to the basic functions of the Service in the Hospital.

Regularly scheduled rounds by senior staff members are now conducted on all patients in the Hospital under treatment by this Service. To the rounds conducted previously on orthopedic and neurological patients, has been added a third, on patients in the Medical and Surgical wards and Babies Hospital units. The rounds, of course, supplement but do not supplant immediate consultation service throughout the Hospital. Also, coverage for out-patient consultations is now at a new high.

Dr. George D. Dorian has taken on the position as assistant to Dr. A. David Gurewitsch, director of the medical service at the Institute for the Crippled and Disabled, with which the Hospital is affiliated. Dr. Dorian will devote a portion of his time to work in the Hospital Service, particularly in consultations relative to transfer of patients or of joint services. This move further strengthens the degree of continuity of care possible through the affiliation of the two institutions. The double duties of Dr. Gurewitsch in this Hospital and as director of medical services at the Institute have further coordinated the activities of the two institutions.

## *Special Studies*

Drs. Shyh Jong Yue and Robert C. Darling are approaching completion of their study of the effects of various forms and durations of rest on the capacity to do subsequent work. A striking feature of the study is the finding that even a few minutes of rest are effective in reversing physical changes from prolonged heavy work. Dr. Yue also developed at the Institute for the Crippled and Disabled a preliminary study of a vocational predictive index among adult cerebral palsied patients, which he presented before the American Congress of Physical Medicine and Rehabilitation at its annual meeting in Atlantic City.

Grateful acknowledgment is given to the Lorenz Foundation for a portion of the support of the above studies; additional support was obtained from residual funds of the generous Bernard M. Baruch Gift to Columbia University.

### *Staff Activities*

Dr. William Benham Snow is a member of the registry board of the American Registry of Physical Therapists, of the subcommittee of physical medicine and rehabilitation of the New York State Medical Society, and he continues to serve on the medical advisory board of the Visiting Nurses Service of New York City. He was awarded a certificate of merit by the New York Society of Physical Medicine and Rehabilitation, at which time he spoke on the present and future position of the physiatrist. Dr. Snow is currently assisting in the New York City Health Department with the Bronx Project. This project is for evaluating handicapped children attending public school or receiving home instruction in the borough of the Bronx.

Dr. Morton Hoberman, who in addition to his Hospital position is now Chief of the Physical Medicine and Rehabilitation Service of the New York State Rehabilitation Hospital, Haverstraw, is engaged there in an evaluation study of the rehabilitation potentials of welfare recipients in New York State, who had been judged totally and permanently disabled. He and Dr. Gurewitsch attended a course in reflex massage at the Elizabeth Dicke Institute, Uberlingen, Germany. Dr. Gurewitsch represented the American Association for the United Nations at the 1956 meeting of the World Federation of the United Nations Association in Geneva.

Dr. Darling became a member of the Board of Directors of the New York Tuberculosis and Health Association and was appointed an associate editor of the American Journal of Physical Medicine. He is the chairman of a clinical advisory committee to the Convalescent Care Study being conducted by the School of Public Health and Administrative Medicine. Dr. Darling spoke on follow-up principles and procedures in rehabilitation at the Fifth Annual Conference of the National Rehabilitation Association, Region II, and he was guest lecturer at a course in rehabilitation at the University of Pennsylvania.

Dr. Milos J. Lota resigned to assume a position as staff physician in physical medicine and rehabilitation at the Veterans Administration Hospital in Manhattan; he retains a teaching position and duties in the College of Physicians and Surgeons.

Dr. John A. Downey interrupted his training in physical medicine



and rehabilitation for a year of training in internal medicine in Boston, and is expected to return to complete his training here.

The improved and enlarged opportunities for training of doctors in this specialty will, it is hoped, attract larger numbers in the future.

During the year, 53,366 patient visits were made to the physical and occupational therapy services. The total number of treatments given was 98,459, of which 24 per cent were to private and semi-private patients, 23 per cent to ward patients, and 53 per cent to clinic patients.

# Psychiatry

LAWRENCE C. KOLB, M.D., *Director*

Within the year a number of notable advances have occurred which directly enhance both quality and quantity of service to patients and psychiatric teaching. Early in the spring the service was gratified to occupy the suite of offices of the East Medical Wing of the eighth floor of The Presbyterian Hospital. These offices, equipped with a one-way screen, now provide for psychiatric consultations with the necessary privacy, and, at the same time, permit observations useful in the teaching and research programs. In addition, the service has available for referral of patients the newly opened floor for the acutely disturbed psychiatric patients in the New York State Psychiatric Institute. The reopening of this service makes it possible to retain within the area of the Medical Center the majority of patients who suffer serious behavior disturbances, whether in the course of psychiatric or medical ailments, and who have in the past been transferred elsewhere for definitive treatment.

## ***Residency Training Program***

The three year residency training program, described last year, as a joint effort between the Service of Psychiatry of The Presbyterian Hospital and the New York State Psychiatric Institute has been given official status by the Council on Medical Education and Hospitals of the American Medical Association and is now designated as the psychiatric residency training program of the Columbia-Presbyterian Medical Center. Finally, the Psychiatric Service has developed a close working and teaching relationship with the Social Service Department of the Hospital. With the appointment of Arthur Carr, Ph.D., as Psychologist at The Presbyterian Hospital and Senior Psychologist at the New York State Psychiatric Institute the planning for the development of a much needed clinical psychological service has been initiated.

The service is grieved over the retirement of Dr. Lawson G. Lowrey who enthusiastically and faithfully gave of his inspiration and professional skill over many years in the Vanderbilt Clinic. Doctors Arnold M. Cooper, H. Daniel DeWitt, Pierre Lacombe and Alfred Messer joined the staff during the year. Dr. Charles Moffett resigned to "break ground" in psychiatry and psychoanalysis in Bellingham, Washington.

The following changes were made in the psychiatric residency training program in The Presbyterian Hospital. Since July 1, four junior residents and one senior resident were assigned for a six-month period. Simultaneously, two other psychiatric residents were assigned for a three-month period each to the Neurological Institute as neurology residents. The residents provide psychiatric consultative service on the wards of the Medical Center, work-up patients in the Vanderbilt Psychiatric Clinic, and handle psychiatric emergencies in the Admitting Clinic under the direction of the senior and attending staff. In addition, each of the residents now serves as psychiatric consultant to the Vanderbilt Neurology Clinic one afternoon per week. In these activities, emphasis is on diagnosis and evaluation. The residents also engage in supervised psychotherapy, group therapy (organized and conducted by two of the residents), and numerous conferences conducted both at The Presbyterian Hospital and the Psychiatric Institute.

A somewhat novel and experimental procedure was recently instituted in which one member of the senior staff treats a case psychotherapeutically for two sessions per week while observed by the resident staff through the one-way screen. Following the period of observation a seminar is held in which all aspects of the treatment are discussed.

The increased activity of the resident psychiatrists has made it necessary to reorganize the Treatment Committee. This committee consists of representatives of all psychiatric facilities for treatment of adults within the Medical Center as well as of special representatives from the Social Service Department. The members are Dr. Robert A. Senescu, who serves as Chairman, Dr. Robert J. Campbell, Dr. Robert Weiss, Dr. Robert B. McGraw, and Dr. Edward S. Tauber, the senior resident assigned to the Service, and Miss Barbara Kohlsaat and Miss Claire Johnson of Social Service. The committee is now evaluating each patient referred for psychiatric treatment to determine treatment recommendations, hospitalization, or referral to a more suitable facility. Another function of the committee is to select cases of interest to and suitable for examination by the third-year medical students assigned to the Vanderbilt Psychiatric Clinic. It is contemplated that, in the near future, the committee will serve as the main coordinating agency for most of the therapeutic activity of the psychiatric program.

Since September, four residents from the Kingsbridge Veterans Administration Hospital have participated in the residency training program. They have been assigned to the Vanderbilt Psychiatric Clinic for a period of one year where they will work only with female patients, who will be referred to them by the Treatment Committee. The work of these resi-

dents is supervised by Drs. Pierre Lacombe, Ruth E. Moulton, Seymour C. Post, and William R. Watson.

In their work in the Neurology Clinic as well as in their consultative work in the Neurological Institute the residents perform a screening and consultative function for psychiatric problems. Here, their major supervision is provided by Drs. Bernard Pacella, Harry R. Potter, and Albert A. Rosner. Other members of the staff who are participating to some degree in the supervision of the residents are as follows: Drs. Arnold U. Cooper, Charles C. Hogan, John S. Montgomery. Special mention is made of the service of Drs. Post and Rosner who have participated most actively in the program since its inception.

This year the program has been fortunate enough to acquire the services of Dr. Robert Weiss who received a Teacher Trainee Grant from the National Institute of Mental Health, and, as a portion of his experience, is assisting Dr. Senescu in the over-all coordination of the training program.

### *Social Service Seminar*

In April, Dr. Viola W. Bernard inaugurated a seminar on psychiatric consultations for the Social Service Department. This program resulted from an expressed need from the social workers for assistance with the many patients whose behavior suggests consideration of some psychiatric direction in working with the patient. The social worker also requires assistance in understanding certain emotional problems so that an adequate history may be obtained and appropriate discussion held with the physician in charge of a case as to whether the patient should be referred for psychiatric consultation or be referred directly to a community resource. Another aim of the Service has been to help the social worker work closely with the psychiatrist as well as with the referring physician with increased understanding of her role.

The new seminar was established initially by the Service of Medicine and is also considered an integral part of the psychiatric resident training on the contributions to patient care available through the Social Service Department. Cases presented for discussion at this seminar originate with the social workers after consultation with the ward physician. In addition to Dr. Bernard, Dr. Senescu, Miss Prichard, Miss Kohlsaas, the medical and psychiatric residents, the social workers and other physicians interested in the particular cases attend. The response to this bi-weekly seminar has been so enthusiastic and its value has been so clearly demonstrated that it has been extended to bring in problems and demonstrations from the Services of Otolaryngology and Neurology with the cooperation

of Drs. Edmund P. Fowler and H. Houston Merritt, Directors of these Services.

As an extension of the liaison between the Service of Psychiatry and the Social Service Department throughout the Medical Center, Dr. Bernard now serves as a member of the Social Work Committee of the Medical Board of the Hospital. She was recently appointed in the School of Public Health and Hospital Administration under Dr. Ray E. Trussell, where she will offer a new course of instruction in Administrative Psychiatry. This course is expected to give the residents an opportunity to acquaint themselves with some practical applications of psychiatry in the community.

### *Liaison with Other Services*

Following the expiration of a research grant in the Obstetrics and Gynecology Service, Dr. Lothar Gidro-Frank, who had formerly worked closely with our staff, was regularly assigned and now represents psychiatry in the Obstetrics and Gynecology Service under Dr. Howard C. Taylor, Jr., Director. This past year Dr. Gidro-Frank instituted weekly conferences with the residents in this Service to discuss the role of emotional factors in the patients they have seen.

Dr. Seymour C. Post was assigned this fall to the Service of Orthopedic Surgery, with the encouragement of Dr. Frank E. Stinchfield, Director of the Service. At present, Dr. Post is attending the weekly orthopedic conference. He has discovered from his initial survey that for effective work a liaison with the Service of Physical Medicine and Rehabilitation is indicated and is conferring now with Dr. Robert C. Darling, Director, regarding this matter.

Dr. Leon Moses continued his work with Dr. Edmund N. Goodman, of the Service of Surgery, in the latter's electrogastrographic laboratory. Currently a three-lumen nasogastric tube for the simultaneous measurement of gastric electrical potentials, gastric motility, and acid and pepsin secretion is being tested on a series of patients for stability, comfort, ease of verbalization, and gastric placement and location. By next spring, the intensive combined psychiatric and physiological study of one experimental peptic ulcer subject will start. Dr. Joseph Lubart remains as psychiatric consultant to the Thyroid Clinic. At the suggestion of Dr. Sidney C. Werner, of the Service of Medicine, he studied a group of non-toxic goiter patients in the course of brief psychotherapy. This project is nearing completion and a report will soon be prepared. Dr. Gidro-Frank is continuing his research on psycho-dynamic factors in pelvic pain. Drs. George E. Daniels, Aaron Karush, and Robert Senescu are collaborating

with Dr. Charles A. Flood and associates from the Service of Medicine and Surgery in the Combined Ulcerative Colitis Clinic. A long-term follow-up study on patients treated by the combined Services is now in progress.

### *Staff Activities*

Dr. Bernard Pacella was appointed by the American Psychiatric Association to the Ad Hoc Committee on Religion and Psychiatry. He was also appointed by the Dean's Committee as Consultant to the Kingsbridge Veterans Administration Hospital.

Dr. Aaron Karush continued as representative from the Association for Psychoanalytic Medicine to the Executive Council of the American Psychoanalytic Association and also continued as a member of the Professional Advisory Board of the Manhattan Society for Mental Health.

Dr. Ruth Moulton, along with Dr. Steward Wolf, Professor of Medicine at the University of Oklahoma, conducted a three-day symposium devoted to the problem of pain in dental practice, held at the Rowe-Smith Foundation Seminar in Texas in November.

Dr. Albert Rosner is a member of the Advisory Board and a consultant to the National Association for Muscular Dystrophy. Dr. Rosner serves also as a consultant in psychiatry for the Westchester County branch of the Association for Help of Retarded Children.

Dr. Alvin I. Goldfarb was appointed as Consultant on Psychiatric Services for the Aged to the New York State Mental Hygiene Department. This past year he was also appointed a member of the Committee on Aging of the American Psychiatric Association and served as a consultant and conference member in several other functions devoted to the aged.

Dr. Senescu served as a consultant in the reopening of Butler Psychiatric Hospital in Providence, Rhode Island, arranged under the auspices of the American Psychiatric Association.

Dr. Lawrence C. Kolb was appointed a member of the Career Investigator Committee on selection of the National Institute of Mental Health personnel during the year. He is serving now as Chairman of the Committee on Psychiatry of the National Research Council and the Committee on Relations to the Medical School and Relations between the Psychoanalytic Institute and the Residency Training Program of the American Psychoanalytic Association. During the year he addressed the annual meeting of the Council on Medical Education and Hospitals in Chicago, and also lectured in Chicago, Omaha, Nebraska, and Little Rock, Arkansas.

Dr. McGraw served on the Committee for Therapeutic Termination of Pregnancy. This Committee, which consists of an obstetrician-gynecologist, an internist and Dr. McGraw, considered some eleven cases this year. Ten were found to have conditions requiring operative termination of pregnancy.

Dr. Hugh Mullan continues as President of the American Group Psychotherapy Association. Dr. Martin Schreiber is pursuing his studies on the psychogenic factor in Buerger's Disease and allied disorders of the peripheral vascular system, with Dr. M. R. Kaufman of the Mt. Sinai Hospital; and also long term investigations on deep characterological changes in psychotherapy as measured by repeated batteries of psychological tests in conjunction with other colleagues. Dr. Edward S. Tauber was re-elected chairman of the Faculty of the William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology. Dr. Herbert Holt became a consultant to the American Mental Health Foundation and Director of the Association for Applied Psychoanalysis, as well as Associate Director for Pastoral Education at the American Foundation for Religion and Psychiatry.

### *New Clinic Facility*

Of particular interest in the Vanderbilt Clinic has been the establishment of a special division of the clinic for use and evaluation of the new psychopharmacological agents. The great value of the tranquilizing drugs has been demonstrated in psychiatric hospital practice throughout the nation. The study of these agents in care of ambulatory patients seen in out-patient services is on a much less firm footing; there are few reports of studies of such patients that merit scientific respect and review. Accordingly, the clinical group was established under the direction of Dr. Sidney Malitz, Acting Principal Research Scientist of the New York State Psychiatric Institute, to develop a program of evaluation and proper therapy in the Vanderbilt out-patient setting. Working with him will be Drs. David N. Graubert, Murray Glusman, John F. O'Connor and Bernard Wilkens. Since this group has worked for some years studying various agents in the hospital setting at the New York State Psychiatric Institute with Dr. Paul Hoch and in other institutions of the State of New York, their experience and the availability of their hospital service in the Psychiatric Institute provides a means of examining initially the agents in hospitalized patients and of transferring any patient from the Vanderbilt out-patient service to the hospital for particular investigation if indicated. The joint appointment of these psychiatrists in both the

Psychiatric Institute and the Hospital again improves our resources for patient management and research.

### *Child Psychiatry*

The teaching of Pediatric Psychiatry and the treatment of children below the adolescent range have been transferred to the Pediatric Psychiatric Division of the service in Babies Hospital.

The relation between the Pediatric Psychiatric Clinic of Vanderbilt Clinic and the Children's Psychiatric Services of the New York Psychiatric Institute has been strengthened. The beginning integration of the two services has been effected both in relation to clinical service to children and to teaching level. It has resulted in prompter psychiatric screening and attention to the many children seen at the Columbia-Presbyterian Medical Center who are in need of psychiatric consultation or treatment. It has also made possible provision of early answers to various community agencies who are desirous of referring children to the Medical Center for psychiatric care.

This integration has been achieved through the establishment of a child psychiatry distributing committee. This committee consists of Dr. William S. Langford, Dr. Harlow D. Dunton and the senior resident at the Psychiatric Institute assigned to Child Psychiatry, together with Miss Elma Olson, the psychiatric social worker from the Pediatric Psychiatric Clinic, and Miss Harriet Sternberg from the Children's Psychiatric Services, New York Psychiatric Institute. This committee meets weekly and reviews available data on all children for whom psychiatric assistance has been sought whether they are already patients on the Pediatric or other Services at the Medical Center or whether referral is being attempted from the community. The committee determines whether the case is an appropriate one, whether more information is needed, or whether a plan can be made for the next steps in the psychiatric study of the child and his family. The committee makes its decisions with a knowledge of the available personnel time both at the Pediatric Psychiatric Clinic and at the Children's Psychiatric Services at the New York Psychiatric Institute. It also is aware of teaching needs and the types of cases needed for the various members of the professional staff at their different levels of training and experience.

The committee functions from time to time as the Child Psychiatry Treatment Committee, and makes decisions and assignments for continued treatment, either in the Pediatric Psychiatric Clinic or at the New York Psychiatric Institute.

In order to facilitate more rapid psychiatric consultations for the



pediatric out-patient service and also to provide an opportunity for eliciting more information about a child so that the Distributing Committee can act more effectively, a Child Psychiatry Brief Consultation Clinic has been established. It is held in the Vanderbilt Pediatric Psychiatric Clinic and staffed by the senior resident assigned to Child Psychiatry and the first year residents in Psychiatry assigned for three month periods to Child Psychiatry. These residents are supervised by Dr. Langford and Dr. Virginia N. Wilking. This arrangement supersedes the plan reported last year for psychiatric consultations in the general Pediatric Clinic. It provides for better supervision and more effective psychiatric planning for the children.

Since July 1, 1956, the initial contact with in-patients for whom psychiatric consultation is requested has been made by the senior resident assigned to Child Psychiatry, presently Dr. David E. Sobel. His work is supervised by Dr. Langford and Dr. Wilking. This arrangement has proved to be valuable as it provides for prompter consultations and gives the senior resident valuable experience with children not usually available to child psychiatrists in training.

All attending psychiatrists, whether seeing children, supervising residents, or engaged in undergraduate teaching, now hold clinical appointments both in the Vanderbilt Pediatric Psychiatric Clinic and at the New York Psychiatric Institute. Assignments for activities include both services.

### *Training for Work with Children*

Thus a program of service has been initiated which should ultimately encompass training for career child psychiatrists. There is a large unmet need for well-trained child psychiatrists in the community. The establishment of a children's out-patient service at the New York Psychiatric Institute has been important in the development described above. By and large it is planned to carry out continued psychiatric treatment at the Institute with those children requiring long-term definitive psychiatric treatment. Children presenting milder psychiatric problems, pre-school children and those children where there is concomitant medical activity going on elsewhere in the Medical Center will be seen in the Vanderbilt Pediatric Psychiatric Clinic. The latter group requires closer communication between the psychiatrist and his medical colleagues so that the total treatment program moves smoothly.

Dr. Olga Frankel is following a group of children presenting chronic organic brain syndromes and testing a variety of the newer pharmacologic agents of the tranquilizing variety to study their effect on the hyper-

kinetic and disorganized behavior of these children. Most of these children also show distortions of perception which interfere with their educational progress. Dr. Frankel's regular duties at the Bureau of Child Guidance of the New York City Board of Education have made her acutely aware of the problems these children present to classrooms; her experience at the Bureau of Child Guidance makes her interpretation of the needs of these children to teachers exceedingly helpful.

Beginning December 15, 1955, Mrs. Herta Wertheim, a nursery educator with considerable experience in nursery schools for emotionally disturbed children has been volunteering one day a week in the Vanderbilt Pediatric Psychiatric Clinic. Her observations of emotionally disturbed pre-school children, including those with psychosis, are exceedingly helpful in arriving at a working diagnosis and in planning for treatment.

Dr. Wilking, Dr. Jean D. Jameson, Dr. David E. Sobel together with Miss Marjorie Behrens, research assistant at the Henry Ittleson Center for Child Research, are making observations on a small group of infants and their families. To support a pilot study of the effect of a new infant on the psychological balance of the family they have received a grant of \$300 from the American Child Guidance Foundation.

Dr. Langford continues as President-Elect of the American Academy of Child Psychiatry. He is chairman of the Policy and Planning Committee of the American Orthopsychiatric Association, and was appointed representative of the American Academy of Pediatrics to the Joint Commission on Mental Illness and Health. In March he served as moderator of a workshop at the Annual Meeting of the American Orthopsychiatric Association on Anorexia Nervosa in Children. Dr. Dunton, Miss Olson and Mrs. Minna M. Genn (formerly clinical psychologist at the Vanderbilt Pediatric Psychiatric Clinic) and Miss Joan Naughton, R.N. of the Babies Hospital staff participated in the workshop. In October, Dr. Langford and Dr. Wilking and Miss Olson gave a round table discussion on Emotional Disorders of Children at the Annual Meeting of the American Academy of Pediatrics. Dr. Langford also served on a panel discussion on Psychiatry in Every Day Practice at the New York State Medical Society Meetings in May.

Dr. Wilking continued with her work in the Vanderbilt Seizure and Cerebral Palsy Clinics. She conducted a course in child development for the students in Occupational and Physical Therapy and took part in the teaching program for the graduate students in Orthodontistry. She was psychiatric consultant at the Salvation Army shelter in Brooklyn.

Statistical studies of the work performed by the Service of Psychiatry

during the year attest to the great value of the residency training program in providing a service to patients. In 1953, prior to the establishment of this service, 161 adult consultations were requested by other Services from Psychiatry. In 1954, when there was one resident, 222 consultations were reported; in 1955, 595 and in 1956, 855 initial contacts including acute psychiatric emergencies were seen in the Hospital, the Vanderbilt Clinic, the Admitting Clinic and the Neurological Clinic.

In addition to numerous scientific presentations and publications, members of the staff continued their participation in various programs for lay education in relation to psychiatry through the medium of meetings, radio and television.

# Radiology

WILLIAM B. SEAMAN, M.D., *Director*

Dr. William B. Seaman was appointed Director of the Radiological Service of The Presbyterian Hospital and began his duties on September 1, 1956. Dr. Russell Wigh, who had been in charge of diagnostic radiology of the wards and clinics of The Presbyterian Hospital, resigned to become Director of Radiology at the Eugene Talmadge Memorial Hospital, Augusta, Georgia, and Professor of Radiology at the Medical College of Georgia. Dr. Juan M. Taveras, Director of Radiology at the Neurological Institute, has temporarily assumed the duties of Dr. Wigh, and Dr. Donald J. Barnett was appointed temporary Director of Radiology at the Neurological Institute. Dr. Catherine J. Dalton resigned to become Director of the Radiology Department at New York Infirmiry for Women & Children. Dr. James M. Monaghan left to enter private practice in Short Hills, New Jersey.

The following new residents were appointed: Dr. Norman E. Chase, Dr. Charles Di Liberti, Dr. Robert J. Johnson, Dr. Robert F. Kiley; Dr. Cecil F. Baxter, who completed a one year American Cancer Society Clinical Fellowship and was given a residency appointment for an additional year of diagnostic radiology. Drs. Alexander Crosett, Jr. and Ezekiel Freed completed their residency training and left to begin the private practice of radiology. Dr. Philip M. Johnson completed his residency training and joined the radiology department of the University of North Carolina at Chapel Hill, under the direction of Dr. Ernest Wood, former Director of Radiology of Neurological Institute. After two years training with the Public Health Service Hospital, Staten Island, Dr. Donald Carlyle was awarded a fellowship here for one year.

Dr. Harold W. Jacox continued as Acting Director of the Radiological Service of Presbyterian Hospital until September, 1956. His very fine performance in that capacity during a difficult interim period contributed greatly to the maintenance of morale and high professional standards of the department. He was appointed an associate editor of the journal, *Radiology*. He read a paper on the radiation treatment of cancer of the urethra at the Eighth International Congress of Radiology in Mexico City and attended the meeting of the International Club of Radiotherapists held in Mexico after the Congress. He continued his ac-

tivities as co-editor of the Radiation Therapy Section of the *Year Book of Radiology* with Dr. Morton M. Kligerman, and as an abstractor for *Excerpta Medica*. He also served on the Executive Committee of the New York Roentgen Society and on the Special Committee on Radiology of the Medical Society of the County of New York.

### ***Research Studies and Other Staff Activities***

Dr. Jacox is collaborating with Dr. C. Zent Garber, Associate Attending Orthopedic Pathologist, on a study of the effects of radiation on bone; with Dr. Fred Vance Lucas, Associate Attending Pathologist, on a study of radiation effects of normal and cancerous tissue removed at autopsy. With Dr. Josephine Wells he is conducting a follow-up study of children who had been irradiated for benign lymphoid hyperplasia of the pharynx.

The third edition of the textbook, *Pediatric X-Ray Diagnosis* by Dr. John Caffey, appeared in March 1956. Dr. Caffey gave the Mackenzie Davidson Memorial Lecture before the British Institute of Radiology in London, England, December, 1956. He also presented papers before the Orthopedic Section of the Royal Society of Medicine, the clinical societies in Manchester and Birmingham and at the Great Ormond Street Hospital. Dr. Caffey served as General Chairman for the National Meeting of the American Academy of Pediatrics. As a result of his intensive study of the roentgen features of the normal infant, Dr. Caffey published a number of papers on the ossification of the pubic bones, the appearance of the ischiopubic synchondrosis, and the normal variations of the acetabular angles at successive periods during infancy.

### **COMBINED CANCER THERAPY**

Dr. Kligerman has given numerous lectures on the use of isotopes in medicine to various groups. At the December meeting of the Radiological Society of North America in Chicago, he reported on the augmentation of radiotherapeutic effects by multi-combination cancer chemotherapy, which represented the initial results of a joint research program conducted by Dr. Kligerman and Dr. Daniel Shapiro of the Service of Surgery. He was appointed consultant to the editor-in-chief of the *Cancer Yearbook* and continues as co-editor of the *Yearbook of Radiology*.

Dr. Norah duV. Tapley and Dr. Wigh presented a paper at the Eighth International Congress of Radiology in Mexico City.

Dr. Wells gave a talk on rheumatoid spondylitis and arthritis to the New York Rheumatism Association. This material is to be published in

a monograph on arthritis. Dr. Wells was consultant on cardiac fluoroscopy and X-ray for the Merck Manual. She continues as consultant in diagnostic radiology to the Community Hospital in Glen Cove, New York. Dr. Wells and Dr. Samuel H. Madell, with Dr. Frederick S. Craig of the Orthopedic Service are studying vertebral sclerosis associated with intervertebral disc disease.

Dr. Francis M. Cummins, Dr. Taveras, and Dr. Edward B. Schlesinger of the Service of Neurological Surgery, have assessed the results of treatment of third ventricle and pineal tumors by shunts and irradiation. Dr. Cummins presented these results to the Eighth International Congress of Radiology in July.

Dr. James Luther Jarvis and Dr. Jerome Nadelhaft are studying the use of a water-soluble iodinated compound for examination of the gastrointestinal tract in children. Dr. Nadelhaft and Dr. Kent Ellis have completed a study of the normal neonatal chest and hyaline membrane disease.

#### NEURORADIOLOGY

Dr. Taveras is writing a chapter on the roentgen examination of the abdomen that will appear in *Diagnostic Radiology*, edited by Dr. Ross Golden, visiting Professor of Radiology at the Medical School of the University of California at Los Angeles and former director of the Radiological Service of The Presbyterian Hospital. Dr. Taveras is also collaborating in the preparation of a book on clinical neuroradiology. He gave a refresher course on cerebral angiography at the December meeting of the Radiological Society of North America in Chicago. The research into the development and improvement of methods of diagnosing brain tumors with radioactive isotopes by Dr. Taveras and Dr. Schlesinger continues.

Dr. Gerhart S. Schwarz continues his studies of cephalopelvimetry and has published several papers and given several lectures on this subject. He prepared a scientific exhibit on the clinical value of cephalopelvimetry for the meeting of the American Roentgen Ray Society at Los Angeles, California. Dr. Schwarz, and Dr. James B. Campbell of the Service of Neurological Surgery, have received grants from the Army office of the Surgeon General, United Cerebral Palsy Association, and Playtex Park for the study of the innervation of the urinary tract intended to improve therapeutic approaches to urinary dysfunction of neurogenic origin. Dr. Schwarz is also conducting studies of X-ray grids and X-ray film emulsions. Of particular promise is the use of single-coated films which possess great exposure latitude.

### *New Diagnostic Equipment*

Several new pieces of X-ray equipment have been installed during the past year. A tomographic attachment, installed in the Harkness Diagnostic division, has been used in conjunction with intravenous cholangiography and has enabled the demonstration of common duct stones which were not detectable on conventional films. In the Presbyterian Diagnostic division a Neotome laminagraph has been acquired. With this equipment there is also a special multifilm cassette permitting the exposure of seven films simultaneously at different depths. A Balteau unit for upright chest tomography has also been installed. With this unit the radiologist can localize the lesion and determine its depth beneath the skin by preliminary fluoroscopic observations. A motor-driven slit scanogram for measurement of bone length was devised by Mr. George Nixon, chief technician, and has been installed. A new portable X-ray machine was purchased. Plans are under way to re-equip and modernize our angiocardigraphic room for rapid biplane serial roentgenography and cineroentgenography. Image intensification is necessary for the latter in order to reduce the patient's exposure to radiation.

Our most pressing need is for space for additional radiographic rooms to handle the increasing service load, as well as for research activities and for film filing and viewing. The film processing equipment on the third floor is inadequate to handle the 1,100 films that require processing in an average day and continues to be a tremendous bottleneck. The acquisition of new equipment and methods of improving this situation are now under study.

### *Special Study Projects*

The work of the Radiological Research Laboratory continued along the lines described in previous reports. There are two separate activities: the research project for the Atomic Energy Commission, and problems allied with therapeutic radiology and with the medical uses of isotopes.

The research project for the Atomic Energy Commission operates under a contract between Columbia University and the AEC, and is under the direction of Dr. Gioacchino Failla. It consists of two parts: one concerned with radiologic physics, and the other with radiobiology. The work is carried out by a considerable staff of scientists and technicians. These studies occupy most of the time of Dr. Roberts Rugh, half that of Dr. Harald H. Rossi. The work in radiologic physics involves the development of new methods of measuring (1) radioactive isotopes, and (2) tissue doses in terms of energy absorbed per gram of tissue, under

various conditions and for all forms of ionizing radiations. The work in radiobiology involves the study of the biological effects of ionizing radiation of particular interest to the Atomic Energy Commission. A full report of work of the project has been issued by the AEC as Document NYO-4698.

The major efforts of the Radiological Physics Group of The Presbyterian Hospital are centered about the betatron. The group has found it possible to reduce stray electron emission affecting the monitoring system and to improve shielding. Also, the output of the machine has been compared with a number of other betatrons in this country to establish equal relative dose units. An absolute calibration of the machine in terms of fundamental units is in progress. A number of ancillary pieces of equipment have been constructed, including a precision optical back pointer. Attachments have been provided for the motorized treatment table, and efforts are under way, in cooperation with Dr. Kligerman, to make rotation therapy possible in the near future. A number of changes in the circuits of the machine have resulted in greater reliability.

A considerable part of the effort of the Radiological Physics Group consists in consultation and assistance in treatment planning as well as other radiological problems. Dr. Rossi has collaborated with Dr. James B. Campbell of the Service of Neurological Surgery in the planning and construction of a stereotaxic instrument intended to deliver radioactive pellets to predetermined sites in the human brain.

A special depth dose study was carried out as part of a country-wide program to establish better depth dose standards. This work was done in cooperation with Mr. Carl Braestrup for a Subcommittee of the National Committee on Radiation Protection.

A number of protection measurements were performed throughout the Hospital. A Radiation Protection Office is being set up for The Presbyterian Hospital. Dr. Rossi is to act as Radiation Safety Officer, and all members of the Radiological Physics Staff of the Hospital will execute technical phases of this work.

Mr. Kenneth E. Meyer in the betatron machine shop built a number of pieces of apparatus and carried out routine repair of mechanical components of other X-ray equipment.

### *Radioactive Isotope Studies*

The Radioisotope Laboratory, under the direction of Dr. Edith H. Quimby, continues to receive and standardize all radioactive isotopes of iodine, phosphorus, gold, and sodium, and occasional other shipments, and dispense them to clinical and research departments.



Under the Atomic Energy Act of 1954, isotope *authorization for use* has been replaced by *license to possess*. The Institutional General Authorization has accordingly been replaced by an Institutional Broad License. However, procedure under the Institutional Isotope Committee remains unchanged. Dr. Failla is chairman of this committee; Dr. Quimby is also a member. About 85 applications were received and reviewed during the past year.

Dr. Quimby continued her studies of radiation dosage problems, under a grant from the American Cancer Society. Mrs. Beverly Cohen is the research assistant under this fund. During the past year detailed tables and procedures were published for the calculation of isodose charts on a basis of currently available depth dose data. Calculated charts are in excellent agreement with those determined experimentally. A comprehensive study was made of the effects of radiation quality, target-axis distance, and field size on distribution of radiation dosage in rotation therapy of lesions in different parts of the body. Parts of this work were presented at the Eighth International Congress of Radiology in Mexico City in July and at the meeting of the American Roentgen Ray Society in Los Angeles in September. At the latter meeting, an exhibit of this material received an Award of Merit.

### ***Graduate Instruction***

Members of the Laboratory Staff carry on various teaching activities. Dr. Failla and Dr. Quimby continue to be members of the Subcommittee on Graduate Instruction for Work in Biophysics. Several students have completed their work for the Ph.D. degree under this Subcommittee and several others are in various stages of their courses. Instruction particularly for students in this field is offered by Drs. Failla, Quimby, Rugh, and Rossi.

The course in Clinical Use of Radioactive Isotopes under the joint leadership of Dr. Quimby and Dr. Sergei Feitelberg, and with the cooperation of several guest lecturers, has been so popular that it has become necessary to offer it twice yearly. It is given as a concentrated full-time course during four weeks in June, for doctors who do not live in the metropolitan area, and again on a basis of one afternoon a week for eight months, October through May, for those in the vicinity. In the fall and winter course of 1955-56 and the June course of 1956, a total of 62 doctors received training. Dr. Quimby continues to give regularly scheduled lectures in radiologic physics, and to supervise the work of the residents in Radiology during their assignment to the Radioisotope Laboratory. These residents have taken or are taking the clinical isotope

course mentioned above, and in the laboratory have additional practical experience. Several of those who have completed their residencies have been qualified to establish radioisotope laboratories in conjunction with their own practices after leaving this institution.

### *Special Awards and Appointments*

In addition to their functions within the institution, members of the Staff of the Radiological Research Laboratory take part in a wide variety of activities in national and international organizations.

Dr. Failla continued to be active in work with the Atomic Energy Commission and other government agencies, both civilian and military, on problems related to atomic energy. He is Chairman of The Advisory Committee for Biology and Medicine of the AEC, and consultant to some of the AEC installations. He is Chairman of the Radiation Instrument Panel of the Armed Forces Special Weapons Project, and a member of the Genetics Panel of the National Academy of Sciences. He is Vice-Chairman of the International Commission on Radiological Protection, a member of the International Commission on Radiological Units, of the National Committee on Radiation Protection, and of the Commission on Radiologic Units, Standards, and Protection of the American College of Radiology. He spent two weeks in Geneva in April at meetings of the two International Commissions.

Dr. Failla and Dr. Quimby received the annual national award of the American Cancer Society at the Society's annual meeting in November, for their comprehensive studies on radiation dosage, carried out over many years.

Dr. Quimby is a member of the Advisory Committee on Isotope Distribution of the Atomic Energy Commission, of the National Committee on Radiation Protection, of the Committee on Handling and Disposal of Radioactive Isotopes of the International Commission on Radiological Protection, and of the Commissions on Education and on Radiological Units, Standards, and Protection of the American College of Radiology. She is an examiner for the American Board of Radiology, a consultant for various medical groups, and on the editorial advisory boards of *Radiology* and *Cancer*. She was the official delegate of the American Radium Society to the Eighth International Congress of Radiology, held in Mexico City in July. At the Commencement Exercises of Douglass College of Rutgers University on June 6th, she was awarded an honorary degree of Doctor of Science.

Dr. Rugh was sent on an "Atoms for Peace" mission, sponsored jointly by the Atomic Energy Commission and the State Department,

for the purpose of discussing radiobiological research with marine forms at the Biological Station in Naples. This trip also included exchange discussions with biologists in Paris, Freiburg, Heiligenberg, Zurich, Rome, and Middlesex.

Dr. Rossi is Chairman of Subcommittee 4 of the National Committee on Radiation Protection, dealing with Heavy Particles (Neutrons, Protons, and Heavier), and has completed the draft of a Handbook on Neutron Protection up to 30 MEV. He is also a member of the Dosimetry Panel of the Radiation Research Society and of the Isotope Committee of St. Luke's Hospital.

Drs. Failla, Quimby, Rugh and Rossi also appeared on programs of international, national and local radiological, medical, physical and other societies, and gave a number of invited lectures to medical and lay audiences.

### *Statistics of Patient Care*

In Harkness Pavilion diagnostic division there were 27,245 private patient visits, an increase of 1,030 over 1955. In the diagnostic division on the third floor of Presbyterian Hospital there were 54,560 patient visits, a decrease of 417 from 1955. Some 18,576 patients were examined by the Chest Survey Unit. At the Neurological Institute there were 6,733 patient visits, 758 less than in 1955. However, 12,206 examinations were completed, including 1,642 complicated procedures consisting of myelograms, ventriculograms, arteriograms, pneumoencephalograms and laminograms, an increase of 299 over 1955.

At Babies Hospital there were 10,475 patient visits, a decrease of 629 from 1955. At the Squier Urological Clinic, 4,672 patients were examined, a decrease of 39 from 1955. At the Institute of Ophthalmology, 681 patients were examined, an increase of 19 over 1955.

In summary a total of 122,942 patient visits were made in 1956, a decrease of 1,886 from 1955.

In Radiotherapy, 3,957 treatments were given to 360 ward and clinic patients on the third floor of Presbyterian Hospital, a decrease of 1,251 treatments. There were 1,830 follow-up visits, a decrease of 229. In Harkness Pavilion, 6,290 treatments were given to 615 patients, a decrease of 22 treatments. There were 810 follow-up visits, an increase of 306. The betatron was used to give 3,329 treatments to 71 private and 90 ward and clinic patients — an increase of 124 patients and 2,686 treatments. At the Neurological Institute 5,541 treatments were given to 259 patients, a decrease of 108 treatments and 27 patients. At the Institute of Ophthalmology 63 patients received 714 treatments, an increase

of 92 treatments. Radioisotope therapy was given to 212 patients and 2,761 radioactive isotope diagnostic studies were made, 150 less than last year. Ninety-seven radium treatments were given to 79 patients.

A total of 19,928 treatments were given to 1,537 patients, representing an increase of 1,386 treatments and one less patient. In addition there were 212 isotope treatments given to an equal number of patients.

# Surgery

GEORGE H. HUMPHREYS II, M.D., *Director*

During the year 1956, the activities of the Surgical Service continued at about the same level statistically as during the previous year. Indices of these activities are ward occupancy, clinic visits, and operations performed, which have not changed greatly. However, these do not accurately reflect the forces and trends which are slowly but surely changing the patterns of surgical practice and teaching: the continued expansion of medical insurance coverage, the increase in life expectancy, the growth of laboratory and research influence upon surgical procedures and in turn, the influence of some of the more recent surgical procedures, notably in the cardio-vascular and pulmonary fields, upon physiological concepts of health and disease. It should perhaps also be noted at this time that with the growing intensity of the attack upon the cancer problem in the laboratory, a further profound alteration in surgical practice may be in the offing as new chemical compounds are found and tried which influence adversely the growth of malignant cells. The achievements of surgery alone and of surgery combined with radiotherapy in this field have been pursued almost to the limit of diminishing returns. The challenge here is probably the greatest in the entire field of surgical practice and it is not going unanswered. The successful use of chemotherapy in conjunction with surgery and radiotherapy certainly would modify surgical practice more than any other conceivable development. This appears to be the direction in which the solution of the cancer problem is currently moving.

## *Staff Activities*

During the fall, Dr. Robert B. Hiatt rejoined the surgical staff after an absence of two years during which he developed and directed the Surgical Service of the newly constructed Nemazee Hospital in Shiraz, Iran. He was also appointed Visiting Professor of Surgery at the American Hospital in Beirut during part of his tour of service in the middle east.

Dr. Raffaele Lattes gave courses of instruction on the surgical pathology of tumors during part of the summer at the Universities in Bogota, Cali, Medellin and Cartagena in Colombia, South America. He also spent a tour of duty as consultant to the American Forces Institute of Pathology in Washington, D. C.

On January 1, 1956, Dr. Ralph A. Deterling, Jr. was appointed Director of Surgical Research Laboratories replacing Dr. David V. Habib who until then had ably directed the surgical research program. Dr. Habib had asked to be relieved of this assignment to devote more time to teaching.

Dr. Deterling's activities have been in the field of cardio-vascular surgery in which so much investigative and clinical work is going forward at the present time. He was elected Recorder of the North American Chapter of the International Society of Angiology on June 9, 1956 and elected Chairman of the Vascular Suture Panel of the American College of Surgeons. He has presented papers and participated in a number of panel and forum discussions on various aspects of this and related subjects during the past year, particularly those phases having to do with vascular substitutes.

#### BOOKS IN CANCER FIELD

Dr. Cushman D. Haagensen was granted a leave of absence for six months early in the year. During this time, he completed a book entitled *Diseases of the Breast* and visited a number of clinics in Europe and Asia giving lectures in several on various aspects of this subject. The current surgical approach to breast cancer is being influenced considerably by the clinical studies initiated by Dr. Haagensen and participated in by other members of the surgical staff at The Presbyterian Hospital and Francis Delafield Hospital. His book summarizes not only his views on this subject but reflects the experience of many years spent in the study of the pathology and clinical behavior of breast diseases. Dr. Haagensen continues to serve as Coordinator of Cancer Teaching at the Medical Center under a grant of the Public Health Service.

Professor Emeritus and Consultant in Surgical Pathology, Dr. Arthur Purdy Stout, continues to be very active in clinical and research projects. He also served as President of the Halsted Society during the past year and was Chairman of the Subcommittee on Oncology of the National Research Council and Secretary of the New York City Cancer Committee. Among other distinguished scientific presentations, he delivered the James Ewing Memorial Lecture at the Memorial Center, New York, and was guest speaker before the Canadian Society of Pathologists at Quebec.

Dr. Herbert C. Maier was appointed to the American Board of Thoracic Surgery, elected President of the New York Society for Cardio-vascular Surgery and was co-author of a book entitled *Pulmonary Carcinoma* during the year 1956.

Surgical Director George H. Humphreys, II was elected Vice President of the Medical Board of Presbyterian Hospital, Vice President of the

New York Surgical Society and a Director of the New York City Cancer Committee.

Dr. Arthur H. Blakemore was elected President of the American Society for Cardiovascular Surgery.

Members of the surgical staff, both attending and resident, attended and participated in a large number of scientific meetings during the year past both in this country and abroad.

In May, Dr. Martha M. MacGuffie, a recent resident at the Francis Delafield Hospital and currently resident in plastic surgery at The Presbyterian Hospital, presented a paper at the National Cancer Conference in Detroit on new criteria for operability of breast cancer.

Six surgical residents attended the annual meeting of the American College of Surgeons in San Francisco in October. Dr. Keith Reemtsma, Dr. James R. Malm, Dr. Julius H. Jacobson and Dr. Arnold Mittelman presented papers which were very well received. The resident staff also instituted a series of clinical seminars for the purpose of discussing reviews of significant advances in surgery and related subjects of clinical importance in other medical fields.

#### LEON E. SAMPLE LECTURE

The first Leon E. Sample Lecture was presented by Dr. Helge B. Wulff, Professor of Surgery at the University of Lund and Director of the Surgical Service at the Malmö Allmänna Sjukhus, Sweden on April 5, 1956. He discussed "Gastro-duodenal Ulcers and Related Problems from a Surgical Point of View" — a resumé of the experience in that clinic bearing upon the choice of operation for peptic ulcer, a subject currently under wide discussion because of conflicting concepts of the disturbed gastro-duodenal physiology associated with this disorder.

The 1956 Surgical Alumni Day program consisted of an operative clinic on the morning of April 20, and an afternoon program participated in by members of the surgical staff, Dr. M. Jack Frumin of the Service of Anesthesiology and Dr. Margaret Murray of the Laboratory of Tissue Culture Study. Dr. Bruce M. Hogg, a former member of the surgical staff, described the operation of the surgical service of the United Mine Workers Medical Care plan under his direction as organized at one of the Union's new hospitals at Beckley, West Virginia, a very interesting illustration of the trend developing in industrial medicine today.

On October 25, 1956 a program similar in nature and scope was presented before members of the Sixth District, New York State Chapter of the American College of Surgeons. Of unusual interest was the laboratory demonstration of the DeWall pump oxygenator by Dr. Shivaji B. Bhonslay and his associates.

There have been few changes in staff or in the organization of the service. The most important of these has been a closer integration between the three surgical ward services and the private service. The house staff coverage is now so arranged that teams representing each service cover both ward and private patients. Reviews of activities of both ward and private practice are conducted on rounds by each service which augment the teaching value of both. There have been no essential changes in the teaching arrangements for the students. Members of the surgical staff have been appointed to positions of responsibility in the general surgery services at the Francis Delafield Hospital bringing the professional activities of these and their counterparts at The Presbyterian Hospital more closely together. Dr. Frederic P. Herter heads the gastrointestinal service, Dr. Charles W. Findlay, Jr., the thoracic service, Dr. David M. C. Ju of the plastic surgery service and Dr. Carl R. Feind, who completed his residency at The Presbyterian Hospital last year and was appointed to the Surgical Staff March 1, 1956, are handling the head and neck surgery on a cooperative basis since so much of it is concerned with the extirpation of cancer and the associated plastic procedures for the restoration of function and cosmetic reconstruction.

Dr. Arthur B. Voorhees, Jr., and Dr. Shivaji Bhonslay were appointed to the surgical staff on January 1, 1956. Dr. Voorhees, who originated and developed the now extensively used plastic cloth substitutes for arteries, is working with Dr. Arthur H. Blakemore on problems in vascular surgery. Dr. Bhonslay was largely responsible for the successful development of the pump oxygenator which is now being used in open heart operations. This new surgical technique was brought to the clinical level this fall after months of work in the surgical laboratories in its development. It provides the extra-corporeal oxygenation of blood via a shunt so that corrective surgical procedures can be performed inside the heart itself in a bloodless field. In this connection, Dr. John Scudder, Director of the Blood Bank, reports that a special list of donors whose blood has been resolved into the subgroups is being compiled for use in these open heart operations. Dr. Scudder was reappointed this year to the Special Committee on Blood Transfusions of the Medical Society of the County of New York.

A comparative statistical summary of the operations performed, transfusions given, and Recovery Room admissions for the past five years is presented in the following table:

	1951	1955	1956
Total Operations			
(Surgical Service) . . . . .	4,105	5,888	5,926
Per Cent Ward Operations. . . . .	53%	49%	45%



	1951	1955	1956
Adult Case Classification			
Thyroid .....	364	407	348
Head and Neck .....	184	396	379
Breast .....	328	487	507
Thorax, Cardio-vascular .....	164	263	304
Gastro-Intestinal Tract .....	530	627	651
Appendix .....	203	208	181
Gall Bladder, Pancreas .....	341	449	489
Hernia .....	320	442	481
Other Celiotomy .....	309	393	370
Rectal and Peri-rectal .....	307	331	335
Other, Superficial .....	675	863	958
Transfusions .....	13,537	11,245	11,457
Recovery Room Admissions .....	7,771*	9,260	9,824

\* Overnight census included as admissions. The Recovery Room was opened February, 1951 and figures are for February through December.

These statistics simply reflect the types and volume of professional services rendered by the Surgical Service during the year and with some study reveal trends in surgical practice developing during the past few years at The Presbyterian Hospital. They fail, however, to reveal the immeasurable amount of time and effort which make them meaningful in terms of patient care. They do not reflect, for example, the painstaking, repetitive indoctrination of house staff, medical students and nurses in high standards of medical care represented through frequent meetings of the Patient Care Committee under the chairmanship of Dr. Rudolph N. Schullinger; nor the tedious, detailed preparations required in the scheduling and management of numerous follow-up clinics represented by the efforts of Miss Gertrude Taylor and her associates; nor the now almost single-handed efforts of Miss Frances C. Evans in keeping contact with surgical patients who require the help of an experienced social service worker in their restoration to health and in the resumption of normal family life.

Social Service has always functioned as an integral part of the surgical service to ward patients. The assistance which has been rendered is incalculable. The surgical procedure carried out on a patient frequently is the least important in the series of events which suddenly disrupts a whole family's ability to function or even to survive as an independent unit in society. To say that this is not a part of the medical problem is begging the question. The two are inseparably related and it is the social service "case worker" who sees that the family unit is maintained intact and functioning until stability is restored. This is only one phase of the social worker's position in relation to sickness and hospitalization, but a most important practical phase when surgery is contemplated or becomes urgent. The Service of Surgery pays tribute to all those workers assigned

to it, past and present, who have always given unstintingly of their time and effort and expresses gratitude for the cooperation which has always existed between these two services. It is hoped that ways will be found to perpetuate this threatened relationship whatever are the current concepts of the role of the social service worker in the Hospital.

The surgical clinics have continued to function without any significant change in organization or personnel. These clinics serve three essential functions: the out-patient care of surgical patients, teaching and clinical research. The first two are being realized to a satisfactory degree but the potentialities of the third are far greater than are being realized in proportion to the amount of time devoted to follow-up visits of patients. The present methods of obtaining and analyzing clinical data on which to base significant studies are too cumbersome to permit full utilization of the really large amount of clinical material available. A very important contribution could be made to medical science and surgical practice by providing a clinical research staff equipped with facilities for gathering these data, analyzing them and keeping them up to date and available for reference and study.

### ***Research***

Research continues to be a major interest of members of the surgical staff. The number of residents and interns making original contributions or participating in projects of original research continues to increase. Fostering and facilitating this interest is the surgical metabolism unit under the supervision of Dr. Harold G. Barker. The type of research carried on here is fundamental, yet very closely tied to the problems encountered in clinical surgery. The results are translated into general clinical application as their usefulness becomes established. This year four residents devoted periods of six to twelve months to this type of research and a fifth continued to work actively on a part-time basis. A steroid chemistry laboratory was set up and is in active operation. Blood ammonia determinations have been improved and are now employed in a number of projects. The most active project continued to be the investigation of fat and fatty acid digestion and absorption in normal and abnormal subjects much of the investigation of which has been carried out by two surgical residents, Dr. Keith Reemtsma and Dr. James R. Malm. Work continued also on cirrhosis with ascites, hepatic coma, steroid physiology as related to operative stress and to cirrhosis, and fluid and electrolyte physiology. At meetings of national societies, six presentations were made from the surgical metabolism unit.

Further research of the above type is being carried on in the hospital

and in the laboratories of surgical research under the direction of Dr. John F. Prudden. Clinical evaluation of growth hormone is being determined with respect to its effect on nitrogen retention with and without insulin administration. Drs. Melvin S. Schwartz and David V. Habib are collaborating on this project. Clinical and laboratory studies are being continued on the difficult problem of ulcerative colitis in the direction of its relationship to the activity of the sympathetic nervous system. A measure of this activity is available by a determination of the catecholamines excreted and the concentration of catecholamines in the mucosae of resected colons from patients suffering from this disease. The severity of the disease is determined by the lysozyme titre, which has proved to be a precise measure. Cooperating in this project is Dr. Marcel Goldenberg of the Medical Service. Evaluation of surgical treatment of this disease is being undertaken by one of the senior residents, Dr. Richard Britton in collaboration with Dr. Prudden and Dr. Hiatt.

Interesting laboratory investigation of methods for increasing the strength of wound healing is being made by the use of cartilage dust films. The observation that a distinct increment in wound tensile strength occurs under these experimental conditions will presumably have wide theoretical and practical applications.

#### SURGICAL PATHOLOGY

In addition to the usual pathology studies made of surgical specimens removed at operation, the Laboratory of Surgical Pathology reports a number of clinico-pathological research projects. Dr. Nathan Lane is collaborating with Dr. Lattes and Dr. Malm in a study of malignant melanomas; with Dr. Howard D. Dorfman in a similar study of carcinoma of the stomach and with Dr. Robert S. Grinnell in a study of adenomatous polyps of the colon. He is also working with Dr. Vincent W. Ansanelli, a surgical resident, on a study of the lipochrome (ceroid) pigmentation in smooth muscle associated with various malabsorptive syndromes. With Dr. Lattes, Dr. Ansanelli is conducting a clinico-pathological review of the enteritides and colitides at The Presbyterian Hospital since 1935.

The laboratory of Dr. Margaret R. Murray collaborated in the identification of tumors by means of tissue culture techniques in 50 tumor biopsies.

#### CANCER STUDIES

Dr. Arthur Purdy Stout continued his study of soft tissue tumors and has also investigated sarcomas which are produced in rats by plastics and metals. This work was carried out in collaboration with Doctors B. S.

and Enid T. Oppenheimer and Dr. I. Danishefsky in the Institute of Cancer Research. In collaboration with Dr. Oscar Auerbach and others at the East Orange Veterans Administration Hospital, he has been investigating intramucosal cancer and allied lesions in the tracheobronchial tree of smokers and non-smokers.

Cancer research continued during the year in the laboratory of cancer chemotherapy under the direction of Dr. Daniel M. Shapiro. It has been possible not only to arrest the growth of breast cancer in mice but to produce sustained regression of the neoplasm by the augmentation effect of radiotherapy on tumors treated by multiple combinations of chemical compounds. This phase of the work was reported by Dr. Morton M. Kligerman of the Service of Radiology on December 5, 1956 before the North American Radiological Society in Chicago. Drs. Shapiro and Kligerman have been collaborating on this aspect of experimental cancer therapy for the past year. Toxicity studies of the compounds used are being undertaken at the present time and not until this has been satisfactorily completed will it be possible to consider clinical trials of this approach to the treatment of cancer. A great deal of the detailed investigation of compounds used in this laboratory has been done by Dr. L. S. Dictrich of the Department of Biochemistry and Maurice E. Shils, Ph.D. Numerous articles have appeared in technical journals from this laboratory recording the progress of the work.

During the past year research continued in the laboratories of the Institute of Cancer Research on the mouse mammary carcinoma factor by Dr. Cushman Haagensen and his associates.

Dr. Virginia Kneeland Frantz continued her work previously reported on the study and treatment with radioactive iodine of patients with thyroid cancer. A thyroid conference, under her leadership, is held weekly attended by physicians and surgeons from the Thyroid Clinic, and by members of the departments of Radiology and Radiological Research. Dr. Frantz participated in a Radio-iodine Conference sponsored by the Atomic Energy Commission held at the Argonne National Laboratory in Chicago on November 5th and 6th.

#### SURGICAL BACTERIOLOGY

The work of the Surgical Bacteriology Laboratory was increased this year as a result of the activities of the committee assigned to investigate the sources and make recommendations upon the control of wound infections on the surgical service. Miss Balbina Johnson and her associates rendered valuable assistance to the committee. Dr. Charles W. Findlay, Jr., in collaboration with Miss Johnson, undertook further studies on the incidence and treatment of postoperative enterocolitis. These researchers

are about to embark on a protracted study of the basic factors causing this disorder. Recently published was a report on the use of cathomycin in the treatment of staphylococcal enterocolitis. They are nearing completion of their investigations of the concentration of neomycin in the soft tissues following surgery and evaluation of the proper dosage schedules of achromycin and the efficacy of erythromycin.

#### CIRCULATORY DISORDERS

Of much importance to current surgical practice are the studies being made on disorders of the circulation. These studies, at the clinical level alone, concern many fields of medicine other than surgery, notably anesthesia, radiology, the blood bank and internal medicine. Individual and collaborative investigations are therefore under way in all these areas. Indeed basic anatomy and physiology are being re-scrutinized in the effort to establish a sound surgical approach to correction of congenital and acquired defects of the circulation. One project of this nature is being undertaken by Dr. George H. Humphreys, II, Dr. Wilfred M. Copenhaver of the Department of Anatomy, and Dr. Reemtsma, surgical resident, on the anatomy of the conduction system in congenital malformations of the heart. Other investigations are being carried out in collaboration with the Service of Anesthesiology by Dr. Deterling, on special problems arising in the course of operations employing the arterial pump.

Dr. John F. Prudden in collaboration with Dr. Ferdinand F. McAllister is continuing to investigate techniques for revascularization of the heart in patients with coronary insufficiency. Currently, in collaboration with Dr. Edward L. Howes, the use of collagenase in the removal of epicardium and the establishment of vascular adhesions with the pericardium alone or with the arterialized lung is being evaluated. Dr. McAllister and Dr. Jacobson, a surgical resident, have been studying the very interesting changes which occur in collateral circulation following re-establishment of the circulation in main arterial channels by substitute blood vessel grafts. Dr. McAllister has also been one of the collaborators in the development of the clinical application of the oxygenator pump with Dr. Bhonslay and Dr. Deterling.

Dr. Aaron Himmelstein continued working with the group studying congenital heart disease and pulmonary blood flow in the Cardio-respiratory Laboratory.

#### THYROID CLINIC

Many members of the surgical staff are engaged in long or short term investigations of clinical subjects. The thyroid gland, which lends itself to study of this sort both as to function and structure, has interested

surgeons, internists, ophthalmologists, surgical pathologists, and radiologists at The Presbyterian Hospital since the thyroid clinic was established under the direction of the late Dr. Walter W. Palmer, former director of the Service of Medicine over 30 years ago. A large number of patients treated for thyroid disorders have been followed for long periods of time. Continuation studies of these patients are being carried out in an effort to understand the characteristics and behavior of various types of goiter. Studies of malignant thyroid neoplasms have been made especially, not only to learn how to correctly identify and treat these relatively few goiters but, more important, how to avoid operations upon the many more goiters which are benign. At present a study is being made of thyroid nodules in cooperation with the internists in the thyroid clinic and Dr. Edith Quimby's radioisotope laboratory for the purpose of ascertaining if possible which nodules are hormone-dependent, a point under considerable general debate at the moment.

Of much importance has been the cooperation of the Surgical Pathology Laboratory in carefully studying and plotting the location and distribution of disease in the thyroid specimens submitted from operation. Important information is thus obtained regarding routes of spread of thyroid cancer and other significant behavior characteristics in the subsequent life history of this disease. Studies of this type have recently been made also by Dr. Carl R. Feind on other neoplasms of the head and neck but the significance of these findings does not seem to be as revealing as in thyroid cancer because of the differences in the natural life histories of the tumors.

Dr. Robert S. Grinnell is investigating the reasons for suture line recurrences of resected carcinoma of the colon and rectum. The possible relationship of the use of intestinal antibiotics to recurrences at this site is being studied by Dr. Thomas V. Santulli and Dr. Herter. In the combined tumor clinic of the Babics Hospital, Dr. Santulli is studying also the natural history of hemangiomas and of other neoplasms originating in childhood.

Clinical investigation of peptic ulcer and gastric carcinoma is continuing under Dr. Harold D. Harvey. Of much interest at the present time is the question of choice of operation for ulcer. Modification of technique depends upon careful follow-up studies of results of previous operations. Suggestions for further modifications have come from the surgical laboratory as a result of the experimental work done by Dr. Shapiro. Such changes, however, require a considerable period of trial in a large group of individuals for evaluation but the basic clinical studies have been made and much experience gained in this field over the years against which to assess the value of new procedures.

## PLASTIC SURGERY

Over the year the plastic surgery service under the direction of Dr. Thomas W. Stevenson, Jr., cooperated more actively than ever with several of the other services within the Medical Center, notably with the Francis Delafield Hospital where, as mentioned in this report, Dr. David Ju is in charge of the head and neck surgery. Work has increased also in cooperation with neurosurgery, fracture, urology, ophthalmology and pediatrics. Dr. George F. Crikelair spent much time working with the oral surgery service on the problems of cleft palate and hare-lip. The mechanism of the speech defect and its possible correction in these patients and others with similar speech patterns but different types of defects are being investigated by this group of workers. Dr. Crikelair and Dr. Daniel H. Moore of the Department of Microbiology are studying hypothermia in relation to the disturbed physiology and treatment of burns. Dr. Crikelair is also interested in the occurrence and management of narcotic addiction in patients undergoing multiple reconstructive surgical procedures requiring prolonged periods of hospitalization. He has studied and reported upon this very serious "surgical" complication.

Dr. Grant Sanger completed statistical reviews of groups of surgical patients treated at the Francis Delafield Hospital since its opening in 1951. With the assistance of his former senior resident, Dr. Whitney Woodruff, all breast cases were studied and the data summarized through 1955. With this as background, the data on all such patients during the past year have been carefully compiled with reference to type, location and extent of the disease in relation to type and extent of therapy and to probable prognosis. Similar studies were made also of the colon neoplasms and currently Dr. Sanger is studying the head and neck neoplasms from the past five years' admissions.

Although still hindered by limitations of time, space, physical facilities and crowded schedules which occasionally mitigate against the best practice of medicine, surgical progress can be said to have been made both in the extent of its usefulness and in its quality during the year 1956. This has been achieved largely as the result of an active curiosity about unsolved surgical problems at every level of medical learning, and the helpful cooperation of a Hospital which provides the facilities for converting this urge into medical achievement. For this, the Surgical Service is grateful and it takes this occasion to remark upon the perspicacity of the Hospital's attitude in this regard, as a result of which the high quality of its service to the community will surely be perpetuated.

# Urology

JOHN K. LATTIMER, M.D., *Director*

The Urological Service of The Presbyterian Hospital, founded by Dr. J. Bentley Squier, is one of the largest urological services to be found in a voluntary hospital. It enjoys a great physical advantage in being entirely on one floor, with its own X-ray department, its own cystoscopic rooms, laboratories and children's ward, all on the tenth floor of the Hospital. There has been a tremendous increase in the number of urological examinations and procedures done by the Urological Service since its installation in these quarters 28 years ago. In order to cope with this increasing growth, plans were made and approved in 1956 for extensive improvements in the Cystoscopic Department and for added bathroom facilities in the Urological X-Ray Department. The corridors of the tenth floor are also to be refurbished and provided with better lighting. Additional cabinet space will be provided so that more efficient distribution of supplies and materials will be possible. Improvements in office lighting and soundproofing will be started. During construction, the Cystoscopic Department will move into temporary quarters in the East treatment room and in one of the rooms of the East Ward of Presbyterian Hospital.

The great increase in the amount of urological work has also made it necessary to increase the Resident Staff of the Service of Urology. The Trustees have authorized the employment of two more resident urologists, bringing the total House Staff strength to eight men and one substituting surgical assistant resident. These men cover a service of approximately 100 beds, including private, semi-private, ward and children, plus the operating rooms, all urological diagnostic work, and six half-day sessions in the Out-Patient Department. The increase in urological X-ray examinations has made it necessary to plan for a full-time radiologist and a full-time radiological resident to work in the Urological X-Ray Department in the future. It is anticipated that this change may take place at the end of 1956, with the cooperation of the new Director of Radiology Service, Dr. William B. Seaman.

## ***New Methods***

A new diagnostic test for the adrenal gland tumor, pheochromocytoma, is in use. The test, developed by Dr. Marcel Goldenberg of the



Service of Medicine, has proved to be remarkably reliable: of 56 positive reactions, 56 tumors were found. So far in our experience, no false positive or negative results have occurred. This tumor, which produces episodes of high blood pressure, has been studied extensively at this Hospital.

The new test of the tumor's presence is a useful means of distinguishing hypertension attributable to this cause, from other hypertensive states. The test is based on the quantities of adrenalin and nor-adrenalin found in the urine. During hypertensive attacks resulting from the tumor, these secretions of the adrenal medulla are found in the urine in large amounts. A scientific exhibit demonstrating the reliability of this test was prepared, in conjunction with Dr. Goldenberg, and shown at the Boston meeting of the American Urological Association in May.

A new operative technique to replace the exstrophied bladder back into the abdomen has been adopted by the Service of Urology. A relatively large experience with this new technique was built up quickly by the Service and papers on this subject were delivered before the New York State Medical Society meeting and before the Association of Genito-Urinary Surgeons, by Dr. Lattimer.

Dr. Lattimer and Dr. Archie L. Dean, Jr. reported on triple voiding as a means of reducing the amount of residual urine in children with dilated urinary tracts to the American Urological Association and the New York Academy of Medicine.

Working in conjunction with the Service of Urology, Dr. James B. Campbell of the Service of Neurological Surgery has been able to restore bladder function in some children whose spinal cords were involved in scar tissue as a result of early operations on meningoceles. A paper on this subject was extremely well received by the Association of Genito-Urinary Surgeons, who asked Dr. Campbell to present the technique. Dr. Campbell's extensive and thorough research of the neuro-physiology of the bladder, using the cat as the experimental animal, is well-known. It may well "re-write the book" on neurogenic bladder dysfunction. It is endowed by research grants from the Office of the Surgeon General of the Army, the Cerebral Palsy Associations, Inc., and the Platex Park Research Institute.

A new technique in the treatment of genito-urinary tuberculosis involves the transplant of a patch of intestine. The intestinal segment is transplanted to the dome of a bladder severely shrunken by tuberculosis in order to increase the capacity of the organ. This maneuver has proven successful. Other uses of segments of intestine have been to adapt them for use as conduits for urine, leading from the ureters to the skin, after radical removal of the bladder as for cancer.

As part of the Veterans Administration cooperative study of the chemotherapy of tuberculosis, our Service continued its interest in new methods of treating urogenital manifestations of this disease. The new anti-tuberculosis medication, Cycloserine, has been tested on our wards.

Dr. Truman D. Boyes summarized the results of chemotherapy for renal tuberculosis at The Presbyterian Hospital in a paper before the New York Academy of Medicine. Dr. Lattimer addressed the annual meeting of the National Tuberculosis Association on this same subject.

A standardized Columbia University cystogram technique was described by Dr. Dean in a paper delivered before the New York Academy of Medicine. This work was also presented before the Pediatric group of the American Urological Association in Boston by Dr. Lattimer. Dr. Clement A. Furey presented an evaluation of the treatment of Peyronie's Disease by the local injection of Metacortilone and cortisone, at the New York Academy of Medicine.

Dr. Ralph J. Veenema was placed in charge of the Out-Patient Department of the Urological Service and has organized there a team for the study of renal calculi, which includes Drs. Kermit L. Pines and Karl Meyer of the Departments of Medicine and of Biochemistry as well as members of the Urological staff. A tumor clinic has been initiated by Dr. Veenema, including Dr. Morton M. Kligerman from the Service of Radiology, Dr. Perry B. Hudson, a member of our Service who is also a member of the staff of the Francis Delafield Hospital, and Dr. Hudson's statistical group, as well as Dr. Meyer M. Melicow and other members of the Urological Service.

### *Staff Changes*

Miss Cornelia B. McCoy, head of the Urological X-Ray Department, will reach the compulsory retirement age next spring. Miss McCoy has been with the Service since its establishment as the J. Bentley Squier Urological Clinic in 1929 and has by her own skill, dignity and dedicated personality built up the Urological X-Ray Department to its present eminence. She is well known to her myriads of patients, and to the parents of hundreds of children, for her graciousness and patience in caring for them over the years. It is with extreme regret and sadness that the members of the Squier Clinic family face her impending retirement. It is our hope that she will stay on with the Department in a research capacity after her official retirement.

Two new urologists have joined the Service of Urology. The first is a worthy son of an illustrious father, Dr. Archie L. Dean, Jr., whose father is Emeritus Chief of the Urological Service at the Memorial Hospital

and is famous for his work in cancer of the genito-urinary tract. The younger Dr. Dean joined the Attending Staff on July 1, 1956 and has taken charge of the tumor clinic of the Urological Service. Dr. Dean will coordinate his research here with the work being done under Dr. Perry Hudson in our Cancer Research Laboratories and at the Delafield Hospital.

Another worthy son of an illustrious father, who has joined our Service, is Dr. Hans Zinsser, son of the late great Dr. Hans Zinsser of Harvard University. Dr. Zinsser is an alumnus of the Columbia University College of Physicians and Surgeons and has been working as coordinator of research at the University of Southern California. He has returned here to take charge of our basic urological research program and to help with our teaching. One of Dr. Zinsser's large-scale projects will have to do with the evolution and treatment of kidney stones. Dr. Zinsser has had extensive experience in this field and is the author of many chapters in urological textbooks dealing with this difficult subject. The principal obstacle in the way of this expanding research program is the severe limitation in laboratory space within our Department, since little or no space for research activities has been allotted to the Department of Urology.

Doctors John E. Bowers and Murray B. Pincus joined the Service and were appointed Assistant Urologists.

Dr. George F. Cahill, Emeritus Director of the Urological Service, lectured on problems in the operative management of pheochromocytoma before the Annual Meeting of the American Urological Association in Boston. Although Dr. Cahill had concluded his nine year term as an examining member of the American Board of Urology, he voluntarily assisted in the examination of a large number of candidates in February 1956 at the request of the American Board of Urology. At the Commencement of Columbia University in June 1956 Dr. Cahill was awarded an Honorary Degree of Doctor of Medical Science by Dr. Grayson Kirk, President of the University, in recognition of his long and distinguished career with the University and The Presbyterian Hospital.

Dr. George W. Fish was re-elected treasurer of the Medical Society of the County of New York and reappointed Senior Civilian Consultant in Urology to the United States Army. Dr. Fish is also the official representative of the American Urological Association with the Armed Forces, and is on the Editorial Board of the *Journal of Urology*. Dr. John N. Robinson retired from the active practice of urology and moved to his estate in Oxford, Maryland. Doctor Robinson continued as a Governor of the American College of Surgeons and on the Executive Committee of the American Urological Association.

### *Clinical and Basic Research*

Urological pathology has continued to be developed through the vigorous work of Dr. Meyer M. Melicow. During the past year Dr. Melicow reported on the classification of tumors of the testis in several publications and in a lecture before the International College of Surgeons. He also published a study of tumors of the urinary bladder, based on analysis of 2500 specimens. In 1955 Dr. Melicow presented an exhibit on the adrenal tumor, pheochromocytoma, before meetings of the American Medical Association and the American Urological Association.

Research in urological cancer has been carried forward by a group led by Dr. Perry B. Hudson, a member of our Service who is also a member of the staff of the Francis Delafield Hospital. New knowledge of the relation of hormones to cancer of the breast and prostate is being gained by studies of testicular vein blood, adrenal vein blood and peripheral vein blood. The analyses of the blood hormone components are being carried out by chromatographic separation and identification. The studies tend to indicate a depletion of urinary estrogen following total adrenalectomy in patients with cancer of the breast. A study of calcium metabolism in mammary cancer patients was made in conjunction with Dr. Charles Crandall of the Francis Delafield Hospital. By perfusion of dog kidneys with various steroid hormones, a study was made of changes induced by these hormones by the passage through the kidneys.

The urological cancer research group works in the cancer laboratories of the College of Physicians and Surgeons and at the Francis Delafield Hospital. Other members of the group are Drs. T. D. Price and M. E. Lombardo of the Department of Biochemistry. The work has been supported by grants from the United States Atomic Energy Commission, The Public Health Service, The Damon Runyon Cancer Fund, The American Cancer Society and the New York City Cancer Committee of the American Cancer Society. Fourteen publications have appeared in various scientific and medical journals during the past year, and numerous lectures on the subject of urological cancer were given throughout the country by Dr. Hudson and other members.

Studies of the physical properties and the mechanism of denaturation of the prostatic acid phosphatase are continuing. A number of inhibitors of the prostatic acid phosphatase have been identified and classified.

Nucleic acid studies have continued, with some information gained on the rate of renewal of individual chemical components of nucleic acid obtained from human adrenal, kidney, ovary, prostate and testis. Radioactive tracer substances have been used to demonstrate that the rate of

renewal of phosphorous in intracellular small molecule nucleotides bears a certain ratio in relation to their formulas.

The cancer research statistical group has continued to measure the incidence of prostatic cancer in the aging male population and to compare, by statistical methods, survival rates after hormone-depleting operations and other forms of therapy for prostatic and mammary cancer. Animal experimentation is going forward in an attempt to devise better surgical techniques for the management of bladder cancer.

#### ANTIBIOTIC RESISTANCE

Research in microbiology, as applied to urology, was carried forward by Dr. Harry Seneca, who has continued his study of bacterial mutations of *Micrococcus pyogenes aureus* which have been made resistant to 75,000 units/ml of penicillin. Strains of *Pseudomonas* and *Proteus* were also made resistant to high levels of tetracycline, but strains of *Escherichia coli* and *Aerobacter aerogenes* could be made resistant to only 200 ug/ml of tetracycline. Genetic variations of these resistant strains will now be studied through future generations. Studies are also under way of the synergisms among certain groups of antibiotics, and among antibiotics plus antibacterials.

Drug sensitivity tests employing discs were compared with those employing tube dilutions. The great advantages of the tube dilution method were shown by the demonstration of minimum inhibitory concentrations of the drugs by the tube method whereas this could not be determined by the disc method.

Studies were carried out on subinhibitory concentrations of antibiotics on cultures of *Endamoeba histolytica*. At this level of concentration (just below that known to inhibit growth) certain antibiotics were found to have a paradoxical, growth-stimulating effect on cultures of this ameba. These antibiotics were: carbomycin, erythromycin, novobiocin, nystatin, bacitracin and polymyxin. At the same low level of concentration, the tetracyclines, fumagillin, and neomycin checked the growth of successive subcultures of this ameba. At higher levels of concentration, novobiocin and nystatin were found to be moderately active against *E. histolytica*, while actidione and entamide were highly inhibitory. On the whole, the research confirmed the current selection of the tetracyclines as the drug of choice in the treatment of amebiasis.

Steroid research in the field of microbiology indicated that the metisteroids (prednisone and prednisolone) depressed the inhibitory effect of certain antibacterial drugs and bactericidal antibiotics, but had no effect on the bacteriostatic antibiotics such as tetracycline, chloram-

phenicol, erythromycin, carbomycin and novobiocin. For instance, a combination of tetracycline and metisteroid in optimum quantities protected 100 per cent of a group of mice infected by *Streptococcus hemolyticus*. It was also determined that metisteroids delayed the fatal outcome of doses of exotoxins of diphtheria, tetanus and gas gangrene. These steroids also gave the red cells of rabbits a degree of protection against staphylococcal hemolysin. Apparently this was not brought about by neutralization of the toxin but probably by an endocrine phenomenon not involving the reticuloendothelial system. A scientific exhibit on this subject was shown by Dr. Seneca at the annual meeting of the American Medical Association in Chicago.

#### ULTRASONIC DEVICE

Ultrasonic methods for destroying ureteral stones are being studied here. This research is being conducted in conjunction with Dr. Harold Lamport of the Yale University Department of Physiology, who is a graduate of the College of Physicians and Surgeons. By cadaver experimentation and other studies, Dr. Lamport gathered sufficient data to warrant animal experiments to evaluate the therapeutic and possible toxic effects of ultrasonic devices designed for the purpose. Animal experimentation has been conducted during the year by Drs. Lamport, Lattimer, Zinsser, Boyes and Pincus. Physicist George Cvijanovich assisted briefly with this work, which has been conducted in the laboratories of the Department of Physiology, Columbia University College of Physicians and Surgeons. The Josiah Macy, Jr. Foundation supported the work.

The members of the Service are grateful to all those who contributed to its research funds. These included the George F. Cahill Fund, the John K. Lattimer Fund, the Kate Wollman Fund, the Josiah Macy, Jr. Foundation, the Merck, Pfizer, Upjohn and Schering Corporations, The National Tuberculosis Association, The American Cancer Society and numerous individual donors. Many of these grants were, of course, made to the College of Physicians and Surgeons of Columbia University. In many cases, research studies are a joint enterprise between the Hospital and the College.

There were 2,215 admissions to the Urology Service during the year, 1,310 of which were new patients, thus making a grand total of 41,765 admissions since the inception of the Clinic. Some 826 operations were performed during the year.

*REPORTS OF VOLUNTARY ORGANIZATIONS*

# The Alumnae Association

## School of Nursing

MRS. DAVID V. HABIF, *President*

Our Alumnae Quarterly Magazine celebrates its 50th anniversary this year. Published by and for the Alumnae Association, it serves as a source of news for our alumnae in 47 states, in Canada and 31 other countries. It has frequently been used as a model by other schools of nursing desiring steady communication with their alumnae.

The seventh edition of *Lippincott's Quick Reference Book for Nurses*, revised by members of the Columbia-Presbyterian Medical Center and released last year, was so well received that the publishers have decided to supply leather-bound copies in addition to the regular paper-bound copies. Total royalties this year from our three main publications, the reference book, *Essentials of Nursing* and *History of the School of Nursing*, amounted to \$2,749.30, all of which goes to the Scholarship Fund.

On June 1 we entertained the graduating class at a dinner dance at the Hotel Pierre. Miss Cecile Covell, Class of '26, was chairman and Dr. Franklin M. Hanger of the Service of Medicine was master of ceremonies.

Two of our alumnae were honored in June. Miss Margaret Eliot, retired Director of Nursing, received the honorary degree of Doctor of Humane Letters from Temple University at its commencement June 14 in tribute to her devotion as a nurse, her inspiration as a teacher and her leadership in administration.

Miss Virginia Harrell, Class of '19, who has been Director of Nursing and of the Nursing School of Greenwich Hospital since 1934, was honored by the alumnae of that school when they presented their Nurses Residence with a portrait of Miss Harrell in tribute to her contribution and development of good nursing both in the hospital and the community.

Meetings were held in Maxwell Hall on February 16 and November 15. June 8 brought our annual meeting, during which the Class of 1956 was presented for membership and the following officers elected: president, Mrs. David V. Habif; vice-president, Miss Margaret Hawthorne; corresponding secretary, Miss Dorothy E. M. Robinson; record-



ing secretary, Miss Ruth A. Lynch; treasurer, Miss Helen Young; assistant treasurer, Miss Margaret Wells.

Scholarships awarded or supported numbered 17, for a total of \$2,200. The Helen Young Scholarship and the Emma Baker Kennedy Scholarship provided \$900 for graduate study, and \$1,300 was provided for student scholarships.

The Distributing Fund received donations of \$8,966.98 of which \$4,700 was assigned to capital funds.

We are pleased to be able to include Mr. Frederick Sturges, Jr. as an honorary member of our Alumnae Association.

We wish to thank the Board of Trustees and the Hospital for their unflinching support of our Alumnae Association.

# Board of Women Managers of the Babies Hospital

MRS. CASIMIR DERHAM, *President*

Two important changes have been effected in the Babies Hospital this year.

First, all child patients with neurological conditions are now being admitted to the Babies Hospital. These children have profited by their close association with children in other categories, and the arrangement has proved advantageous to the staffs of both hospitals. As a result, the Babies Hospital has been running at peak capacity, and the Board would like to express its admiration for Miss Elizabeth R. Callahan, unit manager, and its appreciation of her able handling of this great influx of new cases.

Second, a new special nursing unit has been established for very sick children, to which four graduate nurses have been assigned. This is a 24-hour-a-day project and has helped to resolve the problem of so many special nurses for these children. It is an efficient and satisfactory arrangement.

Mrs. Frederic F. deRham, advisory trustee on nursing, reported that 75 per cent of our student nurses received an average grade of 90 in the state examinations.

Three nurses from Greece were allowed to observe in the premature nursery.

An annual budget of \$11,850 for the year 1956 was submitted and approved by the Board. A \$50 appropriation was authorized to purchase reference books for the Helen Pruyn Wood Nurses' Library, \$250 for essential equipment for the wards, \$250 for the purchase of Christmas dolls, and \$1,000 was transferred from the Cleft Palate Fund to the Emergency Nursing Fund.

The Emergency Nursing Fund was generously supported by contributions from the Arlin Fund, Mrs. I. Townsend Burden, Jr., Mrs. Casimir deRham, Mrs. Frederic F. deRham, Mrs. Joseph V. McMullan, Mrs. John H. Reynolds and Mrs. Douglas Williams.

The Board welcomed Mrs. R. Peter Rose, Mrs. Richard Migel, Mrs. John S. Tilney and Mrs. Priscilla H. Eldredge as new members in 1956.

The resignation of Mrs. James Knott was accepted with regret.

The death of Mrs. Ernest R. Adee was a great loss to the Board. Mrs. Adee had served the Babies Hospital for 57 years. Her first association was with the Cribside Social Service Committee in 1899. In 1903 she became a member of the Board of Women Managers. She served as president and vice president, and was honorary president until her death. An expression of sympathy was sent to her family from the Board.

### *Recreational Therapy*

The Recreational Therapy Department, of which Mrs. George L. Bartlett is chairman, had an unusually high census of patients. Miss Paula de Vautibault, director, and her assistants made a field trip to inspect the play and school facilities of Bellevue Hospital and attended meetings of the United Hospital Fund and Greater New York Hospital Recreational Association. Miss de Vautibault gave the Board a comprehensive report of the activities of her department, reviewing the routine of the school room, the new workshop under Miss Ruth A. Vickers, and the "Tender Loving Care" volunteer evening program. There are 60 volunteers working from 6:30 to 8:30 P.M. in this program. It is of great value and importance in helping to counteract the psychological effects of hospitalization on children, their various fears of strange surroundings and treatments, and the language difficulties.

Many gifts were received by this department, including two fine knitting machines given by Mrs. Joseph V. McMullan, and a sewing machine given by Mr. James Campbell, through Mrs. R. Peter Rose.

A story featuring our school and playrooms was televised by CBS over channel 2. Miss de Vautibault, Miss Vickers and many of our child patients appeared on this program. It was an excellent presentation.

The "Dolls Tea" was held in December and the many other holidays were appropriately celebrated, with all the staff giving their valuable time and efforts to make the young patients happy.

Miss Dorothy Mills, United Hospital Fund chairman, reported 444 gifts for a total of \$40,059. This includes \$336 reported by Mrs. Alexander Keyes, Box Week chairman. The Board desires to thank them for their fine work.

Mrs. Casimir deRham served on the Auxiliaries Committee. Two representatives attended the United Hospital Fund's March 7th symposium on "Changing Times in the Hospital."

### *Special Meetings*

There was a meeting of the Volunteer Department representatives from the Boards of the Neurological, Orthopaedic and Babies Hospitals, with Miss Laura Vossler, director, in February to discuss the problems of the Department as a whole. Mrs. Conrad Riley, chairman, attended. A tea for volunteers was held in Maxwell Hall on January 9.

Mrs. James McCosh Magie represented the Board at a meeting of the Welfare and Health Council on January 12, held for the purpose of reorganization. The new name of this council is to be The Greater New York Community Council. There will be 226 agencies represented but corporate membership is to be limited to 24 members.

The monthly Hospital Auxiliaries luncheons were regularly attended by members of the Board who reported them to be of great interest and value in keeping them informed of the activities of The Presbyterian Hospital as a whole.

Two members of the Board visited the Babies Hospital each month and made a report.

Dr. Rustin McIntosh and Dr. Sidney Blumenthal gave interesting presentations at the monthly meetings. Miss Marjorie Peto of the Nursing Department and Mrs. Robert H. Stiefel of the United Hospital Fund also addressed the Board.

The most delightful event of the year was the celebration on February 10th honoring Dr. McIntosh for his 25 years of service as Director of the Babies Hospital. Scientific sessions were held during the day at the Hospital with alumni and old friends from all over the United States and Canada participating. Each wore a swatch of McIntosh plaid. An anniversary dinner was held in the evening at the Cosmopolitan Club with entertainment provided by the doctors and their wives. A telegram of congratulation and gratitude was sent to Dr. McIntosh from his proud Board of Women Managers.

### CRIBSIDE SOCIAL SERVICE COMMITTEE

MRS. CONRAD M. RILEY, *Chairman*

The Cribside Social Service Committee of the Board of Women Managers of Babies Hospital continued its deep interest in and untiring efforts for the Social Service Department.

The Bargain Box Thrift Shop showed less profit for the year, \$10,128, because the shop itself moved to a new location, 1175 Third Avenue (at 88th Street), and each charity in the Bargain Box had to pay

its share of moving expenses, amounting to \$1,500. However, the chairman, Mrs. Herman Hoops, and her able assistants, with the splendid donations by the Committee and the Women's Board and their friends, hope to increase the receipts rapidly. The Bargain Box Committee has worked extremely hard and deserves great commendation for all its labors.

The Lenten Sewing Class not only netted \$452 but also made clothing for patients in the Hospital.

During the year Committee members attended conferences on Social Service sponsored by the United Hospital Fund. Mrs. Conrad M. Riley was elected for one year to the Medical Social Service Committee of the United Hospital Fund. The staff meetings at Babies Hospital have had committee representation.

In April, the Social Service Department of the Medical Center had a tea for the social service workers and the agencies, throughout the city, with which they worked. The tea committee was comprised of the Director of Social Service, the three Associate Directors and the Social Service Committees' chairmen. The tea gave all committee members an opportunity to meet the representatives of the agencies as well as members of other units of the Social Service Department.

In June, Miss Shirley London returned to the Babies Social Service Department after a leave of absence for the Louise and Gustavus Pfeiffer Foundation Scholarship. In addition to her regular duties, she is supervising a student, assigned to the Department for field work, from the New York School of Social Work.

For eight weeks during the summer the Department was most fortunate in having two Vassar College student volunteers working full time. Their contributions were of great value. This Department, like others in the city, is helping in the recruitment program for medical social service workers by taking on young women interested in this work who are also capable of assisting in a department.

During the summer the Department accepted with regret the resignations of its supervisor and some staff members. This meant curtailment of patient coverage. It is interesting to note the number of cases on hand January 1, 1956 was 235 and the number on hand December 31, 1956 was 137; also the number of interviews with patients' families in the hospital and clinics for the month of January 1956 was 769 and in that same category the figure for December 1956 was 592.

To the present staff the Committee extends deep appreciation for its indefatigable endeavors during the current shortage of workers in the Department. And the Committee wishes to thank Dr. McIntosh for his concern and interest in the Committee's activities.

# The Mary Harkness Convalescent Home Auxiliary

MRS. BENJAMIN STRONG, *Chairman*

It is gratifying to report that the Mary Harkness Convalescent Home and the Strong Memorial Wing continued to run smoothly under Miss Miriam Hubbard's able direction.

There have been some staff changes, the principal one being the replacement of Miss Hubbard's assistant. Miss Ann Parsons has joined the Navy Reserve and has been replaced by Miss Virginia Sorby.

There is the usual fluctuation of the adult census, which has averaged slightly higher than in 1955. However, the child census continues to decline. This decline is due mostly to continued improvement in child health because of the great progress in preventive medicine. Some pediatric convalescent units in other homes have been closed. However, it has been suggested at the Hospital that if the doctors, both in New York and in Westchester, and the administrative heads of hospitals realized all that the Home has to offer for the convalescent care of children, it could be filled to capacity. Both adults and children are accepted from New York City and Westchester County hospitals.

Two significant trends should be noted in the adult patients' convalescent care, which in time will necessitate a review of the facilities at the Home. The average age of the convalescent adult is considerably higher than a few years ago, due again to progression in medical techniques and medicines. Also there are now more chronically ill patients admitted. With these two types of patients it can clearly be seen the care involved presents very different problems.

The White Plains Volunteer Center continues to augment the Mary Harkness staff. There is now volunteer office relief several evenings a week and on Saturday mornings.

The flexibility of adult visiting hours has proved a definite asset.

Under the able supervision of Mr. Wynn Johnson, the parking lot in front of the Children's Wing has been enlarged, providing parking facilities for the non-resident staff.

An improvement in transporting children on stretchers from the Hospital to the Home has been the installation of floor holders in the

automobile bought last year for the Home. These holders keep the stretchers firmly in place.

The members of the Auxiliary feel that the Home is most fortunate in having the services of Stanley Muzoleski. He has been associated with the Home for over ten years, and in addition to his regular work, has undertaken the necessary inside painting such as that in the Children's Wing, adult rooms, corridors and dining rooms. He is of the greatest help in every way.

The full time professional staff is supplemented by three faithful part-time nurses who have been at the Home for the past two years.

The Auxiliary welcomed three new members: Mrs. Kenneth Fagg, Mrs. Thatcher M. Brown, Jr., and Mrs. Henry F. G. Wey, Jr. This brings the total membership to 16.

The patients continue to be very grateful to the Orthopaedic Women's Auxiliary for the weekly movies. The Auxiliary is also grateful for gifts and dolls made by the ladies of the Presbyterian Church of Rye and for the dolls dressed by the ladies of the United States Trust Company.

The Mary Harkness administration, the staff and the Auxiliary express appreciation for the help and understanding given to them by the Hospital.

# Neurological Institute Auxiliary

MRS. H. S. FENIMORE COOPER, *Chairman*

In 1956 the Neurological Institute Auxiliary faced many changes and problems. In the retirement of Mrs. Byron Stookey we have lost a remarkably well informed and efficient chairman; her successor is still in the process of indoctrination. Without the loyalty and helpfulness of our fine Auxiliary members, this would have been difficult indeed. I am most grateful to each one.

Our committees (House, Library, Membership, Nominating, Thrift Shop, United Hospital Fund and Volunteer) are continuing their usual functions most successfully. The former Presbyterian Hospital House Committee was felt to be so essential that in Neurological Institute a successor to it has been set up on a different basis but under the same devoted chairman, Mrs. Willis Wood, with Mrs. Richard L. Morris as vice chairman. A new committee has been formed for collecting Thrift Shop rummage, chaired by Mrs. J. Lawrence Pool; and another called "Clinic Toys" is in the process of formation, headed by Mrs. Sidney Weinberg. Its purpose is to provide constructive diversion for children during the clinic waiting period, thus making their medical care a less anxious and therefore more profitable experience.

The work of the Neurological Institute's Social Service Department was affected by the loss of some professional staff members. This necessitated a curtailment of some activities and a clarification of some Social Service functions. It had long been felt that a number of activities and methods of work were leading to a less than maximum use of professional casework time and skills. For example, a great deal of time had previously been spent in exploring and identifying potential patient problems. Studies showed that a large proportion of patients thus surveyed did not need service and that such an approach to case-finding resulted in an inefficient use of Social Service efforts. Other methods of case identification are being studied but it is too early to come to any conclusions. Some tasks, traditionally but not ideally within the province of Social Service, were provided for in other and sounder ways. Some of the decline in Social Service activities in 1956 may therefore be correctly construed as a healthy rather than an unhealthy trend.

Miss Valerie Halse, a social worker from Great Britain, joined the Social Service staff in September on a working fellowship from the Ful-



bright Committee. She will work as a full-time staff member while studying American casework theory and methods during her two years here.

Social Service's program of providing summer camp experience for children with neurological disorders was expanded. Twenty children were sent to camp in 1956 as compared to eleven children in 1955.

We joined the other auxiliaries again last spring in entertaining representatives of community agencies throughout the city, with whom our staffs are constantly consulting regarding care of patients.

We have been able during this year to make a donation to the House Staff Loan Fund; also to arrange to help Neurological Institute patients who cannot afford essential private nursing.

Our sources of revenue are: the Thrift Shop, the results of which continue to amaze us under the energetic and tireless guidance of Mrs. Royall Cannaday; the United Hospital and Greater New York Funds, plus contributions from members of our Auxiliary and friends of the Neurological Institute.

We have lost two members by resignation: Mrs. Charles S. Munson, and Mrs. Anton E. Walbridge, both with regret.

# Women's Auxiliary of the New York Orthopaedic Dispensary and Hospital

MRS. S. HAZARD GILLESPIE, JR., *Chairman*

Several significant changes occurred in the Orthopaedic Hospital during the past year. First in importance was the retirement of Dr. Alan DeForest Smith as Director after 16 years of devoted and productive leadership. The Auxiliary has enjoyed working under him and is happy to know that we will continue to see him from time to time at the Hospital.

As our new Director, we welcomed with pleasure Dr. Frank E. Stinchfield. He was kind enough to address one of our meetings, giving us various suggestions as to how the Auxiliary could be most useful and helpful to the Hospital.

An important addition to our staff, late in 1955, was Mrs. Eva Beer, the recreational therapist in charge of our children's nursery. This is the special interest of our Auxiliary and we are most fortunate in having found Mrs. Beer, who is a qualified kindergarten teacher as well as a therapist. She plays with the babies, helps with the feedings and in other ways, and is doing interesting craft work in leather and metals with the older children. With the help of Miss Lynn Dickenson, the occupational therapist, Mrs. Beer conducted successful parties at Halloween and Christmas. Many donations of toys were received during the year. Other gifts included a record player and an aquarium for our nursery. We hope to be able to keep the nursery as pleasant a place as possible for the children.

We had the help of some excellent volunteers during the year, especially in the evenings when they are greatly needed. The volunteers did a great deal of art work with the adult patients and the Auxiliary helped to provide paints and other supplies for this program.

Library service to our patients is regular and the choice of books is wide and much appreciated.

The Social Service under Miss Helen Irwin and her twin, Miss Margaret Irwin, is busier than ever since they have taken over the fracture service. Every patient admitted is interviewed and reports are made at

our monthly meetings on the most interesting cases and those needing our support.

Christmas presents were provided for the out-patient department as well as for patients on the wards. The Auxiliary again filled stockings for every child in the Hospital over Christmas.

The Auxiliary raised \$31,358 for the United Hospital Fund campaign in 1956. Many thanks go to Mrs. Edward Gerry and Mrs. E. Haring Chandor, our team captains, who did outstanding jobs.

Miss Delphine Wilde, in charge of our nursing service, had a busy year, teaching students as well as directing activities on the fifth floor. She is ably assisted by Miss Hester Brown and one or the other reports to us regularly at our meetings.

Once again we thank the Hospital administration for its understanding and cooperation. It is a pleasure to be a member of such a smooth running and efficient Medical Center.

# Women's Auxiliary of the Presbyterian Hospital

MRS. GEORGE A. PERERA, *Chairman*

Although we have initiated no new projects during 1956, our auxiliary has continued to serve the Hospital and its patients through our concern for and support of the Social Service Department, the Milbank Library, the Volunteer Department, the Occupational and Physical Therapy Department and the House Staff Loan Fund.

## *Social Service*

This has been a year of flux and change in the Department with a number of workers leaving and few available to take their place. Because of the shortage of staff, the program has had to be curtailed and patients are seen now only on a referral basis. Notwithstanding, help was provided for 18,994 patients as compared to 14,139 in 1955.

Mrs. José M. Ferrer, Jr. and our Social Service Committee worked actively in the spring to sponsor a tea for social workers in community agencies allied closely with the Hospital. The other women's auxiliaries cooperated also. The event was regarded as most successful, the high point being a speech by Dr. Frederick R. Bailey of the Service of Medicine.

The Anna Ball Kneeland Fund continued to serve the staff. Miss Prichard and Miss Yoder were given money towards their expenses at the International Conference in Munich and other workers have been enabled to attend other meetings.

Through the Almoners, Mrs. Ralph H. Boots and Mrs. Samuel W. Lambert, Jr., the Havens Fund has provided another \$1,200 for the use of patients with temporary financial problems created by their illness.

We regret particularly the resignation of Mrs. Claire Wheat. However, the difficulties of the past year have brought us closer to the Department and more aware of its problems and needs. We hope to become increasingly active and better able to help the director.

## *Milbank Library*

It is with sadness that we announce the long illness and death of

Mrs. Yolanda B. McKnight who had been librarian since 1943. During her years at the Hospital she endeared herself to patients and staff alike, and the volunteers and auxiliary members who worked with her found her most understanding and cooperative.

Fortunately, Mrs. Florence Erbe was able to take her place temporarily and has kept the library service functioning smoothly.

During the past year, 25,099 patients and staff were supplied with books, magazines and art prints totaling 26,641. This was made possible by the assistance of Mrs. Howard G. Bruenn, who continues as library chairman, and the 11 volunteers who gave 1,516 hours of their time.

### *Volunteer Department*

Our quarters are more crowded than ever with an average of more than 350 volunteers serving in every unit of the Hospital each month. A record-breaking total of 797 volunteers gave 83,238 hours in 1956. It is both gratifying and frustrating to note that there are many more requests for help than can be provided.

A newly-formed Volunteer Committee, representing the various Auxiliaries, has met to discuss volunteer services in the Hospital with Miss Laura Vossler, Director of Volunteers. Mrs. Conrad M. Riley from Cribside, Mrs. Willis L. M. Reese from Orthopaedic, Mrs. Rollo J. Masselink from Neurological, Mrs. Ralph H. Boots, representing the Red Cross Nurses' Aides, and Mrs. George A. Perera have worked with Mrs. Louis Connick, chairman, and Miss Vossler to obtain a better picture of volunteer needs throughout the Medical Center.

Cooperating with the Department of Nursing, the Red Cross has given an evening course for Red Cross Nurses' Aides; 14 volunteers will be "capped" in January. We hope some of these women will return to give volunteer service here.

The Hospital volunteers were honored at the annual Awards Tea at Maxwell Hall and at the United Hospital Fund Award Meeting in the spring. It is gratifying to record that there has been a large increase in both recipients and number of hours served.

The Auxiliary sent Miss Vossler to Chicago in September for the American Hospital Association meetings. It also donated a sewing machine to the Volunteer Department; this has been found very useful in mending smocks.

Knowing the pressing needs of this Department, the Auxiliary allocated \$2,000 for extra help.

### ***House Staff Loan Fund***

The Auxiliary allocated \$4,000 to the fund as well as the proceeds of our benefit card party in the spring.

We are pleased that this general fund is available to all members of the House Staff. It is being utilized with increasing frequency.

Without funds, the Auxiliary could do little to serve the Hospital. We are most grateful to our Thrift Shop and United Hospital Fund Campaign Committees for their perpetual efforts and interest in meeting the major part of our budgetary needs.

Mrs. Stresenreuter Butler, her vice chairman, Mrs. W. Roy Manny, and their Committee have inspired us with the result that \$5,337 was cleared through the Thrift Shop — a much better showing than last year.

Mrs. C. Redington Barrett, chairman of the United Hospital Fund Campaign Committee, and her 45 workers have done a monumental task: 883 gifts have realized \$27,240. Mrs. Ralph H. Boots, Mrs. Edgar Stillman, and Mrs. Jerome P. Webster acted as team captains. Mrs. James McV. Breed served as Box Week Chairman and as a team captain. Our thanks go to these members for their important help.

\* \* \*

The death of Mrs. J. Bentley Squier is reported with regret. We are also sorry to announce the resignations of Mrs. Harold L. Behlke, Mrs. M. Boylan Carr, Mrs. David S. Muzzey and Mrs. William L. Van Leer, Jr.

Dr. Dana W. Atchley and Dr. Edith Quimby spoke to our members along fascinating lines, making us much more aware of the changes and developments in medicine and the close relationship of modern science to the better care of patients.

It is impossible to recognize adequately the generous contribution of time and effort by Auxiliary members. This report is a testimony of their achievement — made possible only by the continued interest and cooperation of the Administration and Staff.

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Allen, Mrs. Saima  
Andino, Mrs. Adelaide  
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Andrade, Miss Yolanda  
Andrews, Mrs. Mary  
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**1956 PUBLICATIONS OF MEMBERS  
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# 1956 Publications of Members of the Professional Staff\*

## Anesthesiology

Apgar, V.

- Anesthesia for vaginal delivery. *Jrl. Am. Med. Women's Assn.* 11:83-86.
- Infant resuscitation. *Postgrad. Med.* 19:447-450.

Cohen, Max and Frumin, M. J.

- Concentration of choline acetylase in conducting tissue. *Arch. Bioch. & Biophysics* 60:284-296.

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- The mechanism of the opening of the human larynx. *The Laryngoscope* 66:410-425.

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- A gas-tight method of accommodating a gastric drainage tube in the circle circuit. *Anesthesiology* 17:204-205.

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- Respiratory movements of the vocal cords. *Fed. Proc.* 15: #1.

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- The clinical use of a physiologically oriented respirator delivering N<sub>2</sub>O-O<sub>2</sub> anesthesia. *Anesthesiology*. In press.

Frumin, M. J. and Lee, Arnold S. J.

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- A study of the electrical activity of the small intestine. *Jrl. Appl. Physiol.* In press.

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\* Many of the studies reported in these publications were supported by grants to Columbia University's College of Physicians and Surgeons, with which The Presbyterian Hospital is allied as the Columbia-Presbyterian Medical Center. In general, basic research is done in the laboratories of the College and clinical research in the clinics and wards of the Hospital. A number of studies are joint enterprises between Hospital and College.

- Papper, E. M.
- Anesthesia in the aged. Chapter in book presented to Dr. Rudolf Nissen on his 60th birthday. Sept.
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- Dermatology**
- Andrews, G. C. and Domonkos, A. N.
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*APPENDIX*

# Appendix

## STATISTICS December 31, 1956 BED COMPLEMENT

	<i>No. Beds</i>	
<b>PRIVATE:</b>		
Presbyterian Hospital (Harkness Pavilion).....	203	
Babies Hospital .....	10	
Eye Institute .....	19	
Neurological Institute .....	48	
Sloane Hospital .....	23	
Total Private .....	303	303
<b>SEMI-PRIVATE:</b>		
Presbyterian Hospital and Sloane Hospital:		
All Services (Harkness Pavilion).....	97	
Medicine .....	9	
Surgery .....	14	
Urology .....	31	
Orthopedic .....	55	
Otolaryngology .....	21	
Gynecology .....	13	
Obstetrics .....	29	
Babies Hospital .....	30	
Eye Hospital .....	36	
Neurological Institute .....	43	
Total Semi-Private .....	378	378
<b>WARD:</b>		
Presbyterian Hospital and Sloane Hospital:		
Medicine .....	102	
Dermatology .....	8	
Metabolism .....	10	
Surgery .....	114	
Urology .....	36	
Orthopedic .....	67	
Otolaryngology .....	12	
Admitting .....	14	
Gynecology .....	35	
Obstetrics .....	81	
Babies Hospital (including premature nursery of 23 incubators) .....	152	
Eye Institute .....	37	
Neurological Institute .....	110	
Total Ward .....	778	778
<b>MARY HARKNESS CONVALESCENT HOME</b> .....	57	1,459
<b>NEWBORNS (Sloane Hospital)</b> .....	113	1,516
Total .....	1,629	1,629



## HOSPITAL ADMISSIONS

	<i>Admissions</i>	
	1956	1955
<b>PRIVATE:</b>		
Presbyterian Hospital (Harkness Pavilion).....	5,586	5,332
Babies Hospital .....	383	326
Eye Institute .....	573	530
Neurological Institute .....	954	958
Sloane Hospital .....	732	835
Total Private .....	<u>8,228</u>	<u>7,981</u>
<b>SEMI-PRIVATE:</b>		
Presbyterian Hospital and Sloane Hospital:		
All Services (Harkness Pavilion).....	2,814	2,851
Medicine .....	130	168
Surgery .....	300	304
Urology .....	607	615
Orthopedic .....	1,096	803
Otolaryngology .....	1,157	608
Gynecology .....	530	490
Obstetrics .....	975	976
Babies Hospital .....	1,703	1,364
Eye Institute .....	1,412	1,398
Neurological Institute .....	1,106	942
Total Semi-Private .....	<u>11,830</u>	<u>10,519</u>
<b>WARD:</b>		
Presbyterian Hospital and Sloane Hospital:		
Medicine .....	1,560	} 1,746
Dermatology .....	106	
Metabolism .....	111	} 1,695
Surgery .....	1,676	
Urology .....	713	631
Orthopedic .....	1,194	1,094
Otolaryngology .....	459	896
Admitting .....	1,277	1,146
Gynecology .....	835	845
Obstetrics .....	4,053	3,743
Babies Hospital .....	2,825	2,866
Eye Institute .....	879	1,002
Neurological Institute .....	1,295	1,774
Total Ward .....	<u>16,983</u>	<u>17,438</u>
MARY HARKNESS CONVALESCENT HOME.....	749	796
Total .....	<u>37,790</u>	<u>36,734</u>
<b>INFANTS BORN IN SLOANE HOSPITAL:</b>		
Private beds .....	505	501
Semi-private and Ward beds.....	<u>3,606</u>	<u>3,442</u>
Total .....	<u>4,111</u>	<u>3,943</u>

## HOSPITAL OCCUPANCY

	Patient Days Care		Percentage of Occupancy	
	1956	1955	1956	1955
<b>PRIVATE:</b>				
Presbyterian Hospital (Harkness Pavilion)	71,367	66,442	96.1	95.9
Babies Hospital	1,894	1,178	51.7	32.8
Eye Institute	5,199	5,100	74.8	73.5
Neurological Institute	16,358	15,923	93.1	90.9
Sloane Hospital	5,325	6,986	63.3	62.0
Total Private	<u>100,143</u>	<u>95,629</u>	<u>90.3</u>	<u>88.1</u>
<b>SEMI-PRIVATE:</b>				
Presbyterian Hospital and Sloane Hospital:				
All Services (Harkness Pavilion)	29,375	28,887	82.7	82.4
Medicine	3,109	4,263	94.4	73.1
Surgery	5,015	4,902	97.9	95.9
Urology	7,376	6,514	65.0	57.6
Orthopedic	14,577	12,227	74.4	83.7
Otolaryngology	5,453	2,551	74.7	77.4
Gynecology	4,875	4,296	102.5	94.3
Obstetrics	7,225	7,621	68.1	72.0
Babies Hospital	11,512	9,360	104.8	85.5
Eye Institute	11,333	10,683	86.0	81.3
Neurological Institute	15,163	13,136	98.2	92.3
Total Semi-Private	<u>115,013</u>	<u>104,440</u>	<u>83.3</u>	<u>81.1</u>
<b>WARD:</b>				
Presbyterian Hospital and Sloane Hospital:				
Medicine	34,443	38,205	92.3	90.2
Dermatology	2,409		82.3	
Metabolism	2,456		67.1	
Surgery	35,276	34,592	84.5	83.1
Urology	11,534	11,809	87.5	89.9
Orthopedic	22,070	22,674	90.0	74.9
Otolaryngology	3,535	5,233	80.5	59.8
Admitting	2,609	2,586	50.9	50.6
Gynecology	11,721	10,802	91.5	84.6
Obstetrics	27,103	26,036	91.4	88.1
Babies Hospital	40,507	39,439	72.8	71.1
Eye Institute	7,501	8,565	55.4	63.4
Neurological Institute	31,022	37,444	77.1	82.8
Total Ward	<u>232,186</u>	<u>237,385</u>	<u>81.5</u>	<u>79.7</u>
MARY HARKNESS CONVALESCENT HOME	14,674	16,204	70.3	77.9
Total	<u>462,016</u>	<u>453,658</u>	<u>83.3</u>	<u>81.6</u>
<b>INFANTS BORN IN SLOANE HOSPITAL:</b>				
Private beds	3,925	4,018	46.6	30.8
Semi-private and Ward beds	23,082	23,581	70.1	71.8
Total	<u>27,007</u>	<u>27,599</u>	<u>65.3</u>	<u>60.1</u>

### OUT-PATIENT DEPARTMENT STATISTICS

Summary of Patients Treated:	1956	1955
Number of Patients treated .....	62,549	54,559
Number of visits:		
Free .....	117,360	115,042
Pay .....	289,386	300,113
Total .....	406,746	415,155
Average visits per working day.....	1,608	1,647

Attendance Statistics:	<i>New to Clinics</i>	<i>Revisits</i>	<i>Total Visits</i>
Dermatology .....	6,211	30,396	36,607
Emergency and Admitting Wards.....	22,224	4,344	26,568
Group Clinic .....	3,942	23,309	27,251
Medicine .....	4,443	38,300	42,743
Neurology .....	2,428	14,313	16,741
Obstetrics and Gynecology.....	6,164	34,837	41,001
Occupational Therapy .....	58	992	1,050
Ophthalmology .....	5,040	21,938	26,978
Orthopedic .....	13,472	30,153	43,625
Otolaryngology .....	3,146	14,902	18,048
Pediatrics .....	6,125	42,182	48,307
Physical Therapy .....	1,348	13,747	15,095
Psychiatry .....	156	3,572	3,728
Surgery .....	18,135	32,331	50,466
Urology .....	1,729	6,809	8,538
Total .....	94,621	312,125	406,746

### PERSONNEL STATISTICS

	<i>On Duty December 31</i>	
	1956	1955
Administration .....	13	13
Assistant Secretary-Treasurer .....	46	42
Comptroller .....	91	90
Public Interest .....	13	12
Convalescent Home .....	43	41
Non-Professional Services:		
Buildings and Grounds.....	577	570
Food Service .....	375	371
Personnel and Protective.....	75	70
Other Non-Professional Services.....	165	171
Professional Services:		
Nursing .....	1,199	1,181
Professional Staff, Doctors' Offices & Research.....	381	392
Special Services .....	426	431
Vanderbilt Clinic and Other.....	242	235
Total .....	3,646	3,619
Student Nurses .....	462	485
Volunteer Workers .....	385	353

**REPORTS OF THE TREASURERS**  
**THE ALUMNAE ASSOCIATION OF THE**  
**SCHOOL OF NURSING OF THE PRESBYTERIAN HOSPITAL**  
**IN THE CITY OF NEW YORK, INC.**

**BALANCE SHEET**  
**December 31, 1956 and 1955**

**A S S E T S**

	1956	1955
Capital Funds — securities and cash.....	\$689,576.63	\$661,586.93
Operating Funds — securities, cash, etc.....	12,814.19	11,905.35
Total Assets .....	\$702,390.82	\$673,492.28

**L I A B I L I T I E S**

Capital Fund Reserves:		
General fund .....	\$ 10,496.97	\$ 9,526.77
Benefit fund .....	145,693.68	143,594.35
Pension fund .....	477,558.38	456,775.89
Emma B. Kennedy Scholarship fund.....	25,046.82	24,122.48
Memorial Scholarship fund, '20.....	2,305.84	2,313.02
Helen Young Scholarship fund.....	25,660.92	22,732.36
Richard William Walsh Scholarship fund.....	1,418.93	1,323.16
Ruth C. Williams Scholarship fund.....	1,395.09	1,198.90
Total capital fund reserves.....	\$689,576.63	\$661,586.93
Operating Funds Reserves.....	\$ 12,814.19	\$ 11,905.35
Total Liabilities .....	\$702,390.82	\$673,492.28

**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**

Cash on hand January 1.....	\$ 10,164.35	\$ 5,511.04
Receipts:		
Sale of securities.....	\$118,697.16	\$ 44,403.31
Investment income .....	34,681.21	30,386.98
Legacy — Estate of Edith Joy Field.....	12,179.30	53,000.00
Donations .....	9,076.83	9,320.12
Dues and initiation fees.....	9,668.33	9,905.97
Dinner to graduating class.....	97.00	402.00
Loans repaid, etc.....	1,124.26	720.67
Total Receipts .....	\$185,524.09	\$148,139.05
	\$195,688.44	\$153,650.09
Disbursements:		
Purchase of securities.....	\$150,144.78	\$108,520.88
Clerical expense and fees.....	5,034.50	4,384.00
Pensions and benefits paid.....	16,857.50	14,750.00
Scholarships granted .....	2,983.33	3,943.33
Loans granted .....		100.00
Donations .....	1,093.50	2,000.00
Printing, stationery and postage.....	6,452.92	6,609.22
Entertainment of graduating class.....	1,611.92	2,124.28
Miscellaneous .....	1,780.12	1,054.03
Total Disbursements .....	\$185,958.57	\$143,485.74
Cash on hand December 31.....	\$ 9,729.87	\$ 10,164.35

HELEN YOUNG, *Treasurer*

## BABIES HOSPITAL BOARD OF WOMEN MANAGERS

## SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS

## FOR THE AUXILIARY

For the Years 1956 and 1955

	<i>1956</i>	<i>1955</i>
Balance, January 1 . . . . .	\$ 246.63	\$ 165.15
Receipts:		
Membership dues . . . . .	\$ 525.00	\$ 515.00
United Hospital Fund . . . . .	5,996.97	5,175.03
Greater New York Fund . . . . .	6,621.03	6,223.97
Total Receipts . . . . .	<u>\$13,143.00</u>	<u>\$11,914.00</u>
	<u>\$13,389.63</u>	<u>\$12,079.15</u>
Disbursements:		
To Babies Hospital for:		
Emergency Nursing . . . . .	\$ 6,200.00	\$ 4,800.00
Pediatric Psychiatric Clinic . . . . .	1,500.00	1,500.00
Recreational Therapy . . . . .	4,500.00	4,500.00
Volunteer Service . . . . .	500.00	500.00
House Staff Loan Fund . . . . .	250.00	
Decorations, furniture and equipment, etc..	250.00	455.00
Miscellaneous . . . . .	85.60	77.52
Total Disbursements . . . . .	<u>\$13,285.60</u>	<u>\$11,832.52</u>
Balance, December 31 . . . . .	<u>\$ 104.03</u>	<u>\$ 246.63</u>

JULIA M. THIERIOT,  
*Treasurer*

## BABIES HOSPITAL BOARD OF WOMEN MANAGERS

## SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS

FOR THE CRIBSIDE SOCIAL SERVICE COMMITTEE

For the Years 1956 and 1955

	1956	1955
Balance, January 1 . . . . .	\$ 3,847.92	\$ 309.69*
Receipts:		
Membership dues . . . . .	\$ 250.00	\$
Donations . . . . .	5.00	5.00
United Hospital Fund . . . . .	7,570.12	7,057.27
Greater New York Fund . . . . .	8,357.88	8,487.73
Investment income . . . . .	672.64	656.78
Bargain Box Thrift Shop . . . . .	3,502.06	6,465.00
Sewing Class dues and receipts . . . . .	451.82	532.77
Repayments by patients of advances and loans . .	138.00	1,052.50
Total Receipts . . . . .	<u>\$20,947.52</u>	<u>\$24,257.05</u>
	<u>\$24,795.44</u>	<u>\$23,947.36</u>
Disbursements:		
Social service salaries . . . . .	\$10,647.18	\$16,085.48
Travel of social service staff . . . . .	90.00	77.02
Conference expenses, dues, subscriptions and meetings . . . . .	26.00	193.77
Convalescent care . . . . .	448.25	1,141.92
Advances to patients for convalescent care and miscellaneous loans . . . . .	138.00	1,052.50
Relief assistance and extra for patients:		
Clothing . . . . .	843.48	1,056.65
Milk and food . . . . .	203.00	190.46
Christmas and Thanksgiving . . . . .	221.66	256.05
Other . . . . .	50.36	43.09
Miscellaneous . . . . .	18.67	2.50
Total Disbursements . . . . .	<u>\$12,686.60</u>	<u>\$20,099.44</u>
Balance, December 31 . . . . .	<u>\$12,108.84</u>	<u>\$ 3,847.92</u>

JANET M. RILEY,  
Chairman

\* Overexpended

THE NEUROLOGICAL INSTITUTE AUXILIARY  
OF THE BOARD OF TRUSTEES OF THE  
PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**

For the Years 1956 and 1955

	1956	1955
Balance, January 1 .....	<u>\$37,256.37</u>	<u>\$31,380.42</u>
Receipts:		
Donations .....	\$ 1,592.00	\$ 2,217.00
United Hospital Fund .....	11,749.17	10,893.34
Greater New York Fund .....	12,971.83	13,101.66
Everybody's Thrift Shop .....	12,676.31	10,585.52
Repayments by patients of advances and loans ..	734.00	593.60
Total Receipts .....	<u>\$39,723.31</u>	<u>\$37,391.12</u>
	<u>\$76,979.68</u>	<u>\$68,771.54</u>
Disbursements:		
Social service salaries .....	\$26,749.18	\$25,105.53
To Neurological Institute for:		
House Staff Loan Fund .....	10,000.00	
Library .....	1,200.00	1,200.00
Special Nursing Fund .....	5,000.00	
Volunteer service .....	1,900.00	1,900.00
Advances to patients for summer therapeutic care and miscellaneous .....	734.00	593.60
Summer therapeutic care .....	2,268.00	1,246.90
Chronic care .....	524.88	115.52
Convalescent care .....	275.75	12.00
Medical relief .....	1,921.33	888.22
Recreation of patients .....	5.50	5.59
Staff travel, field and conference .....	93.95	37.01
Miscellaneous, postage, telephone and publications .....	617.78	410.80
Total Disbursements .....	<u>\$51,290.37</u>	<u>\$31,515.17</u>
Balance, December 31 .....	<u><u>\$25,689.31</u></u>	<u><u>\$37,256.37</u></u>

KATHERINE G. FENIMORE COOPER,  
*Chairman*

THE WOMEN'S AUXILIARY  
NEW YORK ORTHOPAEDIC DISPENSARY AND  
HOSPITAL OF THE PRESBYTERIAN HOSPITAL IN  
THE CITY OF NEW YORK

**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**

For the Years 1956 and 1955

	<i>1956</i>	<i>1955</i>
Balance, January 1 .....	\$ 7,686.22	\$ 3,439.78
Receipts:		
Donations .....	\$ 5,230.02	\$ 5,492.94
Allocation from United Hospital Fund and Greater New York Fund Distribution.....	4,000.00	4,000.00
Total Receipts .....	<u>\$ 9,230.02</u>	<u>\$ 9,492.94</u>
	<u>\$16,916.24</u>	<u>\$12,932.72</u>
Disbursements:		
Recreational therapist salary.....	\$ 2,854.54	\$ 2,626.00
Other recreational therapy expenses.....	1,014.71	820.50
Library .....	700.00	700.00
Volunteer service .....	1,100.00	1,100.00
Total Disbursements .....	<u>\$ 5,669.25</u>	<u>\$ 5,246.50</u>
Balance, December 31.....	<u>\$11,246.99</u>	<u>\$ 7,686.22</u>

PAMELA F. FURSE,  
*Treasurer*



WOMEN'S AUXILIARY OF THE BOARD OF TRUSTEES OF  
THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**

For the Years 1956 and 1955

	1956	1955
Balance, January 1.....	<u>\$ 5,896.08</u>	<u>\$ 6,509.74</u>
Receipts:		
Membership dues .....	\$ 592.50	\$ 652.50
United Hospital Fund.....	7,915.16	6,920.17
Greater New York Fund.....	8,738.84	8,322.83
Donations .....	292.88	285.30
Stuyvesant Square Thrift Shop.....	5,337.08	3,858.06
Total Receipts .....	<u>\$22,876.46</u>	<u>\$20,038.86</u>
	<u>\$28,772.54</u>	<u>\$26,548.60</u>
Disbursements:		
To Presbyterian Hospital for:		
Occupational Therapy .....	\$ 6,000.00	\$ 6,000.00
House Staff Loan Fund.....	4,000.00	
Library .....	4,800.00	5,808.90
Volunteer service.....	7,200.00	8,300.00
Miscellaneous .....	290.33	543.62
Total Disbursements .....	<u>\$22,290.33</u>	<u>\$20,652.52</u>
Balance, December 31.....	<u>\$ 6,482.21</u>	<u>\$ 5,896.08</u>

MARGARET T. STINCHFIELD,  
*Treasurer*

# Endowed Beds

(1) A gift of \$10,000 shall entitle the donor to nominate a patient to use and occupy one bed in the common wards of the Hospital free of charge (except for special service) for not more than ninety days in any one year.

The donor may at the time of making the gift appoint to another in his stead such right to nominate, provided the appointee is acceptable to the Hospital.

Such right to nominate may be exercised only: —

(a) During the life of the person having the right to nominate, if such right is in an individual.

(b) For a period of fifteen years, if such right is in a Corporation, Society or Association.

(2) Endowed Bed privileges are subject to all rules and regulations governing the admission, treatment, and discharge of patients.

(3) The Board of Trustees may in their discretion under special circumstances accept gifts for the endowment of beds on such other terms and conditions as they may deem best calculated to promote the objects for which the Hospital was established and is maintained.

(4) Periodic gifts may be made until endowment of a bed is completed, at which time the right to nominate shall commence.

## MEMORIAL ENDOWED BEDS FOR RESEARCH PURPOSES

A gift of \$10,000 shall entitle the donor to establish as a permanent memorial one memorial endowed bed for research purposes in a ward of the Hospital to be used and occupied by patients free of charge, except for special service.

The President of the Medical Board shall, subject to the approval of the Vice-President and General Manager of the Hospital have the privilege of nominating patients to use and occupy a Memorial Endowed Bed for Research Purposes for not more than 90 days in any one year for a period of 15 years, subject to all rules and regulations governing the admission, treatment and discharge of patients. This privilege shall be assigned to the persons occupying these respective offices (President of the Medical Board and Vice-President and General Manager of the Hospital) at the time the nomination is made.

## *Endowed Beds and Rooms*

### *Presbyterian Hospital*

- 1868 Mary J. Gelston  
1870 Henrietta A. Lenox (2 Beds)  
Washington R. Vermilyea  
A. R. Wetmore  
1871 John Laurie  
Mary Ann Parish  
1872 William Earl Dodge  
John T. Johnston  
Otis D. Swan  
Henry Young (2 Beds)  
1873 James Brown (2 Beds)  
John R. Ford  
Jonathan Sturges

- 1878 James G. and Henry G. deForest, in memory of  
Lockwood deForest Woodruff, M.D.
- 1880 William C. Rhineland
- 1881 Jennet L. and Robert L. Belknap, in memory of Aaron B. Belknap  
Fifth Avenue Presbyterian Church  
Henry B. Hyde, in memory of his son, Henry B. Hyde, Jr.  
John Stewart Kennedy  
Frederick and Henry G. Marquand  
Edwin D. Morgan (3 Beds)  
Mary L. Sheafe  
John L. Proudfit
- 1882 Heber R. Bishop (3 Beds)  
Mrs. Robert L. Stuart, in memory of her father, Robert McCrea  
Edwin D. Morgan  
Mrs. Moses Taylor
- 1883 Frederick Billings  
Reformed Protestant Dutch Church of the City of New York
- 1884 Nathaniel W. Conkling  
West Presbyterian Church, to be known as "Faith Presbyterian Church Bed"  
Madison Square Presbyterian Church, in memory of George W. Lane
- 1885 Brick Presbyterian Church, in memory of Dr. John G. Adams  
Richard Irvin
- 1886 Frederick Baker, in memory of Sarah Pyewell Baker  
Edward L. Beadle  
Brick Presbyterian Church, in memory of Miss Ann Adams  
Fourth Avenue Presbyterian Church Bed by Peter Cumming, in memory of  
Francis P. Schoals  
George E. Dodge  
Horace F. Hutchinson, in memory of Ellen B. Schoals  
Mr. and Mrs. William D. Sloane, in memory of their son,  
William D. Sloane, Jr.  
Henry S. Wilson, in memory of his son, Harry H. Wilson
- 1887 Fifth Avenue Presbyterian Church
- 1888 Broadway Tabernacle Society  
Samuel Inslee, in memory of Kate J. Inslee
- 1889 John Sloane, in memory of his mother, Euphemia Sloane
- 1890 Isaac V. Brokaw, in memory of Ernest B. Brokaw  
Sidney Dillon, in memory of Hannah Dillon  
Ambrose K. Ely  
Josiah M. Fiske  
O. B. Jennings  
Mrs. John Stewart Kennedy  
Amelia Kerr  
Robert Marshall  
Elizabeth S. and Emily M. Wheeler, in memory of James Boorman  
"The Davenport Bed"
- 1891 Sarah A. Havemeyer, in memory of her son, Hector C. Havemeyer  
Thomas Hope  
John E. Parsons, in memory of his children, E. L. P., K. M. P., and R. M. P.  
Mrs. A. R. Van Nest, in memory of her husband, Abram R. Van Nest
- 1892 John Stewart Kennedy, in memory of his niece, Emma Stewart Baker  
Alexander Maitland, in memory of his mother, Mary C. Maitland
- 1893 Maria S. Auchincloss, in memory of her husband, Edgar S. Auchincloss  
Frances T. Lord, in memory of her husband, George deForest Lord  
Presbyterian Church on University Place

- Presbyterian Home for Aged Women  
Margaret A. Sinclair, in memory of Mr. and Mrs. James Sinclair  
West-Park Presbyterian Church  
Young Men's Christian Association
- 1895 Mary Harrison  
Mrs. Clarence M. Hyde, in memory of her mother, Rebecca Babbitt  
John Stewart Kennedy, in memory of Mrs. Robert L. Stewart  
Mrs. James T. Murray, in memory of her husband, James T. Murray
- 1896 Anthony Dey, in memory of Joseph G. and Eliza D. Scott  
Jane Hope  
Esther J. Jennings, in memory of her husband, Oliver B. Jennings
- 1897 Mrs. Francis E. Baker, in memory of her father, James Rich Steers  
William S. Brown  
Helen Miller Gould, in memory of her parents, Mr. and Mrs. Jay Gould  
Margarette E. and Susan D. Griffith, in memory of their father, Griffith W. Griffith  
Mary J. Griffith, in memory of her husband, Griffith W. Griffith  
Rachel L. Kennedy, in memory of her mother, Mrs. Rachel C. Kennedy  
Annie S. Paton, in memory of her husband, William Paton  
Charlotte H. Skidmore, to be known as "The William L. Skidmore Bed"
- 1898 Brick Presbyterian Church  
Matilda A. Brown, in memory of her son, H. Auchincloss Brown  
First Presbyterian Church  
Mrs. Stephen V. Harkness, in memory of her daughter, Florence Harkness  
Jane Hope, in memory of her mother, Grace Corrie Hope  
John Stewart Kennedy, in memory of Rev. William G. Schaufler, D.D., LL.D.  
Mrs. Elliott F. Shepard, in memory of her daughter, Florence Vanderbilt Shepard  
Mrs. Elliott F. Shepard, in memory of her daughter, Marguerite Shepard
- 1899 William W. Cole, in memory of his mother, Mary A. Cole  
William Whitewright, in memory of his father, William Whitewright, "The Whitewright Beds" (10 Beds)
- 1900 Emily B. Hopkins, in memory of her husband, Moses Hopkins, "Moses Hopkins Memorial"  
Donald MacKay, in memory of his children, Edith Winslow and Walter Wise MacKay  
Caroline L. Macy, in memory of her daughter, Mary M. K. Willets  
Laura Roome, in memory of her sons, Harry and Alfred Roome  
Martha L. St. John, in memory of her mother, Sarah Ward  
Nathaniel Whitman
- 1901 Julia Billings, in memory of her husband, Frederick Billings  
Camilla L. Edwards, in memory of her husband, Walter Edwards  
Andrew J. Garvey, in memory of his mother, Elizabeth Jeffries Garvey (2 Beds)  
George Lauder  
Charles H. Marshall  
Justine Adele Stafford, in memory of her father, Justin A. Bliss
- 1902 Robert Graham Dun  
Margaret J. Plant, in memory of her brother, Simon Loughman
- 1903 Heber R. Bishop  
Lura Currier  
Mrs. Francis B. Harrison  
Julia J. MacCartee, in memory of her husband, Robert MacCartee  
Madison Avenue Reformed Church  
Adela Berry Sloane, in memory of her father, Abraham J. Berry, M.D.

- Justine Adele Stafford, in memory of her mother, Eveline C. Bliss  
 John T. Terry
- 1904 Virginia E. Fowler, in memory of Clarence E. Fowler  
 Susan Bevier  
 Mrs. William Starr Miller  
 Josephine Penfold, in memory of Dr. Edward Livingston Trudeau, Jr.  
 Peter Reid, in memory of his wife, Jane Watson Reid  
 Francis A. Palmer
- 1905 Frederick G. Bourne  
 Helen C. Inslee, in memory of her husband, Samuel Inslee  
 Titus B. Meigs, in memory of his son, Titus B. Meigs, Jr.  
 Mrs. James T. Murray, in memory of Rev. John Hall, D.D., LL.D.  
 Sarah J. Parsons, in memory of her husband, Charles Parsons  
 Presbyterian Church on University Place
- 1906 Maria L. Campbell, in memory of Henry Pearsall Campbell  
 Susan W. Duncan, in memory of her husband, John P. Duncan  
 Samuel Keyser (3 Beds)  
 Sara Pyle McAlpin and James Tolman Pyle, in memory of their father,  
 William Scott Pyle  
 Reformed Protestant Dutch Church of Garden Street  
 John Sloane, in memory of his brother, Thomas Chalmers Sloane  
 John Sloane, in memory of his father, William Sloane
- 1908 William R. Craig, in memory of his sister, Florence Faxon Craig  
 George B. Goldschmidt, in memory of his mother, Celestine Goldschmidt  
 Samuel Anthony Goldschmidt, in memory of his mother, Celestine  
 Goldschmidt  
 Mrs. Stephen V. Harkness, in memory of her husband, Stephen V. Harkness  
 Charles H. Marshall, Jr.
- 1909 Rev. and Mrs. Robert Russell Booth, in memory of "Minnie and Willie"  
 Canadian Society of New York  
 Edward West Currier, in memory of his stepmother, Laura Currier  
 Edward West Currier, in memory of his stepbrother, Walter B. Currier  
 Edward West Currier, in memory of Edward W. Currier  
 Mary Jane Johnson, in memory of her husband, William H. Johnson  
 J. Theresa Keyser, in memory of her husband, Samuel Keyser  
 Julia Hannon Lyle  
 Winfield Tucker, in memory of Joseph, Isabelle and Adeline (3 Beds)  
 J. Spencer Turner, in memory of his first wife, Cornelia J. Turner
- 1910 Jane A. Townsend, in memory of her son, Randolph W. Townsend, Jr.  
 Jane A. Townsend, in memory of her son, Harmon W. Norton  
 Jane A. Townsend, in memory of her daughter, Emma L. Norton  
 Amelia Mott Graham, in memory of Malcolm Graham  
 Adeline Ives Latham, in memory of her husband, John Howard Latham  
 Josephine G. Lord, in memory of her husband, Franklin B. Lord
- 1911 Brearley School Girls and others interested, in memory of Madam Bertha  
 Beck, "Madam Beck Memorial Teacher's Bed"  
 Harriet Coles, in memory of her sisters, Susan and Anna Codman  
 Caroline Thorn Kissel, in memory of her husband, Gustav Edward Kissel  
 Katherine Spencer Leavitt, in memory of her husband, Rev. William Leavitt  
 (2 Beds)  
 Reformed Low Dutch Church of Harlem  
 Frederick Sturges, in memory of his father, Jonathan Sturges  
 William Stuart Tod, in memory of his brother, George Tod
- 1912 Melville de Wolf, in Children's Ward, "Emma de Wolf Bed"  
 Gustavia A. Senff, in memory of her husband, Charles A. Senff

- 1913 Mrs. Christopher M. Bell, "The Dennistoun Bed"  
Cornelia Eaton, to be known as "The Dr. Reuben S. Carpentier Memorial"  
(3 Beds)  
Mrs. Jeremiah V. Meserole, in memory of her son, Abraham Meserole  
Josephine Penfold  
Jane G. Phelps, in memory of her husband, Anson G. Phelps, Jr. (2 Beds)
- 1914 Hugh D. Auchincloss, in memory of his mother, Elizabeth Auchincloss  
Jane Elizabeth Grannis, in memory of her mother, "Charlotte Williams Platt  
Bed"  
William H. Penfold, in memory of Josephine Penfold  
Louise Tillinghast, in memory of her sister, Amelia C. Babcock  
Minnie Hackett Trowbridge (6 Beds)
- 1915 A Friend, in memory of Sophia Kellogg Stebbins and Mary Tompkins  
Kimball  
A Friend  
Mrs. Jeremiah V. Meserole, in memory of her father-in-law, Abraham  
Meserole  
Mrs. Jeremiah V. Meserole, in memory of her husband, Jeremiah Vanderbilt  
Meserole  
Mrs. Jeremiah V. Meserole, in memory of her brother, Adolphus Clock  
Mrs. Jeremiah V. Meserole, in memory of her parents, Alfred and  
Anna Maria Clock
- 1916 Emil C. Bondy, in memory of Margaret Carson Cowan  
Central Presbyterian Church  
Mr. and Mrs. James Petrie Chalmers, in memory of James Petrie  
Chalmers, Jr., "Chalmers Memorial Bed"  
Robert A. Chambers, in memory of his father, Robert Chambers  
Dunlevy Milbank, in memory of his mother, Ella Dunlevy Milbank  
William D. Sloane (3 Beds)
- 1917 Emeline Y. Danforth, in memory of Mrs. William B. Jenkins  
Harris Brisbane Dick, to be known as the "Harris Brisbane Dick Free Bed"  
Sarah C. Miller  
Albert Winter, in memory of Adaline Benson Winter
- 1918 Ida Leora Olmstead, to be known as "Leora McCammon Bed"
- 1919 Samuel Elliott  
Elizabeth Keys, in memory of her daughter, Edith Keys  
Rutgers Presbyterian Church  
James R. Steers, in memory of his former wife, Rebecca E. Steers  
John W. Sterling
- 1920 William C. Boschen, to be known as the "Boschen Bed"  
Rosa Franklin (4 Beds)  
Francis P. Furnald  
Mrs. Francis P. Furnald  
Mary A. Harriot, to be known as the "Margaret Harriot Alms"  
Mary A. Harriot, to be known as the "James Harriot Alms"  
Mrs. Henry O. Havemeyer, in memory of her parents, George William and  
Matilda Adelaide Elder  
Margaret J. Orr, in memory of her mother, Ann Boyd Orr  
Anna St. John, in memory of her brother, Milton St. John
- 1921 Mrs. Peter B. Wyckoff, to be known as the "Sidney Dillon Bed"  
Henry M. Geschcidt  
Ralph E. Prime, in memory of his daughter, Ruth Havens Prime  
Joseph K. Gwynn  
Charles S. Ward, in memory of his friend, Sophie L. Kinman  
Charles S. Ward

- 1922 Minetta C. Howenstine (8 Beds)  
Christina C. Munro, in memory of her husband, John Munro  
Anna M. Romaine, in memory of Dr. William I. Detmold  
Arnold Thayer (2 Beds)  
Hamilton B. Tompkins, in memory of his wife and himself
- 1923 Lydia Augusta Brown  
Josephine Newman Hall
- 1924 Bohemian Society "Lidumil"  
Cordelia F. Turrell  
Nannie Gyles Johnson (Children's Ward), in memory of her son,  
Shirley Everton Johnson  
Mrs. William John Fitzgerald
- 1925 Christina Bond  
In memory of Julia C. Skidmore  
George Clarke  
Elizabeth J. Hofer (2 Beds)  
In memory of Catherine Parke and Horatio C. Kretchmar  
Edward M. Morgan Memorial Association (4 Beds)  
In memory of Edward M. Morgan  
Jennette Robertson, to be known as "Helen C. Inslee Endowed Bed"
- 1926 Elizabeth Ellen Auchincloss, to be known as "E. E. Auchincloss, Jr. Bed"  
Members of the New York Stock Exchange, to be known as the  
"Seymour LeGrande Cromwell Memorial" (2 beds)  
Edmund Penfold (2 Beds), in memory of Josephine Penfold and  
William Hall Penfold  
Dr. M. Allen Starr, in memory of Allen Egbert Starr  
John B. Trevor, in memory of Emily N. Trevor  
West End Collegiate Church  
George D. Widener
- 1927 Second Presbyterian Church in the City of New York  
Ellen Mills Borne, in the Children's Ward, two beds to be known as  
"John E. Borne Bed" and "Nellie M. Borne Bed"  
Virginia Marquand Monroe, in the name of the Young Men's Christian  
Association  
Mrs. Charles H. Senff, to be known as "Dr. George A. Tuttle Bed"  
W. Frazer Gibson, in memory of his mother, Jeanette Frazer Gibson, to be  
known as "Jeanette Frazer Gibson Bed"  
Augustus C. Gurnee, two beds in memory of his mother, Mary M. Gurnee  
Eliza V. Nicholson  
Mrs. Murray W. Dodge and Mrs. Franklin Lord, in memory of their mother,  
Mrs. Fordyce D. Barker (Single Ward Room)  
Dunlevy Milbank (Single Ward Room)  
F. Ethel Wickham, in memory of her father, William Hull Wickham, to be  
known as "William Hull Wickham Bed" (Single Ward Room)  
Anna A. Johnston, in memory of her parents, William G. and  
Adriana C. Gardner  
Anna A. Johnston, in memory of Lewis, Anna, Edward and Mary Johnston  
(Single Ward Room)  
Broadway Presbyterian Church, to be known as the "Walter Duncan  
Buchanan Bed"
- 1928 North Presbyterian Church  
In memory of McKevers Bayard Brown (Single Ward Room)  
Caroline B. Sellew (4 Beds)  
Red Cross Rooms for Nurses (3 Single Ward Rooms)  
Robert W. deForest (Single Ward Room)

- Henry W. deForest (Single Ward Room)  
 James R. Steers  
 Jane Livingston Armour, in memory of John A. Livingston  
 Jane Livingston Armour, in memory of Herman O. Armour  
 In memory of Meredith Howland Pyne  
 Stella C. and Roi C. Megrue (Single Ward Room)  
 Mrs. E. C. Wills, in memory of her mother, Mrs. J. F. Ackerman, and her  
 sister, Mrs. W. Clarence Reed
- 1929 Caroline White, in memory of her sister, Eliza W. White  
 Elizabeth A. Hays, in memory of William and Charlotta Hays
- 1930 Mr. and Mrs. Ernest Trow Carter  
 The Presbyterian Church in the Town of Rye, N. Y.  
 Mrs. Arthur E. Lauderbach, in memory of her mother and father,  
 Esther Hull Jackson and Peter A. H. Jackson  
 Mary L. Walker Peters, to be known as "The Charles Grenville Peters and  
 Mary Walker Peters Free Bed"  
 Marie F. Coddington, to be known as "The Emilie Coddington Bed"
- 1931 Mrs. Clara Beales Obrig, in memory of Adolph Obrig and Clara Beales Obrig  
 (Single Ward Room)  
 Alfred V. Meserole, in memory of his mother, Evelina A. Meserole
- 1932 In loving memory of Justine Adele Stafford (Mrs. W. F. Stafford)  
 by her sister, Ida Evelina Bliss
- 1933 Mrs. John A. Hance and Mrs. Irene Louise Hance, in memory of  
 James R. Jesup
- 1934 Ida Adams, in memory of her sister, Sadie E. and her brother,  
 Robert F. Adams (Single Ward Room)  
 Josephine Leypoldt, in memory of her brothers, Louis and Frederick  
 Leypoldt (2 Beds)
- 1935 Walter J. M. Donovan, in memory of his father, Timothy Donovan
- 1936 Elizabeth P. Hewes, to be known as "The Elizabeth P. Hewes Bed"  
 Dunlevy Milbank, in memory of his mother, Ella Dunlevy Milbank  
 Mary S. Thayer, to be known as "The Orlando Thayer Bed"
- 1937 Margaretta J. Gamble, to be known as "The Gamble Bed," in memory of her  
 father and mother  
 Jeremiah Milbank, in memory of his father, the late Joseph Milbank
- 1938 Susetta L. Goss, to be known as "The Goss Bed," in memory of her parents,  
 Rev. C. C. Goss and Theodosia C. Goss  
 Annie Miller, to be known as "The Mrs. Alexander Miller Memorial Bed,"  
 in memory of her mother, Mrs. Alexander Miller  
 Bertha H. Minturn, in memory of her most faithful and beloved nurse,  
 Mary Humphries  
 Henry T. Sloane, to be known as "The Euphemia Sloane Coffin Bed,"  
 in memory of his sister Euphemia Sloane Coffin
- 1939 "In Memoriam"  
 Dunlevy Milbank, in memory of his mother, Ella Dunlevy Milbank
- 1940 George Gibbs, to be known as "The George Gibbs Bed"
- 1942 Mrs. Huntington McLane, to be known as the "Therese K. Thorne Bed,"  
 in memory of her mother  
 Cornelia Livingston Pell, in memory of Alfred Duane Pell  
 Frank Wallach, in memory of Ida May Wallach
- 1943 Stuart Duncan, to be known as "The Stuart Duncan Bed"
- 1944 Anonymous, to be known as "The Dr. William Darrach Bed"  
 John Fraser, in memory of his parents, Alexander and Elizabeth Fraser
- 1945 Robert W. Carle, in memory of his mother, to be known as the "Cornelia



Willets Carle Bed" for general hospital use including harelip and cleft palate cases

- 1947 W. and J. Sloane  
 Frederick Sturges, Jr., Mrs. Mary Armit Sturges, Mrs. Catharine Armit Chapman and Frederick Sturges, III, in memory of Frederick Sturges Walter S. Gifford, in memory of his son, Walter Sherman Gifford, Jr. Ida L. Darling, known as the "Richards Memorial Bed"  
 John Sloane, in memory of his wife, Elsie Nicoll Sloane, to be known as the "Elsie Nicoll Sloane Bed"  
 Elisa Smith Mabon, in memory of her husband, James Brown Mabon
- 1948 Otto M. Eidlitz, to be known as the "Eidlitz Bed"
- 1949 Effie B. Shearman
- 1950 Isabel Shields Kemp, to be known as "Mary M. Shields and the Dr. Robert Coleman Kemp Free Bed"
- 1951 Gerrish Hill Milliken
- 1952 William Dzus, to be known as the "Ukrainian Institute of America, Inc. Bed"
- 1953 Estate of Charlotte C. Garretson, to be known as the "Charlotte Higbee Kelsey Bed"  
 W. Alton Jones Foundation, Inc., to be known as the "Nettie Marie Jones Bed"
- 1954 Estate of M. Samuel Stern to be known as the "M. Samuel Stern Memorial"
- 1955 Estate of Robert J. Eidlitz to be known as the "Marc Eidlitz Bed"  
 Mrs. John S. Holbrook, in memory of her parents John Johnston and Mary Sloane Sinclair
- 1956 Estate of Aurie Dell Black to be known as the "Aurie Dell Black Bed"  
 Robert W. Carle to be known as the "Adele Skiddy Carle Bed"  
 Estate of Adolph Riesenbergl to be known as "The Adolph and Anna A. Riesenbergl Bed"

#### MEMORIAL ENDOWED BEDS FOR RESEARCH PURPOSES

- 1948 Mrs. William Barclay Parsons, in memory of her husband,  
 William Barclay Parsons  
 Muriel Jane Rudinger Foundation, Inc., to be known as the  
 "Muriel Jane Rudinger Bed"
- 1950 Charles E. Culpeper Foundation, Inc. (2 Beds)
- 1952 John F. Bush Memorial Bed  
 Estate of Selma Boyd, two beds each to be known as a "Boyd Bed"  
 Bruce Barton, in memory of his wife, to be known as the "Esther Randall Barton Memorial Bed"
- 1953 Herman Goldman Foundation, Inc., in memory of Theresa and Frank Goldman  
 W. Alton Jones Foundation, Inc., in memory of Mamie W. Marvin
- 1954 Mr. and Mrs. Charles P. Cooper, in memory of Mrs. Cooper's father,  
 Doctor Charles Lathrop Parsons  
 John Shepard Parke Memorial Bed  
 Mr. and Mrs. Sidney J. Weinberg, in memory of their parents
- 1955 Bruce Barton, in memory of Clyde Scott and Helen Barton Stilwell, to be known as the "Clyde Scott and Helen Barton Stilwell Memorial Bed"  
 George F. Cahill, M.D., Research bed in the Department of Urology  
 Mr. and Mrs. Charles P. Cooper, in memory of Mrs. Cooper's mother,  
 Mrs. Charles Lathrop Parsons  
 Herman Goldman Foundation, Inc., in memory of Theresa and Frank Goldman  
 Williams-Adler Foundation Bed

## ENDOWED ROOMS

- 1903 Henry H. Rogers, known as "Room J"  
 1905 Mrs. Morris K. Jesup, to be known as the "Eliza De Witt Memorial Room"  
 1910 Mrs. John Stewart Kennedy, in memory of her husband, to be known as the  
 "J. S. K. Memorial Room"  
 1912 Peter Cumming, to be known as "Peter Cumming Memorial Room"  
 1926 Alumnae Association of the School of Nursing of The Presbyterian Hospital,  
 to be known as the "Amabel G. Roberts Memorial Room"  
 1928 Mrs. William Sloane, to be known as "The William Sloane Room for  
 Graduate Nurses"  
 1930 The Sarah A. Hard Taylor Memorial Fund, to be known as "The Sarah A.  
 Hard Taylor Room"  
 1935 Mrs. Herbert Neal, in memory of her husband, James Norman Hill, deceased  
 1937 S. Augusta Mora, in memory of her husband, Frank Mora, and mother,  
 Sarah Robson Van De Water

**Babies Hospital**

- 1892 The Cribside Committee, known as "Cradyl-Nyst"  
 1894 Miss Ellen James Evans  
 Mrs. Henry G. Trevor  
 1895 Mrs. Evan T. Walker  
 Mrs. Richard Arnold, in memory of Georgiana Arnold  
 1897 Mr. and Mrs. Charles M. Fry, known as the "Mr. and Mrs.  
 Charles M. Fry Bed"  
 Mrs. George Kemp, "For the use and purposes of the Hospital"  
 1898 Mrs. Oliver G. Jennings, known as the "Brewster Bed"  
 1899 Mr. and Mrs. John Sherman Hoyt, in memory of John Sherman Hoyt, Jr.  
 1900 Mrs. Elizabeth Chamberlin Lockwood, in memory of Emily Beaver  
 Chamberlin  
 1902 Mr. and Mrs. W. E. Dodge, in memory of Grace Osborn  
 Henry P. Wertheim, in memory of Clara W. Wertheim  
 1904 Mr. and Mrs. George Arents, in memory of George Arents Brown  
 Estate of Mrs. Charles Harvey Hartman  
 1905 Mrs. J. Henry Lane  
 Mrs. Daniel S. Lamont, known as the "Julia Lamont Bed"  
 1907 The Cribside Committee  
 1908 Arthur W. Butler, in memory of Elizabeth Marshall Butler  
 1910 Dr. and Mrs. L. Emmett Holt, in memory of Kenneth M. Holt  
 Edwin Clarence Moller, in memory of Peter Moller  
 1911 Emily A. Watson, in memory of Wheeler Watson  
 Mrs. Bradley Martin, in memory of David Bradley Martin  
 1912 In loving memory of J. Bradley Cumings, endowed by his friends. "Greater  
 love hath no man than this, that a man lay down his life for his friends."—  
*St. John 15:13*  
 1914 Mrs. Andrew Carnegie, in memory of Archibald Fraser Barrow  
 Mrs. Robert W. Todd, known as the "Mabel Todd Bed"  
 1916 Mr. and Mrs. John Chandler Moore, in memory of Edward de Bébian Moore  
 Mrs. John Hubbard, in memory of Margaret Fahnestock  
 Mrs. Clarence M. Hyde, known as the "Clara Mathewson Hyde Bed"  
 1917 Harris Brisbane Dick, known as the "Harris Brisbane Dick Free Bed"  
 Mrs. Edward S. Harkness, known as the "Thomas Stillman Taylor Bed"  
 Mr. and Mrs. Walter A. Hirsch, in memory of John Walter Hirsch  
 1919 Mr. and Mrs. Daniel Schnakenberg, in memory of their daughter,  
 Anna Kate Bartlett

- Mrs. John Jay Knox, in memory of John Jay Knox  
 Mrs. John Jay Knox, in memory of Dr. Reuel B. Kimball  
 1920 Mrs. Andrew Carnegie, "A thanks offering for Louise Carnegie Miller"  
 1921 The Estate of Jacob H. Schiff  
 1922 The Cribside Committee, in memory of Sarah Elizabeth Williams  
 Mr. and Mrs. Simon Guggenheim, in memory of their son,  
 John S. Guggenheim  
 1923 Mr. and Mrs. Herman Armour Nichols, "In loving memory of  
 Marie Louise Nichols"  
 1929 The Estate of Julia M. Stout  
 1930 Edith C. Thompson, in memory of her mother, Mrs. Grace H. Thompson  
 1934 West End Collegiate Church  
 1935 The Estate of Daniel Schnakenberg, in memory of his children, Daniel  
 Schnakenberg, Jr., and Marie Schnakenberg  
 1936 The Estate of Carrie Guggenheim  
 1938 The Estate of Emily S. Hornblower, in memory of her stepdaughter,  
 Susie Sanford Hornblower  
 1949 Dr. Frederic H. Bartlett, "Endowed in loving memory of Frederic H. Bart-  
 lett, M.D., 1872-1948, by his patients and other friends to commemorate  
 his many years of faithful service in Babies Hospital"  
 1950 The Estate of Emelyn L. Coolidge, in memory of Marianna Wheeler and  
 Emelyn L. Coolidge, M.D., to be known as "The Wheeler-Coolidge Bed"

### *Neurological Institute*

- 1929 Red Cross Endowed Bed for Nurses  
 Rivington-Dwyer Endowed Room for Nurses  
 1943 Alice Dunning Starr, in memory of her husband, Allen Starr

#### MEMORIAL ENDOWED BEDS FOR RESEARCH PURPOSES

- 1952 Estate of John Bahrenberg, in memory of John H. Bahrenburg and  
 Elizabeth Bahrenberg (Sixteen Beds)

### *New York Orthopaedic Dispensary and Hospital*

- 1883 Miss C. B. Hicks, continued in perpetuity by Buchanan Winthrop  
 1886 Mrs. Elizabeth Milbank Anderson, four beds, in memory of  
 J. Milbank Anderson  
 1891 Alfred Corning Clark, three beds  
 Edward Severin Clark, two beds, to be known as the "Edward Severin Clark  
 Beds"  
 Mrs. Henry S. Winthrop  
 1893 Mrs. William D. Sloane, in memory of William Douglas Sloane, Jr.  
 James K. Gracie, in memory of Anna Bulloch Gracie  
 Miss Sarah B. Gibbs  
 1894 Mrs. Richard Tylden Auchmuty, two beds, in memory of  
 Richard Tylden Auchmuty  
 James H. Jones  
 1896 Mrs. William Astor, in memory of Helen Roosevelt  
 Mrs. Evan T. Walker, in memory of John J. Walker  
 1897 Mrs. William D. Sloane, two beds, one bed in memory of Maria Louise  
 Vanderbilt and one in memory of Emilie Vanderbilt Burden  
 1898 Mrs. Charles B. Alexander, for her daughter, named the  
 "Harriet Alexander Bed"  
 1901 Mrs. N. A. Baldwin, in memory of Louise Suydam Duer  
 Mrs. Benjamin Brewster, in memory of Benjamin Brewster

- Henry T. Sloane, Jessie and Emily Sloane, bed endowed by their father  
Mrs. Marion Story, in memory of M. Furman Hunt
- 1902 James Henry Smith, two beds, in memory of George Smith  
Miss Emily A. Watson, in memory of Mrs. Mary J. Walker
- 1904 Miss Cornelia Prime, in memory of her brother, Temple Prime  
Miss Helen Phipps  
James K. Gracie, in memory of Esther Gracie Ogden
- 1906 Miss Caroline White  
Mrs. M. Dwight Collier, in memory of Maurice Dwight Collier
- 1908 Mrs. H. N. Munn, Mrs. Augusta Munn Tilney and Orson D. Munn,  
in memory of Henry Norcross Munn
- 1911 Estate of Everetta C. Whitney  
Miss Josephine C. Smith, in memory of her father, Dr. Edward A. Smith,  
and her mother, Rebecca Miller Smith
- 1913 Estate of Marion de Forest Clark, in memory of Julian Bouton Clark  
An anonymous donor, to be known as "Mary Townsend Cuyler Bed"  
Carolina F. Butterfield, in memory of Frederick Falconer Butterfield
- 1915 Miss Emily Trevor  
Mrs. Frederick W. Vanderbilt to be known as "The Louise Bed"  
George Graft Mason, two beds, in memory of his uncle, James Henry Smith
- 1916 Henry M. Tilford, in memory of Catharine Hunt Tilford  
Estate of Miss Clementine Furniss, to be known as the  
"Clementine Furniss Bed"  
An anonymous donor
- 1917 Mrs. Charles H. Senff, in memory of her little son, Henry Senff  
Mrs. A. Murray Young, in memory of her great uncle, Wilson G. Hunt
- 1919 R. Fulton Cutting, to be known as the "Helen Suydam Cutting Bed"  
Mrs. Frederick Delano Hitch  
Levi P. Morton, in memory of Anna Livingston Morton  
Miss Georgiana G. R. Wendel, two beds, "In Memory of My Sister,  
Augusta A. S. Wendel"  
Various donors, in memory of Theodore Roosevelt
- 1920 Mrs. John Hobart Warren
- 1921 Mrs. Winthrop W. Aldrich, in memory of her little son,  
Winthrop Williams Aldrich, Jr.  
F. Ambrose Clark, to be known as "The Florence L. Clark Bed"
- 1922 Mrs. David T. Dana, in memory of her mother, Mrs. M. Dwight Collier
- 1924 Estate of Charlotte Bruce Bickmore, in memory of  
Albert Smith Bickmore, Jr.  
Mrs. Louise Ward McAllister Lewis, in memory of her mother
- 1925 Miss Elizabeth J. Hofer, two beds, in memory of Horatio C. Kretchmar  
Percy Chubb, in memory of his wife  
Junior Red Cross of the Public Schools of New York  
Mrs. Douglas Robinson, in memory of her friend, Charles Allen Munn
- 1926 Junior Red Cross of the Public Schools of New York
- 1927 Darrach Home for Crippled Children, in memory of Dr. May Darrach
- 1928 Mrs. Mary L. Schoonmaker, ten beds, in memory of Sylvanus Lothrop  
Schoonmaker and Frank Layng Schoonmaker  
Estate of Henry D. Dickinson, in memory of Hathaway M. Dickinson
- 1930 James T. and Sarah Bancroft Leavitt, to be known as the  
"Mrs. James T. Leavitt Bed"
- 1934 Henry C. deRham, Frederic F. deRham and Clarisse deRham Rutherford,  
in memory of their parents, Charles and Emily Howe deRham
- 1935 Mrs. Percy R. Pyne and family, in memory of Meredith Howland Pync

- 1936 Miss Elizabeth Stewart Hamilton, in memory of Mrs. John Hobart Warren,  
to be known as the "Harriette Mott Warren Bed"  
Mrs. Edward S. Harkness, to be known as "Dorcas House Bed"  
in dear memory of Wilma Gidcon
- 1938 Miss Grace Howard Potter, to be known as the "Howard and Mary Louisa  
Potter Bed," in memory of her father and mother
- 1955 Estate of Louise Lewis  
General and Mrs. E. F. Maude, in memory of Mrs. Maude's father  
Robert I. Brewster  
Estate of Carrie Rosenshine, to be known as "The Lillie Rosenshine--  
Marjorie L. Kaufman Bed"
- 1956 Estate of Adolph Riesenbergl to be known as "The Adolph and  
Anna A. Riesenbergl Bed"

## ENDOWED ROOMS

- 1922 Glenn Ford McKinney, a ward room in the country branch, in memory of  
his wife, Jean Webster McKinney
- 1929 400 of his friends and associates, a room in the private pavilion, in memory  
of H. Le Roy von Lackum, M.D., surgeon in this hospital, 1916-1928

*Herman Knapp Memorial Eye Hospital*

(Institute of Ophthalmology)

- 1883 Mrs. Oswald Ottendorfer
- 1884 Miss Henrietta A. Lenox
- 1895 Miss Mary Morris van den Heuval
- 1897 Mrs. Giovanni Ceccarini
- 1913 Miss Catherine A. Bliss  
Miss D. Willis James
- 1918 Truman Peck Stone
- 1921 Miss Rosie Bernheimer (In memory of her parents)
- 1923 Miss Mary Wiley (In memory of her brother, George Wiley)
- 1928 Mrs. Matilda Townsend Palmer
- 1931 Leo Doblin
- 1936 Charles M. Brooks

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# Gifts and Bequests

The activities of the various hospitals at the Medical Center are supported to a substantial extent by the income from bequests and devises from friends of the various hospitals, who have desired to insure the continuation of their help to the sick of New York.

Bequests and devises may be made in the following form:

**Form of Bequest** *I give and bequeath to The Presbyterian Hospital in the City of New York the sum of..... dollars (\$.....) to be applied to the use and benefit of the said Hospital, under the direction of the Trustees thereof.*

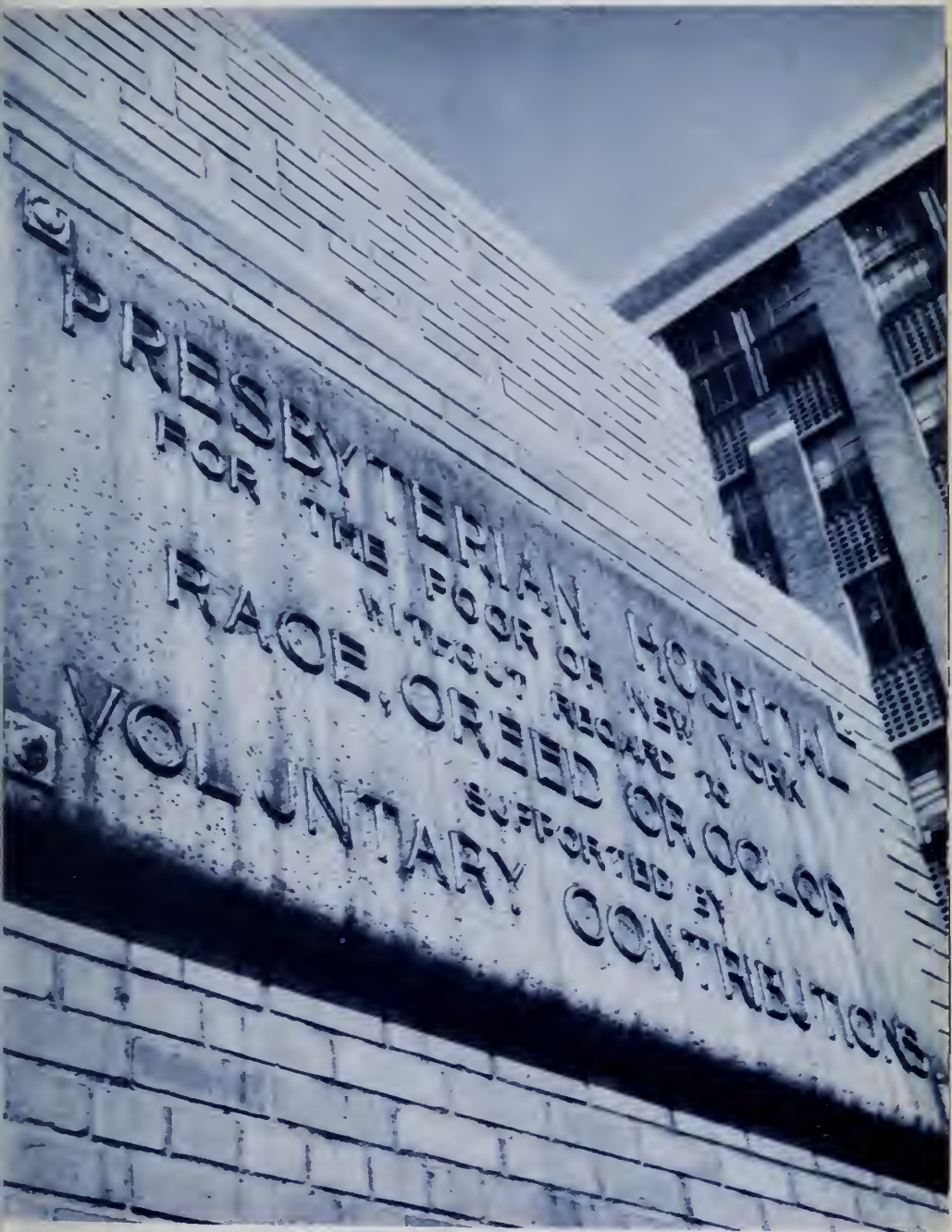
**Form of Devise** *I give and devise to The Presbyterian Hospital in the City of New York all that, etc. (describe the property), to be had and holden to the said The Presbyterian Hospital in the City of New York, its successors and assigns, for the use and benefit of the said Hospital.*

In case it is desired to make the bequest to the Hospital as a memorial "*In memory of.....*" may be added to the Form of Bequest or Devise.

In all instances the gift should be to "The Presbyterian Hospital in the City of New York" in its full corporate name even when mentioning the particular use to which it is to be put.

The corporation will, because of the consolidation of the corporations formerly administering the Medical Center hospitals, become entitled to gifts to the former corporations. It will, therefore, not be necessary to change the provisions of any will naming The Babies Hospital of the City of New York, Neurological Institute of New York or New York Orthopaedic Dispensary and Hospital as beneficiary.

EDWARD C. BENCH,  
*Treasurer.*



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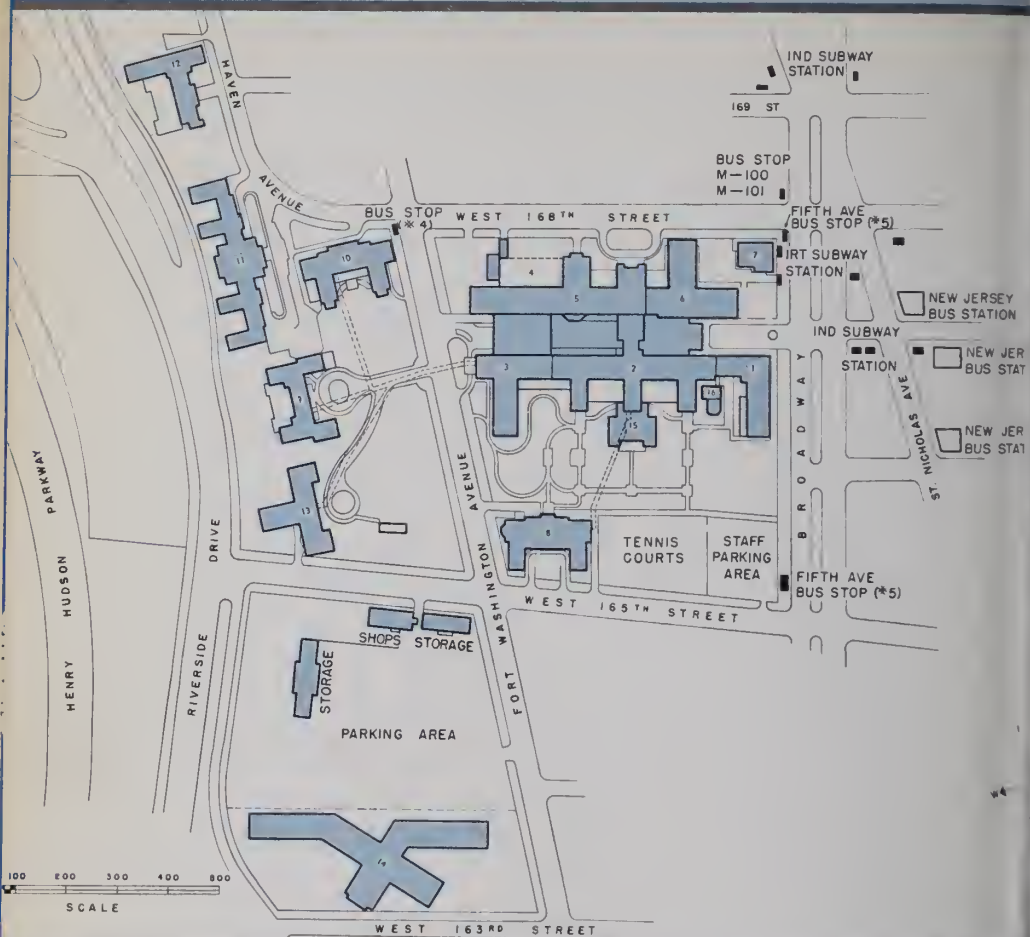


ANNUAL REPORT 1955



The Presbyterian Hospital at Columbia-Presbyteriar

MEDICAL CENTER



**COLUMBIA-PRESBYTERIAN MEDICAL CENTER • New York City**

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| <ol style="list-style-type: none"> <li>1. BABIES HOSPITAL</li> <li>2. PRESBYTERIAN HOSPITAL<br/>N. Y. ORTHOPEDIC HOSPITAL<br/>SLOANE HOSPITAL<br/>SQUIER UROLOGICAL CLINIC</li> <li>3. HARKNESS PAVILION</li> <li>4. POWER HOUSE</li> <li>5. COLLEGE OF PHYSICIANS<br/>AND SURGEONS</li> <li>6. VANDERBILT CLINIC<br/>SCHOOL OF DENTAL AND<br/>ORAL SURGERY</li> <li>7. N. Y. CITY DEPT. OF HEALTH<br/>SCHOOL OF PUBLIC HEALTH<br/>AND ADMINISTRATIVE MEDICINE</li> </ol> | <ol style="list-style-type: none"> <li>8. INSTITUTE OF OPHTHALMOLOGY</li> <li>9. MAXWELL HALL</li> <li>10. NEUROLOGICAL INSTITUTE</li> <li>11. N. Y. STATE PSYCHIATRIC<br/>INSTITUTE &amp; HOSPITAL</li> <li>12. BARD HALL</li> <li>13. HARKNESS MEMORIAL HALL</li> <li>14. FRANCIS DELAFIELD HOSPITAL, N.Y.C.</li> <li>15. PAULINE A. HARTFORD MEMORIAL CHAPEL</li> <li>16. BETATRON BUILDING</li> </ol> |
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- == PEDESTRIAN TUNNELS

*Cover photo by Werner Wolff of Black  
Other photos by Elizabeth Wilcox, Esther B  
Werner Wolff and Arthur Schatz of Black Sta  
Falk of The New York Times, Manny We*

EIGHTY - NINTH  
ANNUAL REPORT

For the Twelve Months ended December 31, 1957

The Presbyterian Hospital in the City of New York  
at the Columbia-Presbyterian  
MEDICAL CENTER

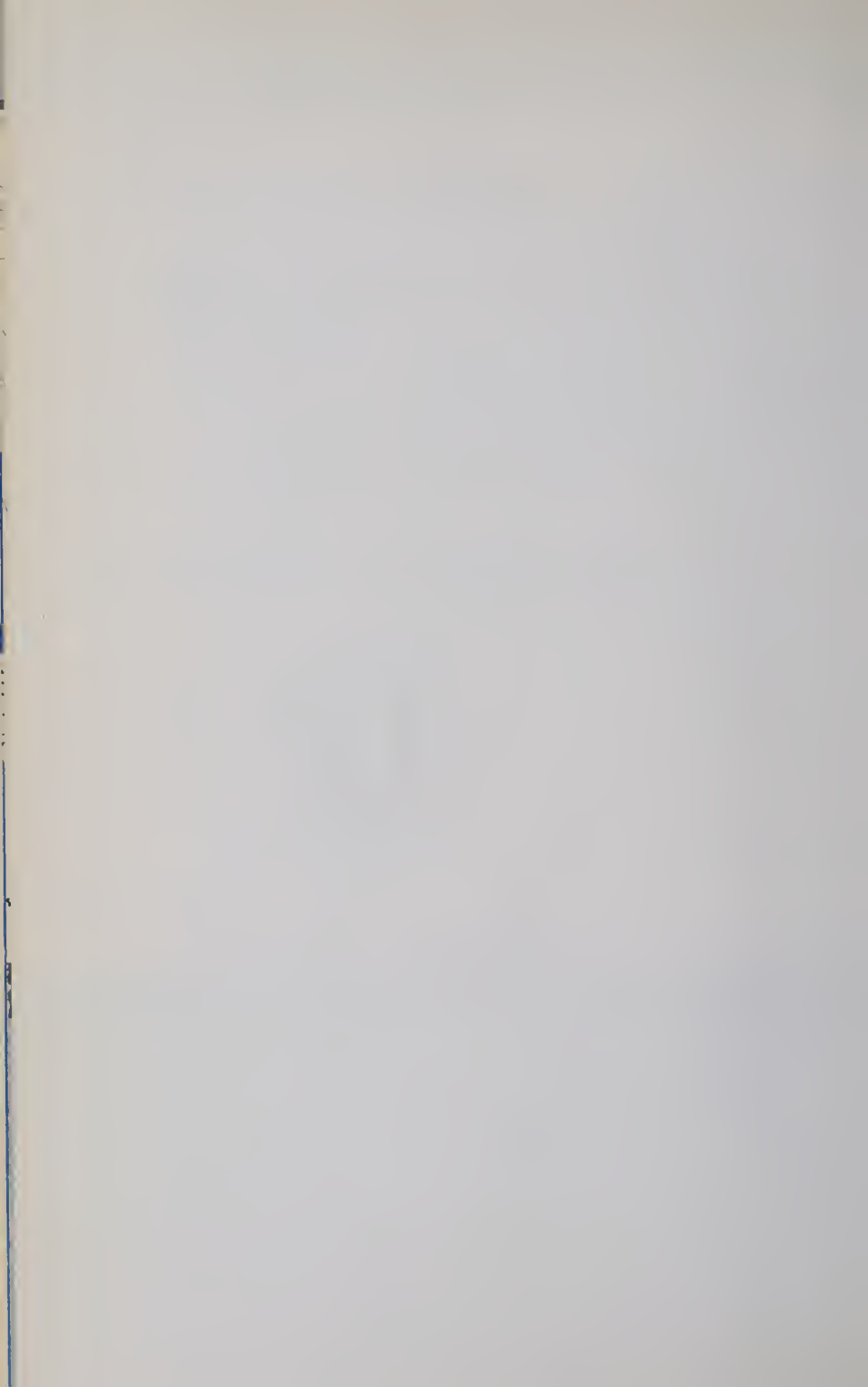


INCLUDING

Babies Hospital • Harkness Pavilion  
Institute of Ophthalmology • Mary Harkness Home  
Neurological Institute • New York Orthopaedic Hospital  
Presbyterian Hospital • Sloane Hospital for Women  
Squier Urological Clinic • Vanderbilt Clinic

Broadway and 168th Street

New York 32, N. Y.





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# Origin and Functions of the Medical Center

The Medical Center comprises a group of long established hospitals of high standing which, in affiliation with the College of Physicians and Surgeons of Columbia University, furnish an integrated program to provide the highest quality of medical care for the sick and injured, to advance knowledge about the cause, prevention and treatment of disease and disability, and to train men and women in the professions of medicine, dentistry, nursing, public health, and allied fields. Through the affiliation between the hospitals and the University the members of the staffs of the hospitals are nominated by Columbia University, and teaching and research are conducted in all the hospitals.

The Presbyterian Hospital in the City of New York is the corporate title for all the voluntary hospitals and clinics at The Columbia-Presbyterian Medical Center. Some 128,000 patients a year are cared for in the hospitals, clinics, and doctors' offices of the Medical Center. The group consists of the following units:

## ***The Presbyterian Hospital***

The Presbyterian Hospital, founded as a general hospital in 1868 by James Lenox, was originally located on the block bounded by Madison and Park Avenues between 70th and 71st Streets. On April 25, 1911, Presbyterian Hospital made its original arrangement with Columbia University's College of Physicians and Surgeons for coordinating the care of the sick with the educational and research program of the University. Now Presbyterian Hospital is the largest single unit of the Medical Center. The Hospital occupies a 22-story building in which are the wards of the Medical and Surgical Services, Obstetrical and Gynecological Service, Urological Service, Ear, Nose and Throat Service, Dermatological Service and the Orthopedic Surgery Service.

## ***Babies Hospital***

Babies Hospital, 167th Street and Broadway, founded in 1887, provides for general medical and surgical care of infants and children up to

their thirteenth birthday, and care for premature babies. The total capacity of the Hospital is 192. One floor is devoted to the care of private and semi-private patients. Both outdoor and indoor playrooms are provided for convalescent children. Laboratories are operated for the diagnostic and research work of the Hospital in pathology, microbiology and chemistry. An X-ray and fluoroscopic department is operated under the direction of the Hospital radiologist. An outpatient department is maintained in Vanderbilt Clinic by the attending and house staff of the Hospital. In addition to the general medical and surgical clinics, there are special clinics for children suffering from heart disease, tuberculosis, epilepsy, asthma and other diseases.

### ***Harkness Pavilion***

Harkness Pavilion, 180 Fort Washington Avenue, erected when the Medical Center was established in 1928, is available for the accommodation of 300 adult private patients of the attending staff.

### ***The Mary Harkness Convalescent Home***

Mary Harkness Convalescent Home, King Street, Port Chester, N. Y., opened in 1937 to provide convalescent care for adults. The new Strong Memorial Wing was opened in 1952 to care for handicapped children whose families are unable to provide convalescent care following poliomyelitis, orthopedic, medical and surgical procedures. In a beautiful country setting, facilities are available for the convalescent care of 35 adults and 22 children.

### ***The Institute of Ophthalmology***

Institute of Ophthalmology, 635 West 165th Street, opened in 1933, has complete facilities for the medical and surgical treatment of adult and child patients with diseases of the eye. There are private, semi-private and ward beds, with a total capacity of 92. On January 1, 1940, the work of the Herman Knapp Memorial Eye Hospital was taken over by the Institute.

### ***The Neurological Institute***

Neurological Institute, 168th Street and Fort Washington Avenue, one of the first nongovernmental hospitals in this country for the treatment of nervous diseases, was founded in 1909. It moved from East 67th

Street to the Medical Center in 1929. Its affiliation with The Presbyterian Hospital has made possible a broad basic program of teaching and research in neurology and in the treatment of diseases of the nervous system and surgical conditions of the brain and nervous system. Facilities are provided for 201 beds, of which 110 are for ward patients.

### ***New York Orthopaedic Dispensary and Hospital***

The New York Orthopaedic Dispensary and Hospital opened as a dispensary in 1866 largely because of the interest taken in the care of the crippled by Theodore Roosevelt, father of the President of the same name. In succeeding years, the dispensary grew into a hospital with beds for ward and private patients. In 1911, the first spinal fusion operation for Potts Disease (tuberculosis of the spine) was performed by Dr. Russell A. Hibbs. This successful operation opened an entirely new era in the treatment of this disease. The Orthopaedic Dispensary and Hospital was located in its own buildings at 420 East 59th Street until December, 1950, when it moved to the Medical Center. On the 5th floor of the main building, 622 West 168th Street, facilities are available for the care and treatment of orthopedic conditions and fractures in children and adults.

### ***The School of Nursing***

The School of Nursing was founded in 1892 for the training of nurses. Since 1935 its educational program has been under the supervision of the Department of Nursing of the Faculty of Medicine of the College of Physicians and Surgeons of Columbia University. A three-year course in nursing is conducted, and the degree of Bachelor of Science is offered by the University to those properly qualified.

### ***The Sloane Hospital for Women***

Sloane Hospital for Women was built at West 59th Street and Amsterdam Avenue and presented to Columbia University by Mr. and Mrs. William D. Sloane in 1886. It now occupies three floors of the Presbyterian Hospital building for ward and semi-private patients and one floor in Harkness Pavilion for private patients. There are 181 beds, of which 116 are ward beds. The deliveries in the Hospital totaled more than 4,190 in 1957.

### ***The J. Bentley Squier Urological Clinic***

The J. Bentley Squier Urological Clinic occupies the 10th floor of the Presbyterian Hospital building and the 10th floor of Babies Hospital. There are 67 beds for the care of adults and 19 beds for children. There are laboratories fully equipped to do diagnostic, X-ray, bacteriological, pathological, fluoroscopic, and research work. This unit has two large, especially equipped, operating rooms. The urological outpatient department is in Vanderbilt Clinic.

### ***Vanderbilt Clinic***

Vanderbilt Clinic, Broadway and 167th Street, presented to Columbia University by the Vanderbilt family in 1888, is the common outpatient department and admitting service for all the wards of all the units of The Presbyterian Hospital. It is a fully equipped dispensary offering complete medical, surgical and specialty services. Eligibility to the Clinic is determined by the admitting physician and the clinic interviewer and is limited to those unable to afford a private physician. The Group Practice Clinic, organized in 1946, has proved a forward step in the diagnosis and treatment of patients.

### ***Other Patient Care Institutions Located at the Medical Center***

The New York State Psychiatric Institute and Hospital, built and maintained by the State of New York, is a 168 bed hospital with provisions for the study and treatment of all types of psychiatric disorders.

The Francis Delafield Hospital, built and maintained by the City of New York, is a 300 bed hospital for the treatment and study of cancer.

The Washington Heights Health and Teaching Center was built and is maintained by the City of New York.

**REPORT OF THE PRESIDENT**



*Volunteers last year contributed 81,640 hours of service to the Hospital. Here a volunteer staffs key post in the recovery room, where patients are cared for after surgery.*



# Report of the President for 1957

The Presbyterian Hospital is the largest voluntary non-profit hospital in the country. It is an integral part of the even larger Medical Center which has as its foundation the affiliation between Columbia University and Presbyterian Hospital and its various constituent hospitals. Every day more than 12,000 individuals come to the Medical Center. Patient and doctor, student and teacher, nurse and research scientist, administrator and worker and visitor help to make it a very large and busy institution.

During 1957 The Presbyterian Hospital continued to expand its services. It provided 462,300 days of hospital care for patients. It had 409,000 clinic visits and 188,200 private office visits. It served 128,000 individuals either as in-patients in the Hospital or as out-patients in the clinics or private offices or, in many cases, both as in-patients and as out-patients.

Statistics, however, are cold and mere size can be meaningless. The reputation of the Medical Center and of Presbyterian Hospital has been built not with size as an objective but on the maintenance of quality and on a balanced emphasis among teaching, research and patient care. Moreover, the Medical Center is not a mere geographical expression. It stands for a spirit and a tradition which have ramifications far beyond the physical confines of the buildings of the Medical School and the Hospital.

The values of academic medicine, the affiliation of medical school and teaching hospital in a university setting, are now well accepted. Under this concept, great strides have been made in research and discovery, in teaching and training and, consequently, in the health of the individual and the care of the patient. It is perhaps not too much to say that the position of the United States today in medicine and medical care is due in large measure to this concept.

The Presbyterian Hospital takes great pride in the fact, that, in conjunction with Columbia University, it was one of the first to follow the vision of men like Dr. Abraham Flexner who saw the possibilities of academic medicine and to receive the support of men like Edward S.

Harkness who made it possible to realize that vision. It takes great pride in the fact that the men and women who have worked at the Medical Center since its inception have had a considerable share in the advance of medical science and medical teaching and medical care. Some indication of what has been done in 1957 is contained in the reports of the President of the Medical Board and of the Directors of Services on pages 37 to 198.

Pride must never become complacency. And in fact it is evident that there are many problems to be faced. In common with all educational institutions and hospitals, the Medical Center is confronted with the effects of inflation. This presses most heavily on the many men and women who are wholly or chiefly dependent on academic salaries. It is not without significance that another great Medical Center has announced that it is seeking over \$50,000,000 largely for the support of salaries both in the basic sciences and in the clinical fields.

Aside from the matter of academic salaries, we have not yet completely and satisfactorily solved the proper relationship between those physicians and teachers who are working full time and who receive compensation only from the University or the Hospital; those who are working on "geographic full time" and who have offices only at the Medical Center but do make regular charges to private patients; and, finally, those who are "part time" and do some teaching or clinic work at the Medical Center but have their offices and principal work elsewhere. This is a complex problem with many ramifications. Possibly it can never be neatly solved and put away as settled. Possibly the Medical Center handles it as well as it can be, with a fair measure of give and take and compromise. But at least it is a challenge to further thought and development.

Financial statements, including balance sheets at December 31, 1957 and December 31, 1956 and statements of income for the years 1957 and 1956, are set forth in the Report of the Treasurer on pages 25 to 34.

In 1957 there was a net loss of \$39,682, after all expenses, including provision for depreciation. But it is noteworthy that this relatively small net loss would have been considerably greater had it not been for substantial increases in investment income and in current contributions. Net operating loss, before investment income and contributions, amounted to almost \$3,400,000, which was about \$335,000 greater than in 1956. Increased operating expenses, caused by inflationary factors, and increases and improvements in services, were not balanced by increases in operating income. Rates for services to patients remained substantially unchanged during 1957. A slight increase in the number of patients and

of clinic visits, a substantial increase in the reimbursement rates from Blue Cross, and the receipt for a full year of certain increased rates as revised in June 1956, were not sufficient to make up for the increase of \$1,283,000 in operating expenses.

In a time when all hospitals are confronted with rising costs of operation, we have been very fortunate in the able administration of Mr. Alvin J. Binkert, Executive Vice President of the Hospital, and in the loyal cooperation of the professional staff and personnel. They have served not only with loyalty but with a sense of dedication that makes the institution what it is. It is also perfectly clear that we owe a great debt to those whose policies have placed the Hospital on a sound business and financial basis and to those whose generous contributions have made possible what the Hospital is doing. The chart on the following page summarizes the main elements of the Hospital's financial history over the last 17 years.

In 1957 unrestricted contributions of \$658,428 were received, not only as direct gifts to the Hospital but also through the United Hospital Fund and the Greater New York Fund. Exclusive of contributions through these Funds, over 3,000 individuals, foundations and other organizations made current unrestricted gifts to the Hospital, representing an increase of more than 1,000 contributions compared with the previous year. We are grateful for this very generous and necessary support.

In addition, a total of \$680,624 was received in legacies and contributions in 1957 for special purposes which were added to special expendable funds. Other income, principally investment income on restricted endowment funds, resulted in a total credit to special expendable funds of \$1,347,424. The major portion of this amount was used during the year in the support of research and teaching and for other designated purposes. Here again we owe a great debt of gratitude to the many friends whose generosity in the past and in the present has made this support possible.

Other legacies and contributions received during the year were credited to the Endowment Fund or to the General Fund which are principal or capital funds.

It is hard to single out any legacies or contributions for particular mention. However, among the larger bequests and gifts which came to us in 1957 either for current or capital purposes were gifts from The Ford Foundation (the final installment of a \$250,000 grant), The John A. Hartford Foundation, Inc. and the James Foundation of New York, Inc. and bequests under the wills of William A. Coulter, Edward S. Harkness (a final distribution), Lillian K. Kuhn, Antoinette D. Lapham,

*Operating Expense and Income, The Presbyterian Hospital 1940-1957*

IN MILLIONS OF DOLLARS



- PATIENT INCOME
- ENDOWMENT INCOME AND GIFTS
- OTHER SERVICES INCOME
- NET LOSS

Garfield Arthur Nathan, and Alice Temple Parkin. All of this is of the greatest value in helping to promote health and improve medical care and in supporting the research and teaching programs of the Medical Center as well as a heartening factor to all those whose combined efforts make the Hospital a tangible useful force.

Among the most important activities at the Hospital are those of the Women's Auxiliaries and of the Alumnae Association of the School of Nursing. Their reports are set forth on pages 200 to 214. Here again, however, the rather cold facts and statistics fail to convey all that these organizations mean to the Hospital and to the Medical Center. They bring to us a human warmth, a personal touch and a sense of tradition which are of the utmost value. They do some of the personal things and support some of the special projects which are beyond the accepted scope of the Hospital's responsibilities but which can be of enormous value to patients.

From the membership of the Auxiliaries and from other sources we have had the benefit of very important volunteer service. Last year 848 men and women contributed a total of 81,640 hours of service. This is of great value to the Hospital, to the patient and to the community. We are deeply grateful but nothing that may be said here can repay the volunteers for their efforts. Their greatest satisfaction must come from the realization that they have contributed in helping to improve health, to save life and to give comfort to those who are sick and suffering.

During the year Mr. John P. Stevens, Jr., a most loyal and generous friend of the Hospital, resigned as a Trustee and was elected an Honorary Trustee. Mr. Kenneth C. Towe was elected a Trustee, filling the vacancy caused by Mr. Stevens' resignation.

In April 1957, Charles P. Cooper who served for thirteen years as President of the Hospital was elected President Emeritus. No man has done more to make The Presbyterian Hospital what it is today. When Mr. Cooper first became President, the Hospital had a great and deserved reputation but had not yet developed to its present size and complexity. Mr. Cooper brought to his task wide experience and knowledge, infinite patience and a zeal for the good of the Hospital that rose above all obstacles. The organization of the Hospital today and its sound fiscal policies are a monument to his accomplishments.

With all his realism and insistence on standards, Mr. Cooper recognized that efficient operations were only a means to an end — a means to give the doctor, the nurse, the teacher, the research scientist the opportunity to do his best. He was unfaltering in his support of the professional staff. He was determined that The Presbyterian Hospital and the Medical

Center should stand for the best in teaching and research and care of patients. He made a record of which we are all proud.

FREDERICK A. O. SCHWARZ,  
*Acting President*

February 17, 1958

# Report of the President of the Medical Board

It is my privilege to report on some of the current activities affecting the present and future of our institution.

## *Membership of the Medical Board*

The chief duty of the Medical Board is to maintain "professional care and treatment of patients in accordance with the highest standards of medical science." This assignment is a large and intricate one where the disciplines of medical practice are carried out by separate services, each with its special requirements for patient care and academic activities. To attain a wider understanding of these diverse activities the membership of the Medical Board has been recently enlarged to 39, and reconstituted to include several members of the faculty of the Medical School who have hospital appointments: Professors David Rittenberg of the Department of Biochemistry, Ray E. Trussell of the Department of Public Health, Harry B. van Dyke of the Department of Pharmacology, and William J. Savoy from the Department of Dentistry. Additional members have also been authorized from a number of clinical services in recognition of increasing patient-care load and teaching responsibilities: Drs. George W. Fish from Urology, Edgar C. Hanks from Anesthesiology, Harold W. Jacox from Radiology, Irville H. MacKinnon from Psychiatry. Other changes in membership represent routine rotation within services: Drs. Hattie E. Alexander from Pediatrics and Saul B. Gusberg from Obstetrics and Gynecology. It is a pleasure to welcome this distinguished group since their experience and special training will bring strength and wisdom to the Medical Board. It is regrettable that as a part of this transition, the Board has lost the valued memberships of Drs. Frederick R. Bailey, William V. Cavanagh, David V. Habif and Conrad M. Riley. A great loss was also sustained through the death of Dr. Lewis R. Stowe who preceded Dr. William J. Savoy as Director of the Dental Service.

## *Activities of the Medical Board*

Many problems of a large hospital arise out of ever-changing developments in the fields of knowledge and improvements in technology as

well as out of the transitions taking place in the social order around us. To maintain a realistic attitude toward these changes, the Medical Board has authorized a number of committees to assist in the formulation of policies. Also in collaboration with the Faculty of Medicine of Columbia University, the Medical Board has authorized a number of joint committees to deal with problems common to both institutions. In selecting highlights from the reports of these committees it is possible to indicate the wide variety of responsibilities of the parent body.

All needs for major structural alterations, special equipment, and space re-allocations throughout the Hospital are brought before a planning committee. This body is comprised of representatives from all the clinical services, the Dean of the Medical School, the Executive Vice President of the Hospital, and others by invitation. Many of the recent improvements which have been completed or are now under way were initiated and studied by this planning committee. It has been a privilege of this group to have members of the Board of Trustees attend some of its meetings to better acquaint themselves with current trends and developments at the Medical Center.

A distinct improvement in the clinical laboratory services was achieved in the past year under the supervision of a diagnostic laboratories committee, comprised of executives of the Hospital and Medical School and members of the professional staff with interests in microbiology, clinical pathology, and chemistry. This committee reviews the techniques employed in the laboratories and makes recommendations as to which procedures are to be standardized throughout the institution. It has brought about closer coordination of separately functioning units and has set up better facilities for night and weekend coverage. A number of units of modern mechanized equipment have been put in operation in a central laboratory area generously provided by Dr. Harry Pratt Smith in the Department of Pathology, where certain routine chemical diagnostic tests are being performed rapidly and accurately for the entire institution.

The creation of a special residency program committee was prompted by the need to bring co-ordination into the expanded residency program but still maintain healthy flexibility, in order that about 250 young doctors in various stages of training might be enabled to assume clinical responsibility, perfect their skills, and widen their intellectual horizons. The residency program committee, which often lacks precedents for its guidance, has effected uniformity of stipends among the resident staff based upon a formulated scale of seniority; it has established the policy that residents are required to be licensed physicians of New York State;



it has fostered worthwhile residency rotations with neighboring institutions including the Francis Delafield Hospital and the New York State Psychiatric Institute; and it has awarded travel expenses to residents participating in the programs of recognized medical and scientific societies. It is gratifying to report that all of our residency programs were reviewed in December 1956 by a representative of the various specialty boards and the Council on Medical Education and Hospitals of the American Medical Association and have received official approval.

An emergency committee, which was organized primarily to prepare for mass treatment of casualties in the event of a nationwide catastrophe, has drawn up detailed plans for the mobilization of the professional staff and Hospital personnel at any hour of the day or night in the event of a major civilian disaster in the city.

The social service committee has been most helpful in acquainting the Medical Board with the handicaps under which the Social Service Department has been operating in recent years with increasing work loads and disturbing shortage of persons trained in medical social work. In cooperation with this committee, the Director of Social Service has effected a number of adjustments which have materially assisted in meeting critical responsibilities despite the reduction in personnel. An important recent development has come largely through the personal efforts of the chairman of the social service committee, Dr. Frederick R. Bailey, who has been instrumental in obtaining a grant to the Medical School from the Pfeiffer Foundation to establish a teaching program in social work. It is hoped this innovation, by aiding recruitment to the organization at the student and apprenticeship level, will prove as stimulating to the social service group as are medical students to the clinical services.

The unit system Record Room, which represents a pioneering achievement at The Presbyterian Hospital, continues to function effectively with the help of a record committee. This group has already put into effect all the latest recommendations for official hospital accreditation. It has inaugurated and maintains a system of checking incomplete charts and enforcing realistic responsibilities upon the professional staff for the type of case records that are essential for thorough patient care and for the study of disease.

Likewise, the Medical Board must depend heavily upon a number of other advisory committees who are concerned with vital activities of the hospital, such as overcrowded parking facilities, maintaining isolation for patients with communicable diseases, revising the list of drugs to be provided by the pharmacy, standardizing special diets, and ensuring all possible safety in the operating rooms. A notable assignment over

the year was setting up and enforcing of a meticulous regimen to minimize the hazards of transfusions and to procure and preserve blood to meet special requirements. The blood bank committee also recently introduced a program to encourage donation of blood by friends and relatives of patients, and it continues to follow up any suggestion that might avert transfusion hepatitis, which continues to be a disturbing menace throughout the country.

The Medical Board has received valuable collaboration and important assistance from the staff committee. This group is comprised primarily of younger representatives of the various professional services who discuss, quite independently, ways and means to improve the facilities of the Hospital and to maintain high standards. The staff committee adds vigor and critique to the over-all development by constructive suggestions and by its prerogative to challenge the seeming inflexibility of prevailing time-honored customs.

### ***Joint Committees***

As the common interests of the Hospital and the Medical School have become more apparent, a number of joint committees have been established with representation from both institutions. In some instances, members of these committees serve in the dual capacity of executive officer of a Department in Columbia University and a Director of a Service in The Presbyterian Hospital.

The radioisotopes committee is an example of this type of enterprise, where all problems related to the use of radioactive isotopes in all units of the Columbia-Presbyterian Medical Center are submitted to a group of physicists, radiologists, biologists, and physicians who employ radioactive materials in basic research or in diagnostic or therapeutic procedures. As the biological effects of cumulative radiation are becoming more widely appreciated, this committee has been increasingly helpful to the Medical Board in setting up appropriate regulations.

Another type of joint committee is that of the Faculty and the Medical Board on the facilities of the Medical Center, which is actively engaged in viewing over-all needs in terms of the future. Under the co-chairmanship of the Dean of the Medical School and the Executive Vice President of the Hospital, this committee has reviewed the present utilization of space throughout the entire Medical Center and has analyzed the potential needs of the clinical services and pre-clinical departments in terms of required teaching and auditorium space, facilities for basic and clinical research, adequate library housing, and suitable quarters for private practice. At present, the committee is still at the stage of explor-

ing the most effective ways of integrating these objectives. However, it is already manifest that additional space, especially for medical research, is desperately needed if we are to maintain our clinical standards and advance our academic aspirations.

Just as activities in the medical fields are being modified constantly by scientific advances, so, too, they are affected by changing patterns of economic customs as they involve the individual physician, the ideologies of medical groups, and the types of service to be provided by hospitals. As an example, the phenomenal rise in the proportion of the population with some type of medical or hospital insurance is already creating new demands on members of the professional staff concerned with patient care, is affecting undergraduate and graduate teaching, and raises problems as to the type of hospital facilities to be planned for the future. At a recent meeting of the Medical Board the need was recognized for a forum here at the Medical Center where the possible effects of this changing order can be reviewed realistically. In consequence, the joint committee of the Faculty and the Medical Board on the Staffing of the Medical Center was re-constituted under the chairmanship of the Dean of the Medical School to explore and make public the trends at this and other university hospitals so that all concerned can participate helpfully in preserving high standards in medical practice, in superior undergraduate and graduate teaching, and in advancement of scientific knowledge.

### *Scientific Activities*

Many of the scientific accomplishments of the professional staff are enumerated in the reports of the various Directors of Service, and are represented by hundreds of publications in textbooks and scientific journals in this country and abroad. It would be difficult indeed to select from this wide array of productivity the discoveries that will eventually prove the most significant in the alleviation of human suffering. It is far easier to point with pride to the spirit of inquiry that pervades all departments and the zeal and intelligence and dedication that underlie research at our institution. It is particularly gratifying to note the increasing joint enterprises conducted by members of different units in the study of problems pertaining to each. An example is the collaboration between Anesthesiology, Pediatrics, and Obstetrics and Gynecology established to study the cardiopulmonary physiology of the newborn; and on the relationship between difficulties encountered at the time of delivery and subsequent developmental defects in childhood. It is also of great significance that increasing numbers of the younger members of the professional staff conducting clinical studies are developing interests in scientific disci-

plines such as physiology, microbiology, cytology, pharmacology, and chemistry which are maintained primarily in the laboratories of the Medical School. The techniques developed in the basic sciences are becoming everyday tools for the modern practicing physician as well as for the investigator.

The close relationship between basic research and clinical medicine can be illustrated by the impact that enzymology has had upon the concepts of disease. This area of biochemistry, which has developed largely in the last twenty-five years, deals with the group of catalysts (enzymes) without which foodstuffs cannot be utilized, and tissues and organs cannot perform their specific tasks. It is becoming increasingly apparent throughout the medical world that an understanding of most diseases, whether they be metabolic, infectious, or toxic in origin, depends upon a knowledge of normal enzymic function and the ways in which enzyme behavior may be disturbed. Illustrative of this approach is the series of observations on nervous tissue carried out in recent years by Dr. David Nachmansohn and his associates in the Departments of Neurology and Biochemistry. Their early studies were concerned with the identification and purification of the enzymes which operate in the normal transmission of a nerve impulse. Subsequently, using the purified enzymes as model chemical reagents, they were able to develop new drugs useful in the management of myasthenia gravis and to devise by theoretical reasoning, agents which protect against and reverse the effects of potent war gases (nerve gases) considered to be among the most lethal chemicals known to man.

A number of research programs in progress at the Medical Center involve comparable enzymatic studies in elucidation of biological processes or in relation to clinical conditions. Representative among these are the pioneering studies of Dr. David Shemin in the Department of Biochemistry which have established the pathway for the formation of necessary respiratory pigments such as hemoglobin; the studies of Dr. Paul A. Marks in the Department of Medicine on the specific enzymatic deficiencies of the red blood cells in certain hereditary and acquired anemias; the use of enzymes, by Dr. Karl Meyer of the Departments of Biochemistry and Medicine in identifying the chemical structure of connective tissues; and the work of Dr. John V. Taggart of the Department of Medicine on the enzymatic components of the kidney which underlie the removal of toxic products from the body.

It should be emphasized that enzymology represents but one of the many equally important avenues of investigation arising out of the basic sciences which are exerting profound influences on the growth of medical

knowledge. The topic has been used in this report to illustrate the extent to which so-called "preclinical" and "clinical" research have become inextricably intermingled. The disciplines employed by the enzyme chemist are not simple, and require elaborate laboratory facilities and equipment, highly trained technical assistants. Full development of these concepts in their application to clinical medicine requires guidance by men whose interests bridge the gap between the basic sciences and patient care. The Medical Center can be justly proud of having been one of the first institutions to foster this type of interdisciplinary approach through which so many significant contributions to medical science have evolved.

### *Appreciation*

The year 1957 has been a fruitful one for the institution despite inflationary difficulties which have caused serious shortages of highly trained technical workers in our laboratories and in many of our special services. Great credit goes to Miss Eleanor Lee, Director of Nursing, and Miss Marion D. Cleveland, Director of Nursing Service, and their assistants for farsighted policies in maintaining effective recruitment and high morale in our nursing staff; and further, by skillful deployment of nurse grouping they have been able to meet the special demands imposed by the increasing complexities in medical care. Good will and mutual respect have prevailed at our council tables. We have enjoyed the stimulating confidence of the Trustees and officers and shall always remember with appreciation the wisdom and unselfish devotion of Mr. Charles P. Cooper who, after many years of service to the Hospital, was elected President Emeritus during 1957.

We have had the fine cooperation and leadership of the Executive Vice President, Mr. Alvin J. Binkert, and the Dean of the Medical School, Dr. Willard C. Rappleye. To all these, on behalf of the Medical Board, I express sincere gratitude.

FRANKLIN M. HANGER, M.D.,  
*President of the Medical Board*



*Study of enzymes that carry forward chemical reactions in the body's connective tissue is helping to show what happens as we age and why important functional parts like blood vessels sometimes lose their elasticity.*

*REPORT OF THE TREASURER*

## EXHIBIT A

## THE PRESBYTERIAN HOSP

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## ASSETS

	<i>December 31</i>	
	1957	1956
<b>ENDOWMENT FUNDS ASSETS:</b>		
Investments:		
Bonds and stocks (market value — 1957, \$70,954,590) .....	\$60,123,888	\$59,247,489
Mortgages receivable, etc. ....	101,611	361,801
Cash .....	135,722	133,964
<b>TOTAL ENDOWMENT FUNDS ASSETS.....</b>	<b><u>\$60,361,221</u></b>	<b><u>\$59,743,254</u></b>
<b>PLANT ASSETS:</b>		
Property and equipment at original cost (less accu- mulated depreciation — 1957, \$13,371,072; 1956, \$12,775,276) .....	\$20,542,997	\$20,916,956
Replacement Fund — Bonds and stocks (market value — 1957, \$4,843,895) .....	4,124,655	2,983,075
<b>TOTAL PLANT ASSETS.....</b>	<b><u>\$24,667,652</u></b>	<b><u>\$23,900,031</u></b>
<b>CURRENT FUNDS ASSETS:</b>		
Investments — Bonds, etc. (Market value — 1957, \$2,246,996) .....	\$ 2,200,260	\$ 2,135,178
Cash .....	499,564	392,789
Accounts receivable (less reserve — 1957, \$265,572; 1956, \$244,535) .....	1,962,003	1,909,948
Supplies and materials.....	409,259	386,191
Interest accrued and dividends receivable.....	508,026	473,931
Prepaid insurance, etc.....	38,849	26,146
<b>TOTAL CURRENT FUNDS ASSETS.....</b>	<b><u>\$ 5,617,961</u></b>	<b><u>\$ 5,324,183</u></b>
<b>TOTAL .....</b>	<b><u><u>\$90,646,834</u></u></b>	<b><u><u>\$88,967,468</u></u></b>



## EXHIBIT A

THE CITY OF NEW YORK

et

AND 1956

## FUNDS AND LIABILITIES

	<i>December 31</i>	
	1957	1956
ENDOWMENT FUNDS (Exhibits C and D) . . . . .	<u>\$60,361,221</u>	<u>\$59,743,254</u>
PLANT FUNDS:		
Capital invested in property and equipment . . . . .	\$20,542,997	\$20,916,956
Replacement funds:		
Buildings . . . . .	1,179,231	909,594
Furniture, fixtures and equipment . . . . .	2,945,424	2,073,481
TOTAL PLANT FUNDS . . . . .	<u>\$24,667,652</u>	<u>\$23,900,031</u>
CURRENT FUNDS AND LIABILITIES:		
General fund (Exhibit C) . . . . .	\$ 2,942,078	\$ 2,722,007
Special expendable funds (Exhibit C) . . . . .	1,661,181	1,455,320
Undistributed income from investments . . . . .		240,829
Accounts payable . . . . .	384,330	396,429
Patients' credit balances . . . . .	60,629	72,174
Accrued payroll and other expenses . . . . .	569,743	437,424
TOTAL CURRENT FUNDS AND LIABILITIES . . . . .	<u>\$ 5,617,961</u>	<u>\$ 5,324,183</u>
 TOTAL . . . . .	 <u>\$90,646,834</u>	 <u>\$88,967,468</u>

## EXHIBIT B

## THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

## STATEMENT OF INCOME

For the Years Ended December 31, 1957 and 1956

	<i>Year Ended December 31</i>	
	1957	1956
<b>OPERATING INCOME:</b>		
Care of patients.....	\$14,542,289	\$13,784,085
Other services.....	1,541,811	1,474,832
<b>TOTAL</b> .....	<u>\$16,084,100</u>	<u>\$15,258,917</u>
Transfer from special expendable funds (Exhibit C):		
For research.....	413,814	376,875
For other designated purposes.....	475,815	388,704
<b>TOTAL OPERATING INCOME</b> .....	<u>\$16,973,729</u>	<u>\$16,024,496</u>
<b>OPERATING EXPENSES:</b>		
Administration .....	\$ 224,221	\$ 220,969
Assistant Secretary-Treasurer.....	163,793	151,226
Comptroller .....	348,764	330,401
Public Interest .....	105,217	86,599
Convalescent Home.....	231,643	216,354
Non-professional services:		
Buildings and Grounds.....	2,684,563	2,439,281
Food Service .....	2,416,211	2,347,518
Personnel and Protective .....	245,406	224,806
Other non-professional services.....	645,949	608,202
Professional services:		
Nursing .....	5,192,920	4,819,589
Professional Staff, Doctors' Offices & Research..	2,520,018	2,403,914
Special Services .....	2,837,074	2,651,002
Vanderbilt Clinic and other.....	1,472,160	1,314,594
Provision for Depreciation:		
Buildings .....	262,800	262,800
Furniture, fixtures and equipment ( <i>see note</i> )...	1,021,100	1,010,700
<b>TOTAL OPERATING EXPENSES</b> .....	<u>\$20,371,839</u>	<u>\$19,087,955</u>
<b>NET OPERATING LOSS</b> .....	<u>\$ 3,398,110</u>	<u>\$ 3,063,459</u>
<b>OTHER INCOME FOR GENERAL PURPOSES:</b>		
Investment income .....	\$ 2,700,000	\$ 2,390,000
Contributions .....	658,428	617,673
<b>TOTAL OTHER INCOME FOR GENERAL PURPOSES</b>	<u>\$ 3,358,428</u>	<u>\$ 3,007,673</u>
<b>NET LOSS</b> (charged to general fund - Exhibit C)...	<u>\$ 39,682</u>	<u>\$ 55,786</u>

NOTE - Includes appropriation in each year of \$350,000 to provide for a portion of the depreciation which occurred prior to the adoption of depreciation accounting in 1953.

## EXHIBIT C

## THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

## SUMMARY OF FUND CHANGES

For the Years Ended December 31, 1957 and 1956

	<i>Year Ended December 31</i>	
	<i>1957</i>	<i>1956</i>
<b>ENDOWMENT FUNDS</b>		
Balance, January 1.....	\$59,743,254	\$56,956,099
Add:		
Legacies and contributions.....	\$ 549,214	\$ 553,798
Gain (loss) from disposal of investments.....	( 45,960)	2,183,033
Transfers from special expendable funds.....	114,713	50,324
	<u>\$ 617,967</u>	<u>\$ 2,787,155</u>
Balance, December 31.....	<u>\$60,361,221</u>	<u>\$59,743,254</u>
<b>GENERAL FUND</b>		
Balance, January 1.....	\$ 2,722,007	\$ 2,565,668
Add:		
Unrestricted legacies .....	\$ 426,968	\$ 311,697
Gain (loss) from disposal of investments.....	( 443)	210
	<u>\$ 426,525</u>	<u>\$ 311,907</u>
Total .....	<u>\$ 3,148,532</u>	<u>\$ 2,877,575</u>
Deduct:		
Net loss (Exhibit B).....	\$ 39,682	\$ 55,786
Expenditures for property and equipment.....	166,772	99,782
	<u>\$ 206,454</u>	<u>\$ 155,568</u>
Balance, December 31.....	<u>\$ 2,942,078</u>	<u>\$ 2,722,007</u>
<b>SPECIAL EXPENDABLE FUNDS</b>		
Balance, January 1.....	\$ 1,455,320	\$ 1,124,810
Add:		
Legacies and contributions.....	\$ 680,640	\$ 683,195
Investments and other income.....	666,784	566,370
	<u>\$ 1,347,424</u>	<u>\$ 1,249,565</u>
Total .....	<u>\$ 2,802,744</u>	<u>\$ 2,374,375</u>
Deduct:		
Transfers to:		
Operating income (Exhibit B).....	\$ 889,629	\$ 765,579
Endowment funds .....	114,713	50,324
Expenditures for property and equipment.....	55,065	39,614
Miscellaneous .....	82,156	63,538
	<u>\$ 1,141,563</u>	<u>\$ 919,055</u>
Balance, December 31.....	<u>\$ 1,661,181</u>	<u>\$ 1,455,320</u>

## EXHIBIT D

## THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

## ENDOWMENT FUNDS

December 31, 1957

## THE PRESBYTERIAN HOSPITAL:

Anonymous .....	\$ 649,126
Anonymous — For Support of Residency Training .....	240,500
Arnstein, Daniel G.....	65,000
Baker, Frances E.....	11,058
Baker, Mrs. Frederick, Pathological Department	8,500
Briddon, C. K., Gold Medal.....	2,559
Brookman, Henry D.....	50,000
Cary, Caroline Catherine.....	50,000
Coakley, Cornelius G.....	632,559
Coakley, Cornelius G., Memorial.....	30,000
Colgate, Hannah, Memorial.....	60,794
Collins, Perry McDonough.....	548,999
Columbia University for Vanderbilt Clinic and Sloane Hospital.....	1,400,000
Cook, William W.....	119,498
Cragin Fund.....	68,819
Davis, Isabel G.....	813,999
Delano, Moreau.....	4,000
Department of Surgery Research.....	9,370
Dodge, The Cleveland H.....	310,500
Dortic Memorial .....	99,024
Dows, Mrs. David.....	7,700
Dows, Margaret E.....	5,360
Educational and Scientific Work.....	285,528
Eichner, Joseph Herman and Hannah, in Memory of.....	8,576
Eidlitz, Otto M.....	415,272
Eidlitz, Robert J.....	152,500
Endowed Bed .....	1,775,054
Endowed Bed — Research.....	182,113
Faulkner, The Edward Daniels, Memorial for the Study and Treatment of Arthritis.....	100,000
Fiske Fund .....	104,236
FitzGerald, Frederick H. and Josephine F.....	141,363
Flagler, Alice Manderlick.....	250,142
Foote, Edwin Bancroft.....	175,949
Ford, George W. and Eliza Lawson.....	330,911
General Endowment.....	264,481
Goldschmidt, Henry Philip.....	5,000
Gondran, Sophie M. and Adolph L.....	100,000
Griffith, Griffith W. and Mary Jones, Memorial.	1,319,573
Haller, Maria L.....	2,609
Harkness, Edward S.....	6,188,794
Harkness, Edward S., Memorial.....	14,000,000
Harkness, Edward S., Research.....	500,000
Harkness, Mary Stillman, Memorial Endowment	250,000

## ENDOWMENT FUNDS, December 31, 1957 (Continued)

## THE PRESBYTERIAN HOSPITAL (Continued):

Harkness, Mary Stillman, Memorial Research ..	50,000
Harkness, The Mary S., for Convalescent Care..	1,003,045
Harkness, William Hale, Memorial.....	43,416
Hartford, The John A., Foundation.....	300,000
Hill, Marguerite S.....	5,500
Institute of Ophthalmology, The.....	3,412,942
Jesup, Morris K. and Maria DeWitt.....	100,000
Jones, David, Memorial .....	300,000
Jones, Margarette A.....	166,255
Keller Memorial .....	500
Kennedy, John Stewart.....	1,828,714
Kinnicutt, The G. Herman, Flower.....	5,000
Knapp, The Herman Memorial Eye Hospital Endowed Bed.....	60,375
Lattimer, Dr. John K.....	25,442
MacMillin, Isabel, Memorial.....	1,285,563
Martin Frederick Townsend.....	10,000
Maxwell, Anna C., Memorial Library.....	7,101
McCosh, Dr. Andrew J., Memorial.....	100,192
McCready, Jeanne Campbell.....	106,529
McGuire, Mary Madison.....	260,006
Medical Laboratory Development Endowment..	85,000
Medical Scientific.....	317,226
Miller, Margaret G.....	60,275
Nathan, Garfield Arthur.....	248,750
Ottman, for Cancer Research.....	20,000
Parkin, Alice Temple.....	50,000
Quick, The Walter R.....	15,060
Research and Development in Anesthesiology..	40,000
Rogers, Henry H., Memorial.....	30,294
Sage, Dean, Memorial.....	28,253
Sage, Dean, Scholarship .....	7,000
Sage, Russell and Margaret Olivia, Memorial..	878,188
School of Nursing.....	203,230
Sherry, The Bertha, Memorial.....	653,401
Sidman Trust.....	1,072
Sloane Hospital.....	783,257
Sloane Hospital Babies' Alumni.....	18,762
Sloane Hospital Research .....	25,000
Squier Clinic .....	113,636
Stilson, Ellen J. and Minnie.....	21,029
Stone, William Ridgley, Memorial.....	77,363
Surgical Fellowship.....	60,000
Terry, John T., in Memory of.....	40,767
Tod, J. Kennedy, Memorial.....	100,102
Tolfree, The Caroline O. and James E., Memorial .....	157,370
Urological Service Research.....	9,591
Valentine, Isaac E., Memorial.....	563,227
Van Norden, Kathryn L.....	2,609
Vanderbilt Clinic.....	156,806
Webster, Dr. Jerome P., Library of Plastic Surgery .....	30,861

## ENDOWMENT FUNDS, December 31, 1957 (Continued)

## THE PRESBYTERIAN HOSPITAL (Continued):

Weinman, Moses.....	5,360
Weisl, Alice.....	76,500
Welles, Frances Swan.....	10,000
Westlake, Emory H. and Caroline B.....	27,092
Wheeler, The Dr. John M., Memorial.....	73,791
Williams, William.....	342,658

\$46,143,576

## THE BABIES HOSPITAL:

Cleft Palate Cases.....	\$ 8,333
Cribside Social Service Committee.....	12,828
Educational Therapy.....	1,000
Eichner, Joseph Herman and Hannah, In Memory of.....	8,576
Endowed Bed.....	37,426
General Endowment.....	10,000
Harkness, Edward S., Educational and Scientific	600,000
Harkness, Edward S.....	1,199,775
Harkness, Mary Stillman, Memorial Endowment	250,000
Kimball, Reuel B.....	57,738
Lambert, Dr. Charles I., Memorial.....	10,000
Rathbone, R. Bleecker.....	15,000
Rumson Fund.....	20,470
Videre, Leontine, Foundation.....	9,976
Wilcox, Herbert B., Memorial.....	2,000

2,243,122

## NEUROLOGICAL INSTITUTE:

Blair Memorial.....	\$ 3,127
Endowed Bed - Research.....	166,049
Ogilvie, Clinton, Memorial.....	9,970

179,146

## NEW YORK ORTHOPEDIC HOSPITAL:

Bridgman, Statira.....	\$ 2,500
Endowed Bed.....	623,343
Farrell, Dr. Benjamin P., in Memory of.....	7,656
General Endowment.....	833,259
Hibbs, Russell A., Memorial Library.....	36,068
Hurst, The Thomas D. and Kate.....	5,000
Kane, Annie C., Fellowship.....	1,000,000
Rathbone, R. Bleecker.....	15,000
Smith, Dr. Alan DeForest, Lectureship.....	6,601
Tower, Mary T., in Memory of.....	30,569
Watson, Emily A.....	2,502,256
White, Emily Vanderbilt.....	20,000
Willard, Mary Livingston.....	5,000

5,087,252

Gain from Disposal of Endowment Fund Investments  
since November 1, 1946.....

6,708,125

TOTAL ENDOWMENT FUNDS.....

\$60,361,221

## ACCOUNTANTS' CERTIFICATE

THE PRESBYTERIAN HOSPITAL  
IN THE CITY OF NEW YORK:

We have examined the balance sheet and supporting schedule of endowment funds of The Presbyterian Hospital in the City of New York as of December 31, 1957 and the related statement of income and summary of fund changes for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and schedule of endowment funds and the statement of income and summary of fund changes present fairly the financial position of the Hospital at December 31, 1957 and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

HASKINS & SELLS

*Certified Public Accountants*

New York

January 27, 1958.

## REPORT OF THE AUDITING COMMITTEE

TO THE BOARD OF TRUSTEES OF THE PRESBYTERIAN HOSPITAL  
IN THE CITY OF NEW YORK:

Pursuant to Article VII of the By-Laws of The Presbyterian Hospital in the City of New York, the undersigned Auditing Committee appointed by your Board has chosen, with your approval, the firm of Haskins & Sells, as independent certified public accountants, to make an examination of the books and accounts of The Presbyterian Hospital in the City of New York for the fiscal year 1957.

We submit herewith, after due consideration by this Committee, a certificate of Messrs. Haskins & Sells dated January 27, 1958 relating to the Corporation's balance sheet and schedule of endowment funds as of December 31, 1957 and related statement of income and summary of fund changes for the year then ended, as the results of a satisfactory examination of the said books and accounts. Your Committee recommends that the Certificate and financial statements be accepted and approved.

JOHN A. GIFFORD, *Chairman*

JOHN S. BURKE, JR.

DORRANCE SEXTON

*Auditing Committee*

New York

January 28, 1958.

## EXHIBIT E

**GROUP RETIREMENT PLAN ESTABLISHED BY  
THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK**

The retirement benefits provided by the Hospital under its Group Retirement Plan are partly provided by a Trust Fund established with the Guaranty Trust Company of New York and partly insured by the Travelers Insurance Company. The amounts set aside for retirement benefit purposes, which are not part of the assets of the Hospital, aggregated \$4,895,737 at December 31, 1957. In accordance with the Hospital's undertaking under the Group Retirement Plan the amounts already set aside are sufficient to provide for all retirement benefits to which employees now retired and employees now eligible to retire at their own request are or would upon retirement be entitled under the Plan. In addition, they include provision for that portion of future retirement benefits to employees not now eligible for retirement at their own request, which has been funded through December 31, 1957 under the systematic program followed by the Hospital in financing such benefits.

Following is the Trustee's report for the year ended December 31, 1957 of the Retirement Fund Trust established by the Hospital:

Assets in Fund — January 1, 1957.....	\$1,646,174
Payments to Fund.....	200,000
Net Income from Investments including Net Profit on Investments Disposed of.....	70,827
	\$1,917,001
Disbursements for Retirement Benefits.....	77,801
	\$1,839,200

*Book Value\**

Consisting of:

U. S. Government Obligations.....	\$ 81,465
Industrial, Railroad, Public Utility and Miscellaneous Bonds.....	1,103,056
Preferred Stocks.....	141,038
Common Stocks.....	499,710
Cash.....	13,931
	\$1,839,200

\* The cash and approximate market value of the securities held as of December 31, 1957 totaled \$1,915,419.

GUARANTY TRUST COMPANY OF NEW YORK,  
*Trustee*

By WILLIAM F. LACKMAN,  
*Vice President*

Following is a summary of the Retirement Fund Trust and the Travelers Insurance Company reserves at December 31, 1957:

Retirement Fund Trust — Guaranty Trust Company of New York, Trustee.....	\$1,839,200
Travelers Insurance Company Reserve for Annuities Purchased.....	3,056,537
	\$4,895,737



*REPORTS OF SERVICES*



*Training of residents, who in turn take modern methods of anesthesia to many parts of the country, is important part of work of Anesthesiology Service. Here a resident begins work in the operating anteroom.*

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# Anesthesiology

EMANUEL M. PAPPER, M.D., *Director*

The clinical responsibilities of the Anesthesiology Service continue to be large in absolute number, and even larger in terms of man hours required for anesthetic patient care. This was due to a relative increase in the difficulty and the severity of surgical procedures. As of December 31, 1957, 20,665 anesthetics had been administered. They are divided into 16,833 general anesthetics, 1,578 spinals and 2,254 regional anesthetics. The use of some form of regional anesthesia in approximately 20 per cent of the patients represents a trend toward greater use of this method than in previous years.

## *New Instruments Aid Patient Care*

The large number of anesthetics which must be administered and the complexity of anesthetic administration resulting from the increased difficulty of surgical procedures and the increasing severity of patient risks have modified practices in improving patient care. These modifications are not entirely new and have their origin in past years when efforts were made to translate some of the information acquired in the laboratories to the care of the sick in the operating rooms. These have been concerned in good part with the addition of apparatus designed to make precise measurements to aid in more effective patient care during the course of clinical anesthesia.

Over the years it has become increasingly obvious that in anesthetic practice the distinction between certain aspects of research and patient care is becoming more and more blurred. Comparatively recently we were content to be able to measure such relatively simple things as pulmonary ventilation, the rudimentary elements of acid-base balance and the simple aspects of hemodynamic activity as advanced types of information for research projects. At the present time and in the last year many of these measurements have not only left the research bench but have become standard and required practice in many patients during clinical anesthesia. It has been clearly shown that the more quantitative information the anesthesiologist has the better able he is to care for his patients. An obvious corollary is that the apparatus designed to provide this information must be rugged, relatively simple to operate, and fast in

providing its information. Members of the attending staff have been active in all aspects of the improvement of patient care along these quantitative lines.

It will be interesting to cite a few of the developments as illustrations of this type of approach to patient care. Drs. Herbert Rackow and Ernest Salanitro in the Babies Hospital operating rooms began a study of the standardization of anesthetic equipment for children. This is an effort which should be fruitful for patient care in that it will make various parts of anesthetic apparatus interchangeable and make it possible to provide safe and effective care with all the techniques currently available.

A further example of the trend toward quantitation in providing clinical anesthesia exists in the administration of anesthetic vapors, both old and new. Formerly it was possible to meter only gases with reasonable accuracy. At the present time with the adaptation of a vaporizer designed by Dr. Lucien Morris of the University of Washington it is possible to develop vapor pressure curves for many liquid anesthetics and thus to administer vapors in accurate concentrations. This instrument is being used for the quantitative metering of ether and the new halogenated anesthetic Fluothane.

Fluothane is an important improvement in anesthetic care because it is potent, noninflammable, has broncho-dilating qualities, and it can be administered under very precise conditions of control. It is being used for patients in the Institute of Ophthalmology by Dr. Herman Schwartz and, in fact, has practically replaced chloroform in that institution for the short ophthalmic examinations on ambulatory patients. This agent, however, must be used with precise measurement and a metering instrument called the Fluotec has been developed for the quantitative measurement of this vapor when carried in a gas carrier.

Dr. Seamus Lynch has made practicable the measurement of pulmonary compliance in patients during anesthesia. Together with Drs. Leonard Brand and Albert Levy, he studied patients on the Orthopedic Service, particularly those with scoliosis or other spine disease requiring operation in the prone position. Early results suggest that, because of diminished pulmonary compliance, controlled respiration is a more effective practice during anesthesia than assisted respiration.

The use of the electrocardiograph during anesthesia was extended in 1957 and has provided information useful in the care of clinical patients. During the year, the Anesthesiology Service was called upon with greater frequency by other services to aid in the management of patients with a variety of diseases or injuries all having in common hypoventilation, apnea, or a disturbance in the exchange of gases between alveoli

and the blood. This "medical" or non-operating room activity of the Anesthesiology Service has been helpful in patient care and has stimulated research in the management of airway problems in such patients and in attempting to improve the design of mechanical ventilators which could be of use to these various other services.

It has been thought wise to develop a central location for the treatment of all "respirator patients" whatever the cause of their respiratory failure. At the present time this possibility is under discussion with Drs. H. Houston Merritt and J. Lawrence Pool in the Neurological Institute. It should be stated that already there has been a sharp trend toward the use of external mechanical ventilators applied through tracheostomy openings in contrast to the use of the all body Drinker type respirator. In addition to improving ventilation care, the external ventilators have considerably simplified nursing care of these patients. It has also become apparent that laboratory facilities for the measurement of blood gases in monitoring these machines are essential for intelligent and rational treatment.

Other changes in the anesthetic care of patients were instituted in the various units of the Medical Center. There was an increasing use of muscle relaxants in pediatric patients with a lesser dependence upon the flammable anesthetic agents. This method is being evaluated at the present time.

### *Redesign of Standard Equipment*

The Service has been particularly anxious to collaborate with manufacturers of anesthetic apparatus and with the newly instituted equipment-testing laboratory of the American Society of Anesthesiologists to provide more efficient and more physiologically oriented anesthetic apparatus than was the case in the past. This has already borne fruit in the form of redesign of the gas machine of at least one company and the development of a new canister for the absorption of carbon dioxide in closed anesthetic circuits.

In the Sloane Hospital for Women, Dr. Virginia Apgar and her associates Dr. L. Stanley James and Dr. Irwin Weisbrot of the Pediatric Service clearly showed that regional anesthesia is superior to general anesthesia as an aid in decreasing morbidity of the newborn if there is fetal distress before delivery of the infant.

Members of the attending staff gave lectures and demonstrations at staff conferences of several of the Surgical Services to improve the knowledge of resuscitation in the event of cardio-circulatory or respiratory accidents on the wards of these Services.

### *Staff Activities*

Dr. S. H. Ngai returned to the attending staff on July 1, 1957 from military service. He received a citation from Major General Leonard D. Heaton in recognition of distinguished performance of duty while serving in the Walter Reed Army Institute of Research during a leave of absence for military duty.

During 1957 Dr. Robert M. Epstein rejoined the attending staff after a year as a Fellow of the New York Heart Association under the direction of Dr. Stanley E. Bradley of the Service of Medicine. Dr. Charles C. Wycoff joined the attending staff on August 1, 1957 after returning to the United States from England where he took courses in diseases of the chest and heart diseases at the Brompton Hospital in London. The Service was further enriched by the part-time services of Dr. Raymond Jonnard who is a physicist and engineer. He has been of great help in the development of a measuring device depending upon fluorescence in the blood.

Dr. Marilyn S. Kritchman resigned to enter private practice. She has retained a part-time interest in our activities and has therefore retained her University appointment.

The organization of the Service was further improved along the lines set forth in the plans of 1952. This year saw the assignment of two senior staff anesthesiologists, Dr. M. Jack Frumin and Dr. B. Raymond Fink, to the Neurological Institute on a permanent basis. Their assignment has been a happy one for Drs. Frumin and Fink and has also yielded better care of neurosurgical patients, a closer liaison with the Neurological and Neurosurgical Services, and more effective training of residents in anesthesiology in those disciplines pertinent to this field.

The assignment on a permanent basis of Drs. Herbert Rackow and Ernest Salanitro to the Anesthesiology Service in Babies Hospital also took place this year. Dr. Schwartz continued his supervision of our Service at the Institute of Ophthalmology and Dr. Leonard Brand continued his work with the New York Orthopedic Hospital in The Presbyterian Hospital unit. Dr. Albert Levy assumed charge of anesthesia for thoracic and cardiovascular surgery. The fixed assignment principle has been a very gratifying arrangement for the Surgical Services and for the members of the Anesthesiology Service. The only drawback is the possibility that our specialists might be at a disadvantage in keeping abreast of the growth of knowledge across the whole field of anesthesiology. We have designed several off-sets:

- Three weekly staff-wide conferences, in which subjects pertinent to the whole field of anesthesiology are discussed.

- Occasional rotation of a "permanently" assigned man to another Service for a period long enough to familiarize him with the problems of that Service.
- Frequent informal meetings of the attending staff to keep each other advised of activities in the various areas in the Medical Center.

During 1957, 27 papers were published or in press by members of the Anesthesiology Service. These are appended in the bibliography. During the year various members of the staff were invited to present scientific papers on 88 different occasions. Among these were the Jenny Hartmann Memorial Lecture at the University of Basle and a lecture before the University of London at Westminster Hospital by Dr. Emanuel M. Papper. He also addressed the Faculty of Anesthetists of the Royal College of Surgeons. Among the distinguished visitors and lecturers to the Anesthesiology Service were the following:

- Dr. W. W. Mushin, Cardiff, Wales
- Dr. Ronald Woolmer, London, England
- Dr. Clement A. Smith, Boston, Mass.
- Dr. Ronald Jarman, London, England
- Dr. Akira Inamoto, Kyoto University, Japan

### *Research Studies*

The research activities of the Anesthesiology Service were conducted in collaboration with the College of Physicians and Surgeons of Columbia University and were made possible by the generosity of the National Institutes of Health, the Department of the Army, the National Foundation for Infantile Paralysis, the National Tuberculosis Association, the Burroughs-Wellcome Fund, Abbott Laboratories, and several gifts from individuals.

Dr. Duncan A. Holaday continued his studies with the four-phase research model respirator which was described in last year's Report. Work this year included the design of a linear low-resistance pneumotachograph and alteration of the circuits to make available a phase of sealed distention and a rigidly timed cycle. The pneumatic circuit was re-worked to provide a constant volume, constant flow pattern with provisions for modifying the ascending and descending slopes of the flow curve. This instrument has proved valuable in studies of the effects of circulatory depression on the efficiency of respiration and the effects of various aspects of the respiratory flow patterns on pulmonary mechanics. Dr. Holaday, in collaboration with Dr. Christen C. Rattenborg of the resident staff, developed a constant flow respirator to monitor changes of pulmonary resistance and compliance resulting from various surgical

and anesthetic maneuvers. This device proved the value of incorporating into a mechanical respirator the means for diagnosing changes in pulmonary mechanics.

Drs. Holaday and Rattenborg in collaboration with Dr. Paul Gerst of the resident staff of the Surgical Service conducted a study of the effect of acute hemorrhage on pulmonary and systemic blood pressures and of the efficiency of the several mechanisms involved in the transport of respiratory gases under those conditions. They observed a significant increase in alveolar dead space which reduced the efficiency of external respiration as the cardiac output was reduced. The study further emphasized the need for monitoring respiratory gas tensions in the tissues or in the mixed venous blood since severe anoxemia and hypercarbia may occur in the tissues and therefore in the mixed venous blood during acute reductions of cardiac output despite the maintenance of oxygen and  $\text{CO}_2$  tensions in a normal range in the arterial blood.

In collaboration with Dr. Edward Prince of the Service of Obstetrics and Gynecology, Dr. Holaday studied the accuracy and reproducibility of measurements of blood oxygen saturation by the method of Nahas, by double-scale oximetry and by the micromanometric method of Holaday and Verosky. It was concluded that the spectrophotometric method was suitable and more convenient to use than the manometric method for all measurements of oxygen saturation except those concerned with determining arterio-venous differences. Dr. Holaday in collaboration with Drs. M. Jack Frumin and Norman Bergman conducted a study of oxygen saturation at various levels of ventilation determined by altering airway pressures during expiration. They demonstrated that increases in normal alveolar-arterial oxygen tension gradients may occur during artificial respiration, particularly in patients who had some abnormality in the distribution of gases in the lungs before artificial respiration. It was observed that elevation of the mean airway pressure during the expiratory phase minimized these increases in alveolar-arterial oxygen gradient.

#### EXTRACORPOREAL BLOOD OXYGENATOR

Together with Drs. Ralph A. Deterling, Jr. and Shivaji B. Bhonslay of the Surgical Service, Dr. Holaday assisted in a study of the blood gas tensions and acid-base balance during the use of an extracorporeal blood oxygenator. Definite correlations have not as yet been established but these workers observed that the bubble oxygenator possesses greater efficiency with respect to gas exchange than is required and that the patterns of blood flow may be of particular significance in determining the relative safety of this procedure in the future.



Dr. Holaday continued his long-term interest in artificial respiration as a means of providing effective ventilation during anesthesia and operation and in non-operative patients whose respiration has failed because of disease, drugs or injury. Current efforts are designed to determine the most suitable mechanisms for establishing efficient artificial respiration, to develop the most physiologically useful and acceptable patterns of gas flow in respirators, and to devise clinically useful methods for evaluating the effectiveness of respiration during artificial ventilation. This problem is perhaps brought into sharpest focus in the care of the patient who requires respiratory assistance over prolonged periods of time. It seems desirable and proper for the Anesthesiology Service to accept an increasing responsibility for the care of such patients as methods and facilities are developed for their more effective and convenient care.

Drs. Herbert Rackow and Ernest Salanitro collaborated with Dr. Holaday in studying the effects of respiratory acidosis on intracellular organic acids. They made considerable progress by applying a celite column for liquid phase chromatography. A study of the response of spontaneously breathing rats to inhalation of various types of atmospheres containing various combinations of anesthetic agents, oxygen, nitrogen and CO<sub>2</sub> has indicated that organic acids in the rat liver may be significantly altered by many of these inhaled gas mixtures. For identification of the organic acids involved in these changes, there must be enough filtrate for quantitative analysis. Such concentrations of acids have been accumulated and are now in the process of being refined and identified. The study so far has not shown that the anesthetic agents increase the total organic acids of the rat liver, but it has shown that the relative proportions of four organic acids present in the liver are changed by the drugs studied. The evidence presently available suggests that CO<sub>2</sub> retention deranges certain equilibria of the citric acid cycle. It is hoped that an understanding of the changes occurring in the liver may provide a clue to the derangements which develop in other tissues in the body.

#### RAPID MEASURE OF CARDIAC OUTPUT

Dr. Holaday in collaboration with Dr. Lester C. Mark of the Anesthesiology Service and with Dr. Raymond Jonnard, consultant engineer, devised a test system for the rapid optical estimation of fluorescence in a moving stream of blood. This method was suggested by Mr. Carl Berkley of the Rockefeller Institute as a means of selecting a useful dye for the measurement of cardiac output by the dye dilution technique. Suppression of hemoglobin's quenching effect on fluorescence and an optical system sensitive enough to measure non-toxic concentrations of

fluorescein have been achieved. A suitable time constant in the pumping mechanism must be achieved before the method can be applied to animal experiments.

Dr. Holaday continued his studies of hypothermia in collaboration with Dr. Hubert Rosomoff of the Neurosurgical Service. The researchers are studying the effects of low temperature upon tissue irritability, upon the permeability of cellular membranes, and upon various glycolytic systems as these are reflected in changes of acid-base balance.

Dr. B. Raymond Fink in collaboration with Dr. John J. Conley of the Otolaryngology Service is engaged in a study of the mechanics of swallowing in patients who have been subjected to radical surgery of the head and neck. Cinefluorography is being used to analyze the defective mechanisms. Dr. Fink established, in collaboration with Drs. J. Lawrence Pool and Hubert Rosomoff of the Neurosurgical Service and Dr. Holaday of the Anesthesiology Service, a standard procedure for the management of hypothermic anesthesia in neurosurgical patients. This grew out of an attempt to produce standard conditions for studies of blood gas alterations and changes in acid-base balance during hypothermia.

Dr. Fink also made an intensive study of respiratory muscle activity during anesthesia in man and in animals. He found that expiratory muscle activity is marked during barbiturate anesthesia and that the activity is decreased by further administration of anesthetic agent. The possibility of using this phenomenon as a measure of depth of anesthesia is being explored. The technique is being developed further to demonstrate the response of respiratory muscles to increased flow resistance. The integral of the electromyographic response has been found to be a sensitive indicator. Dr. Fink has begun a study of these influences in cats in collaboration with Dr. S. H. Ngai. These studies are designed to obtain a clearer picture of the contribution of the accessory muscles of respiration to total ventilation during general anesthesia.

Drs. Seamus Lynch and Albert Levy are studying the effects of controlled respiration by mechanical ventilators on the caliber of bronchial muscles. This study involves kymographic examinations of diaphragmatic motion and the radiographic photographing of the bronchial tree with appropriate radiopaque material. Dr. Kent Ellis of the Radiology Service is collaborating in these studies. Drs. Lynch, Levy and Brand are studying ventilation in certain orthopedic patients by measuring tidal volume and pulmonary compliance.

#### PREANESTHETIC MEDICATION FOR CHILDREN

Drs. Herbert Rackow and Ernest Salanitro are studying preanesthetic medication for pediatric patients. This is a field in which impressions,

opinions, and convictions vary widely in the published literature and in the dicta handed down by experts in these fields. These researchers are evaluating on a clinical level, with appropriate and rigid objective controls, the influence of the various commonly used preanesthetic drugs. Ultimately it is hoped to arrive at a schedule of preanesthetic management in relation to weight or perhaps surface area that will enable the anesthesiologist to predict within a reasonable range the effective sedation provided by a given dose of the drugs being studied.

Dr. Edgar C. Hanks is reviewing 500 cases of trigeminal nerve resection to evaluate the morbidity and mortality in relation to the conduct of general anesthesia. These patients will be compared with those who have been anesthetized by local anesthesia, a group being studied by Drs. Byron Stookey and Joseph Ransohoff of the Neurosurgical Service. Dr. Hanks is also engaged in improving visual methods for education of residents in collaboration with Dr. Vance Lauderdale, Jr.

Dr. Virginia Apgar and Dr. L. Stanley James, with Dr. Irwin Weisbrot of the Pediatric Service, continued their studies in the physiology of the newborn. Dr. Apgar and her colleagues observed that vigorous respiration by the newborn may occur spontaneously in the absence of measurable oxygen in umbilical arterial blood. Asphyxia produces the same biochemical changes in the infant as in the adult: a respiratory acidosis which either causes or is followed by a superimposed metabolic acidosis. Failure to breathe at birth is caused by depressant drugs or by a severe respiratory and metabolic acidosis, all the result of prolonged asphyxia. Dr. Apgar and her colleagues demonstrated that the biochemical status of a depressed infant may be evaluated more precisely by analyzing a sample of blood taken directly from the infant in preference to a sample from the umbilical artery. Their findings stressed the urgent need for active ventilation and reoxygenation of infants immediately after birth. Cineradiography has proven a useful tool to Dr. Apgar and her associates in studying the circulation in the immediate newborn period and as an aid in the diagnosis of cardiac anomalies in infants at birth. Their work has been greatly assisted by the cordial cooperation of members of the Radiology Service. Dr. Holaday has collaborated in some of the blood studies.

#### FOLLOW-UP STUDY OF 150 CHILDREN

Dr. Apgar and Dr. Frances Schacter of the College of Physicians and Surgeons studied 150 children between the ages of 8 and 10 years whose heel blood had been analyzed for oxygen content at the time of birth at Presbyterian. The children were studied by psychological tests, electro-

encephalography, and appropriate neurological and other examinations. Results have not as yet been analyzed. Dr. Apgar also began a pilot study of 4,000 children selected with the advice of Dr. John W. Fertig of the School of Public Health from a group of 16,000 children who were evaluated by Dr. Apgar's scoring system one minute after birth between the years 1952 and 1956. This study will appraise the forecasting ability of the score system, which is based upon a group of vital signs appearing immediately after birth.

Dr. Apgar and her colleagues completed the study of the transmission of cyclopropane across the placenta and determined that the infants whose mothers received cyclopropane were more depressed than those born during regional anesthesia. Cyclopropane, they found, is transferred rapidly to the fetus but equilibration with the blood of the mother was not reached during the period of study. There was no biochemical evidence that cyclopropane depressed placental function. This finding suggested that the gas exerts a direct narcotic action on the fetus despite the absence of correlation between the blood concentration of gas and the condition of the infant at birth. The possibility of a toxic action of cyclopropane in relation to the low oxygen and high carbon-dioxide levels normally present at birth has been the subject of considerable theoretical speculation.

Dr. Herman Schwartz made clinical studies of the new anesthetic agent, Fluothane, and found that its use led to certain advantages in the management of general anesthesia. These were discussed earlier in this Report. Dr. Schwartz is continuing his clinical studies with this agent and confirming the work of others as well as the initial promising impressions which he himself obtained. Together with Dr. Andrew deRoethth of the Service of Ophthalmology, Dr. Schwartz is planning a study on the effect of Fluothane on intraocular pressure.

Dr. Norman Bergman, in collaboration with Drs. M. Jack Frumin and Herbert Rackow, studied the pressure-broadening effect of nitrous oxide on a spectrum of carbon dioxide as a source of error in clinical use of the infra red carbon-dioxide gas analyzer. A change in construction of a commercially available analyzer suggested by the manufacturer to minimize this effect was evaluated.

Dr. Rita Jacobs is making a clinical study of the anesthetic management of patients subjected to tracheoesophageal fistula in the six-year period, 1950-56. She also studied a new anti-emetic agent with Dr. David B. Habif of the Surgical Service. Post-anesthetic nausea and emesis were not diminished by the use of this ataractic compound. Consistently, it appeared to prolong recovery from anesthesia.

Dr. Lester C. Mark in collaboration with Dr. Leonard Brand and with Drs. Joseph F. Artusio, Jr. and V. D. B. Mazzia of the New York Hospital continued their studies comparing the plasma levels during thiopental anesthesia in man with changes in the electroencephalogram. Their studies demonstrated wide variability between EEG changes reflecting depth of anesthesia and plasma levels of the anesthetic. This brought into consideration the possibility that these patients may develop acute tolerance. Refinements of the electroencephalographic servo mechanism appeared to be necessary before pursuing this problem further. Drs. Mark and Brand turned to the dog in an attempt to secure better control over conditions for the testing of the thesis of acute tolerance under the conditions of study. Dogs were maintained for prolonged periods at constant electroencephalographic patterns of deep anesthesia. The plasma concentrations of thiopental were remarkably constant when tested at prolonged intervals during the study. The dog is evidently not a suitable species for studying acute tolerance to thiopental. A new analeptic (methylphenidate) was studied for possible use in the therapy of barbiturate intoxication. Acute trials were conducted in dogs deeply anesthetized with thiopental. Successive increments of the analeptic intravenously at three-minute intervals to a total of 40 mgm. per kgm. proved fatal or exhibited no antagonism to thiopental as judged by clinical or electroencephalographic arousal.

#### CLUES TO BARBITURATE ACTION

Another study was the search for a new avenue of eliminating barbiturates from the body. A sulfoxide metabolite of a butazalodine derivative studied by Dr. John J. Burns of the National Heart Institute proved to be a potent enhancer of renal excretion of enolic acids. This effect is evidently due to a depression of renal tubular reabsorption without alteration of glomerular filtration and results in increased urinary output of the enolic acids present. Since barbiturates are enolic acids, a study seemed interesting in this connection. Barbital was chosen for testing since it is normally eliminated by the kidney. Unfortunately there was no evidence of speedier recovery with the new drug nor were plasma decay curves appreciably altered from controls. Further studies in this area do seem indicated before these drugs can be ruled out as potentially useful in accelerating the excretion of barbiturates. Dr. Mark and Dr. Brand also continued their studies of other barbiturates, the latest one being methitural. This compound is alleged to be ultra-short-acting because of rapid metabolism. In the dog brain this barbiturate does appear to have a rapid onset and a very rapid penetration. Preliminary

experiments suggest that the compound is metabolized much like thio-pental and probably owes its fast action to rapid accumulation in the body fat, just as do other "rapid acting" barbiturates used for general anesthesia.

Dr. Charles C. Wycoff is studying the effect of digitalis on stress performance of the normal heart. He has spent some time in learning and perfecting techniques appropriate to the study planned in Dr. Rene Wegria's laboratories in the Department of Medicine.

Dr. Vance Lauderdale, Jr. studied the records of patients who died during or after operation in the attempt to evaluate as precisely as possible the role of anesthesia in mortality. His work has sharpened our appreciation of the difficulties and the pitfalls in making such evaluations. Dr. Lauderdale last year also spent a good deal of effort on the improvement of equipment and physical facilities in the care of patients.

Dr. S. H. Ngai, in collaboration with Professor S. C. Wang of the Department of Pharmacology in the College of Physicians and Surgeons, studied the effects of barbiturates and narcotics on the central respiratory mechanism in the cat. Preliminary results suggest that barbiturates and narcotics affect the pneumotaxic center earlier than the medullary integrating mechanisms. However, it appears that barbiturates and narcotics act in distinctly different ways in modifying the respiratory responses to stimulation of the pneumotaxic center.

#### SPLANCHNIC BLOOD FLOW STUDIES

Dr. Robert M. Epstein continued his studies of the splanchnic vascular response to anesthesia and hypercapnia under the direction of Dr. Stanley E. Bradley of the Medical Service. Splanchnic blood flow and blood volumes changed little during light anesthesia with nitrous oxide — oxygen and succinylcholine. The splanchnic vascular resistance increased following hypercapnea, and the liver's ability to remove bromsulfalein fell. In collaboration with Dr. Henry Wheeler of the Medical Service, Dr. Epstein studied the hepatic removal of bromsulfalein in hepatic out-flow preparations. A dual mechanism of removal was established involving hepatic storage and hepatic transfer. A method for determining the storage and transfer in the intact organism emerged from this work. Dr. Epstein also studied with tracer materials the renal water volume and regional blood flows. Antipyrine and  $I^{131}$  and 4-iodo-antipyrine- $I^{131}$  were used. The ideal tracer material is yet to be found. Some new concepts of "volume of distribution" of these materials came from this work.

Dr. M. Jack Frumin and Mr. Arnold S. Lee have developed a new type of anesthesia apparatus which delivers fixed and known concentra-

tions of the volatile anesthetic agents. It is based upon the principle of delivering a definite measured volume of the liquid agent into a controlled volume of the carrier gas. Numerous safety devices are incorporated into the apparatus. It is being readied for testing in animals and ultimately for application in clinical anesthesia and for studies of the analgesic state in man. Dr. Frumin also conducted studies with Dr. Dominick Purpura of the College of Physicians and Surgeons on the effect of nitrous oxide on evoked potentials in the dendrites of human and cat cerebral cortex. The failure of nitrous oxide to depress this cortical function may lead to a better understanding of the nature of the amnesic and anesthetic process. Nor was the reticular activating system of the cat depressed with 80 per cent nitrous oxide.

Members of the attending staff continued their interests in a variety of national and local organizations devoted to anesthesiology, to the related sciences, or to the clinical practice of medicine.



*What kind of birthmarks should be treated, as well as the most effective form of treatment, has been shown by a study of more than 1,000 hemangiomas seen in the Dermatology Clinics.*



# Dermatology

CARL T. NELSON, M.D., *Director*

The new ward facilities of the Service of Dermatology were utilized to virtual capacity during 1957. The demand for dermatologic ward care thus remained high despite the ever increasing number of patients who have hospital insurance and who desire semi-private and private accommodations. In other respects the past year on this Service has been one devoted primarily to a consolidation of the gains recently made for improved patient care. New specialized equipment for skin planing procedures was generously donated to the Service by Mr. Irving B. Wershaw. This promises to aid materially in the treatment of ward and clinic patients, as well as in the training of the resident staff.

Patient visits in the Dermatology Out-Patient Department in Vanderbilt Clinic numbered 32,915 during 1957. There were 104 admissions to the Dermatological Service in Presbyterian Hospital and 850 patients were treated in consultation with other Services. The division of mycology examined 3,734 specimens from patients admitted to the various services of the Medical Center and the serological research laboratory performed 1,470 treponemal immobilization tests. The progressive rise in the demand for these specialized examinations in recent years further emphasizes their increased importance in the treatment of patients admitted to the Medical Center.

It is with the deepest regret that we record the death of Dr. Rhoda W. Benham on January 17, 1957. Mycologist to The Presbyterian Hospital for more than 30 years, Dr. Benham had risen to a position of unusual distinction in her specialty. An outstanding teacher and investigator who combined the qualities of kindness, humility and generosity, Dr. Benham had won the admiration and devotion of all her colleagues at the Medical Center.

Changes in the staff during the year included the retirement of Dr. George C. Andrews as Attending Dermatologist and his appointment as Consultant Dermatologist. Dr. Andrews has been a loyal and distinguished member of the Service of Dermatology for 35 years. It is fortunate that the services of this indefatigable and knowledgeable clinician will continue to be available to the Medical Center. Dr. Helen O. Curth was appointed Assistant Attending Dermatologist, effective July 1, 1957,

and Dr. Arlington Bensele resigned as Assistant Dermatologist in Vanderbilt Clinic.

### **Research Studies**

The research activities of the members of the Service of Dermatology continued at a high level and again reflected a wide range of interests. As heretofore, these investigative studies utilized the clinical facilities of The Presbyterian Hospital or Vanderbilt Clinic, and the laboratories of the College of Physicians and Surgeons. Dr. Andrews, in collaboration with Dr. Anthony N. Domonkos and Dr. Victor M. Torres, completed a study of the outcome of treated and untreated hemangiomas in more than 1,000 patients. The results of this survey indicate that approximately one-third of untreated capillary hemangiomas and up to 80 per cent of untreated cavernous angiomas fail to involute spontaneously. Dr. Domonkos continued the study of neutron activation analysis of arsenic in the skin of patients with arsenical epitheliomas and keratoses. He also made observations on the therapeutic value of local injections of prednisolone in various dermatoses.

Dr. Leslie P. Barker initiated an investigation of biotin values in the blood of patients with cutaneous disorders of the seborrheic type. This work has entailed the development of new techniques for determining blood biotin levels in humans. In collaboration with Dr. Dorothy H. Andersen, Associate Attending Pathologist, Dr. Barker also initiated studies of the histologic variations in normal fetal and infant skin. Dr. Helen Curth continued the long-term study of acanthosis nigricans. This investigation was extended to include observations on the genetic pattern of this disease as well as its relationship to visceral cancer. Dr. Bohdan E. Dobias of the College of Physicians and Surgeons, with Dr. Irving Abrahams, continued the study of the hematologic, metabolic and endocrinologic effects of an endotoxin derived from *C. albicans*. This work was extended to include an investigation of the effects of this product on leukemic animals. Dr. F. Philip Lowenfish initiated a study of the value of combinations of corticosteroids with various fungistatic agents in the local treatment of superficial dermatophytosis.

In collaboration with Dr. Justina H. Hill of the College of Physicians and Surgeons and Dr. Marvin Brodey, Dr. J. Lowry Miller continued the investigation of the significance of persistent biologic false positive reactions with standard serologic tests for syphilis in otherwise apparently normal individuals. This work enlisted the cooperation of a number of laboratories in the Medical School and Delafield Hospital. Dr. Leo Schweich and Dr. John T. McCarthy extended the clinical investigation

of the value of a combination of anti-malarial drugs in the treatment of chronic discoid lupus erythematosus. Dr. Joseph S. Shapiro studied further effectiveness of various tranquilizing drugs in the treatment of chronic urticaria and dermatoses of possible psychogenic origin.

Dr. Margarita Silva-Santiago of the College of Physicians and Surgeons completed a study of the carriage of *Cryptococcus neoformans* by patients not suffering from cryptococcosis. The results of this investigation indicate that infections with this fungus, contrary to previous views, are exogenous in nature. With Miss Buckley, Dr. Silva-Santiago also studied the effect of various agents on the growth of dermatophytes in keratin, using the shell membrane of the hen's egg as a source of sterile keratin. She also investigated the nutritional requirements of *Pityrosporum orbiculare* and, with Dr. Beatrice M. Kesten, undertook studies to assess the etiologic significance of this lipophilic yeast in tinea versicolor. Dr. Joseph Rapaport, Visiting Fellow, with Dr. Abrahams and Dr. Nelson continued observations on the specificity of the Kveim reaction in sarcoidosis and the identity of the chemical complexes responsible for this phenomenon. With Mrs. Julia M. Einbinder, Dr. Nelson also extended the studies on the effects of corticosteroids and serotonin-antagonists on tissue electrolyte changes in hypersensitiveness.

### Staff Activities

During the year members of the Service continued their customary interest in the activities of various scientific and educational organizations. Eight members of the staff attended the 11th International Congress of Dermatology in Stockholm from July 31 to August 6, 1957. Participants in the proceedings of the Congress were: Drs. Helen Curth, William Curth, Domonkos, Kesten, Max Liebman, Miller, Nelson and Theodore Rosenthal. Eleven members of the staff lectured before twenty-eight other scientific assemblies during the year and six participated in the symposia and postgraduate educational programs of the American Academy of Dermatology and Syphilology. A total of twenty-five papers were published by members of the staff of the Service of Dermatology during 1957.

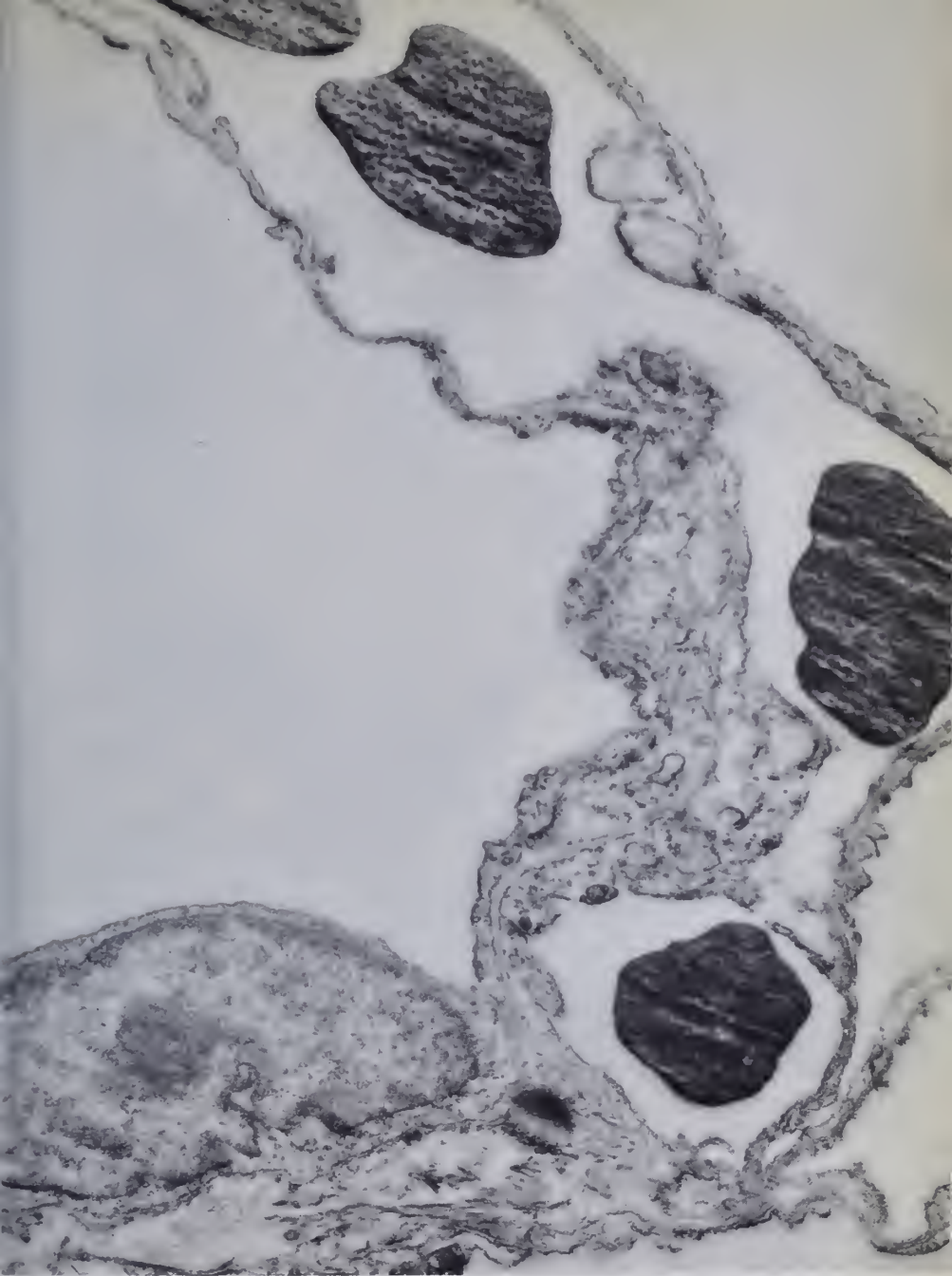
Several well-deserved distinctions and honors came to members of the Service during the year. Dr. Andrews again served as Chairman of the Panel on Cutaneous Malignancy at the annual meeting of the American Academy of Dermatology and Syphilology and also became Chairman of the Permanent Committee on Long Range Radiation Effects of the American Dermatological Association. Dr. Barker was elected Secretary of the Section on Dermatology of the New York Academy of

Medicine and Dr. Paul Gross became President of the Manhattan Dermatological Society. Dr. Kesten served as Secretary of the American Board of Dermatology and Dr. Miller was President of the New York Dermatological Society. Dr. Miller also was elected Chairman of the Section of Dermatology and Syphilology of the Medical Society of the State of New York. Dr. Lowenfish was appointed Director of Dermatology of the Elmhurst General Hospital and Dr. Nelson became Treasurer of the American Dermatological Association.

The annual alumni dinner for graduates of the Service of Dermatology of The Presbyterian Hospital and Vanderbilt Clinic was again held in Chicago in conjunction with the meeting of the American Academy of Dermatology and Syphilology. Dr. John F. Daly of Burlington, Vermont served as chairman of the committee on arrangements for this increasingly popular function.

It is again a great pleasure to express sincere thanks to the members of the professional staff and to the nursing and administrative staffs of The Presbyterian Hospital for their cooperation and their invaluable assistance in the care of patients and instruction of the resident staff during the past year.

It is also a pleasure to acknowledge with gratitude the generous support given to our research program by the following benefactors: Alfred P. Sloan Foundation; Duke Laboratories, Inc.; Lehn and Fink Products Corporation; Merck, Sharp and Dohme Research Laboratories; and E. R. Squibb and Sons.



*Capillary in mouse lung demonstrated by electron microscopy. Studies of the heart and lungs in disease must today include detailed study of the cell. Micrograph by Dr. Councilman Morgan; magnification 15,000 times.*



*Group Clinic, the first of its type to be established, gives each patient the benefit of diagnosis by a panel of consulting specialists. The Clinic introduces the fourth-year medical student to the concept of group practice, in which the internist (i.e., the family physician) holds the key position but has immediate access to interdisciplinary relations with specialists when particular skills are applicable to the patient's problems.*

# Medicine

ROBERT F. LOEB, M.D., *Director*

## *The Future*

The essence of the magnificent contribution of Abraham Flexner to medical education lay primarily in his belief that one should support strength and that through the support of strength, as manifested by past accomplishment and extrapolated expectation, one would set a pattern of excellence which one way or another would be emulated by weaker groups. In addition to advocating and procuring substantial support for a limited number of medical centers in existence he gambled on the development of a few new ones where he found seed which gave promise of maturing to excellence. Dr. Flexner's second guiding principle, to which the Medical Service of The Presbyterian Hospital fully subscribes, was his conviction that for continuing intellectual growth in an academic medical atmosphere, the establishment of solid and rigid full-time groups within major clinical departments, as well as in the preclinical departments, of the medical schools is vital. The unbelievably rapid and important advances in medical education and medical care in this country through the recent decades can in a large measure be ascribed to the efforts set in motion by Abraham Flexner.

Since the days when large lump sums were made available by the Rockefeller Foundation and the Carnegie Corporation to the "islands of excellence" there may be said to have taken place *a complete turn of the wheel*, and emphasis on Flexner's principles is again as imperative as it was in 1920. It is wholly possible that without renewed assistance in the form of large lump sum support at this time the high standards which were achieved earlier will begin to crumble and disintegrate. The basis for this anxiety lies in the fact that over the years the cost to the universities of their medical schools and university hospitals for their continued existence alone has increased enormously. Superimposed upon this increasing cost lies the expansion of faculties of medicine and hospital staffs, which has been both natural and essential with the rapidly expanding base of medical science. The day of monolithic departments, i.e., those headed by a single professor, has passed in the medical faculties as well as in the faculties of science within the main bodies of the universities throughout the country. The demand for larger faculties and hospital

staffs results not only from the increasing area of medical science from which the blessings of improved patient care emerge, but also from an evolution in the nature of medical teaching in which small conference groups have largely replaced the large lecture hall.

The straining of the finances of medical centers which harbor medical faculties has resulted in an alarming distortion of the principle of full-time. Full-time is retained in a number of institutions in name, but in most of these it is retained in name alone. In many institutions the so-called full-time man devotes a highly significant portion of his working hours to the care of private patients either for the purpose of earning part of his own salary or, yet more dangerously, to amass funds to help pay salaries and defray costs even in the preclinical departments. If it is granted that the principle of full-time is to afford those with motivation, capacity and flair for research, as well as for teaching, freedom from the legitimate intrusions upon their time and thought by patients who pay for their services and for whom they should accept full and undivided responsibility, then it becomes apparent that the insidious trends now gaining momentum can only lead in time to a deterioration of the priceless standards which have been achieved.

It therefore seems not only justified but essential that in some way, and preferably outside of government, substantial sums be made available to key medical centers of established worth in order that they may be protected from further corruption of the full-time principle. The Columbia-Presbyterian Medical Center is in the vanguard worthy of new and substantial financial assistance. Whereas the principles enunciated apply in varying degree to all services they are particularly applicable to the Medical Service of the Hospital and the Department of Medicine of the Medical School.

### *The Challenge*

The days for leisurely and contemplative research are regrettably vanishing. We live in restless times. The boundless potential of science has impressed itself upon the mind of man. With this appreciation there has come an ever-increasing demand that the rate of progress be accelerated. With each step ahead there is pressure to take the next step and to take it quickly. This attitude assumes the proportion of a mandate — particularly in medical science. If we are to accept this mandate, which we must, the needs for the immediate future are great in terms of men, money and facilities. If the requirements cannot be met, the magnificent record of accomplishment of the past and present at this Medical Center will not be maintained, and the challenge will be met elsewhere.



In the light of the foregoing discussion it is gratifying to express profound appreciation to those friends of the Medical Center whose foresight and generosity have made possible the continuance of full-time efforts by members of the Medical Service of the Hospital and the Department of Medicine in the Medical School. Without the continuing support of the Daniel G. Arnstein and the Alice Weisl Funds as well as the Laboratory Development Fund it would not have been possible to hold together the productive research groups now making significant contributions to medical science.

### *Staff Activities and Honors*

Dr. Stanley E. Bradley represented the Harvey Society at the Harvey Tercentenary Congress in London. He also served as External Examiner at Queen's University in Belfast and delivered lectures in London, Oxford, Paris and Montreal. He served as President of the American Society for Clinical Investigation and joined the editorial board of *Circulation* and the publications committee of the American Heart Association as well as the scientific council of the Life Insurance Medical Research Fund. Dr. Dickinson W. Richards received the honorary degree of Doctor of Science from Yale University. Dr. George A. Perera was elected a member of the American Board of Internal Medicine. Dr. John V. Taggart was appointed to the Council of the American Society for Clinical Investigation and the Harvey Society and to the editorial board of the *Journal of Clinical Investigation*. Dr. Sidney C. Werner became a member of the endocrine panel of the National Cancer Institute. Dr. Karl Meyer lectured in Japan, India and Hawaii. Dr. René Wégria lectured at the Universities of Louvain and Liège. He will in January 1958 be on leave as Visiting Professor at Louvanium University in Leopoldville, Belgian Congo. Dr. Alfred Gellhorn served as Visiting Professor at the University of California Medical Center. Dr. Alfred P. Fishman delivered the Dean's Lecture at the Louisiana State University. Dr. Charles A. Ragan continued to serve as Chairman of the Committee on Grants of the Arthritis and Rheumatism Foundation. Dr. Felix E. Demartini was made Secretary-Treasurer of the New York Rheumatism Association and a member of the Editorial Committee of the *Rheumatism Review*. Dr. Joseph W. Jailer was appointed consultant to the United States Public Health Service. Dr. Alvan L. Barach addressed the Royal Academy of Medicine in Barcelona. Dr. Dana W. Atchley served as Consultant on problems of medical education to the Rockefeller Foundation in South America. He addressed the Council on Medical Education on "Science in Medical Education." Dr. Franklin M. Hanger continued as President

of the Medical Board of the Hospital and was elected a Regent of the American College of Physicians. Dr. Stuart W. Cosgriff was appointed Medical Adviser to the New York Director of Selective Service. Dr. Calvin H. Plimpton is on leave of absence and is currently Professor of Medicine at the American University in Beirut, Lebanon. Dr. Robert F. Loeb was made an honorary fellow of the Royal College of Physicians of London and a foreign corresponding member of the British Medical Association. He received the honorary degree of D.Sc. from Kenyon College and served as Chairman of the Board of Scientific Counsellors of the National Heart Institute. He also continued as Consultant to the Survey of the University of Pennsylvania and became a member of the policy committee of Dartmouth Medical School. In addition to these activities, many members of the Medical Service delivered lectures at a large number of universities and society meetings throughout the country.

Dr. Bertram J. Sanger last year retired from active service. For many years he gave unsparingly of his wisdom, enthusiasm and professional skill as Director of the Metabolism Unit and the Diabetic Clinic of the Medical Service. It is a deep satisfaction to announce that two beds on the metabolism wards have been endowed for research and are designated by Dr. Sanger's name. Dr. Kermit L. Pines has assumed Dr. Sanger's clinical responsibilities.

### ***Research Studies***

The research program, except for the studies in the Cardio-Respiratory Laboratory and Radio-iodine Laboratory of the Hospital, has, as in the past, continued to be carried on in the laboratories of the College of Physicians and Surgeons by the staff which serves both The Presbyterian Hospital and the College. The salaries of the staff and the cost of research are made available from resources of both institutions. This interdigitation of effort is not only highly desirable but is essential for the research activities here at the Medical Center. There follows, as in previous reports, a brief outline of some of the research programs of the Medical Service during the past year.

Dr. Bradley continued investigations of various aspects of hepatic and renal physiology in collaboration with Drs. Henry O. Wheeler, Robert M. Epstein of the Service of Anesthesiology, Roscoe R. Robinson, Visiting Fellow, Eric S. Snell, Visiting Fellow, Salvador U. Vial and William I. Cranston. Dr. Wheeler completed developmental work in the dog upon a method for measuring hepatic bromsulfalein transfer (Tm) and storage capacity. He is now engaged in making measurements of Tm and storage in normal persons and in patients with various disorders of

the liver and in examining the effects of various agents including Decholin and dinitrophenol that alter hepatocellular function. Dr. Epstein has returned to his duties in the Anesthesiology Service but continues to work with the group. He has developed a method of measuring renal water volume on the basis of the regional dilution of antipyrine. He finds that  $^{131}\text{I}$ -labelled antipyrine is an unreliable measure of water distribution because it is protein-bound and tends to accumulate within the cells. Dr. Robinson has discovered that re-transfusion in dogs subjected to protracted hemorrhagic hypotension with the development of irreversible shock results in splanchnic hyperemia but *not* in demonstrable splanchnic "pooling" of blood. The mechanism of fever production and changes in splanchnic hemodynamics during fever were studied in dogs by Drs. Snell and Cranston, both of whom are Visiting Fellows from England. Dr. Cranston is also working with Dr. Vial, a Fellow from Chile, on the changes produced in urinary composition during orthostasis or abdominal compression in patients with severe renal insufficiency with the ultimate aim of evaluating nephron populational changes. To date, the results indicate that even almost complete destruction of the kidney does not eliminate renal tubular alteration of the urine. With Dr. John H. Laragh, the relationship between glucose loading and tubular reabsorption (glucose titration) is being assessed in the dog prior to anatomic study of the tubules by Dr. Jean Oliver of Summit, New Jersey, in an effort to correlate structural and functional data characterizing the nephron population. Mrs. Katherine Baker devoted time to clarification of the factors concerned in the movement of para-aminohippurate into red blood cells of man and other animals.

The members of the group working with Dr. Taggart are continuing their studies on transport mechanisms in the kidney and intestine. In investigating the possible participation of acyladenylates in renal transport, Dr. Geoffrey M. Kellerman, a Visiting Fellow from the University of Sydney, and Dr. Alvin Essig prepared benzoyladenylate and hippuryladenylate as model compounds. The former was shown to be an intermediate in the biological synthesis of hippuric acid. Enzymes capable of hydrolyzing the acyladenylates were isolated from kidney and liver, and the enzymatic mechanisms involved in hydrolysis elucidated through the use of water labelled with  $\text{O}^{18}$ . The latter studies were conducted in collaboration with Dr. David Rittenberg of the Department of Biochemistry. Dr. William J. Hensley, another Visiting Fellow from the University of Sydney, completed his observations on the transport of glycine in sacs of everted small intestine of the hamster. Of interest was the finding that the transport occurs normally in the intestine obtained from animals

chronically depleted of pyridoxine and treated with lethal doses of pyridoxine antagonists. This finding is not in accord with the suggestion by others that amino acid transport involves the formation of a chelate between the amino acid, pyridoxal phosphate and a metallic ion. Dr. Marc C. J. Dorner, a Visiting Fellow from the University of Strasbourg, investigated the enzymatic properties of the pigment-bearing particles of a transplantable mouse melanoma. These particles, although much smaller than most mammalian mitochondria, contain the enzymes of the citric acid cycle and the aerobic phosphorylation mechanism. A comparison was made of the enzymatic activities of these particles and of mitochondria obtained from non-malignant tissues.

Dr. Taggart is engaged in a study to determine the essential molecular configuration of compounds eliminated from the body by renal tubular excretion. Drs. Richard J. Cross and Taggart continued their studies of the utilization of energy by the kidney. The role of phosphorylated nucleotides in supplying this energy was investigated by analysis of the renal tissue for these compounds before and after the administration of dinitrophenol, a compound known to interfere with the performance of certain types of renal work. Assays by both chromatographic and enzymatic methods revealed a decrease in adenosine polyphosphates following dinitrophenol, but precise interpretation of these results is complicated by wide fluctuations due to uncontrollable variables.

The metabolism of salicylate in normal and in diseased subjects was studied by Dr. David Schachter. Sensitive, fluorometric procedures were devised to permit estimation of the products of salicylate metabolism in human plasma and urine. Observations were completed in a series of normal subjects on the rates, sites, and modes of formation of the salicylate metabolites, as well as the mechanisms by which these components are excreted in the urine. The salicylate metabolism in diseased subjects will now be compared with that in the normal group. Animal experiments are being conducted by Dr. Schachter to elucidate the more basic problem of glucuronide formation. An assay more sensitive than those available heretofore has been developed, and various animal tissues are being tested for the capacity to form glucuronides. This capacity appears to be of importance for the inactivation of such compounds as the steroid hormones, and for the elimination of such end-products as bilirubin. The nature of the glucuronide in direct-reacting bilirubin was also studied. It has been possible to demonstrate that the glucuronide linkage is with the carboxyl groups of bilirubin.

Dr. Donald F. Tapley returned in July from a year's leave of absence with Professor Hans Krebs in the Department of Biochemistry at Oxford.

During the year in Oxford, he and Professor George Kalnitsky developed a method for estimating oxaloacetic acid in tissues and found that ketosis can develop in a fasting animal in the presence of normal levels of this compound in the liver. This investigation is being extended with the help of Mr. William Shaw, a medical student, and will include observations on diabetic animals. Previous studies by Dr. Tapley have shown that thyroxine can alter certain morphological and biochemical features of mitochondria. A study was begun to determine whether thyroxine is bound to mitochondria and, if so, what the chemical interaction may be.

The isolation, structure and enzymatic degradation of acid mucopolysaccharides were studied as in past years by Dr. Meyer and Dr. Philip Hoffman of the College of Physicians and Surgeons and Dr. Alfred Linker also of the College. The main results of this work were the finding of a new type of hyaluronidase in extracts of the medicinal leech, an enzyme which hydrolyses the uronic bonds of hyaluronic acid. The main product of this reaction is a hitherto unrecognized tetrasaccharide which has glucuronic acid at the reducing end. The structure of this compound was established by combined enzymatic and chemical degradation of oligosaccharides isolated from digests with testicular hyaluronidase. In collaboration with Dr. E. Korn of the National Institutes of Health, the enzymatic degradation of various mucopolysaccharides was studied by extracts obtained from a microorganism grown in the presence of a variety of mucopolysaccharides. A complex of consecutive steps of enzymic actions was demonstrated starting with the production of unsaturated uronides, the desulfation (in case of sulfated mucopolysaccharides) of the resulting oligosaccharides and the splitting of the unsaturated disaccharides into N-acetylhexosamines and  $\alpha$ -ketoacids of still unknown structure. In collaboration with Dr. Gerald Loewi of Oxford University, the acid mucopolysaccharides of embryonic skin were studied by Dr. Meyer. The very low chondroitin sulfate B content of embryo skin as compared to adult skin was noted. Apparently chondroitin sulfate C is replaced by B in maturation of the tissue and it was suggested that the maturation of the collagen itself is correlated with the elaboration of chondroitin sulfate B. In collaboration with Dr. Melvin M. Grumbach of Babies Hospital, a study of the mucopolysaccharides in urine and in organs of children with gargoylism has been started. In this congenital systemic connective tissue disease, large amounts of chondroitin sulfate B and of heparitin sulfate are excreted in the urine and at least one of these, heparitin sulfate, is stored in many organs. In collaboration with Dr. Nelly Blumencrantz of the University of Jerusalem, a study of the oxidative breakdown of hyaluronic acid was undertaken.

Employing the new and highly specific quantitative methods developed by them, Dr. Marcel Goldenberg and Dr. Gerald Cohen of the College of Physicians and Surgeons carried out studies with Dr. Bernard C. Holland of the Service of Psychiatry on the responses of normal subjects and schizophrenic patients to the infusion of adrenaline and nor-adrenaline. At comparable infusion rates of these catechol amines, generally higher and more variable plasma concentrations were observed among the schizophrenic patients. From the total data obtained from infusion studies and the observed normal plasma concentrations, estimates of the endogenously produced catechol amines were calculated; the values obtained were 0.04  $\mu\text{g}$  of nor-adrenaline and 0.01  $\mu\text{g}$  of adrenaline per minute. Comparison of these data obtained from the normal group and those obtained from schizophrenic patients did not indicate any significant difference in the rates of utilization of either adrenaline or nor-adrenaline. The symptomatology associated with the infusions was compared in the normal and schizophrenic groups.

During the past year Dr. Laragh extended his studies on electrolyte metabolism and hormonal factors in the production of edema. With Drs. Demartini and Henry O. Heinemann, Dr. Laragh carried out observations on the mechanism of action and the clinical usefulness of the new diuretic agent, chlorothiazide. The studies suggest a mechanism of action distinct from other currently employed diuretics and may contribute to an understanding of the role of renal tubular cells in the processes of fluid retention and excretion. The effect of chlorothiazide was also studied by renal clearance techniques, particularly to elucidate the basis for the elevation of uric acid in the blood frequently noted with continued administration of the compound. Drs. Laragh and Helen M. Anderson with Dr. Paul Brazeau of the Department of Pharmacology completed their studies demonstrating a normal capacity for potassium excretion in sodium depleted dogs, despite the development of hyperkalemia which is now known to result from extra-renal mechanisms. Studies were carried out with potassium bicarbonate and chloride and it was shown that the former salt potentiates naturesis by chlorothiazide to a greater extent than does the latter. With Drs. Seymour Lieberman of the College of Physicians and Surgeons and Stanley Ulick in the laboratories of the Service of Obstetrics and Gynecology, Dr. Laragh studied the rate of secretion of aldosterone by the adrenal glands in man in health and disease employing the tritium labelled steroid. These studies were made possible by the use of apparatus presented to Dr. Laragh by Mr. Daniel G. Arnstein. Dr. Laragh is also studying certain aspects of nor-adrenaline metabolism in hypertension with Dr. Goldenberg.

Previous investigations by Drs. Jailer and Nicholas P. Christy have demonstrated that Cushing's syndrome due to bilateral adrenal hyperplasia is characterized by an increased sensitivity to exogenous ACTH as measured by the response of the plasma 17-hydroxycorticosteroids. This hyper-sensitivity disappears after successful pituitary irradiation. Last year data were obtained which indicate the existence of a non-steroidal factor in the plasma of patients with Cushing's syndrome which is capable of maintaining adrenal weight in the hypophysectomized rat. It is absent in the plasma of patients whose Cushing's syndrome is due to an adrenal tumor. In addition, it was shown that the urinary steroidal pattern in Cushing's syndrome is similar to what is found in normal individuals who have been receiving ACTH over prolonged periods.

Drs. Julian I. Kitay and Donald A. Holub in Dr. Jailer's laboratory perfected a technique for assaying minute amounts of ACTH which depends upon the release of corticosterone by isolated adrenal slices. They have found that various forms of stress and also cortisone decrease the pituitary ACTH content whereas exogenous ACTH itself increases it. Further investigation revealed that administration of ACTH prevents the subsequent release of ACTH when the animal is stressed. Studies aimed at elucidating adrenocortical function during pregnancy revealed increased plasma 17-hydroxycorticosteroid levels, which result in part from decreased degradation of the hormones and increased responsiveness of the adrenal to ACTH. The adrenal cortex, it was also shown, is not readily suppressed by steroid administration during pregnancy as it is in the non-pregnant state.

Chromatographic studies of plasma hydrocortisone, both free and conjugated, were continued by Dr. Christy in order to learn whether reportedly elevated plasma 17-hydroxycorticosteroid levels in late pregnancy are authentic hydrocortisone or artefact. Measurement of the disappearance rate of hydrocortisone from plasma of patients treated chronically with estrogens has shown not only a delay in disposal of the hormone, but also an unexplained time lag in the attainment of peak levels. Estimation of levels of corticosterone in the plasma of rats, by means of paper chromatography and quantitation (ultraviolet light absorption and sulfuric acid chromagen) are being carried out in an effort to determine whether or not adrenocorticotrophic hormone accelerates return of adrenal cortical response to normal after long-term treatment with steroids. With Dr. Adele P. Hofmann of the Pediatrics Service it has been possible for Dr. Christy to show that administration of diphenylhydantoin to patients with epilepsy brings about no reduction in adrenal cortical activity as measured by plasma steroid response to adrenocorticotropin.

With Dr. Richard J. Block and Mr. Richard B. Mandl of the Boyce Thompson Institute for Plant Research, Dr. Sidney C. Werner studied identification in the circulation of true iodoproteins in two patients, one with cretinism and the other with amenorrhea and bony deformities. These studies reveal that leakage of thyroglobulin from the thyroid is the causal defect in these individuals. Work also done by this group reveals that all the iodoamino acids of the serum have specific binding proteins in the serum as well as thyroxine. Dr. Werner is also completing a four-year study on the assay of thyrotropic hormone and appears to be reaching a successful conclusion; a suitable method of assay appears to be at hand. Studies of the mechanisms controlling iodide, thyroxine and triiodothyronine uptake by human and avian red blood cells continue. Also, work is being completed which bears on the mechanisms responsible for the adjustment of thyroidal activity to small excesses of iodide, in collaboration with Professor Howard L. Levine of the Department of Mathematical Statistics at Columbia University.

The Cardio-Respiratory Laboratory, under the direction of Dr. Fishman, continued to explore the interrelations between the respiration and the circulation in man. Five particular problems constituted the major research effort for the year: 1) the measurement of the effective pulmonary collateral blood flow in normal human subjects and in patients with various types of heart and lung disease; these studies indicate that a large collateral circulation to the lungs may develop in patients with abnormalities such as congenital pulmonic stenosis or bronchiectasis, whereas, it remains inappreciable in other acquired disease states, such as carcinoma of the lung. 2) the determination of the factors which influence the "diffusing capacity of the lung"; in this study, Dr. Gerard M. Turino (Senior Fellow, New York Heart Association) and Dr. Martin Brandfonbrener (Research Fellow, American Heart Association) assessed the role of hemodynamic, ventilatory and kinetic factors in influencing a measurement which is generally interpreted as an index of the area and permeability of the alveolar capillary interface; an important by-product of this research was the development by Dr. Robin W. Briehl (Research Fellow, Public Health Service) of a highly accurate method for estimating the carbon dioxide tensions in blood. 3) the regulation of the pulmonary circulation; the device used for this study, conducted in conjunction with Dr. Aaron Himmelstein of the Surgical Service, was a transient occlusion of a pulmonary artery by a balloon-tipped catheter for the evaluation of the nature of the pulmonary vascular bed proximal, and distal, to the occlusion. 4) the syndrome of alveolar hypoventilation; Dr. Roberta M. Goldring (Research Fellow, Public Health Service) and



Dr. Edward H. Bergofsky (Research Fellow, Polachek Foundation) explored metabolic factors and structural deformities, respectively, as initiating mechanisms in the production of this syndrome. 5) the detection of impaired distribution of gases within the lung; Dr. Gustave A. Laurenzi (Research Fellow, National Foundation for Infantile Paralysis) was responsible for this phase of the work using nitrogen and carbon dioxide as test substances.

In addition, Dr. John A. Wood completed studies on the relationship between cystic fibrosis of the pancreas in children and chronic obstructive pulmonary emphysema in adults. In these patients with emphysema, abnormal sweat tests and impaired absorption of fat have been disclosed; these simulate in many respects the characteristic abnormalities of cystic fibrosis. The group from the Pediatric Service, under the supervision of Dr. Sidney Blumenthal and Dr. Sylvia P. Griffiths, continued to study the circulation in Cooley's anemia. Dr. Raymond E. Barker (Resident in Cardiology) working in conjunction with the Pediatrics group, is investigating the role of vector-cardiography in identifying hypertrophy of the respective ventricles. As in previous years, the group in the Cardio-Respiratory Laboratory cooperated with the Surgical Service in the routine diagnostic studies relevant to problems of surgical intervention.

Drs. James R. Golub, Fellow of the Dazian Foundation, Jiro Nakano of the College of Physicians and Surgeons, Fellow of the New Jersey Heart Association, Gerhard Muelheims of the College of Physicians and Surgeons, Fellow of the United States Public Health Service, John C. McGiff, Fellow of the American Heart Association, Robert Jreissaty, formerly of the College of Physicians and Surgeons, and Dudley F. Rochester collaborated with Dr. Wégria in his study of problems concerned with the regulation of the coronary circulation, cardiac work and cardiac metabolism under varied conditions. It has been found that acute mitral insufficiency increases the coronary blood flow and the cardiac oxygen consumption. These effects were observed in mitral insufficiency of moderate severity as well as in mitral insufficiency severe enough to lower markedly cardiac output and mean arterial blood pressure. It has also been found that acute aortic insufficiency severe enough to lower markedly the mean and diastolic aortic blood pressure increases the coronary blood flow and the cardiac oxygen consumption. Acute arteriovenous fistulae sufficient to increase the cardiac output by up to 130 per cent resulted in an increase in the coronary blood flow even in the presence of a definite and marked decrease in the mean arterial blood pressure. Such arteriovenous fistulae also resulted in an increase of the cardiac work and oxygen consumption as well as cardiac efficiency.

Dr. Perera engaged in studies of the accelerated ("malignant") form of hypertension. His preliminary analysis of its natural history reveals certain unique features regarding its abrupt onset in a rather narrow age range. He has now established the fact that there are related constitutional factors and that this disorder is not solely an acquired condition based on the intensity of the blood pressure elevation. A significant difference was also noted in the frequency of some of the blood groups in women with this disease. In addition, he has studied the effects of large salt loads in hypertensive patients and, in animals, is seeking to determine the degree to which pathological changes can be reversed by antihypertensive drugs. Drs. Abbie I. Knowlton and Emily N. Loeb of the College of Physicians and Surgeons continued studies aimed at differentiating the types of hypertension induced in the rat by desoxycorticosterone acetate (DCA), and by cortisone acetate, through analyses of whole carcass and also of aortae for electrolyte content.

Dr. Joseph C. Turner continued his studies of red-cell lipides in animals and man. Lecithin, hitherto assumed to be a component of all cells, was shown to be lacking from the red-cells of ruminants, and this finding correlates with the insusceptibility of these same cells to certain snake venom toxins. The study is now being extended to problems of anemia in man. Dr. Anderson during the past year established a laboratory for the classification and study of patients with disorders of blood coagulation. These studies have made possible, not only more precise definition of the nature of various bleeding syndromes, but have also provided a means by which material from patients with specific abnormalities can be made available for research into the more intimate chemical mechanisms involved in blood coagulation. At present, chemical analysis of blood platelets and the effect of specific fractions of platelets in coagulation and clot retraction are being studied.

During the past year, Dr. Helen M. Ranney continued studies of hemoglobin variations in both patients and animals. The human studies have been designed to observe the *in vivo* incorporation of Fe<sup>59</sup> into each of two varieties of hemoglobin in the same individual. Studies now completed indicate no difference in incorporation rates for two varieties of hemoglobin in individuals with sickle cell trait, hemoglobin C trait, hemoglobin J trait and the fetal hemoglobin of a thalassemia syndrome. A slower rate of incorporation has been observed in human hemoglobin A<sub>3</sub>; this problem is now under study in experimental animals. The possibility of a quantitative measurement of genetically determined hemoglobin differences in mice has been explored; and by both column chromatography and starch gel electrophoresis separations, new data are

being accumulated on the genetically controlled hemoglobin differences in mice.

In conjunction with the Service of Neurology, a larger program of anticoagulant therapy for cerebrovascular disease was cautiously embarked upon by Dr. Cosgriff. In the past six or eight years selected patients in small numbers with cerebrovascular disease have been treated. However, more recently the treatment program has been broadened with particular reference to continuous ambulatory anticoagulant therapy for certain types of vascular insufficiency and occlusions which have a tendency to recur, in particular basilar artery insufficiency and insufficiency or thrombosis of the internal carotid artery. Understanding of the diseases and possible beneficial effects of the coagulation therapy should, at least in part, be clarified by this program. The ambulatory anticoagulant therapy program in Vanderbilt Clinic is being continued and extended by Dr. Cosgriff. Studies have been underway for more than eleven years, and ambulatory treatment is proving to be relatively safe and certainly practical. Included among the patients treated are those with rheumatic heart disease who have previously experienced embolism of intracardiac origin, thrombophilic individuals who have had recurrent venous thrombosis and pulmonary embolism, individuals who have suffered multiple coronary occlusions and patients with recurrent cerebrovascular disease. Evaluation of the reliability of a bedside test for prothrombin has failed to yield results sufficiently reliable to warrant its adoption in the care of patients.

Active research continued in the area of the rheumatic disorders under the direction of Dr. Ragan. Dr. Charles L. Christian, a Fellow of the Arthritis and Rheumatism Foundation, continued to work on the serologic reactions seen in rheumatoid arthritis and established that the reactant material in gamma globulin is an aggregate of the normal components. Dr. Stanley L. Wallace, a United States Public Health Service Trainee for 1957, studied retrospectively the random muscle biopsy experience of the Hospital and concluded that this technique was of real diagnostic value only in Boeck's sarcoid. Dr. Robert F. Willkens from Seattle, Dr. Eric J. Southwood from San Francisco, and Dr. André Peltier from Paris are Trainees with Dr. Ragan's group for 1958. The study of juvenile rheumatoid arthritis undertaken by Drs. Albert W. Grokoest and Arthur I. Snyder is nearing completion. A preliminary report was submitted to the 9th International Congress on Rheumatic Diseases. Many interesting aspects of the disease have been demonstrated, among them the significant number of patients without pain, the frequency of a monoarticular onset mistakenly diagnosed for months,

and the frequency of unusual X-ray findings related to the inflammatory process in maturing joint structures. Dr. Henry D. Grosfeld of the College of Physicians and Surgeons continued his *in vitro* studies of fibroblasts, working in the Histochemical Laboratory of the Service of Orthopedic Surgery under Dr. Gabriel Godman of the College of Physicians and Surgeons. With Dr. Meyer, the identity of certain mucopolysaccharides elaborated by the fibroblast *in vitro* was established as hyaluronic acid and probably an undersulfated chondroitin sulfate. Dr. Grossfeld is continuing studies of the respiration of fibroblasts and factors which modify this aspect of their metabolism. Teaching in conferences with patients of the fourth-year students during their Group Clinic period and also of student clerks at Columbia Division, Goldwater Memorial Hospital continues.

Certain immunochemical properties of the "LE factor" were studied by Dr. Daniel L. Larson with Drs. Thomas B. Tomasi, Jr. and John F. Watson. On the basis of quantitative precipitin and gel diffusion data, it would appear this factor is an abnormal gamma globulin which appears to be antigenic in rabbits. Hematoxylin body formation was demonstrated with isolated nuclei and gamma globulin from a patient with lupus erythematosus. The phagocytic factor necessary for LE cell formation is being studied with Mr. Alan Aron, a senior medical student. DNA-protein-gamma globulin complexes separated by electrophoresis gave identical nitrogen-phosphorus ratios when the source of gamma globulin was either a normal individual or a patient with lupus. Similarly, there was no change in the sedimentation constant of the DNA-protein when exposed to gamma globulins. With Drs. Ricardo Mendez-Bryan and Christian, attempts were made by Dr. Larson to fix DNA-protein to the surface of red blood cells and to latex particles. Using the latter system, agglutination was observed following the addition of lupus serum and lupus gamma globulin but not with normal serum or normal gamma globulin. With Dr. Willkens, a modified "LE test" was devised, suitable for use with fingertip blood.

During the current year Mrs. Katherine M. Price and Dr. Yale Kneeland, Jr. continued their studies of post mortem bacteriological flora of the lower respiratory tract. In addition, with the appearance of influenza a study was made of the normal pharyngeal flora and its seasonal alteration, with special reference to the epidemic, the pharyngeal flora of cases of uncomplicated influenza, together with sputum studies of cases of influenzal pneumonia. All of these studies are still in progress.

Studies on the efficiency of the pulmonary ventilation in patients with pulmonary emphysema were continued by Dr. Barach with the collabora-

tion of Dr. Gustav J. Beck. The majority of these patients exhibit a decrease in oxygen consumption and minute volume of ventilation. With the use of the patient-cycled ventilatory apparatus, which increases reserve tidal volume, the respiratory rate selected by the patient is generally diminished; this response, a lowered volume of breathing, is similar to that previously reported as a result of "increased reserve diaphragmatic breathing" accomplished by the head-down position. Increased diffusion of oxygen and carbon dioxide per liter of ventilation was found to be a satisfactory measurement for evaluation of therapeutic procedures in clinical disorders of breathing. In collaboration with Dr. Hylan A. Bickerman and Dr. Beck, Dr. Barach developed a thermostatically controlled nebulizing device. Aerosols of saline and propylene glycol were found to increase strikingly bronchial secretions thus making material available for cytologic examination for bronchogenic cancer. Dr. Edith E. Sproul of the College of Physicians and Surgeons carried out cytological examinations in this study. The device has also proven of great value to facilitate expectoration in many patients with acute and chronic bronchopulmonary disease.

Dr. William B. Sherman and Dr. Elliott Middleton, Jr. continued their investigations of the *in vitro* release of histamine from allergic human blood in the presence of specific antigen. This system allows quantitative evaluation of the allergic sensitizing antibody and factors affecting its activity. In a series of pollen sensitive subjects, it was shown that increasing the concentration of pollen extract added to heparinized blood increased the amount of released histamine up to an optimal concentration of 1000-5000 protein N units per liter of blood (10-50  $\mu\text{g}$  of pollen protein N). Addition of more antigen did not result in further histamine release; indeed, in the most sensitive subjects diminished release was noted with high antigen concentrations, a seemingly paradoxical effect. The release reaction is dependent on calcium ions since EDTA, oxalate, and citrate completely prevent histamine liberation in concentrations adequate for anticoagulation. Recalcification of citrated blood allows histamine release to occur. Certain enzyme inhibitors and factors affecting the reaction are under study. Dr. Sherman with Dr. Walter R. Kessler of the Babies Hospital published a volume on "Allergy in Pediatric Practice."

Dr. Gellhorn continued his studies on the evaluation of the newer chemotherapeutic agents against various neoplastic diseases. These agents have included methotrexate, a folic acid analog, in patients with testicular tumors containing choriocarcinoma. Also, guinacrine was employed in the control of neoplastic effusions in the pleural and peritoneal cavities.

Fluorouracil was employed in patients with acute leukemia and malignant melanoma. Finally, the usefulness of benzimidazole-2-chlorethylamine was explored in patients with bronchogenic carcinoma.

During the past year, Drs. Charles A. Flood, Henry Colcher and James A. L. Mathers continued studies on the nature of pain of esophageal origin and of disorders of the esophagus. It was demonstrated in achalasia of the esophagus that propulsive motility may be only partially rather than totally disrupted as had been believed. Dr. Flood and Dr. George C. Hennig completed a long-term study concerning the natural history of hiatus hernias. Studies concerning the natural history of ulcerative colitis and its modification by steroid therapy continue. Dr. Michael J. Lepore continues collaborative studies with members of the Surgical Service on the malabsorption syndromes. With Drs. Harold G. Barker and Keith Reemtsma the effect of steroids on the course of non-tropical sprue was determined by the absorption curves of  $I^{131}$ -tagged olive oil and oleic acid. Also, Dr. Lepore, with Dr. Frank E. Gump of the Surgical Service, is making an exhaustive study of the natural history of regional enteritis and its modification by various forms of therapy. With Dr. Paul A. di Sant'Agnes of the Pediatric Service and Dr. Heinrich B. Waelsch of the Psychiatric Institute, Dr. Lepore is attempting to determine whether an oral gliadin test may be useful in establishing the diagnosis of gluten-induced celiac disease and sprue.

Dr. Pines and Dr. Hans Neuberger are completing a study of the influence of diabetes mellitus on vibratory sense in the hopes of establishing whether or not this is related to the intensity and duration of disturbances in carbohydrate metabolism. Dr. Pines also continued to make observations of the effects of sarcoidosis on calcium metabolism. Dr. Henry Aranow and Dr. Robert M. Day of the Institute of Ophthalmology are appraising a large group of patients in whom hyperthyroidism has been controlled with anti-thyroid drugs in order to determine the incidence of serious ophthalmopathy as compared with groups of patients managed with other forms of therapy. Dr. Aranow also is continuing his collaboration with Drs. Paul A. Hoefler and Lewis P. Rowland of the Neurological Institute in the study of the management of myasthenia gravis.

# Neurological Surgery

J. LAWRENCE POOL, M.D., *Director*

Two important developments during the past year in which the Service of Neurological Surgery actively participated are the expansion of pediatric neurosurgery and the team approach to the neurosurgical treatment of intracranial aneurysms.

Closer cooperation in clinic and conference between the staffs of the Babies Hospital and the Neurological Institute, for example, has led to earlier recognition and treatment of many salvageable conditions, as reflected by over 200 admissions to the Neurosurgical Pediatric Unit of the Neurological Institute this year. Dr. Joseph Ransohoff was largely responsible for this development for the Service of Neurological Surgery. In addition, thanks to his long years of laboratory research, Dr. James B. Campbell was successful in translating his experimental data into practical clinical application in restoring useful bladder function in children and young adults.

The second promising development of the year was the concerted, combined effort by the Services of Neurology, Neuroradiology, Neuropathology, Anesthesiology and Neurological Surgery to study and improve the treatment of intracranial aneurysms. Neurosurgical members of this group are Dr. Lester A. Mount, Dr. Joseph Ransohoff, and Dr. J. Lawrence Pool. Dr. Sherwood A. Jacobson, Research Fellow of the College of Physicians and Surgeons, and Dr. Hubert L. Rosomoff are also active participants. Improved methods of angiographic diagnosis, of management of the hypothermic patient and of surgical techniques have already been achieved. As a result, more lives are now being saved than in former years after a subarachnoid hemorrhage has occurred from a ruptured intracranial aneurysm, especially if the patient is given the benefit of prompt neurosurgical attention.

The volume of surgical procedures for the year has been somewhat greater than last year. Some 1020 major and 740 minor operations were done. The latter include 481 arteriograms and 134 ventriculograms. In addition, close to 250 myelograms and 100 pneumoencephalograms were also done.

It is gratifying to report that improvements in technique and surgical management have enabled our Service to achieve an outstanding record

in the treatment of acoustic nerve tumors, 40 successive cases having been operated upon in the past two years with only one loss. Hypophysectomy has proved of significant value in three of five cases of advanced cancer of the breast, and thanks to prompt surgical intervention, technical developments and increasing experience, as indicated below, early surgery of intracranial aneurysms is now proving its worth.

### ***Research Activities***

A high level of clinical and laboratory investigative work was carried out not only by members of the attending staff, as listed below in order of seniority, but to a notable degree by our resident staff, as indicated by over 60 publications.

Clinical and laboratory studies by Dr. Pool were focused on factors influencing the circulation of the brain and cerebral vasospasm, and on the mechanism and control of central effects influencing cardiac action at normal and lowered body temperatures. Dr. Jacobson was an active co-worker in this investigation, made possible in part by the Mortimer and Harriet Marcus Gift. Data thus far accumulated has proved of practical value in improving the neurosurgical management of intracranial aneurysms.

A relatively new technique of treating intracranial aneurysms was also applied by Dr. Pool. This entails temporary occlusion of all branches of the circle of Willis that feed the aneurysm sac, so that the aneurysm can then be dissected from the brain, the oculomotor nerve or the optic chiasm with greater safety. With this technique successful occlusion of the aneurysm was achieved in 10 of 12 patients of the small series thus far.

Continued evaluation of globus pallidus surgery for the alleviation of Parkinson's disease was also carried on, with the able cooperation of Dr. Edgar M. Housepian.

Dr. Lester A. Mount continued research in the collateral circulation of the brain, spontaneous subarachnoid hemorrhage and intracranial aneurysms, and a long-term study of the results of operative therapy for premature synostosis of the sutures of the cranial wall.

Dr. Edward B. Schlesinger is investigating the use of radioactive isotopes to test the patency of drainage shunts and is also applying this technique in the attempt to ascertain the presence or absence of bleeding from intracranial aneurysms by the use of intravascular isotopes. These valuable long-term studies have been made possible by grants-in-aid



from the American Cancer Society and the Localization of Brain Tumors with Radio-isotopes Gift.

Dr. Joseph Ransohoff was active in the following research programs: spinal cord tumors in children, with Dr. Harold Haft, now at the Veterans Administration Hospital, and Dr. Sidney Carter, Service of Neurology; the treatment of hydrocephalus by ventriculopleural shunts; and the physiology of cerebrospinal fluid circulation, with Dr. Robert Fishman of the Service of Neurology. His study of hemispherectomy and other major cortical procedures for the treatment of uncontrollable convulsive seizures is also progressing, in collaboration with Drs. Sidney Carter, Melvin D. Yahr, and Eli Goldensohn of the Service of Neurology. Mechanisms involved in the experimental production of rage states in animals and modification of these states by lesions in the temporal lobe are under investigation by Dr. Ransohoff with Dr. Murray Glusman at the New York Psychiatric Institute; while the diagnosis of acute intraventricular hemorrhage in premature children is being pursued by serial hematocrit studies with Dr. William Silverman, Service of Pediatrics.

Dr. Thomas J. Bridges continued his research studies on plethysmographic study of cerebral vasomotor phenomena, and on the application of previously reported observations of digital vasomotor responses to nerve root stimulation in the treatment of advanced Raynaud's Disease. The effect of hypophysectomy upon prostatic and breast carcinoma, an analysis of 40 cases of cordotomy with Dr. Jules C. Ladenheim at Delafield Hospital, collaboration with Dr. Byron Stookey in a review of 70 cases of cordotomy, and an analysis of 33 laminectomies for cord compression due to cancer at Delafield Hospital comprise additional aspects of his work.

#### NEW LABORATORY FOR METABOLIC STUDIES

Thanks to the Paul Moore Research Gift, a laboratory was equipped and organized to carry out experimental studies on the influence of the nervous system on lipid metabolism and other metabolic functions. It is hoped that this may ultimately yield a better understanding of peripheral neuritis. Evidence has been obtained indicating that neural pathways play a part in maintaining certain hyperlipemic states in experimental animals. Other evidence suggests that this is part of a neuro-humoral mechanism. Preparations are being made to amplify certain aspects of this work using materials from patients before and after hypophysectomy. This work is being carried on by Dr. James W. Correll.

Dr. Correll also carried out the following studies: metabolic or immunologic changes possibly related to the clinical course of patients with

tumors of the pituitary gland; peripheral neuritides with identification of a factor incident to the development of experimental allergic neuritis and encephalomyelitis, and evaluation of its possible relation to the disease in man; study of pupillary changes which result from carotid-cavernous fistulae; surgical treatment of complications resulting from fractures through the paranasal sinuses; improvements in the technique of vertebral arteriography; and a study of abnormal intradural calcification and ossification, with Dr. Fritz Cramer.

Dr. Cramer presented this data before the International Congress of Neurological Sciences in Brussels.

#### STUDIES OF REGENERATION OF NEURAL TISSUE

Dr. James B. Campbell's research efforts were directed toward the following two projects: the development of apparatus for the stereotaxic intracranial placement of radioactive isotopes for the alleviation of dyskinesias, and a study of regeneration of neural tissue directed at improving the paraplegic state and urinary dysfunction of neurogenic origin in civilian patients and battle casualties. This work has been generously supported by the Veterans Administration; the Quaker Oats Co.; Mrs. Rodgers Denckla; The Donner Foundation; Office of the Surgeon General, Department of the Army; the Playtex Park Research Institute; and the United Cerebral Palsy Association.

Aided by the new laboratory facilities made possible through the Paul Moore Research Gift, neurophysiological studies on the organization of central synaptic systems were continued by Dr. Dominick P. Purpura of the College of Physicians and Surgeons along the following lines: analysis of synaptic activity in the cerebral and cerebellar cortex with particular emphasis on the role of inhibitory processes in the cerebral cortex; analysis of caudate-cortical projections in the cat; central synaptic action of amino acids and their application to problems of synaptic organization; electrophysiological and pharmacological studies of apical dendritic activity; effects of hypothermia on centrally induced cardiac irregularities; and systemic actions of amino acids in cortical regions of blood-brain barrier loss.

As in previous years, collaboration with Dr. Harry Grundfest of the College of Physicians and Surgeons continued to be an important feature of the research activity of the laboratory. In addition, the laboratory is serving to train research fellows in neurophysiology. Currently Dr. Martin Girado from Buenos Aires is collaborating with Drs. Purpura and Grundfest on a number of projects. Dr. Juan A. Gomez of the College of Physicians and Surgeons also recently joined the group that in-

cludes Mr. Thomas Smith, third year medical student, serving as a pre-doctoral fellow in neurophysiology. Working with Mr. Smith this summer was Mr. Desmond Callan, a second year medical student. Their major problem concerned effects of intraventricularly administered amino acids on electrocortical activity. This work has been made possible by generous financial assistance from the Donner Foundation and the U. S. Public Health Service.

Dr. Henry R. Liss, with Dr. William Caveness of the Service of Neurology, participated in a study of combat head injuries, sponsored by the Office of Naval Research. Several hundred Marine and Navy patients who sustained head injuries in the Korean combat area as well as in civilian-type accidents have been studied with electroencephalographic records as well as long-term followup. Another part of this study is implantation of permanent electrodes into the skull and reticular formation of monkeys for simultaneous electroencephalographic recording during and following cerebral concussion. Histological examinations of the brains are being done with Dr. Charles W. True, Department of Pathology.

#### ELECTROLYSIS IN SPINAL CORD

With Dr. Fred Mettler of the Department of Neurology, Dr. Liss is continuing his study on surgical trauma of the spinal cord; and with Dr. Mettler and Mr. Waller V. Morgan of the Department of Neurology, he is creating electrolytic lesions of the spinal cord and attempting to create minimum spread of damage by the use of ultra high frequency currents. This latter study is being carried out in an effort to prepare a needle comb electrode for the simultaneous recording and electrolytic destruction in the pain pathways of the cord for use in neurosurgery.

Dr. Housepian carried forward electrophysiological studies in the neurosurgical laboratory and also clinical studies on the nature of Parkinsonism and pallidal surgery. He published three papers covering this work.

Dr. Hubert L. Rosomoff studied the effects of hypothermia upon the circulation of the brain and its use in clinical neurosurgery. The use of sterilized freeze-dried dura mater in the repair of pachymeningeal defects, and the use of inorganic ethylenediamine-treated bone for cranial reconstruction is being studied as a continuation of his work with the Naval Medical Research Institute. Five published reports have resulted from his research on these problems.

Dr. R. James Seymour continued his work with special staining techniques permitting study of the nerve supply of the vessels of the circle of

Willis and he is completing his experimental survey of the sacral innervation of the urinary bladder. He has contributed to several publications with Dr. Campbell.

### *Travels and Lectures*

During the year Dr. Pool contributed to the following formal discussions: Temporal Lobe Epilepsy Symposium, National Institute of Health; Pallidal Surgery for Parkinson's Disease, Harvey Cushing Society; Inflammatory Intervertebral Disc Disease, American College of Surgeons; and Prefrontal Lobotomy, New York State Division of the American Psychiatric Association. He attended the International Symposium on the Reticular Formation of the Brain, was co-author of a paper on centrally induced cardiac irregularities given before the American Neurological Association, and presented a paper on hypothermia in cerebrovascular surgery before the International Congress of Neurological Sciences in Brussels. At the latter meeting, Dr. Pool served as delegate for the American Academy of Neurological Surgery, and also inspected new neuropsychiatric units at Bordeaux, France, and Edinburgh, Scotland.

Dr. Mount presented various papers throughout the year on circulation of the surface vessels of the cerebral hemisphere; the treatment of intracranial aneurysms by carotid ligation in the neck; and progress in arteriography, the latter having been read before the Neurosurgical Society of America. He described the treatment of intracranial aneurysms and vascular anomalies before the Mexican Society of Neurology and Psychiatry; the management of intracranial aneurysms at the Albert Einstein College of Medicine; and epidural hematoma as a complication of ventricular drainage and ventriculography, with Dr. Liss and Dr. Haft, before the American College of Surgeons.

Dr. Edward B. Schlesinger presented several talks on the low back syndrome, management of head injuries, lesions of the odontoid process, herniation of the nucleus pulposus, treatment of gliomas of the third ventricle and pincalomas, and brain tumor localization with radioactive isotopes. He also participated in the First American Congress on Legal Medicine and Law-Science Problems and the Regional Committee on Trauma of the American College of Surgeons.

Dr. Ransohoff, with the assistance of Dr. Housepian, prepared an excellent exhibit at the Congress of Neurological Surgeons on the technique of ventriculoplacural shunt for the treatment of hydrocephalus.

Dr. Bridges participated in a symposium on cerebrovascular disease given by the Section of Neurology at the New York Academy of Medi-

cine with Dr. H. Houston Merritt, Service of Neurology, and other specialists in this field.

Dr. Purpura presented papers at the International Symposium on Reticular Formation of the Brain, and at the International Symposium on Curare and Curare-like Agents held in Rio de Janeiro, and also gave many lectures on his work at our own Medical Center as well as at other hospitals in the metropolitan area.

Dr. Campbell read several papers throughout the year on regeneration of the seventh cranial nerve; the clinical use of freeze-dried human dura; neurosurgical problems in children; congenital malformations of the spine; lesions produced by implanted beta ray sources in the brain; experimental studies on regeneration of nerve and spinal cord with the use of Millipore; beta radiation of the feline caudate nucleus; innervation of the urethra; and bladder dysfunction secondary to meningocele, improved by intraspinal surgery 5 to 15 years after meningocele repair. These were presented at various meetings including the Physiology Seminar of Cornell University Medical School, the Harvey Cushing Society, the Postgraduate Seminar at Yale University, the Inter-American Symposium on the Peaceful Applications of Nuclear Energy, Yeshiva University, the National Institute of Health, the International Congress of Neuropathology at Brussels, the American Physiological Society, and the American College of Surgeons.

Dr. Liss presented his work on social and economic adjustment after head injury before the American Neurological Association in conjunction with Dr. Caveness. His work on massive epidural hemorrhage as a complication of ventricular drainage, prepared with Drs. Mount and Haft, was presented before the American College of Surgeons.

Dr. Rosomoff participated in the Subcommittee on the Nervous System of the Committee on Medicine and Surgery, National Research Council; the panel on hypothermia at the International Congress of Neurological Sciences in Brussels; and participated in the Symposium on Hypothermia at the International Congress of Military Medicine and Pharmacy in Belgrade, Yugoslavia. He also serves as Consultant to the Naval Medical Research Institute pertaining to experimental surgery. His application for graduate studies leading toward the degree of Doctor of Medical Science has been approved, based on work performed at the Naval Medical Research Institute and the Neurological Institute.

Dr. John Potanos, Assistant Resident on leave of absence for one year, is working on the biochemistry of the brain with Dr. Samuel Graff at Delafield Hospital. It is hoped that through this study he too will become a candidate for a Doctor of Medical Science.

### *Distinguished Visitors*

There were fifty-two visitors to our operating rooms and clinic during the year for periods of one to ten days. The majority of these were well-known neurosurgeons from European countries, South America, Australia, Formosa and Japan. In addition, the Neurosurgical Travel Club, consisting of members of well-known clinics throughout this country, spent two days at the Neurological Institute to observe surgical techniques and attend the presentation of papers by members of our staff, under the aegis of Dr. Mount.

The expansion of pediatric neurology and neurosurgery has emphasized the need for an air-conditioned postoperative neuropediatric unit to alleviate the serious suffering of babies and young children from the high fevers to which they are prone during our hot summer months. It is hoped that the proposed remodeling of the Neurological Institute will provide for this need.

Thanks are extended to the attending and resident staffs for their superb contributions to clinical, teaching and research activities during the year, and also to Dr. Purpura for his outstanding and widely acclaimed work carried out in the new Paul Moore Research Laboratory. The Service of Neurological Surgery is also indebted to Dr. Merritt and the Service of Neurology for their continued and greatly appreciated cooperation toward our common goals at the Neurological Institute, and to the Nursing Staff including Miss E. Pierce, supervisor of the Neurological Institute operating room. All these and many others have helped to make this a valuable year for our Service, and we hope for the Medical Center.



*Neurosurgical advances are extending the possibility of operative correction at both ends of the lifespan. Here treatment of a four-month-old baby assures normal development of brain.*



*Successful treatment of Japanese agricultural workers poisoned by insecticide was last year a by-product of fundamental studies of the origin of the nerve impulse. Here research team traces pathway of radioactive electrolytes across wall of single cell of electric eel. Tiny plastic apparatus keeps single cell alive and "breathing".*



# Neurology

H. HOUSTON MERRITT, M.D., *Director*

The clinical program of the Neurological Service continued at its usual level in the past year. Now that it has been decided that the Neurological and Neurosurgical services will remain in the Neurological Institute, needed improvements in our facilities, particularly in the X-ray department, are planned.

The number of patients treated at the Neurological Institute and the Vanderbilt Clinic was approximately equal to that of previous years. The demand for private and semi-private facilities exceeded the capacity. There was, however, a slight decrease in the admissions to the wards. This was due in part to the fact that many patients had their studies and treatments entirely in the out-patient department. A more significant factor, perhaps, is the increase in the number of patients who had some form of medical insurance demanding semi-private accommodations. This trend in medical economics may make it necessary to change the relative number of ward and semi-private beds in our hospital. This can be done without difficulty on the Neurological Service by extending the teaching activities to the semi-private patients. This should result in an improvement of the medical care of these patients.

## *Staff Activities*

The electroencephalographic laboratories, under the direction of Dr. Paul F. A. Hoefler, continued to carry the usual heavy load of clinical work. Dr. Joseph L. O'Brien, formerly resident neurologist, became associated with Dr. Hoefler on July 1, replacing Dr. Eli S. Goldensohn, who has taken over the charge of the treatment of all patients with epilepsy in the Vanderbilt Clinic. The addition of electroencephalographic facilities in the Vanderbilt Clinic will expedite the study and treatment of patients with epilepsy and lighten the load on the facilities in the Hospital.

Four members of the resident staff completed their training in neurology during the past year and accepted academic appointments elsewhere, as follows: Dr. Eugene Loeser, Assistant Professor of Neurology, University of North Carolina; Dr. Howard J. Tucker, Assistant Professor of Neurology, Western Reserve University; Dr. Labe Scheinberg, Instructor

in Neurology and Dr. Robert Katzman, Fellow in Neurology, both at Albert Einstein Medical School, New York.

Dr. J. P. P. Bradshaw, of Leeds, England, spent a year on our Service as Visiting Fellow. He participated in the teaching activities of the Service and made a study of the circulation of the spinal cord in animals in an effort to elucidate spinal cord changes in man, secondary to osteoarthritis. This work will be published in the *Journal of Comparative Anatomy*. Dr. Bradshaw returned to England in November to become the Director of the Service of Neurology at the General Infirmary in Sheffield. Dr. Rosa Helena Longo of Sao Paulo, Brazil, spent several months as a Visiting Fellow in Dr. Hoefer's laboratories, studying electroencephalography and electromyography. A number of graduate students from this country and abroad also studied in the laboratory for varying periods.

Dr. Hoefer and Dr. Lewis P. Rowland, with Dr. Henry Aranow, Jr., of the Medical Service, continued their studies on myasthenia gravis. A review of cases of myasthenia gravis developing at some time after surgical removal of thymomas was presented by Dr. Hoefer at the meeting of the American Academy of Neurology. In an attempt to improve drug treatment of myasthenia gravis, the therapeutic effects of long-acting alkylphosphates have been reviewed in some detail. The problem of radiating thymus and thymomas prior to surgical intervention is being studied by a team including: Dr. Hoefer, Drs. William B. Seaman and Morton Kligerman of the Radiology Service, and Drs. Raffaele Lattes and Robert Wylie of the Surgical Service.

Dr. Hoefer, with Dr. Stanley Lesse and Dr. James Austin, finished an analysis of cases with a severe diffuse encephalopathy of varying etiology, characterized by a highly specific pattern in the electroencephalogram. Dr. Hoefer, Dr. Goldensohn and Dr. O'Brien analyzed the focal electroencephalographic abnormalities in cases of classical clinical petit mal epilepsy.

Drs. Robert A. Fishman, Katzman, and Goldensohn completed a study on glutamic oxalacetic transaminase levels in spinal fluid and serum of patients with various neurological disorders. They reported that a rise in glutamic oxalacetic transaminase level occurs in the spinal fluid of some cases with cerebral thrombosis and embolism but were unable to substantiate other reports concerning the reliability of this measurement as a diagnostic method in these conditions. There is no relationship between protein values and glutamic oxalacetic transaminase activity in the spinal fluid. An increase of the enzyme in the plasma is not reflected in the spinal fluid. This indicates the existence of an effective blood-brain barrier to the enzyme.

Drs. Goldensohn and O'Brien completed a study on paroxysmal abdominal pain as a manifestation of epilepsy. Drs. Goldensohn, M. Jack Frumin of the Service of Anesthesiology, and Dr. John Schweiss until recently a member of that Service completed a study of the electroencephalogram during anesthesia. It was found that satisfactory anesthesia and amnesia could be achieved regularly with only minimal deviation of electroencephalographic patterns from those of normal awake patterns.

Dr. Goldensohn and Dr. William Hass investigated the electroencephalographic changes associated with thrombosis of the internal carotid artery. Focal slow wave activity was found, both at the onset of the vascular accident and for months or years thereafter. In this respect, the EEG characteristics of carotid thrombosis are unlike those of other types of cerebral vascular accidents.

Drs. Goldensohn, Isabelle Rapin, and Hoefler are studying the relationship between electroencephalographic changes during hyperventilation and levels of carbon dioxide measured continuously throughout the respiratory cycle in various age groups. Sensitivity of brain waves during hyperventilation, in the form of high voltage synchronous and asynchronous slow waves, occurs in most patients under thirty years of age. This response appears to be less indicative of epilepsy than was previously believed.

Drs. Goldensohn, Hass and Elliot Weitzman are investigating body tilting and carotid compression as methods for activating electroencephalographic abnormalities in cerebrovascular insufficiency. Drs. Goldensohn and Michael Small evaluated the electroencephalographic and electrocorticographic findings in patients with intractable seizures treated by hemispherectomy. In both partial and complete hemispherectomy, the prognosis as to recurrence of seizures was related to the presence of residual latent seizure discharges in the electrocorticogram taken immediately after tissue removal.

Drs. Sidney Carter, Melvin D. Yahr, and Daniel Sciarra continued their clinical investigations of new anticonvulsant drugs. A number of new compounds have been tried. Dr. Carter and Dr. Joseph Ransohoff of the Neurosurgical Service are evaluating a new procedure, pallidectomy, in the treatment of abnormal involuntary movements in children with various forms of cerebral palsy. Dr. Carter was the director of a program on pediatric neurology at the annual meetings of the American Academy of Neurology held in Boston in May and at the American Academy of Pediatrics held in Chicago in October.

The Department of Neurology was awarded a grant by the United States Public Health Service for graduate training in pediatric neurology. This grant, which became effective April 1, 1957, the first to be made for this purpose by the National Institute of Neurological Diseases and Blindness, has made it possible to add two full-time members to the Pediatric Neurology Section. Dr. James F. Hammill, formerly Lieutenant Colonel in the Army Medical Corps and Director of the Service of Neurology at the Walter Reed Hospital, joined our Service in July.

Three of the former Visiting Fellows in Pediatric Neurology are now in academic positions at other universities. Dr. Neils L. Low is Associate Research Professor in Pediatrics at the University of Utah; Dr. Patrick Bray is Assistant Research Professor in Pediatrics at the University of Utah; and Dr. Richard Allen is Instructor in Pediatrics at the University of Michigan.

#### CEREBRAL ANEURYSM STUDY

Drs. Yahr and Hammill, in association with Dr. J. Lawrence Pool and members of the Neurological Surgery Service, are conducting a study of subarachnoid hemorrhage and cerebral aneurysms. This study is part of a nationwide program conducted under the auspices of the National Institutes of Health. An attempt will be made to evaluate various types of therapy, as well as the natural history of the disease. Dr. Yahr is also studying the effect of the newer carbonic-anhydrase inhibitors on cerebrospinal fluid pressure in patients with increased intracranial pressure. Dr. Yahr is Consultant in Neurology, United States Army, First Army Area; Consultant to American Medical Association on Pharmacy and Chemistry; and Training Consultant in Neurology, Division of Vocational Rehabilitation, New York State Department of Education.

Dr. Joseph Moldaver, Dr. Julia Schneider, with Dr. Philip Knapp of the Ophthalmological Service, continued the study of pathology of the extraocular muscles, by means of electromyography. A preliminary report of this work was presented at the annual meeting of the American Neurological Association. Dr. Moldaver is also evaluating the electromyographic changes in muscular diseases: dystrophy, polymyositis, and various collagen diseases.

Dr. William Amols continued his clinical studies of new compounds for the treatment of neurological disorders. Following the successful demonstration of the oral effectiveness of zoxazolamine (Flexin) as a skeletal muscle relaxant, four analogs of this compound were studied in spastic patients in the continuing search for a more effective relaxant. One of these drugs (5-chlorobenzoxazolinone) proved comparable to Flexin in its clinical effectiveness and is superior to Flexin in that it

produced fewer unpleasant side-effects. Three other chemically unrelated compounds were also evaluated as skeletal muscle relaxants. Dr. Amols continued the study of anti-emetic compounds. A new phenothiazine derivative (Perphenazine) was found to have about twenty times the anti-emetic activity of chlorpromazine in dogs; and five to eight times that of chlorpromazine in humans. It was also found to be effective in vertigo and subjective dizziness, especially when these complaints arise from disorder of the labyrinth.

#### HEAD INJURY STUDY

Dr. William F. Caveness, in association with Dr. Henry R. Liss of the Neurosurgical Service, continued the follow-up phase of the study of head injuries incurred in Korea by Navy and Marine personnel. In association with Dr. Charles W. True, Fellow in Neuropathology, College of Physicians and Surgeons, and Mr. William Curlett, the study of head injury was extended into the laboratory where concomitant clinical observations, cortical and brain stem electrical recordings, and histological studies were made subsequent to injury in the Rhesus monkey. By such correlation it is hoped there will be a better understanding of head injury in man.

Dr. Caveness, in association with Dr. Nicholas Kopeloff, formerly of the College of Physicians and Surgeons, and Dr. Lenore M. Kopeloff of the Department of Microbiology, College of Physicians and Surgeons. Dr. Joseph G. Chusid, Attending Neurologist at St. Vincent's Hospital and Dr. Gertrude van Wagenen, Research Associate in Obstetrics and Gynecology at Yale University School of Medicine, determined the refractability of infant Rhesus monkeys to the development of seizures by the injection of alumina cream into the cerebral cortex. Dr. Caveness was appointed Consultant in Neurology to the Surgeon General of the Navy.

#### ANTIBODY REACTIONS AND BLOOD STRUCTURE

The immunochemical laboratories at the Neurological Institute are affiliated with the Department of Microbiology in the Medical School. A systematic investigation of the use of quantitative immunochemical techniques in elucidation of the structural units determining reactivity of polysaccharide anti-polysaccharide systems is underway. The demonstration in the dextran-antidextran system by Dr. Elvin A. Kabat that antidextran molecules are heterogeneous in the size of their combining sites appeared in the *Journal of Immunology*. Additional studies on the effect of oligosaccharides of various known structures in inhibiting precipitation of antidextran by dextran have made it possible to evaluate

the contribution of the substituents on different carbon atoms to the binding energy in this system. Because dextran is a polymer of a single sugar, it offers a simple model for such studies.

Mr. Peter Z. Allen, a graduate student in Microbiology, and Dr. Kabat demonstrated that the bacterial polysaccharide, levan, is antigenic in man and produces antibody with specificity directed against a sequence of 2,6-linked fructofuranose residues. Evidence that levans produced by various strains of micro-organisms differ structurally was obtained from quantitative precipitin studies. These studies appeared in the *Journal of Experimental Medicine*.

Mr. Joel Goodman, a graduate student in Microbiology, and Dr. Kabat obtained evidence that the antibody combining site on the Type II antipneumococcal antibody which cross-reacts with dextrans and glycogens is similar in size to that of the antidextran. Most of the cross-reactivity of dextran with Type II antipneumococcal antibody appears to be due to a sequence from the non-reducing end of at least two glucoses linked  $\alpha$ -1,6 plus a second  $\alpha$  linkage. The cross-reaction of glycogen with Type II antibody, however, appears to involve a smaller unit in that on a molar basis the various oligosaccharides are relatively much more effective in inhibiting the glycogen-Type II than the dextran-Type II cross-reaction.

The principles worked out with these simpler systems are being applied to the elucidation of the structural units of the blood group A and B substances which determine their specificity. Dr. Gerald Schiffman, Associate in Microbiology, College of Physicians and Surgeons, and Dr. Kabat are fractionating oligosaccharides obtained by mild acid hydrolysis of the blood group substances. This procedure has been shown to split off dialyzable oligosaccharide units with blood group specificity as shown by the capacity of the oligosaccharides from A and B substances specifically to inhibit A anti-A and B anti-B precipitation, respectively. Dr. Calderon Howc of the Department of Microbiology, Dr. Schiffman, Miss Ada E. Bezer, and Dr. Kabat are engaged in a study of the effects of enzymes from *Clostridium tertium* in splitting off various constituents from the blood group substances and their effects on blood group activity and cross-reactivity with Type XIV antipneumococcal antibody.

Mr. Allen and Dr. Kabat have been studying the non-dialyzable polysaccharide residue after mild acid hydrolysis of the A and B substances. These materials were found to possess antigenicity for man and, indeed, even gave rise to antibodies in individuals of the corresponding blood group, although the original substances are not antigenic except in individuals lacking the specific blood group antigen. The specificity of these

degraded blood group substances with their antibodies, is also under investigation.

Dr. Yahr, Miss Bezer and Dr. Kabat have prepared a survey of the changes in cerebrospinal fluid gamma globulin in patients with multiple sclerosis followed over long intervals and are attempting to correlate this with the course of the disease. They have also found in their study of patients with multiple sclerosis who have elevated cerebrospinal fluid gamma globulin, that large doses of corticoid cause a marked drop in cerebrospinal fluid gamma globulin before any such decrease is detected in the serum gamma globulin.

Dr. Irving Finger, Visiting Fellow, College of Physicians and Surgeons and Dr. Kabat are studying the precipitin reaction of human diphtheria antitoxin with toxin. Evidence for the presence of considerable amounts of antibody to impurity in the various antitoxins has been found.

Dr. Kabat attended a Ciba Conference on mucopolysaccharides in London, and delivered lectures at London Hospital, the University of Leeds and the Pasteur Institute in Paris, at which he was presented with a silver plaque of Louis Pasteur. In Sweden he addressed a joint meeting of the Swedish Microbiological Society and the Wenner Grens Institute in Stockholm, the Biochemical Institute at Uppsala and the Medical Faculty at the University of Lund. He also spoke at the University of California at Berkeley and delivered one of the Nathan Rosenthal Seminars at Mount Sinai Hospital.

The training program in Neuropathology, under a United States Public Health grant to Dr. Abner Wolf, was continued with Dr. Sheila Donahue of the College of Physicians and Surgeons as the Senior Trainee and Dr. Benjamin Matzilevich as the Junior Trainee.

#### BRAIN INJURIES AT BIRTH

Drs. Wolf, David Cowen and Lester M. Geller, College of Physicians and Surgeons, continued their studies on birth injury of the brain and of the effects of severe repeated convulsions in infancy upon the central nervous system. Dr. Wolf reported on changes in the human brain during aging at the National Institute of Health Symposium on the Processes of Aging in the Nervous System. Drs. Wolf and H. Houston Merritt reported on the occurrence of prolonged and profound coma in patients with lesions of the brain stem at the First International Congress of Neurological Sciences held in Brussels in July. Dr. Sheila Donahue and Dr. Arthur Brown of the Pathology Service are studying a unique instance of xanthogranulomatosis with involvement of the nervous system.

Dr. Donahue, in collaboration with Dr. Alfred Gellhorn of the Medical Service and Dr. Ransohoff, began a study of primary reticulum cell tumors of the cranial cavity. Dr. Wolf continued his interest in the study of the demyelinating diseases.

Dr. Fred A. Mettler of the College of Physicians and Surgeons completed studies on the rubrospinal tract, the olivary decussation, and brachium conjunctivum, reports of which were published in the *Journal of Comparative Neurology*. Studies on the experimental production of ataxia were reported by Dr. Mettler at the Federation of American Societies for Experimental Biology and Medicine in March. Dr. Mettler's James Arthur Lecture, "Culture and the Structural Evolution of the Neural System," was issued by the American Museum of Natural History in 1956 as the first of this series to be published on the evolution of the human brain. His lecture before the Association of American Law Schools on "Intent" appeared in the *Psychiatric Quarterly*, in October. Dr. Mettler has resumed his studies on the history of medicine with a publication in the *Bulletin of the Medical Library Association* on medieval Islamic medicine.

Dr. Mettler, Mr. Robert L. Thompson, and Dr. Christian A. Hovde of Seton Hall Medical College, found that the retention of learned patterns of behavior is adversely influenced by damage of the corpus striatum. There is direct correlation between the degree of dysfunction and the amount of striatal tissue destroyed. If less than half of the total of the striatum is destroyed, special psychologic testing techniques are required to detect the presence and nature of the defect. If larger amounts of tissue are destroyed, the functional defect becomes grossly evident and unlearned adaptive behavior is affected. Thus far chemical and metabolic studies of striatal function have yielded equivocal results.

#### ANATOMY OF PARKINSON'S DISEASE

During the current year Dr. Mettler's researches upon the corpus striatum were also extended in another direction, notably the analysis of the pathologic physiology of paralysis agitans, also known as Parkinson's disease. It has now been possible to reconstruct the clinical pathophysiology of this condition upon an experimental basis involving four entities: a mechanism for the loss of associated movement (damage of the pallidum or its outflow); a mechanism for the production of so-called "resting" tremor (damage of the upper projections of the cerebellum: the "brachium conjunctivum anterius"); a mechanism for the development of rigidity (damage of the combined telencephalic inhibitory outflow); and a mechanism for the presence of autonomic dysfunction (hypothala-



mic lesion or interference with the pallidohypothalamic outflow). It is felt that degenerative, vascular or infectious causes of parkinsonism produce variable but nevertheless similar clinical states by virtue of the fact that critical parts of the anatomic substrates of these four systems lie in the same general region, notably the junction between the mesencephalon and subthalamus.

#### NERVE MYELINATION OBSERVED IN CULTURE

Electrophysiological studies of cultured chick embryo spinal ganglion cells by Dr. Stanley M. Crain, College of Physicians and Surgeons, were greatly facilitated by the development of a culture technique which permits the long-term maintenance of these neurons in a cellulose framework following early outgrowth in a plasma clot. Connective tissue and clot barriers to microelectrode impalement of the body of nerve cells are eliminated by differential proteolytic digestion without disturbing the ganglionic array. Normal membrane resting and action potentials were obtained from such cells even after more than four months *in vitro*. A system was also devised for rapid alteration of the chemical environment of the hanging-drop culture during intracellular recording, which has been used in preliminary pharmacological investigations.

Action potentials in response to electrical stimuli were recorded (extracellularly) from explants of bullfrog tadpole medulla, retina and forebrain, after periods up to four weeks *in vitro*. This is the first time that clear-cut electrical activity has been detected in cultured neural tissue other than spinal cord. Furthermore, myelination was observed in tadpole spinal cord cultures after the first month *in vitro*, involving what appeared to be rotation of the sheath cells around the myelinated axon (in agreement with current theories accounting for the spiral lamination of the myelin sheath).

#### NEW FINDINGS ON SYNAPTIC TRANSMISSION

Dr. Harry Grundfest of the College of Physicians and Surgeons has centered his studies on the hypothesis put forward in 1954 that synaptic transmission differs in a fundamental electrophysiological respect from propagation of impulses along nerve fibers. If synaptic transmission takes place by a process which cannot be initiated by electrical stimuli (as this hypothesis holds), transmission must be by a chemical process. Various consequences of this hypothesis have been explored in Dr. Grundfest's laboratory, and elsewhere. In every case these studies have confirmed the hypothesis, which has now been widely adopted. Analysis of these consequences have permitted predictions concerning the properties of

various synaptic systems including those of the mammalian brain; of segmented giant axons of earthworm and crayfish; and of various types of electric organs. They have also led to a new formulation of synaptic pharmacology which has shown considerable analytical and predictive value, particularly in the case of the mammalian central nervous system.

Studies on the synaptic organization and pharmacology of the mammalian central nervous system were continued by Drs. Grundfest and J. Martin Girado of the College of Physicians and Surgeons in collaboration with Dr. Dominick Purpura and Dr. Edgar M. Housepian of the Service of Neurological Surgery. Recent work concerns the analysis of the modes of synaptic action of various amino acids and related compounds.

Dr. Grundfest and Dr. C. Y. Kao of the Rockefeller Institute for Medical Research found that fibers of the giant axons of earthworm and crayfish, were endowed with specialized synaptic properties. Further studies were continued with Dr. Crain, who has received a Grass Foundation Fellowship to pursue this work with Dr. Grundfest at the Marine Biological Laboratory, Woods Hole, Massachusetts.

The nature of the synaptic activity which is responsible for repetitive rhythmic discharges in various electric fishes has been studied further by Dr. Grundfest, with Dr. Alexander Mauro of the Department of Physiology, Yale University Medical School and Mr. Ernest Amatnick. Some fifteen species of *Gymnotidae* and about thirty of the *Mormyridae* have been characterized with respect to the discharges and some of their properties. Dr. Grundfest and Dr. Crain are also studying the electrical activity of the African electric catfish. A stay at the Marineland Research Laboratory by Dr. Grundfest, Dr. Mauro, Mr. Amatnick and Mr. Robert Mathewson, Curator of Science, permitted studies of two other forms: the *Torpedre Narcine Brasiliensis* and the *Stargazer, Astroscopus Guttaters*, neither of which had previously been studied with modern electrophysiological techniques.

Dr. Grundfest continued a fruitful collaboration with Dr. Joseph Fiasconaro and Dr. Harold Sherman of the Dental Faculty, College of Physicians and Surgeons, on the evaluation of the activity of dental anesthetics. Another collaborative research, with Drs. Abraham M. Shanes and Walter Freygang, Jr. of the National Institute of Health, concerns the ionic phenomena during the action potential of giant axons of squid.

#### NERVE GAS ANTIDOTE TREATS INSECTICIDE POISONING

Dr. David D. N. Nachmansohn, College of Physicians and Surgeons, and his group continued their work on biochemical aspects of nerve function, with special emphasis on the elementary process underlying the

generation of bioelectric currents and the chemical reactions controlling ion movements.

The single electroplax preparation initiated last year has been modified and greatly improved by Dr. Ernest Schoffeniels of the College of Physicians and Surgeons. This preparation promises to become a most important tool for the study of ion flux and the various physical and chemical factors affecting it. The superiority of this preparation over those used previously has become apparent in many ways. For the first time it is possible to reverse the effects of compounds which react with the acetylcholine system. The previously observed effects, which were considered irreversible and indicative of irreparable damage, made interpretations difficult. In the new method one single electroplax separates two pools of fluid. In contrast to the cylindrical shape of nerve fibers the conducting membrane of the electroplax is rectangular, making it possible to study the ion flux across this membrane. Dr. Schoffeniels succeeded in obtaining a preparation in which ions cannot bypass the membrane and can move only across it. This was established with the aid of radioactive sulfate ions. He determined the Na concentration inside the electroplax and the rate of flux. The energy required to maintain the equilibrium of the resting condition was found to be only 5 to 10 per cent of the total energy supplied by the oxygen uptake in rest.

The development of a specific and potent antidote — pyridine aldoxime methiodide (PAM) — against alkylphosphate intoxication has shown the usefulness of the study of the molecular forces acting in the acetylcholine system. The antidote was designed by Dr. Irwin B. Wilson of the College of Physicians and Surgeons on purely theoretical considerations with the aim of repairing the chemical lesion which results from the phosphorylation of acetylcholinesterase. This phosphorylated enzyme is inactive and death ensues. PAM detaches the phosphoryl group with catalytic speed and reactivates the enzyme. Dr. Wilson has shown that PAM in combination with atropine protects animals against tenfold lethal doses of paraxon and DFP. It protects against four-five lethal doses of TEPP, which is a much faster acting compound than DFP. Even against the fastest acting "nerve gas," Sarin, PAM provides protection against one and one-half to two lethal doses. On the other hand, PAM's protection against Tabun, an insecticide, is limited. This corresponds to the behavior *in vitro*: the amidophosphoryl enzyme cannot be reactivated, and the protection in this case is due to direct interaction between PAM and Tabun. Since PAM is made to measure for the phosphorylated acetylcholinesterase, it reactivates specifically this enzyme. Particularly gratifying are reports from Japan that PAM was used successfully in the

treatment of patients poisoned by insecticides which contain alkylphosphates. These insecticides are used extensively in Japan to improve the yield of rice and are poisonous to the workers in the fields. Dr. Wilson, in association with Dr. Sara Ginsburg of the College of Physicians and Surgeons, investigated the steric configuration of PAM. A number of PAM analogues were synthesized which may be useful for special studies in isolated cells and tissues. Dr. Wilson also continued studies of the molecular forces acting between the enzyme protein and small molecules. New and interesting information was obtained in this respect by the use of Tensilon and its analogues.

Dr. H. Claire Lawler of the College of Physicians and Surgeons continued to develop new methods of purification of acetylcholinesterase from electric organ of electric eel. By ammonium sulfate fractionation in combination with strictly controlled variations of pH, satisfactory and readily reproducible yields were obtained. The properties of the protein molecule are under study using electrophoresis and ultracentrifugation.

Dr. Francis C. G. Hoskin, of the College of Physicians and Surgeons, continues studies initiated by Dr. Max Eisenberg of the Department of Biochemistry, College of Physicians and Surgeons, on the intermediary metabolism of the electroplax. The presence of various enzymes of the glycolytic and citric acid cycle and their concentration is being investigated. Interesting results were obtained with a more detailed study of succinic oxidase, especially in comparative studies with other tissues (heart, muscle, liver, kidney). The ultimate aim of these enzyme studies is the elucidation of the chemical reactions providing the energy for the ion flux in recovery. The electric tissue, in view of its highly specialized function, is particularly suitable for the study of this problem. The investigation will be carried out in correlation with the studies on the single electroplax preparation.

Dr. Annemarie Weber of the College of Physicians and Surgeons investigated the question as to whether ATP breakdown can be demonstrated during contraction in an intact muscle fiber. The work was carried out with the spectrophotometric methods developed by Professor Britton Chance, Director of the Johnson Foundation at the University of Pennsylvania, and in collaboration with him. ATP breakdown has been demonstrated although the rate is not as high as theoretically estimated. This, however, may be due to experimental conditions, diffusion being a limiting factor.

A number of the members of the services attended the Sixth International Neurological Congress held in Brussels. Papers were read by Drs. Mettler, Gallinck, Kabat, Friedman, Yahr and Merritt.

## VISITORS OF THE YEAR

Visitors to the service during the year included: Professor Georges Boudin of Paris; Dr. Ingve Zotterman, Stockholm; Dr. Hans Tertian, Padua, Italy; Dr. Gunnar Wohlfart, Lund, Sweden; Dr. V. Rail, Sydney, Australia; Prof. C. J. Munch-Petersen, Aarhus, Denmark; Prof. Deolindo Couto, Rio de Janeiro, Brazil; Dr. D. Mosovich, Buenos Aires; Dr. Rafael Castillo, Caracas, Venezuela; Dr. J. Colover, London, England; Dr. Leon Prusak, Poland; Drs. N. Viazemski and D. Zunev, Moscow; Dr. K. N. Matija, Zagreb; Prof. Sydney Allison of Belfast.

We report with deep regret the deaths of Dr. Leon A. Salmon and Dr. Maurice Frocht. Dr. Salmon served as chief of the out-patient clinic some years ago and was Associate Attending Physician at the time of his death. Dr. Frocht was Associate Attending Physician for many years before his retirement in 1956.

It gives me great pleasure to express my thanks to the entire staff for their sincere cooperation throughout the year. Special thanks are extended to the administrative and nursing staffs of the hospitals for their invaluable assistance. We are particularly indebted to Dr. J. Lawrence Pool and the staff of the Service of Neurological Surgery for the fine spirit of cooperation in the care of patients and the instruction of the resident staff of the Service of Neurology.

The research work of the various members of the Service has been aided by grants to the Medical School, from the following: American Philosophical Society, Army Chemical Center—United States Army, Association for the Aid of Crippled Children, Atomic Energy Commission, Foundations Fund for Research in Psychiatry, Oscar Lazrus Foundation, Benjamin Lazrus Foundation, Matheson Commission, Muscular Dystrophy Association of America, National Science Foundation, Office of Naval Research, Sergievsky Fund, Teagle Foundation, United Cerebral Palsy Association, United States Public Health Service; Abbott Laboratories, Ciba Pharmaceutical Products, Inc., Eli Lilly and Company, E. R. Squibb & Sons, McNeil Laboratories, Inc., Parke, Davis & Company, Riker Laboratories, Inc., Merck Sharp & Dohme, Division of Merck & Co., Inc., Smith, Kline & French Laboratories, and Wallace Laboratories.



*Nursing team plans the day's patient care. The nurse is leader of a team that may include nursing aide, attendant, volunteer, practical nurse, and nursing student. Conferences alert team to patient needs.*

# Nursing

ELEANOR LEE, R.N., *Director*

Improving the nursing care of patients and adding new techniques growing out of progress in medical science have been of major interest during the past year. It is worthy of note that the increased number of nurses on the staff during the past year has made possible the maintenance of a high standard of patient care.

Providing intensive nursing care for acutely ill patients is becoming increasingly difficult because the supply of private duty nurses does not keep up with the demand. Also many of the private duty nurses are unable to give the intensive and complicated care needed by acutely ill patients. Presbyterian's Registry has sought every possible means to stretch the short supply by assigning a nurse to two patients when possible; by the increased use of practical nurses for private duty; and by the employment of medical students to give nursing care to selected patients during the evening hours when the greatest number of unfilled requests for private duty nurses occurs. During the months of October and November twenty medical students filled sixty calls per month in four different units of the Hospital. Although these measures have helped, some other means of providing additional nursing care has become necessary in certain clinical areas.

## *Group Nursing*

Two recent plans, group nursing and special assignment of staff nurses, are proving most satisfactory in certain units: Harkness Pavilion, Babies Hospital and the Medical and Surgical Services. Group nursing in four-bed units in Harkness Pavilion 11-Annex and in Babies Hospital is the more economical plan, both for the patient and for the nursing staff. Under the special assignment plan, staff nurses are assigned by the nursing office to evening or night duty in each of the units mentioned above. Some thirty-one authorized nursing positions have been added under these two plans since 1952. These two plans supplement conventional private duty nursing and provide flexibility in securing the nursing care needed by acutely ill patients.

All nurses under the two new plans are remunerated by the Hospital according to established general duty salary scales. The Nursing Service

recognizes that these plans must operate on a financial break-even basis. For the patient cared for under the group nursing plan, charges are considerably less than those for a private duty nurse, amounting to \$18 for 24 hours as compared to \$48.

All nursing positions have been filled since September, three-fourths of the nurses having graduated from 173 schools of nursing in the United States, including Puerto Rico, and one-fourth or 119 nurses from schools outside the United States — Canada, fifty-seven, England and Scotland, forty, and Ireland, eleven; two each from Germany, Norway and Sweden; and one each from five other countries. Some 60 per cent of the general duty nurses come from 121 schools of nursing in 28 states and 40 per cent from 52 schools in New York State. This wider geographic distribution has been the result of wider recruiting methods in recent months. The turnover figure for graduate nurses for 1957 was 45.3 per cent. This figure continues the consistently low average of recent years.

### *Scholarships for Staff Nurses*

The tuition-aid scholarship program for full-time staff nurses has proved to be the most important factor in recruiting. The effect of this new program has already been reflected in a staff better prepared for both patient care and for promotion. Under the plan the Hospital pays one-half of tuition expenses up to six credits. In February 1957, 84 graduate nurses on the staff received tuition aid. By September 1957, 122 graduate nurses registered for university study, 75 per cent studying at Columbia University, either in the Teachers College Division of Nursing Education or in the School of General Studies. In addition, the School of General Studies has conducted two courses for groups of over 20 nurses in Hospital classrooms — Survey of American Literature, and Sociology, three credits each.

The Arthur Williams Scholarship Fund of \$2,025 was given to The Presbyterian Hospital in April. Two scholarships of \$500 each were awarded in September to two graduate nurses. Each recipient was granted a leave of absence for full-time study at Teachers College which will enable her to complete her studies for a Bachelor of Science degree. The two remaining scholarships will be awarded for the spring semester.

In July 1957 ten new apartments accommodating twenty-seven nurses at 70 Park Terrace East were occupied by members of the Class of 1957 joining the staff. The attractive new furnishings provided by the Hospital, in addition to air-conditioned bedrooms, make these new apartments most desirable and popular. New draperies throughout the apart-



ments in Edward S. Harkness Hall have added to the comfort and pleasure of the residents. Priority for occupancy here has been given to permanent evening and night duty nurses.

Two beautiful paintings with bronze plaques inscribed have been hung in the recreation room of Harkness Hall, the gift of Mr. Robert W. Carle. One picture is dedicated "to Margaret Eliot in appreciation for outstanding services to the Hospital from 1921 to her retirement as Director of Nursing in 1955." The other painting was given in memory of Frederick Sturges, Sr., President of The Presbyterian Hospital 1910-1916 and President Emeritus 1916-17. They are both Vermont scenes by Dudley Morris.

The 17 faculty apartments in Maxwell Hall were redecorated in charming color schemes arranged by Mrs. Earle Harkness and are very much appreciated by the faculty residents. The auditorium and classroom in Maxwell Hall have been equipped with 200 comfortable new chairs.

### **Recruiting**

Perhaps the two most important factors in attracting nurses to the Medical Center are housing and tuition aid. The salary increase on July first to \$300 for the basic salary is of great value in recruitment. Full-page advertisements in the *American Journal of Nursing*, describing the scholarship program, housing and other personnel practices have been important in putting recruiting on a national basis.

Social activities for the graduate nurse staff are carried on by committees with representatives from each of the clinical areas. The hospitality committee welcomes newcomers with dances, teas, theatre parties and a ticket service for New York radio and TV shows. The Nursing Service is most appreciative of the generosity of members of the Board of Trustees and the Women's Auxiliaries who have contributed tickets for many occasions.

The orientation program for new employees in all departments began in February under the direction of the personnel department of the hospital. Miss Lillian A. Oring, Administrative Assistant, Nursing Service, in charge of in-service education, participates in this weekly program by presenting the hospital team, the meaning of uniforms and the importance of ethical practices.

The expansion of in-service education for all groups in nursing, under the able leadership of Miss Oring, has been enthusiastically received. In addition to the regular schedule of educational programs, separate conferences for the nurses on night duty have been held monthly

since May, presenting topics suggested by this group, such as new drugs and techniques. Private duty nurses have also attended.

Miss Mary I. Crawford, Assistant Director of Nursing on the Obstetric Service, has been experimenting with the extension of modified rooming-in to a twelve-bed ward on floor 15-east. An intensive study has been conducted to determine objectives in the care of obstetrical patients and to determine how these can be accomplished with the available staff. Each member of the nursing staff, both professional and auxiliary, defined her criteria for good patient care and from these the general objectives of patient care were developed. All members of the nursing team are now preparing job descriptions. Emphasis is being given to orientation of new personnel, and a basic orientation plan has been completed, including follow-up conferences. The fact that all personnel are participating in these studies has done much to improve understanding and working relations and has increased individual responsibility.

During the Spring a series of meetings was arranged by Miss Ruth M. Ginter, Assistant Director of Nursing, with the head nurses on the Medical and Surgical Services to discuss the various aspects of leadership. One result of these discussions is a manual for head nurses and supervisors, containing job descriptions and detailed orientation plans for new head nurses and new graduate staff nurses.

A second Nursing Service Workshop was held in February for all supervisory personnel of the Nursing Service. The theme of the workshop was Methods Analysis Techniques to Improve Traditional Patterns of Patient Care. Mr. John Cogswell of the Management Training and Development Field of the Bell Telephone System, spoke on "Introducing Changes in Work Patterns." Discussion groups were then formed, each one made up of staff members from a single nursing unit. In this way it was possible to talk about and attempt to solve nursing service problems specific to an individual unit.

Miss Kathryn Y. Egan, appointed in January as senior supervisor of nursing on the Medical and Surgical Services, made a three-month study of the problems related to the nursing care of this large group of patients. The aims of this study were to improve the quality of patient care and to determine ways to help nurses make better use of nursing personnel resources. As a result some present activities were reorganized and communications among nursing staff members at all levels were improved. In April Miss Rose Mary Hoynak was promoted to senior supervisor, replacing Miss Egan who resigned to enter the industrial field.

A four-week refresher course, the fifth to be offered by the Hospital

in recent years, was completed in March by eight graduate nurses. Seven joined the nursing staff either full-time or part-time, and one joined the Registry for evening duty.

The role of the practical nurse has been widened in certain clinical areas. Practical nurses, graduated from approved schools, were given special classes in pharmacology in preparation for giving selected medications. As a result practical nurses are able to take greater responsibility and to get more satisfaction from their work.

It is gratifying to note the marked decrease in the turnover rate for nurses' aides. This is a result of both the February wage increase and of the excellent in-service training. The turnover figure for the year is 27 per cent as compared with 33 per cent for the previous year. The head nurses in the Eye Institute conducted a refresher course for their nurses' aides to prepare them to assume increased patient care responsibilities. This was well received and increased interest and efficiency of the aides.

Some 30 college aides, 26 young women and 4 men, were employed during the summer months. After an intensive orientation program these college aides assisted in the nursing care of selected patients and their services were most helpful.

The new Red Cross Volunteer Nurses' Aide course of 40 hours of classroom instruction and supervised practice on the wards has been taught during this year instead of the former 80-hour course. Two groups of nurses' aides received supervised practice during the evenings, nineteen aides in April and eight aides in November. Miss M. Cyrilla Page has been responsible for the orientation of the aides to their clinical assignments. The nursing staff appreciates the assistance of the Red Cross volunteer nurses' aides during the evening hours.

### *Staff Changes*

The retirement in June of Miss Nellie L. Estey, Assistant Director of Nursing for Vanderbilt Clinic, completed 34 years of service to the Hospital. Her cheerful manner and interest in her work will always be remembered. Miss Constance C. Hamon was appointed assistant director of nursing in the out-patient department and assistant professor of nursing, Department of Nursing. Miss Margaret Reid was promoted to senior supervisor and Miss Patricia O'Hora was appointed supervisor of the Admitting-Emergency Service. During the past year Clinic nurses have been meeting with the Director of the Clinic to discuss Clinic functions and problems. The excellent attendance and eager participation indicate that a need is being met. The Assistant Director of Nursing has planned meetings for practical nurse and auxiliary nursing groups.

Dr. Hans W. Neuberg was appointed in January physician to the graduate nurse staff. His wisdom and good judgment have been a great help in the health problems of the graduate nurse staff.

The graduation exercises for the 108 members of the Class of 1957 were held in the garden outside the Pauline A. Hartford Memorial Chapel on June 6. Mr. Henry C. Alexander, vice-president of the Board of Trustees of the Hospital, presided. The address was given by Dr. Harry J. Carman, Dean Emeritus of Columbia College. Dr. Willard C. Rappleye, Dean of the Faculty of Medicine, spoke of the great accomplishments of the school in reaching the goal of a university school of nursing. The Reverend Harland D. Fague was Baccalaureate speaker.

Miss Katherine M. Kennedy, evening desk clerk in Maxwell Hall, retired in December after 28 years of faithful service.

Some 32 nurses from around the world were received as visitors.

A panel on Nursing Today was presented by members of the nursing staff in April in Maxwell Hall. Among the invited guests were representatives of the professional staff from each of the clinical services, and members of the Women's Auxiliaries and the administrative staff.

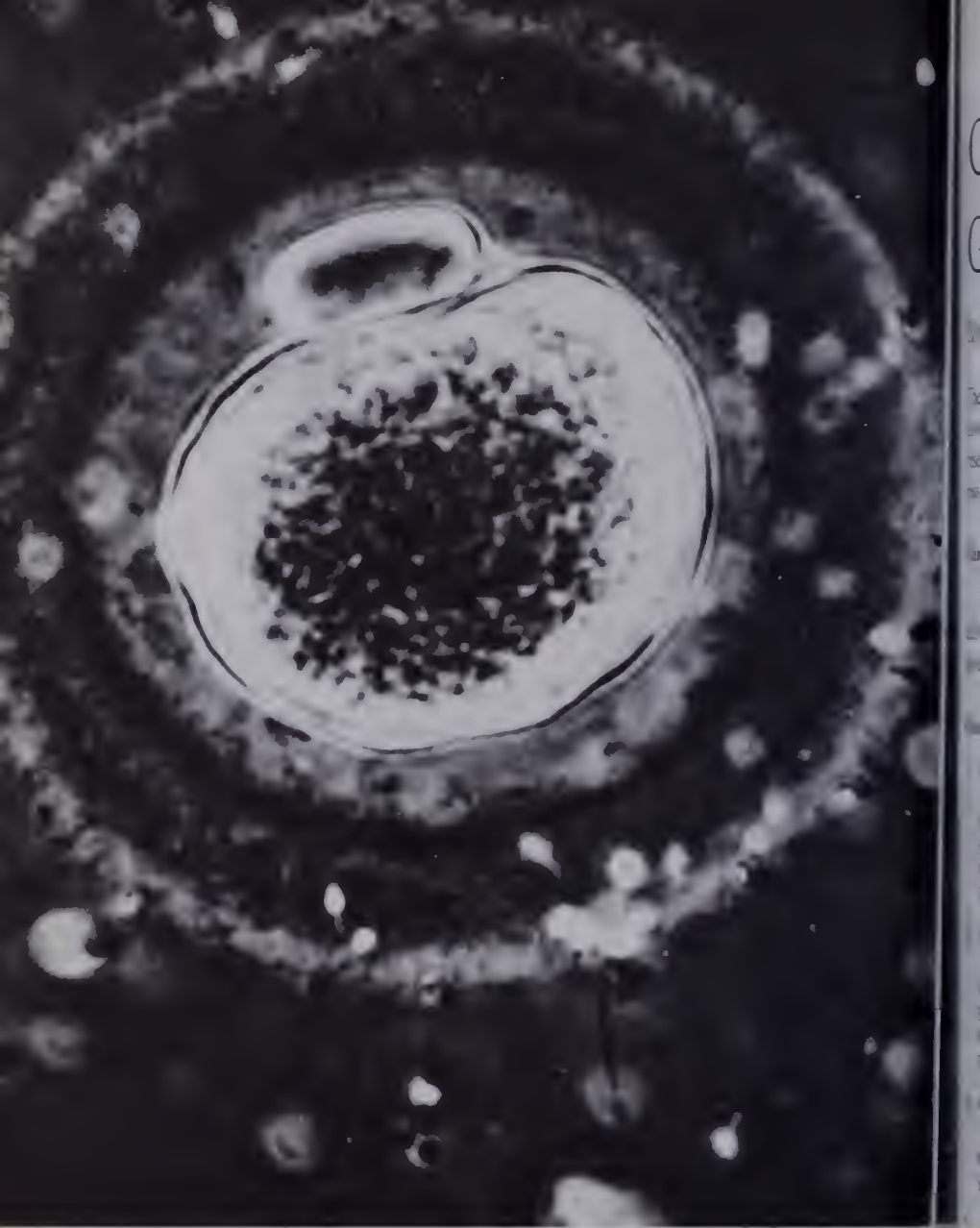
Members of the nursing staff attended the following meetings: American Hospital Association Institutes — Miss Marjory A. Purinton, Evening and Night Nursing Service Supervision, Roanoke, Virginia, March; Miss Mary I. Crawford, Staffing Departments of Nursing, Chicago, March; Miss Lillian Oring, Nursing In-Service Programs, Chicago, April; Miss Dorothy M. Caspar, Obstetric Nursing Administration, Albany, April; Miss M. Cyrilla Page, Nursing In-Service Programs, Boston, May; Miss Marion D. Cleveland, Staffing Departments of Nursing, New York City, December; Miss Page also attended the United Hospital Fund Nurse-Aide Workshop, New York City, March; the Misses Norma Snow and Grace E. Laubach, Academy of Medicine's Eastern States Education Conferences, New York City, April; the Misses Ruth M. Guinter, Margaret B. Reid and Marianne L. Taft, the National League for Nursing convention, Chicago, May; the Misses Cora L. Shaw and Elna Saamanen, International Council of Nurses Congress, Rome, Italy, May; Miss Cecile Covell, National Association for Practical Nurse Education Convention, Atlantic City, April; Mrs. Shirley Smith and Mrs. Florence Carroll, the Regional Workshop of the N.A.P.N.E., New York City, November.

Miss Marion D. Cleveland, Director of Nursing Service, has been resourceful and untiring in her efforts to maintain good patient care. Another special contribution this year has been her interest in strengthening recruitment of nurses for the staff.

The nursing staff appreciates the cooperation of the professional staff and the understanding support of the administration.



*Babies and children undergoing neurosurgery are cared for by nurses assigned to a special care unit in the Neurological Institute.*



*Living human egg at moment of fertilization as seen under phase microscope. Sperm were introduced in vitro as part of study of earliest stages of human life. Micrograph by Dr. Landrum Shettles; magnification 900 times.*

# Obstetrics and Gynecology

HOWARD C. TAYLOR, JR., M.D., *Director*

The year was characterized by few changes in staff and by the care of about the same number of patients as in recent years. The teaching and research programs developed along lines previously projected, with progress but with no major innovations.

## *Clinical Activities*

The total clinical work of the Service, as measured by number of deliveries and by gynecological operations performed, seems again to have increased a little.

## *Clinical Statistics*

I. VIABLE DELIVERIES	1944-1953 (average)	1954	1955	1956	1957
Ward .....	2,029	2,515	2,671	2,815	2,779
Semi-Private .....	704	833	804	806	829
Private .....	664	501	493	499	582
Total .....	3,397	3,849	3,968	4,120	4,190
II. GYNECOLOGICAL OPERATIONS	1944-1953 (average)	1954	1955	1956	1957
Ward .....	763	906	782	845	919
Semi-Private .....	245	408	485	527	564
Private .....	509	554	430	386	419
Total .....	1,512	1,868	1,697	1,758	1,902
III. PERINATAL MORTALITY	1944-1953 (average)	1954	1955	1956	1957
Ward .....	32.6/M	24.9/M	24.8/M	25.6/M	27.2/M
Semi-Private and Private...	24.4/M	17.9/M	19.3/M	15.3/M	21.2/M
IV. CLINIC VISITS	1944-1953 (average)	1954	1955	1956	1957
Obstetrical .....	21,267	23,409	24,404	24,502	24,781
Gynecological .....	14,622	18,679	17,086	16,499	16,793
Total .....	35,889	42,088	41,490	41,001	41,574

The 2,765 deliveries on the ward now represent about the maximum that can be properly managed by the medical and nursing staffs in the facilities available. The increases in number of private and semi-private deliveries, while slight, are especially gratifying since they indicate at least an arrest of the recent downward trend of activity in these divisions. The change may be explained by the expanding practices of a younger group of attendings who have joined the staff in recent years. Recorded percentage occupancy of private and semi-private obstetrical beds is still somewhat lower than is perhaps desirable, but it should also be recognized that obstetrical admissions cannot be exactly timed, and the reserve of available beds must be kept larger than is necessary for other services.

The number of gynecological operations performed remains at approximately the same level as heretofore, this maximum being determined chiefly by the availability of beds. The ward and semi-private gynecological beds were last year continuously occupied almost to capacity.

The Obstetrical Service has had an unfortunate year in the sense that there have been five maternal deaths. During the month of October, when the epidemic of Asian influenza was at its height 30 patients were admitted to the wards with severe bronchitis or pneumonia. There were two deaths during this period, one with a staphylococcus pneumonia following influenza, the other with a combination of respiratory infection and chronic rheumatic heart disease. During the year one patient died of puerperal sepsis, one from a perforated esophageal ulcer, and the fifth of uremia. The fatalities are a reminder that pregnancy still entails a risk and that the threat from micro-organisms remains in spite of modern antiseptics and antibiotics.

The perinatal mortality of 27.2 per 1,000 on the ward service and 21.2 per 1,000 for the combined semi-private and private services was about the same as in previous years. It should be remembered that this figure includes the still births and neo-natal deaths during the first month of all infants weighing over 1,000 grams. A considerable portion of these deaths consists of those of premature infants whose chance of survival still remains relatively small as compared with that of term infants.

### ***Research Activities***

The research program of the Service of Obstetrics and Gynecology is of course carried on jointly with the Department in the College of Physicians and Surgeons. A generous proportion of the financial support of the work comes from grants made to Columbia University. In the area



of cancer research close cooperation is maintained with the Gynecological Service of the Francis Delafield Hospital.

#### PROBLEMS OF ENDOCRINOLOGY AND FERTILITY

The work in reproductive endocrinology and in fertility continued to develop along three general lines. There should be noted first the studies of Dr. Landrum B. Shettles on the early development of the human ovum; second, the fundamental studies on the chemistry and physiology of certain hormones, being carried on in the laboratories of Dr. Seymour Lieberman, of the College of Physicians and Surgeons, and biochemist of our Service, and in the laboratories of Dr. Joseph W. Jailer of the Medical Service; finally, the clinical research under the general direction of Dr. Anna L. S. Southam of the Sloane Hospital Endocrine and Sterility Clinics.

Dr. Shettles' work has involved the observation under the microscope of the human ovum with special consideration of the cytology and physiology of the cells immediately surrounding the ovum itself known as the corona radiata cells. These studies are essential to the further development of knowledge concerning the nutrition of the human ovum. Dr. Shettles published three articles on his observations of these subjects during the last year.

Research in the laboratory of Dr. Lieberman is concerned with measurement of the various excretory products of the steroid hormones, with the effect of the physiologic disturbances produced by various diseases on these substances and with the interconversion of various steroid compounds. The work of this laboratory is furthered by a number of very able Research Associates.

Daily individual variations in the excretion of 17-ketosteroids were determined and the effect of chorionic gonadotrophin and of estrogen administration on the levels of urinary 17-ketosteroids continues to be studied. The 17-ketosteroids excreted by pregnant women, pregnant women with Addison's disease, patients with Stein-Leventhal syndrome, and patients with Kimmelsteil-Wilson syndrome were measured.

Several methodological improvements were developed for study of this class of steroids. Dr. Jean-Pierre Rosselet and Dr. Joel Bitman, until recently members of the College staff, published their spectrophotometric method permitting the quantitative analysis of binary mixtures of urinary steroids, which could not previously be separated by any known method. In addition, Dr. Shlomo Burstein of the College of Physicians and Surgeons has developed an elegant method for the hydrolysis of urinary sulfates. In the course of this study he uncovered some remarkable properties of organic sulfates which will have important bearing upon

chemical investigations of other naturally occurring esters of sulfuric acid.

Dr. Stanley Ulick, of the Medical Service continued to work on his chemical assay for the estimation of aldosterone. With it he detected in urinary extracts two substances which apparently are metabolites of aldosterone. One of these was extensively purified and its structure formulated as a tetrahydro metabolite of aldosterone whose oxygen function at C-18 is present as a primary hydroxyl group. Furthermore, he is applying this method to the estimation of aldosterone metabolites in the urine of patients in whom disturbances in electrolyte and water balance are known to exist.

Dr. Samuel Solomon of the College of Physicians and Surgeons and Dr. Raymond Vande Wiele continued their efforts to elucidate some of the finer details of the *in vivo* biosynthesis of the steroid hormones. They determined that ovarian biosynthesis of the estrogens can occur via the route: cholesterol  $\rightarrow$  progesterone  $\rightarrow$  17 $\alpha$ -hydroxyprogesterone  $\rightarrow$  androstenedione (testosterone)  $\rightarrow$  estradiol. The establishment of this pathway makes possible a rationalization of the pathogenesis of various ovarian diseases. Dr. Solomon also studied adrenal steroid biosynthesis by human fetal adrenals and has proved for the first time that these glands are steroidogenic. He demonstrated that they biosynthesize 17-hydroxyprogesterone and androstenedione as well as several corticosteroids, the structures of which he is presently elucidating. In addition, he is attempting to determine the biological intermediates that lie between cholesterol and pregnenolone.

The work in the laboratory of Dr. Jailer of the Service of Medicine is also concerned chiefly with the steroid hormones, but is directed particularly toward physiology of the adrenal gland. With Dr. Jailer are five fellows: Dr. Julian Kitay (Commonwealth Fund), Drs. Donald Holub and Leonard Fisher (National Foundation for Infantile Paralysis), and Drs. Wilfred E. Gordon and Marvin Belsky (National Institutes of Health).

Previous investigations in this laboratory have demonstrated that Cushing's syndrome due to bilateral adrenal hyperplasia is characterized by an increased sensitivity to exogenous adrenocorticotrophic hormone (ACTH) as measured by the response of the plasma 17-hydroxy-corticosteroids. This hyper-sensitivity disappears after successful pituitary irradiation. Recently data were obtained which indicate the existence of a non-steroidal factor in the plasma of patients with Cushing's syndrome which is capable of maintaining adrenal weight in the hypophysectomized rat. It is absent in the plasma of patients whose Cushing's syndrome is due to an adrenal tumor. In addition, it was shown that the urinary

steroidal pattern in Cushing's syndrome is similar to what is found in normal individuals who have been receiving ACTH over prolonged periods.

Studies aimed at elucidating adrenocortical function during pregnancy revealed increased plasma 17-hydroxy-corticosteroid levels which are due in part to decreased degradation of the hormones and increased responsiveness of the adrenal to ACTH. The adrenal cortex is not easily suppressed by steroid administration during pregnancy, as contrasted to the non-pregnant state.

The clinical studies in fertility during the last year were much concerned with the so-called "new progesterones." These are synthetic substances which appear to afford for the first time possibilities of effective progesterone medication in the patient. A report on the early experience with these new substances, entitled "A Comparative Study of the Effect of Progestational Agents in Human Menstrual Abnormalities" was presented before a special conference at the New York Academy of Science on October 7 by Dr. Southam. Related to this work were histochemical studies of the human endometrium following the administration of 17-ethinylestreneolone carried out with Dr. Southam by Dr. Margaret E. Long of the College of Physicians and Surgeons in collaboration with Dr. Prabhaker N. Shah, a Fellow of the Rockefeller Foundation and the Population Council.

Dr. Oscar Karlis Adamsons, Jr. is continuing his interest in the structure-activity relationships of the neurohypophysial hormones under Dr. Harry B. van Dyke, Professor of Pharmacology. Mr. Theodore Johnson, a Macy Scholar in the Service, has studied the cyclical variations in water and electrolyte content of human endometrium during the different phases of the menstrual cycle, and is now spending a year in the University of Birmingham, England.

#### PROBLEMS OF PREGNANCY

Research on the physiology of pregnancy has largely been directed toward the solution of problems which through changes in maternal physiology affect the health of the expectant mother. Particular attention has been given to alterations in the circulation and to cardiac and adrenal function with their bearing on the ability of the pregnant cardiac to withstand the strain of pregnancy and labor, and to the great problem of specific toxemia and to eclampsia. These aspects remain, but there is an increasing expectation that studies of the physiology as well as the accidents of pregnancy and labor may shed some light on the occurrence of congenital defects in the offspring. This new aspect promises to be of increasing importance in the future.

The studies on water exchange between products of gestation and maternal organism being carried on by Dr. Albert A. Plentl were extended to include the early phases of pregnancy. The clinical portion of this work was accomplished by Dr. Plentl in Sweden where the material and facilities are particularly suitable. The results of these elaborate studies demonstrated that the water of the amniotic fluid circulates in a specific direction, a finding which may well be of clinical and physiologic significance. Most of the basic work on the exchange of water has now been completed and future investigations will be concerned with tracing the pathways of metabolic products, by means of radioactive carbon. Selected pilot experiments are now being carried out on primates and these are to serve as models for future clinical investigations.

A quantitative study of the distribution of human blood group specific substances in the maternal-fetal barrier and in the amniotic fluid was completed by Dr. Vincent J. Freda. His work strongly suggests that these substances are transferred to the fetus by way of the endometrial glands, the fetal membranes and the amniotic fluid rather than by way of the placenta as has heretofore been supposed.

Localized damage to circulatory mechanisms is known to produce placental infarction, a condition which, when extensive, may result in the intrauterine death of the fetus and, when limited, may result in fetal damage. This subject has become the object of a special study by Dr. William A. Little, Assistant Resident and Macy Fellow, who has begun a general study of the significance of this and other placental abnormalities. As a related project he is measuring some of the serum proteins and certain enzymes of the blood to determine whether their variation has any relationship to the occurrence of placental infarction.

The laboratory of Dr. Gilbert J. Vosburgh was set up and is functioning as a center for the encouragement of research by medical students. Assistants in this laboratory were last year concerned with the study of the metabolic activity of the placenta with respect to ascorbic acid, the electrophoretic examination of the proteins of the human amniotic fluid, with the development of a sensitive and accurate spectrophotometric method for the determination of magnesium in biological material, and with other aspects of reproductive physiology or biochemistry.

Dr. Louise L. Phillips of the College of Physicians and Surgeons continued the work on the fibrinolytic enzyme system and its role in the etiology of hypofibrinogenemia, which may result in hemorrhage in obstetrical and surgical patients. This study included an investigation of the enzyme system in normal pregnancy, in maternal and cord blood of both premature and full term, in cases of abnormal hemorrhage, and in

other fields where work was carried out in cooperation with the Urology, Neurology, Medical and Dermatology Services.

Among more purely clinical studies of the problems of pregnancy may be mentioned a review of the cases of pregnancy complicated by acute leukemia by Dr. Clement Yahia, and a study of the fetal results in twin pregnancy by Dr. Emanuel A. Friedman and Dr. Little. A paper is in press on "The Effect of Axillary Compression in Venous Pressure in Pregnancy," by Dr. Little. Dr. Alvin J. B. Tillman is continuing what promises to be an exhaustive monograph on the toxemias of pregnancy.

#### PROBLEMS OF LABOR

The study of labor naturally concerns techniques for determining the size and shapes of the diameter of the pelvis, methods of measuring the efficiency and altering the strength of the uterine contractions, and finally techniques for determining the rate of progress of labor. Work on the Service concerned all of these three aspects.

Since the classical investigations of Caldwell and Moloy on X-ray pelvimetry, this Service has been identified with studies in this field. During the last year, Dr. Charles M. Steer completed a study, correlating the measurements obtained by X-ray pelvimetry with the outcome of labor in 1,586 cases, and presented the work at the Clinical Congress of the American College of Surgeons. Dr. Harold M. M. Tovell, in conjunction with Dr. Gerhart S. Schwarz of the Service of Radiology, made a similar study.

Studies on the oxytocic agent, sparteine sulfate, have been completed by Dr. Plentl, in association with Dr. Mary Jane Gray and Dr. Friedman. This naturally occurring chemical compound has now been thoroughly evaluated on over 700 patients in labor. The final analysis of this extensive study led to the conclusion that this new oxytocic agent shortens labor by regulating the rhythm rather than by accentuating the contractions. Its net effect appears to be that of a stimulant, restoring, but never causing the normal forces to be exceeded. The drug is useful and effective and has already found a broad application in this and other institutions. A study of synthetic oxytocin, which showed it to be an effective agent for the induction and stimulation of labor, was completed and published by Dr. Friedman. Trials with the hormone Relaxin, a substance supposed to abolish or reduce the strength of uterine contractions, were begun by Dr. D. Anthony D'Esopo, Dr. Southam and Dr. Freda.

Dr. Marion D. Laird continued her interest in methods of natural childbirth, and published a paper on the care of the prepared patient in

labor. The effect of caudal-epidural anesthesia on the progress of labor is being studied through the use of the graphicostatistical method of analysis by Dr. Friedman. This method follows the course of the dilatation of the cervix and relates progressive increase in diameter of the cervix to the elapsed time of labor.

#### THE FETUS AND THE NEWBORN

The greatly increased interest manifest throughout the country in the perinatal period is reflected in the work of a collaborative research project shared in by the Services of Anesthesia, Pediatrics, Obstetrics and Gynecology, and largely carried out in the labor and delivery rooms of the Sloane Hospital. The perinatal team consists of Dr. L. Stanley James, Visiting Fellow in Anesthesiology, Dr. Irwin Weisbrot, Visiting Fellow in Pediatrics, Dr. C. Edward Prince, Macy Fellow in Obstetrics and Gynecology, Dr. Duncan A. Holaday and Dr. Virginia Apgar of the Anesthesiology Service. Their work is directed particularly to the respiratory, circulatory and biochemical adjustments to birth.

Progress was made in the techniques and interpretation of cine-radiography of the newborn, both as a research tool and a diagnostic measure. Studies in over one hundred infants and their cord blood samples indicate that aortic samples obtained by catheterization of the umbilical artery immediately after birth will give more accurate information as to the status of the infant than will the umbilical artery or vein samples. Biochemical studies of depressed infants show that in addition to marked respiratory acidosis, metabolic acidosis is present. The biochemical studies agreed well with the clinical scoring system in use since 1952. Follow-up studies of the normal asphyxia at birth indicate that the infant's acid-base balance returns to the maternal level within a few hours.

Studies on the transfer of cyclopropane across the placenta were completed. Both because of the rapidity of transfer and the relative clinical depression of the infants, the use of regional anesthetic methods is being encouraged.

Over 3,600 infants were scored at birth; this is a procedure by which various factors concerned particularly with circulatory and respiratory physiologic efficiency are recorded. These infants will be included in a five-year study (1952-1956) of 16,000 infants who have been evaluated at birth by this method.

An eight-year follow-up study was conducted of infants whose heel blood was studied at birth during 1947-1948. Of the original 400, 150 children were given a battery of psychological tests, audiograms, electroencephalograms and neurological examinations. The results are being

analyzed at present and will serve as a pilot study for the sample of 4,000 children from the 16,000 mentioned above whose examinations will be completed in 1960.

A number of partly independent studies of the fetus before and during labor are also under way or in immediate project. Reference has been made to the work of Dr. Freda on the passage of blood group substances through the placenta. A clinical study of the problem of fetal distress during labor was begun by Dr. Steer and by Dr. Arnold N. Fenton, depending partly on a correlation of clinical signs of fetal distress with the method of delivery and the outcome to the fetus, but also on a hoped-for method of recording the electrocardiograph of the unborn fetus. Dr. Adamsons and Dr. Leo J. Dunn are attempting to record the electroencephalogram of the unborn fetus during the course of labor. In collaboration with Dr. William A. Blane of the Department of Pediatric Pathology, College of Physicians and Surgeons, Dr. Little is studying the incidence of placental inflammation, "placentitis," in cases of neonatal death due to pneumonia.

#### RESEARCH OF GYNECOLOGICAL CANCER

Work continued on the long program concerned with the search for biochemical and biological differences between benign and malignant tumors, and between the different grades of malignancy. The program has been under the general direction of Dr. Lieberman and Dr. Howard C. Taylor, Jr., the chief collaborators being Dr. Long, Dr. Hyman Guthwin, Dr. Helena de Roeth, and Dr. Saul Bader all of the College of Physicians and Surgeons.

The cytochemical investigation of cancer tissues with respect to the varying degrees of malignancy was continued by Dr. Long, assisted by Dr. Fumio Doko, Damon Runyon Research and Fulbright Fellow of the College of Physicians and Surgeons. They completed their assessment of nucleolar patterns in endometrial tissues and established a statistically significant difference in nucleolar size and number between non-malignant and malignant endometria as well as with increasing degrees of malignancy. Similar biometric studies are in progress for epidermoid carcinoma of the cervix. Observations on sites of succinic dehydrogenase in ovarian papillary serous tumors by Dr. Long indicate that the activity of this enzyme is probably more likely to be associated with growth of cells than with malignancy per se.

The metabolic behavior of human gynecological tumors was the subject of work by Dr. de Roeth. She has found, for human ovarian tumors, a correlation between the histologically determined grades of

malignancy and the amount of oxygen consumed and lactic acid produced. Her results indicate that the more malignant the tumors are the more glycolysis occurs. Dr. de Roeth is also studying the survival rates of tumors by following glycolysis and oxygen consumption throughout a period of storage at room temperature.

Dr. Guthwin began a long range program designed to fractionate human gynecological tumors, primarily by differential centrifugation, into various cellular components. The various cellular fractions so obtained may then be studied with a variety of chemical and cytological methods. These techniques are being developed so that chemical and cytological assays may be carried out upon relatively uniform cellular fractions.

Microspectrophotometric measurements of gynecological tumors made by Dr. Bader have indicated increased desoxyribonucleic acid distributions with variations in spread from the diploid tissue of origin. Tumors have been found to manifest cells with a modal chromosome number. Cells having this prevalent chromosome complement have been designated as the stem cells of the tumor since they usually reflect the dividing cell population responsible for the growth of the tissue.

Efforts to distinguish those cancers of the cervix which will be sensitive to radiation from those which will be resistant and therefore best treated by surgical excision continue under the direction of Dr. Saul B. Gusberg of the College of Physicians and Surgeons. The cytochemical studies of this group have proceeded to the point where they furnish a fairly accurate method for the prognostication of the healing of tumors under radiation therapy. The method, which involves serial biopsies during the course of radiation treatment, has not yet been introduced into the regular plan of therapy, because more cases are needed for its evaluation and some simplification is also required to make it practical for clinical use. Studies of the so-called sensitivity response, by examination of the desquamated cells found in the vaginal tract, is also continuing in an attempt to evaluate the method. Evidence collected during the last year by Dr. Grace G. Herman and Dr. Helena Hughes, Barnes Foster Fellow of the College of Physicians and Surgeons, suggest that the so-called "sensitization response" may have an endocrine significance, since it is sometimes found in patients without cancer who, as a result of physiological, pathological or surgical causes, appear to be in a state of hormonal imbalance.

Studies of the precursors of gynecologic cancer also remain a part of Dr. Gusberg's interests. With Dr. Southam, evaluation is being made of the adenomatous hyperplasia of the endometrium found in young women with the Stein-Leventhal syndrome of ovarian dysfunction. With



Dr. David B. Moore a study is being undertaken of the pregnancy changes in the cervix and a complete evaluation of the experiences of the Service with intraepithelial cancer of the cervix. Another approach to the study of the radiosensitivity of human epidermoid cancer is being taken by Dr. Tovell in a study of the survival and growth of radiated tumors upon retransplantation into small laboratory animals.

Beside these examples of laboratory research, a continuous analysis of the clinical material of the Service is being made. The follow-up system of cases of cancer treated at the Sloane Hospital has been perfected and continues under the direction of Dr. Moore. The cases of cancer of the cervix treated at the Medical Center from 1946 to 1951, 368 in number, have been completely investigated and will be reported shortly by Dr. Henry Clay Frick II. Reviews of the cases of sarcoma of the uterus have been completed by Dr. James Corscaden and Dr. Plentl is writing the chapter on the lymphatic system of the female pelvis in a book concerned with the relationship of the human lymphatic system to the spread of cancer in general.

### *Bulletin of the Sloane Hospital*

Under the editorship of Dr. D'Esopo, with the assistance of Dr. Tovell and Dr. Robert E. Hall, the Bulletin is now entering its fourth year of publication and continues to grow in acceptance as indicated by increased circulation, now 1,800 from an original 800, and requests for reprints. A new department, "Case Histories from the Weekly Staff Conferences of the Sloane Hospital," has been added this year. The department aims to present cases that provide teaching interest in the discussions that follow. In addition to its value as a scientific publication, the Bulletin serves as a medium of fostering good relations within the profession, since it is distributed to the Directors of Obstetrical and Gynecological Departments and to most of the important medical schools throughout the world.

### *The Teaching Program*

The undergraduate teaching program remained essentially unchanged during the past year. Consisting of fifty hours of formal lectures in the third year, and a two-month clinical clerkship in the fourth year, it is regarded as somewhat unsatisfactory by the Department of Obstetrics and Gynecology. The principal defect is felt to be the lateness with which the subject appears in the undergraduate years.

The Residency Program also remained the same, except for some changes in the third year by which the amount of time devoted to Pathol-

ogy is reduced. More time in consequence can be devoted to work in the specialty clinics in the outpatient department as well as to the operating room and delivery rooms.

The fellowships made available by the Josiah Macy, Jr. Foundation, by which men or women intending to enter academic obstetrics and gynecology are provided with funds to give them a year or more of training in one of the sciences, promises to add much to the intellectual future of the Service. During the past year there were four such fellows. Dr. Gray continued her work with Dr. Plentl on the distribution of water and electrolytes with the use of deuterium, tritium and certain radioactive ions. Dr. Little studied the pathology of the placenta. Dr. Prince served as one of the team working on the physiology of the newborn under Dr. Apgar and Dr. James. Dr. Robert A. Munsick began work in the Department of Pharmacology under Professor van Dyke on the pharmacology of the posterior pituitary hormones, vasopressin and oxytocin. Beside these Macy fellowships, designed for graduates in medicine, the Service hopes eventually to profit by Macy scholarships awarded to undergraduate medical students in the College for part-time research work in fields regarded as ultimately pertinent to the problems of Obstetrics and Gynecology.

Reference must be made to the assistance afforded by Dr. Alan F. Guttmacher, Director of the Gynecologic Service at Mt. Sinai Hospital, and by Dr. Carl T. Javert, Director of the Woman's Hospital Division of St. Luke's Hospital. Both have given lectures to the third-year students and Dr. Guttmacher conducts regular weekly rounds for fourth-year students during their period of clerkship.

During the last year a monthly perinatal mortality conference was introduced in order to review the causes of fetal and neo-natal deaths. This exercise, participated in by members of the Services of Anesthesia, Pediatrics, and Obstetrics and Gynecology, is attended by members of the House Staff, the fourth-year clinical clerks in Obstetrics and Gynecology, and any interested visitors.

The program in graduate maternity nursing continued with increasing participation. Five students completed the program during the past academic year, three being candidates for the Master's degree, and two for a certificate. Eight additional are at present enrolled in the Master's program which began in September 1956. For this course progress was made in obtaining continuity of care so that the graduate students are now able to follow the expectant mother through pregnancy and labor.

Under the heading of education, reference must be made to the graduate fellows who worked in the Service during the last twelve months.

Dr. Hughes of Manchester, England, under the University Barnes-Foster Fellowship, devoted her time to the problem of radiosensitivity. Dr. Doko of the University of Okayama in Japan is spending his second year as a Damon Runyan Fellow, investigating the cytochemistry of gynecologic tumors. Dr. Shah of Tata Cancer Institute in Bombay, India, under a fellowship of the Population Council, studied the effects of the new progestational compounds on the endometrium. Undertaking less formal work have been Dr. Amin el Zeneiny of the University of Cairo, supported by a Fulbright grant, and Dr. Umberto Bologna of Rome, Italy, supported by the Institute of International Education.

A total of 75 visitors, 61 of these from abroad, were also registered. The countries chiefly represented include England, 16; Switzerland, 9; India, 5; Germany, 4; Egypt, 3; Belgium, 3; and Australia, 2.

### *General Staff Activities*

During the year Dr. Friedman, a graduate of the College of Physicians and Surgeons, was appointed an Assistant in the Hospital, having completed a five-year residency in the Sloane Hospital. Dr. Frick and Dr. Harold Speert were promoted from the rank of Assistant to that of Assistant Attending Obstetrician and Gynecologist.

The members of the Service were active in writing, in speaking before medical societies, and in taking part in the work of various scientific and medical organizations. A somewhat incomplete survey indicates that at least 46 papers were published, and 20 lectures or addresses given in places outside of the Medical Center by members of the Service.

Among new elections to Societies may be mentioned the following: Dr. Long to the American Association for Cancer Research; Dr. Gusberg to the Board of Directors of New York City Cancer Committee, to the Executive Committee of the Intersociety Cytology Council, to the American Gynecological Society, and to the American Radium Society; Dr. Frick to the Allen O. Whipple Surgical Society, to the Ewing Society, and to the New York Academy of Medicine; Dr. Plentl to fellowship in the American College of Surgeons; Dr. Jailer to the Association of American Physicians.

Dr. Lieberman is on leave of absence as Visiting Scientist with the Cancer Chemotherapy National Service Center of the National Institutes of Health. Miss Mary I. Crawford, Assistant Director, Nursing Service, has been made President-Elect of the American College of Nurse-Midwifery. As a member of the Institute of Neurological Diseases and Blindness, Dr. D'Esopo attended a meeting in Bethesda this year. Dr. Taylor is serving this year as the President of the American Gynecological

Society, and also as a Regent of the American College of Surgeons.

During most of the year, Dr. Earl T. Engle of the College of Physicians and Surgeons was on a sabbatical leave, devoting his time under a grant from the Josiah Macy, Jr. Foundation to study of departments of Obstetrics and Gynecology throughout the United States. During the course of his investigation, Dr. Engle visited some forty departments, discussing the problems of academic obstetrics with students, residents and attendings. The report of his work in this survey was in the process of completion at the time of his sudden and tragic death on December 17. Dr. Engle's going leaves a gap in the Department and in the whole field of scientific research on the physiology of the reproductive process that can scarcely be filled for many years.

# Ophthalmology

JOHN H. DUNNINGTON, M.D., *Director*

In 1957 3,009 patients were admitted to the Institute of Ophthalmology. They received 25,724 days of care and 2,811 operations were performed. We have had twelve visiting fellows and scholars and two visiting speakers, Mr. M. J. Roper-Hall and Dr. P. Jameson Evans of Birmingham, England. Sir Stewart Duke-Elder, director of the Institute of Ophthalmology (London), paid us a very stimulating visit and participated in both clinical and scientific discussions.

We deeply regret the untimely death of Dr. C. Gregory Barer on February 8, 1957. Dr. Barer, who was first a resident and then a staff member, is remembered with affection.

Upon completion of their residencies, Dr. Robert P. Burns, Dr. Anthony Donn, Dr. Charles J. Campbell, and Dr. John W. McTigue joined the staff as Assistant Ophthalmologists.

## *Clinical Advances*

During 1957 we developed more exact controlled studies of diagnosis and treatment of some chronic ocular diseases by the formation of special study groups. In this way closer patient-doctor relationships can be maintained and the physician's understanding of these conditions enhanced. Under the direction of Dr. Maynard C. Wheeler, four members of the resident staff, viz. Dr. Robert M. Ellsworth, Dr. Harold F. Spalter, Dr. Howard C. Lucas, Dr. G. Richard O'Connor have inaugurated such a study on uveitis. An electroretinography laboratory supervised by Dr. Charles J. Campbell, with the assistance of Miss Catherine Rittler of the Knapp Laboratory of Physiological Optics, is serving as a center for the diagnosis and evaluation of treatment of the non-surgical diseases of the retina and optic nerve. Having established normal values and conditions for electroretinography and flicker perimetry, they are able to detect visual field defects in chronic simple glaucoma at a very early stage in the disease. In addition, Dr. Andrew deRoeth, Jr. and Dr. Herman Schwartz of the Service of Anesthesiology have clearly demonstrated the safety of a single dose of intramuscularly or subcutaneously administered belladonna as preoperative medication for patients with glaucoma.

Studies of P<sup>35</sup> uptake have become part of our regular armamen-

tarium for the diagnosis of malignant melanomas of the uveal tract. These determinations are being carried out by Dr. John W. McTigue. At the present time a special service, medical and surgical, for the treatment of corneal diseases is being established under the supervision of Dr. Anthony Donn, who has recently returned from a year of postgraduate work at the Institute of Ophthalmology, London, England.

Under Dr. Graham Clark the various surgical procedures for detachment of the retina are being carefully evaluated. With the establishment of an eye bank it is hoped that more globes will become available for use in the treatment of corneal and retinal diseases. Within the past year Dr. Joseph A. C. Wadsworth secured encouraging results in the treatment of keratitis sicca (dry eye) by transplanting the parotid duct into the conjunctival cul de sac.

### *Staff Activities*

At a reception preceding their annual meeting, the Alumni of the Institute of Ophthalmology presented a portrait of Dr. John H. Dunnington to The Presbyterian Hospital. It was accepted by Mr. William E. S. Griswold, Sr. on behalf of the Hospital. During the two day meeting fourteen scientific papers were presented.

Our staff continues to contribute to national and regional ophthalmology. Fifteen members gave instructional courses at the annual meeting of the American Academy of Ophthalmology and Otolaryngology. Dr. John H. Dunnington was made president-elect of this society and vice-president of the National Society for the Prevention of Blindness. He continues as a member of the Board of Directors of Recording for the Blind. He delivered the George Edmund deSchwcinitz Lecture in Philadelphia entitled: "Some Modern Concepts of Ocular Wound Healing." Dr. Dunnington also contributed a chapter on healing of the cataract incision to the new book, *Diseases and Surgery of the Lens*.

Dr. Algernon B. Reese received an Honorary Doctorate of Law from Duke University and was elected a member of the Board of Scientific Councilors of the National Institute of Health. As chairman of the Eye Section, American Medical Association, he read a paper entitled, "Differentiation of Malignant Melanoma of the Choroid." He has also delivered three other addresses and participated in two symposia.

In addition to his continued duties as Editor of the Transactions of the American Ophthalmological Society and member of the program committee of the Section of Ophthalmology of the American Medical Association, Dr. Gordon M. Bruce was elected Chairman, American Board of Ophthalmology and appointed Ophthalmologist on the Spe-

cialty Advisory Committee of the Surgeon General's Office, U. S. Navy. Dr. Maynard C. Wheeler is Secretary-Treasurer of the American Ophthalmological Society and was a guest speaker at the Albany-Troy-Seheneetady Eye Society. Dr. Charles A. Perera edited the 22nd edition of May's *Manual of Diseases of the Eye* — a textbook of long international reputation. Dr. Raymond L. Pfeiffer has lectured to the Departments of Ophthalmology and Roentgenology at the National Institutes of Health, is associate editor of the *New York State Journal of Medicine*, and is serving as consultant to the Commission for the Blind of the New York State Department of Social Welfare. Dr. John P. Maenie is on the faculty of the Ophthalmological Study Council and the Home Study Course of the American Academy of Ophthalmology and Otolaryngology.

Dr. Raynold N. Berke has lectured before the Memphis Society of Ophthalmology and Otolaryngology, the American Orthoptic Council and the American Association of Orthoptic Technicians, and the American Academy of Ophthalmology and Otolaryngology. He has also contributed a chapter on "Complications of Ptosis Surgery" to the recently published *Management of Complications in Eye Surgery*.

Dr. Willis S. Knighton and Dr. Andrew deRoethth, Jr. presented a scientific exhibit, "Practical Tonography," at the American Academy of Ophthalmology and Otolaryngology. Dr. Knighton continued to serve as Chairman of the Committee on Glaucoma of the National Society for the Prevention of Blindness. Dr. Frank D. Carroll was a delegate from the Section of Ophthalmology to the New York State Medical Society.

As part of a symposium on retinal detachment surgery at the American Academy of Ophthalmology and Otolaryngology, Dr. Graham Clark described the mechanical effects produced by the various scleral shortening procedures used in detachment surgery. At the last annual meeting of the Radiological Society of North America, Dr. George R. Merriam, Jr. gave a course in ocular radiotherapy and won first prize for his exhibit entitled, "A Clinical Study of Radiation Cataracts."

Dr. Joseph A. C. Wadsworth was appointed associate editor of the *Ophthalmic Pathology Manual* and continues as associate editor of the *American Medical Association, Archives of Ophthalmology*. He lectured on eye pathology at New York University Medical School and was guest speaker at the Southern Surgical Society, the American College of Surgeons and the Philadelphia Ophthalmological Society.

Dr. Ellen F. Regan was elected to membership in the American Ophthalmological Society. Her thesis was entitled, "Epithelial Invasion of the Anterior Chamber."

In June, 1957 Dr. Charles J. Campbell received his Doctorate of

Medical Science from Columbia University. His thesis was "An Experimental Investigation of Size Constancy Phenomenon." He was appointed Ophthalmologist to the 635th USAF Hospital.

Dr. Arnold W. Forrest and Dr. Reese were members of a symposium on malignant melanomas of the eye presented at the American Academy of Ophthalmology and Otolaryngology. Dr. Ira S. Jones participated in a symposium on diseases of the orbit at the Toronto meeting of the American College of Surgeons.

Dr. Reese and Dr. Bradley R. Straatsma received a certificate of merit from the Section of Ophthalmology of the American Medical Association for their exhibit, "Precancerous and Cancerous Melanosis of the Conjunctiva." Dr. Straatsma read a paper on "Eosinophilic Granulomas of the Bone" at the American Academy of Ophthalmology and Otolaryngology and received a Special Clinical Traineeship awarded by the National Institute of Neurological Diseases and Blindness.

### *Research Studies*

In research we continue to coordinate laboratory and clinical investigations and to work out clinical problems in collaboration with other departments. Dr. Robert P. Burns, advised by Dr. Harry M. Rose of the Department of Microbiology, is working with tissue cultures for the isolation and study of ocular viruses.

As ophthalmologist at the Thyroid Clinic, Dr. Robert M. Day has continued his clinical studies of the ocular changes associated with thyroid disease. In addition, he has undertaken an investigation of possible hormonal changes in the blood of patients with this disorder. Dr. Donn is completing the studies of corneal physiology begun during his year in London.

In association with members of the Service of Neurology, Dr. Carroll is studying optic neuritis in children and is continuing investigations of the relation of optic neuritis and temporal arteritis. As a corollary to his work on retinal detachments, Dr. Clark is now investigating the surgical effect of isolated elements of the conventional wave forms used in electro-surgery.

Dr. Dunnington and Dr. Regan, in collaboration with Dr. Virginia Weimar and Professor George Smelser of the research staff of the Department of Ophthalmology of the College of Physicians and Surgeons, continued their studies of the healing of limbal and corneal wounds. The present phase of the investigation concerns itself with the abnormal healing of cataract incisions as a cause of postoperative complications.

Dr. Jones is conducting experiments on the factors influencing orbital



size and growth. He is also making a clinical study of angiomatous lesions of the eye and orbit. Dr. deRoethth continues his investigations of the secretory metabolism of the ciliary body, Dr. Philip Knapp and Dr. Wheeler their studies of the miotic treatment of accommodative strabismus, and Dr. Merriam is completing his analysis of time-dose relationships in the production of radiation cataracts.

The Resident staff shows great interest in clinical and experimental investigations. Dr. John L. Goble and Miss Sally Moore are evaluating the indications for and the techniques of orthoptic treatment. Dr. Joan E. Hollenberg is studying the growth patterns of embryo vitreous implanted in the anterior chamber of adult rabbit eyes.

Dr. Spalter in association with Dr. George Hyman of the Service of Medicine is attempting to produce  $C^{14}$  tagged triethylene melanine to determine the selective uptake of tumor tissue in retinoblastoma.

Dr. O'Connor is trying to identify antibodies against various infectious agents in the aqueous humor of patients with uveitis.

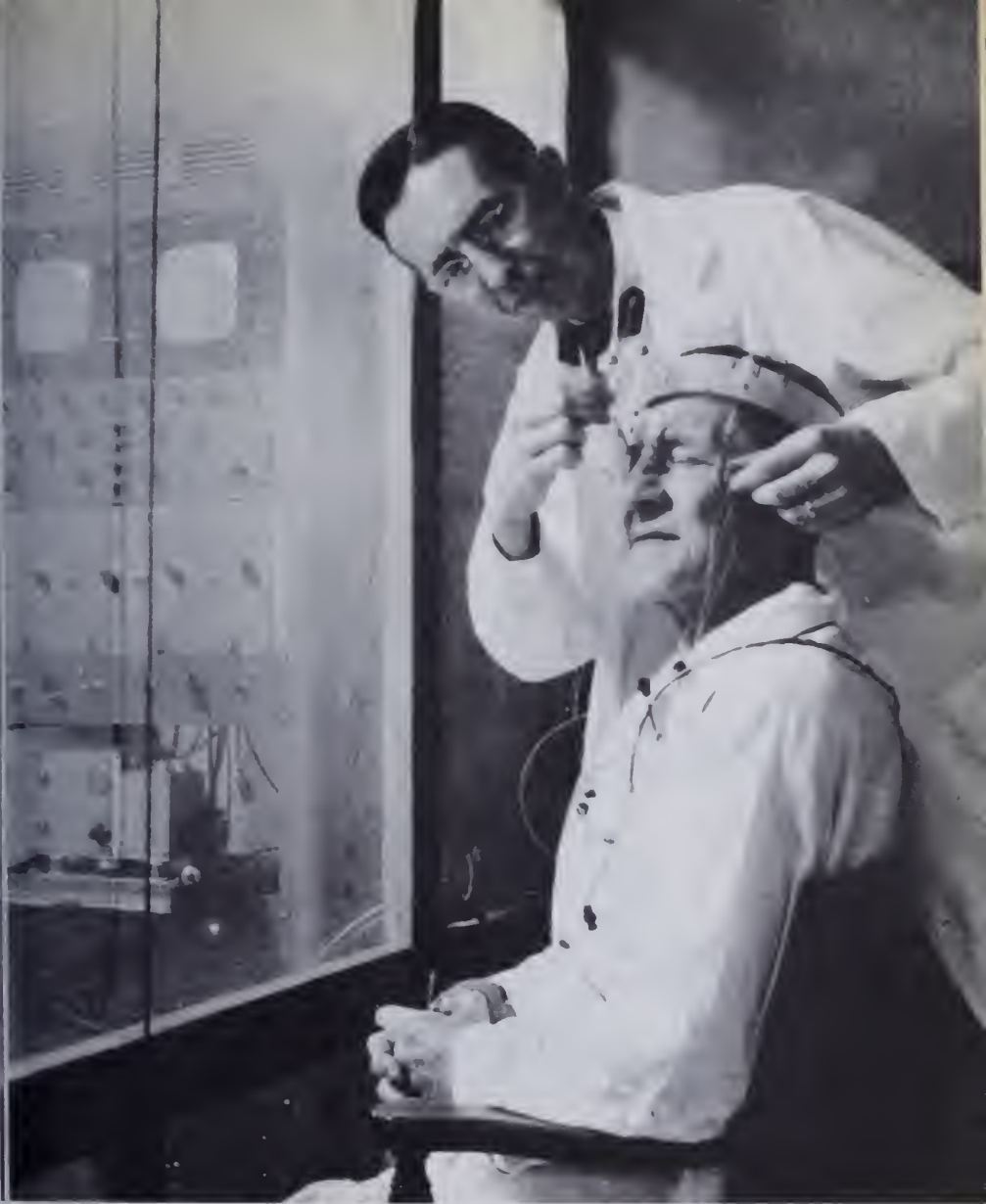
### *Intradepartmental Activities*

The various special departments within the Institute are running smoothly. Miss Moore returned to take care of the Orthoptic Department, thus enabling more extensive analyses and treatment of both clinic and private patients. In 1957 Miss Rittler examined more than 500 patients using the space eikonometer and the ophthalmic-eikonometer. A study is now being made of those patients who return for re-examination and who have been wearing aniseikonic correction for a ten to twenty year period. The John M. Wheeler Library continues to aid both the staff and visiting physicians and to distribute ophthalmic literature to other institutions either on loan or as gifts. Over the year, the Diagnostic Laboratory of the Institute has performed over 35,000 diagnostic procedures, related for the most part to the diagnosis and treatment of infectious eye diseases. In addition instruction was given to visiting scholars and residents. The pathology department prepared 450 ocular specimens for microscopic study. The department of photography and the X-ray department under Mr. James Lafayette continue to give the staff valuable diagnostic aid as well as providing fine material for graduate and undergraduate teaching.

### *Benefactions*

We are most appreciative of the continued support of our Service by our modest friends who wish to remain anonymous. Both individual donations and those of various foundations have been generous and we

welcome this opportunity to thank all our kind benefactors. Dr. Raymond Barry, Mr. E. F. Johnson, the Mary W. Harriman Fund, the Mortimer and Harriet M. Marcus Foundation, the Jack Kriendler Memorial Foundation, Mrs. Paul McEwen, the Dunlevy Milbank Fund, the New York Foundation, the Snyder Ophthalmic Foundation, and the Whitehall Foundation have done much to further our research studies. To all these kind people, and to the loyal professional and personnel staffs, I am profoundly grateful.



*Measurement of the electrical changes that occur when the eye muscles move may eventually yield a guide for surgical correction of muscle defects. Eye researchers have also designed instruments that measure minute electrical changes reflecting the retina's response to light. This technique is already aiding diagnosis of some eye diseases.*



*Research studies underway here have contributed to knowledge available to orthopedic surgeons treating patients in the Fracture Clinic. Here staff member reviews case and counsels on patient presented by a resident in training.*

# Orthopedic Surgery

FRANK E. STINCHFIELD, M.D., *Director*

The year 1957 afforded The New York Orthopedic Hospital opportunity to devote more of its time and facilities to teaching and research than previously.

Although our research and teaching duties have increased manifold, our ward occupancy has decreased. This is especially true in the children's orthopedic wards. Because of the decrease in tuberculosis, poliomyelitis, and osteomyelitis, together with a high standard of living, children are now being cared for in the home. Decrease in adult ward occupancy is also evident and this would seem to be directly attributable to the increase in insurance programs permitting patients to take advantage of private medical care. This, no doubt, is of aid to the private practitioner from a financial standpoint, but is most difficult from a teaching standpoint. As insurance programs continue to become more available and widespread, the clinic and ward population will decrease. Unless this trend is stopped or reversed, we will soon see the day when our teaching in orthopedic surgery is didactic and not clinical. The problem must be solved, not only on a local level, but on a national level among medical groups and insurance companies, acting as a team to preserve our present method of training future orthopedic surgeons.

During the past year the out-patient clinic treated 17,495 patients and 41,150 visits were made by our patients; 995 patients were admitted to the ward teaching service during the past year.

## *Research Activities*

During the past year our research projects progressed most satisfactorily. In the field of basic research, Dr. Gabriel C. Godman of the College of Physicians and Surgeons did some outstanding work on the development and senescence of cartilage, an electron microscope and cytochemical study; on the cellular pathology and cytochemistry of adenovirus infection; and on quantitative and cytological aspects of mucopolysaccharide production by osteogenic cells in vitro.

Dr. C. Zent Garber, stimulated by interest in bone cysts and Paget's disease, is measuring blood pressures in bone marrow. He has also given some support to experimental bone injection work being carried on by

Dr. Lloyd A. Hurley, and to statistical chondrosarcoma searches by Drs. Kenneth C. Francis and John C. Williams, as well as continuing, in association with Mr. Abel Said, work on chemistry of bone salts.

Dr. C. Andrew L. Bassett, in collaboration with Dr. James B. Campbell of the Neurosurgical Service, developed a new technique in aiding nerve regeneration by use of a synthetic substance, "Millipore." This has received much attention because of its clinical implications. In addition, Dr. Bassett who is in charge of the Orthopedic Clinical Research Laboratory, worked on cellular and chemical factors in osteogenic induction. He also continued his work with the Bone Bank and has in preparation a permanent exhibit, "Cathode Ray Sterilized Cadaver Bone Grafts." Dr. A. Gibson Packard assisted Dr. Bassett with the latter.

Dr. Everett C. Bragg continued his study on the lumbar disc and is conducting a follow-up study on the treatment of club foot with Dr. Frederick S. Craig.

Dr. Craig is investigating the efficiency of posterior tibial transplant in cerebral palsy, as well as continuing his study of vertebral body sclerosis.

Dr. Robert E. Carroll continued with his work in the Orthopedic Hand Clinic, where 2,615 patients were seen during the year, 196 of whom were surgically corrected.

Dr. Francis reports that his study on scanograms is progressing exceedingly well. With Drs. B. L. Coley and N. L. Higginbotham of Memorial Hospital, he recently submitted for publication a paper on multiple myeloma.

Dr. Sawnie R. Gaston continued his study of conservative treatment and surgical correction of club feet and believes this work will be ready for publication in the near future.

Dr. D. Keith McElroy continued his studies of cerebral palsy, and on drug therapy in bone and joint tuberculosis.

Dr. Charles S. Neer, II, has substantially completed a movie on shoulder prosthesis and also finished his study on the indications for open reduction of the clavicle. He is also doing a cadaver and clinical study of the surgical pathology of the proximal humeral articulation.

Dr. Alexander Garcia participated in an exhibit on fractures in the aged at the recent meeting of the American Medical Association, and at the New York State Medical Society meeting. With Dr. Neer as co-author, he presented a paper on isolated fractures of the intercondyloid eminence at the recent meeting of the American Association for the Surgery of Trauma.

Dr. George B. Ambrose continued to represent the Orthopedic Serv-

ice on the Hospital's Wound Healing Committee during the year and, with Dr. Williams, is reviewing the wound infections on our Service for the past ten years. He has also continued his studies on slipped upper femoral epiphyses and on fractures of the upper shaft and subtrochanteric region of the femur.

Drs. Neer, Garcia and Ambrose are continuing their joint investigation on displaced fractures of the femoral neck.

Dr. Alexander D. Papas is continuing a clinical evaluation of the self-adjusting nail for intracapsular and intertrochanteric fractures of the hip.

Dr. Charles T. Ryder continued his fetal life study of the development of the hips and legs and, as part of a city-wide survey under the auspices of the Bureau for Handicapped Children, is investigating the effects of treatment on the end shape of the femoral head in coxa plana. Dr. John D. LeBouvier is assisting him with the latter.

Dr. Frederick M. Smith continued his study of trauma to the elbow and spine and presented a number of papers on the former.

Dr. Stinchfield, in conjunction with the Service of Radiology and the Faulkner Arthritis Clinic, is studying the effects of steroid therapy on massive bone reabsorption.

Dr. William H. von Lackum, with the cooperation of past and present staff members and Dr. Alfred P. Fishman and associates of the Service of Medicine, is gathering data for setting up the system of surgical treatment of scoliosis in this hospital.

In addition, a number of other research projects are being carried on by our residents and fellows:

Drs. Ira M. Cantin (and McLaughlin) — Lottes nail fixation for tibial shaft fractures.

Drs. Raymond L. Cunneff, Jr. (and Francis) — Osteogenic sarcoma.

Drs. S. Ashby Grantham (and Garcia) — Vertebral osteomyelitis.

Dr. Lloyd A. Hurley — Continuation of work on use of anorganic bone; use of this on a clinical basis has just been started.

Dr. Rosamond Kane — Results of eleven Grice procedures.

Drs. Cyril E. Shea, Jr. (and McLaughlin) — Late open reduction of ankle fractures.

Dr. R. Warner Wood, Jr. — Review of multiple enchondromatosis.

### *Bulletin and Postgraduate Course*

The first Bulletin of The New York Orthopedic Hospital was published in May, and the second issue in September, under the editorship of Dr. Halford Hallock, Dr. Neer, and Dr. Ryder. It is with a great deal of pride that this Bulletin is published, not only for its clinical value

but for the purpose of binding together most closely the present staff and the alumni. It has already fulfilled its purpose and, as evidenced by its subscription list, is receiving enthusiastic support from our alumni and interested groups.

A postgraduate course is given yearly by the Orthopedic Service. In 1957 the course was attended by 44 doctors and was enthusiastically received. The proceeds from this course will be used by our Service for the development and maintenance of a photographic laboratory.

### ***Resources for Teaching***

At the time of the retirement of Dr. Smith, a lectureship was created in his name. Each year an outstanding teacher is asked to give this lecture at the time of the Service alumni meeting. The first lecture was given in June of this year by Dr. Bradley L. Coley on "The Conservative Treatment of Certain Musculoskeletal Neoplasms," and was published in the September issue of *The Bulletin of The New York Orthopedic Hospital*.

Last year also marked the institution of a visiting professor pro-tem policy. We feel that it is advantageous to bring outstanding professors and teachers to our Service for short periods of active teaching.

Accordingly, this year, Dr. H. Relton McCarroll, Professor of Orthopedic Surgery at Washington University in St. Louis, and an outstanding teacher, acted as Director of the Service, making rounds, teaching techniques, conducting conferences and, in general, "running" the Service for a week in November. It can safely be said that this was one of the most successful and satisfying ventures we have undertaken. The teaching by a visiting professor was especially stimulating and many new ideas were gleaned and many old ones reevaluated.

An intensive, carefully correlated basic science course is given to all second year orthopedic residents. This is a concentrated course given for a two-month period, twice yearly, and includes anatomy, pathology, rehabilitation, roentgenology, physiology, pharmacology, neurology, and orthopedic and traumatic surgery. The cooperation of all departments in the Medical Center has been enlisted and all have responded. It has been most popular, not only with our own residents, but also with visiting teachers and students.

### ***Staff Changes***

During the past year, Dr. J. William Fielding was appointed to our staff as an Instructor in Orthopedic Surgery and Assistant Attending Orthopedic Surgeon. Dr. Fielding's assigned position is in the Scoliosis Clinic, understudying Dr. von Lackum, who retires in July 1958.



Dr. Harrison L. McLaughlin had the honor of giving the Oration on Trauma at the annual meeting of the American College of Surgeons in Atlantic City in October, speaking on "Education in Trauma."

Dr. Alan DeForest Smith, Emeritus Director, continued his active participation in undergraduate instruction.

Early this year, Dr. Stinchfield was appointed to the Executive Committee of the Medical Board.

It is with extreme gratitude that we thank the benefactors who have contributed so generously in a financial manner to help us with our Service and permit us to carry on all of our research activities. Most of our funds have come from individual contributors who prefer to remain anonymous. To them we are and always shall be grateful. The United States Public Health Service, the Jane Coffin Childs Memorial Fund, and the Office of Naval Research have also contributed to our research endeavors and have been most helpful.

A special debt of gratitude is due the entire staff, including nurses, secretaries, and house staff. The cooperation and willingness to carry more than the average load by each member is most appreciated.

The utmost help and cooperation are afforded The New York Orthopedic Hospital by both The Presbyterian Hospital and the College of Physicians and Surgeons.



*Young patient of the Speech and Hearing Clinic discovers that with electronic help she can hear. Clinic's team planned a program that made it possible for this three-year-old to use a hearing aid and, for the first time, to speak.*

# Otolaryngology

EDMUND P. FOWLER, JR., M.D., *Director*

The number of attending oto-rhino-laryngologists on the Hospital staff slowly decreases. Dr. Sylvester Daly and Dr. Max J. Pierce both resigned during the past year.

The slow attrition is apparently due to two things: (1) the extraordinary opportunities and demands for private practitioners outside the Medical Center; (2) the dearth of ear, nose and throat specialists available from the younger age groups. The latter can be attributed to the completely erroneous proposition that otolaryngology is contracting because simple mastoid surgery has been reduced by antibiotics and chemotherapy. Actually, as in every other specialty, antibiotics and chemotherapy make possible many new procedures. These, with new medications, increase rather than decrease the scope and number of patients who can be helped by otolaryngological methods. Also to be considered is the fact that with increased life spans there are more older patients with hearing losses, and with the increased survival rate of infants, especially prematures, there are more youngsters with defective speech and hearing.

Fortunately the great need for well-trained otolaryngologists has finally become apparent to medical students and interns, and applications for residencies have increased markedly in the last two years. We therefore can expect soon again to have adequate numbers of qualified personnel to run the Service. Until then, the present staff will be forced to work harder than ever and to attend duties which might better be delegated to younger men.

There has been little change in the classification of patients seen on the wards in the last few years. There has been a slight increase in head and neck cancer patients, but the number of traumatic cases of the head and neck still seems to be too small for adequate teaching of residents. There seems to be a slight decrease in the minor surgery available on Service cases, as a result of increased semi-private insurance coverage for patients in the upper part of the lower income bracket. This is reflected in the decrease of clinic patients in this category. Although there seems to be a slight 2.4 per cent increase in the number of visits to the Otolaryngology Clinic, a goodly part of these are patients with complicated problems referred from other clinics rather than the range of pa-

tients seen in a typical otolaryngological practice, the group most needed for resident training.

Perhaps the most notable event of 1957 was the extremely large number of foreign visitors to the Service of Otolaryngology, particularly just before and just after the Sixth International Congress of Otolaryngology which met this year in Washington, D. C. Many world famous visitors after extensive tours of the United States commented favorably on the Service at The Presbyterian Hospital. Throughout the Congress Dr. Franz Altmann acted as host and interpreter to the German speaking people and Dr. Edmund P. Fowler, Jr., served as chairman of one of the sections, as well as chairman of the tours in New York City.

There were several lectures to the staff by foreign visitors. Most notable were those by Dr. Hans Engstrom of Goteburg, Sweden, on the finer structures of the inner ear as seen with an electron microscope and a comparative review of European otology by Professor H. Herman of Munich. Another notable event was the demonstration by Professor M. Arslan, of Padua, Italy, of his ultrasonic treatment for Meniere's disease.

Dr. Fowler was voted president of the Microcirculatory Conference.

Dr. Altmann, Dr. Milos Basek and Dr. Fowler continued their studies on the mechanisms of stapes mobilization and the causes of otosclerosis. Dr. Basek and Dr. Fowler are working on facial nerve afflictions, especially anomalies in the course of the seventh cranial nerve and Bell's Palsy. They have also been testing the ultrasonic treatments on certain patients with severe vertiginous spells, according to the method of Arslan.

Dr. Fowler is actively cooperating with three groups in the Psychiatric Institute. (1) Dr. Franz J. Kallmann's study of the deaf and especially of deafened twins; (2) Dr. Carney Landis, Dr. Howard Page and J. Rutschmann in a study of magnetic movement of the ear drum; (3) Dr. Samuel Sutton and Mr. Richard Chase in the use of delayed feed-back in studying speech and other general central nervous system complexes.

Dr. John J. Conley's most active research interests are in the physiology of swallowing and extensive head and neck surgery.

Dr. Jules G. Waltner continues his work on roentgen diagnosis of chronic mastoid disease.

Dr. DeGraaf Woodman completed further studies with acrylic molds and tantalum keels for glottic obstruction.

Mrs. Shulmith Kastein of the Speech and Hearing Clinic continues her studies on differential diagnosis of communication disorders in children and has found an extremely high percentage, close to 50 per cent, in prematures who survive.

Maurice H. Miller, Ph.D., supervisor of the Speech and Hearing Clinic, studied the effects of binaural versus monaural hearing aids and the feasibility of using "Language Master" magnetic tape cards for "monitored microphone voice" in the testing of hearing. Dr. Miller was also made Chairman of the Audiology Study Group in New York City.

Members of the resident staff also were active in research. Dr. Richard Fitton presented his studies on maxillary carcinoma with Dr. Waltner. Dr. David Hilding is working on the chemistry of labyrinthine fluids, using radioactive isotopes. Dr. Bruce Marshall is studying the long-term results of radical mastoidectomy. Dr. Philip Charbonneau begins a study of Bell's Palsy.

Publications for the year are listed elsewhere in this volume.

During the year 3,190 new patients were treated in Vanderbilt Clinic. There were 1,580 admissions to The Presbyterian Hospital and 150 to Harkness Pavilion with a total of 2,082 operations. There were 1,380 admissions to Babies Hospital with 1,189 operations. There were 401 consultations on the other Services.



*Microscopic examination of tiny sections of body tissue is a very important aid in diagnosis. Here, a resident in pathology is demonstrating a slide to a clinical resident who, in turn, is prepared to provide clinical viewpoints on the case.*

# Pathology

HARRY P. SMITH, M.D., *Director*

During the past year no major changes occurred in the functions of the Pathology Service. The performance of autopsies continues to be the major responsibility. This Service, in addition to its obvious values to the clinical departments, serves several other useful purposes. Many individuals and groups at the Medical Center utilize fluids and specimens obtained at autopsy through specific consent from the next of kin. At present about 30 standing orders are on file, many involving repeated or periodic needs. For example, the bone bank frequently obtains specimens of bone for storage and subsequent use in repairing various types of bone defects. Similarly, blood vessels, particularly the aorta, may be removed for later use as grafts. Also, many specimens are removed for research purposes or for biological testing. As an example, pituitary glands are used for the isolation and study of the growth hormone. Also, for research purposes, samples of bone are taken for analysis of strontium 90. This latter project is related to studies of radioactive fallout from nuclear weapons. These various studies by colleagues in other departments of the Medical School and Hospital supplement similar studies made by the Pathology Service itself.

The responsibility of the Service for training residents is a broad one. In addition to those physicians wishing to specialize in Pathology, there are always a number of men who wish to obtain a firm basis for future training in one or another of the various clinical specialties. To improve the training of both groups, the residency program has been broadened. It now includes rotation through the autopsy service of Babies Hospital, and a short period of assignment at the Francis Delafield Hospital. The latter assignment allows additional training in the problems of cancer.

Percentage of necropsies for the year ending December 31, 1957:

Pediatrics	80
Dermatology	25
Private	41
Medicine	62
Neurology	56
Neurosurgery	61
Obstetrics and Gynecology: Adults	78
Neonatal	54

Ophthalmology .....	0
Orthopedic Surgery .....	30
Otolaryngology .....	29
Psychiatry .....	0
Surgery .....	71
Urology .....	25
Vanderbilt Clinic .....	25
Average .....	<u>54</u>





*Four hands are best for building in newly equipped shop on recreational therapy floor of Babies Hospital. Playrooms and outdoor play space of the Department of Recreational Therapy were re-equipped over the last year.*



*Patient co-operation facilitates evaluation.*

# Pediatrics

RUSTIN MCINTOSH, M.D., *Director*

Improvements in patient care tend to creep insidiously into the therapeutic program. So long as a new form of treatment is being tested, one hesitates to say anything about its value for fear of raising false hopes. By the time its value has been demonstrated, it is apt to be taken for granted. Mention should be made of some of the advances which are now accepted as established norms. One such is the virtual elimination of retrolental fibroplasia as a cause of visual impairment in premature infants, through strict control of the amount of oxygen administered in coping with respiratory and circulatory adjustments. The mortality of premature infants in the first five days of life has been significantly reduced by the simple measure of raising the relative humidity of their environment from 60 per cent to a level closer to 90 per cent. Patients with nephrosis now spend, on the whole, less time in the hospital and have a greater life expectancy than was the case only a few years ago. Improvements in the means of treating nephrosis represent another instance of accelerated advance made possible by generous support of research in the study of a specific disease. Patients with congenital malformations of the heart have likewise enjoyed increasingly close study for diagnostic evaluation, and have benefited from a highly organized system of interservice consultation designed to work out for each individual an optimal program of correction. The very success of cardiac surgery has brought into prominence the complicated problems of pre-operative preparation and post-operative care, all requiring the close participation of a variety of disciplinary skills. The list of lesions which lend themselves to accurate identification and to attempts at correction continues to expand.

Over the year a number of welcome improvements were made in the facilities available for patient care. On the 12th floor, a complete revision of the lighting system has helped both the school work in the classrooms and the recreational activities in playrooms and workshops. Outlets for oxygen and suction were installed in various portions of the 9th floor ward area as a means of facilitating post-operative supervision and care. Organization of a four-bed group nursing unit on the 4th floor has increased the efficiency of the personnel assigned to the care of patients whose clinical condition necessitates close coverage 24 hours a day.

In June Dr. J. Taylor Howell retired after an uninterrupted contribution of 37 years of experience to the Pediatric Service. The loss is mitigated by his continuing participation in the activities of the doctors' private practice offices. Dr. Ruth C. Harris, whose husband has been assigned to a post in Beirut, Lebanon, was granted leave in November in order to keep her family intact. Dr. Melvin M. Grumbach succeeds her as director of the pediatric biochemical laboratory. The resignation of Dr. Virginia Strong and Dr. Paul E. Wilson was regretfully accepted. New appointments to the pediatric attending staff include those of Dr. Charles D. May, former director of the Pediatric Service of the Iowa University Hospital, and of Drs. Solomon J. Cohen, Herman L. Grossman and Herbert E. Poch, former members of the resident staff. Dr. Grumbach and Dr. Gilbert W. Mellin were promoted to rank of assistant attending pediatrician.

Research activities on the part of members of the Pediatric Service have eventuated in the publication of twenty-four articles in periodicals and of one book. Grateful thanks are due to the many organizations and individuals who by the contribution of funds or otherwise made these investigations possible: The American Cancer Society; the Dunlevy Milbank Foundation; The Dysautonomia Association, Inc.; The Gabrielle Holst Fund; Loyal League Philanthropies, Inc.; Mead, Johnson and Co.; Merck and Co.; Milbank Memorial Fund; National Cystic Fibrosis Research Foundation; National Foundation for Infantile Paralysis; National Institutes of Health of the Federal Department of Health, Education, and Welfare; Nephrosis Foundation of New York, Inc.; Nutrition Foundation; the Fannie E. Rippel Foundation; and many individuals. Some of the gifts and grants for research were made to the Hospital, others to Columbia University.

Anatomical evidence obtained by Dr. Dorothy H. Andersen, Dr. William A. Blanc of the College of Physicians and Surgeons, and Dr. Carolyn R. Denning indicates that the progress of the pancreatic lesion in fibrocystic disease is a discontinuous one, taking place in episodic spurts. Deposits found in muscle cells of patients with cystic fibrosis of the pancreas were shown by Dr. Joseph D. Reed of the College of Physicians and Surgeons, Dr. Andersen, and Dr. Blanc to provide evidence of an incidental vitamin E or tocopherol deficiency. The problem is being approached through biochemical as well as morphological studies. Dr. Denning has been carrying out assays of the serum proteins of patients with cystic fibrosis of the pancreas, utilizing electrophoretic techniques.

Dr. Paul A. di Sant'Agnes's collaboration with Dr. Zacharias Dische of the Department of Biochemistry of the College of Physicians and

Surgeons continues in the identification and measurement of abnormal mucoproteins found in secretions of patients with fibrocystic disease. In studies of the genetics of this condition, encouraging results were obtained in efforts to identify the heterozygous carriers of the genetic trait who, without showing the full clinical picture of the disease, may nevertheless be responsible for its transmission from one generation to another. Bacteriologic studies were initiated, in collaboration with Dr. Calderon Howe of the Service of Medicine and the Department of Microbiology, in an effort to learn whether the close association of staphylococcal infections with the underlying systemic disease may be explained by some peculiarity of the internal environment which promotes selective survival of this particular bacterium. Dr. Harold G. Barker, of the Surgical Service, collaborated in promising studies of the quantitative aspects of intestinal absorption of fats. The incorporation of radioactive iodine into food fat provides a relatively simple means of measuring the efficiency of its absorption from the intestinal lumen. Preliminary results indicate that the application of these techniques may eventually furnish a simple and accurate test of this important aspect of digestive function. With the collaboration of Dr. Heinrich B. Waelsch of the Department of Biochemistry, College of Physicians and Surgeons and the New York State Psychiatric Institute, studies mentioned in last year's Report are being continued, in which the response of patients with celiac disease to a test feeding of wheat gluten is compared with the behavior of normal controls.

The laboratories of microbiology in the Pediatric Service have focused their efforts strongly on studies of the determinants of heredity in both bacteria and viruses. Of particular interest is the demonstration that polio virus RNA (ribonucleic acid), which is presumably the heredity determinant of this virus, can invade human cells in tissue culture. The cells invaded produce whole polio virus of the type corresponding to the virus from which the RNA is extracted and the resulting injury is indistinguishable from the action of whole polio virus. The invasion can be prevented by ribonuclease. The similarity of genes or heredity determinants to the part of a virus which invades the cell is again exemplified. This work, still in its preliminary stage, has been shared by Dr. Hattie E. Alexander, Dr. Gebhard Koch of the College of Physicians and Surgeons, Dr. Isabel Morgan Mountain of the College of Physicians and Surgeons, Dr. Katherine Sprunt, and Miss Olga Van Damme. Somewhat comparable studies in bacterial genetics, in which Dr. Stephen Zamenhof of the College of Physicians and Surgeons, Miss Grace Leidy, Mr. Sheldon Greer and Miss Eros Hahn have collaborated, continue to elucidate the role of the so-called transforming principle of the hemophilus bacteria.

Studies of the initial infection with tuberculosis, especially as the disease affects relatively young children, have enlisted the collaboration of Dr. Alexander, Dr. Saul Blatman, Dr. Douglas S. Damrosch, Dr. Garrison Rapmund (now in the Army), and Miss Donna Newstrand. Careful observation of patients showing satisfactory clinical and roentgenographic evidence of recovery from the initial infection, whether with specific treatment or without it, has demonstrated beyond question that viable and virulent organisms are recoverable from gastric contents as long as a year after all other evidence of disease activity has subsided. Unless these observations result from a strange accident of patient selection, which seems unlikely because of their consistency, they carry new implications regarding the public health aspects of tuberculosis acquired in early life. These studies carried out at Babies Hospital and in Vanderbilt Clinic constitute only a fraction of a broadly conceived collaborative study in which many clinics throughout the country are taking part, the ultimate aim of which is to demonstrate whether the initial infection requires specific antibiotic treatment, or whether the natural defensive responses of the body are competent to keep the infection localized.

Dr. Ruth C. Harris' valuable studies of the biochemical dislocations produced by liver disease in early life were progressing satisfactorily and were contributing valuable diagnostic and prognostic information, up to the time when she was obliged to leave for the Middle East. Continuing observations of her ambulatory patients will be carried out in Vanderbilt Clinic by Dr. Robert B. Mellins. Before Dr. Harris left she was able to complete a manuscript describing certain challenging observations carried out in collaboration with Dr. Jerold F. Lucey and Dr. J. Robert MacLean, both former members of our staff. In these studies it was found that in premature infants there is a rather poor correlation between the serum bilirubin concentration and the threat of serious damage to the central nervous system (kernicterus). The behavior of premature infants is in this respect notably different from that of mature infants in the newborn period.

Biochemical studies of endocrine disorders, in which Dr. Melvin M. Grumbach and Dr. Ralph E. Moloshok now have the cooperation of Dr. Jacques Ducharme of the College of Physicians and Surgeons, went forward at an accelerated pace, thanks very largely to the remodeling of a biochemical laboratory and the addition of new research equipment. Further advances were made in the study of abnormalities of sex differentiation. The identification of a subject's sex by the pattern of nuclear chromatin material continues to provide an important basis of clinical differentiation, through which certain clinical paradoxes find reasonable

solution. In investigations in which Dr. Karl Meyer, of the Medical Service and the Department of Biochemistry, played a major role, unusual metabolic end products were found to be eliminated by patients with Hurler's syndrome. Chondroitin sulfate B and heparitin sulfate have been isolated and identified in unusual quantities in the urine of these subjects, and in the liver of one of them heparitin sulfate was detectable. These observations indicate an abnormality of mucopolysaccharide metabolism, possibly implying an inborn deficiency of a specific enzyme which normally plays a role in connective tissue synthesis or breakdown. Additional studies will be required before this peculiar hereditary disorder can be properly explained.

Under the general supervision of Dr. William A. Silverman a number of studies are being carried out in the premature infant nursery. With the cooperation of Dr. John W. Fertig and Miss Agnes Berger, of the Department of Biostatistics, a controlled study of the influence of the thermal environment on survival and well-being of premature infants is being carried forward. Studies of the value of prophylactic use of antibiotics in the first five days of life are being continued. Dr. F. J. Agate, of the Department of Anatomy, contributed a great deal of time and technical ingenuity in devising new methods of regulating body temperature, utilizing sensitive thermometers applied to the skin as measures of systemic temperature, and delivering the input of heat through a source of infrared radiation rather than by conventional warm air convection. Dr. Grumbach and Dr. Ducharme are participating in a series of short term studies to learn whether human growth hormone can be shown to accelerate the growth of premature infants. Although the growth factor of the anterior pituitary gland has been found to accelerate growth in hypophysectomized experimental animals, its clinical application to the treatment of dwarfism in children has thus far been disappointing. The premature infant, with his normally rapid growth rate which permits detection of growth increments in as short a period as four days, should constitute an ideal subject in whom to clarify this moot point.

Radiographic studies of the chest of premature infants were pursued by Dr. William A. Bauman with Dr. Jerome Nadelhaft, a former member of the Radiology staff, and correlations were sought between radiographic appearance on the one hand and the presence of respiratory difficulty or the formation of alveolar hyaline membrane on the other. In collaboration with Dr. William A. Blanc, Dr. Silverman is studying the value of frequent determinations of hematocrit level as a method of establishing the presence of significant internal hemorrhage, specifically of intracranial hemorrhage. Dr. James A. Wolff, Dr. Frederick H. von

Hofe and Dr. Anneliese Sitarz are studying the use of iron administered intramuscularly to premature infants in prevention of the anemia which these patients often develop in the first six months of life.

In the Fetal Life Study, under the administrative direction of Dr. Gilbert W. Mellin, long term investigations are going forward steadily with the aim of determining the frequency, type and distribution of congenital malformations, as well as their relationship to maternal illness or other episodes occurring during the course of pregnancy. Considerable progress was made in the description and codification of dental anomalies. New criteria were developed by Dr. Nadelhaft and Dr. Kent Ellis of the Service of Radiology for interpretation of radiograms of the chest of normal newborn infants. Dr. Richard H. Osborne, a research associate of the Institute for the Study of Human Variations of Columbia University, cooperated with the pediatric group in applying twin study methods to the evaluation of the genetic component in the pathogenesis of malformations. In the same context, Dr. Conrad M. Riley collaborated with Dr. Osborne in studying the genetics of familial dysautonomia, again making use of twin study techniques. Analyses of the component protein fractions of blood plasma are being carried out in Dr. Riley's nephrosis laboratory, to be correlated with the various phases of the disease and with the patient's response to therapy. In the past year progress was made in extending fractionation techniques to the lipid component of serum.

As has been customary for some years, the Pediatric Service was host during 1957 to a large number of visitors from different parts of the world. Among visitors who spent several days or a few weeks may be mentioned Dr. Miguel Figueroa, of Chile; Dr. John H. Moseley and Dr. B. S. B. Wood, of England; Dr. Bernard E. Cohen and Dr. S. G. Gershon, of Israel; and Dr. M. Nishihara and Professor T. Takatsu, of Japan. Lectures were delivered to the pediatric staff by Dr. Takatsu, by Dr. J. M. Tanner, of London, and by Dr. P. J. E. Karlberg, of Stockholm.

Dr. Hattie E. Alexander completed her term as chairman of the Council of the American Pediatric Society, and was elected a member of the Elizabeth Blackwell Award Committee. Dr. Sidney Blumenthal served as Chairman of the Public Health Committee of the New York Heart Association, and has been consultant in cardiology to the New York City Health Department. Dr. Melvin M. Grumbach was elected a member of the Editorial Board of the *Journal of Clinical Endocrinology and Metabolism*. Dr. Conrad M. Riley served as Chairman of the Medical Advisory Board of the Dysautonomia Association, Inc. He is also on the Medical



Advisory Board of the National Nephrosis Foundation, and a member of the Executive Committee of the Committee on Public Health of the New York Academy of Medicine. Dr. William A. Silverman serves on the Special Committee on Infant Mortality of the Medical Society of the County of New York. Dr. Rustin McIntosh delivered the Leonard Parsons Lectures at the University of Birmingham, England; he also addressed the staff of the Hospital for Sick Children, Great Ormond Street, London. He was elected chairman of the American Pediatric Society's Committee on Medical Education.

During 1957 the Pediatric Service provided 56,242 days of care for 5,079 patients.



*Physical therapy is key tool in helping to restore muscle function damaged by accident or disease. Here doctor and physical therapist care for patient in rehabilitative clinic.*

# Physical Medicine and Rehabilitation

ROBERT C. DARLING, M.D., *Director*

The aims of this Service continue to be twofold: to furnish and supervise physical and occupational therapy as requested by the other Services and to furnish consultation for comprehensive rehabilitative evaluation and treatment for those patients with major residual disabilities amenable to such treatment. In the latter connection, a number of patients on the various Services continue as hospital patients primarily for rehabilitative treatment for the last part of their hospital stay. All activities are planned to combine optimal patient care with teaching of staff and trainees in this Service.

The treatment clinic, previously Physical and Occupational Therapy, has been designated Physical Medicine, more properly to denote its role as a consultation and evaluation clinic as well as a treatment area. A new treatment modality, ultrasound, has been made available for selected patients screened by our physicians for orderly evaluation of its efficacy. There has been a marked increase in the use of the therapeutic gymnasium; many more patients from the floors of Presbyterian Hospital and Babies Hospital buildings are transported there rather than treated at bedside. As a result, treatment has become more efficient, intensive and morale-building. Emphasis on regular rounds for teaching and patient evaluation has been continued and strengthened.

Affiliation with the Institute for the Crippled and Disabled has grown in respect both to activities in the Medical Center and to staff activities at the Institute. The representatives of the Institute's Prosthetic and Orthopedic Appliance Laboratories stationed at the Hospital have contributed increasingly to the care of patients and to the functioning of a hospital rehabilitation team. Almost all the staff physicians devote time to the Institute and all the physician trainees obtain experience there. There is a regular cross-referral of patients between the two institutions.

Staff organization has been generally stable. Dr. Lucille Tsu Pai, formerly a fellow, became Assistant Physician. Mrs. Edith Hansen, Chief Physical Therapist, retired after 25 years of loyal service and was succeeded by Miss Mary Cover who was promoted from Supervisor of Physical Therapy in the Neurological Institute. Mrs. Helen White resigned from her position as Chief Occupational Therapist to become Coordinator of Occupational Therapy with the United Hospital Fund; Miss

Elizabeth Scully, formerly staff occupational therapist at the Institute for the Crippled and Disabled, succeeded her. The staff in both occupational therapy and physical therapy has been considerably strengthened by several recent graduates of Columbia occupational therapy and physical therapy training courses.

There are at present five physicians in training (a resident and four fellows). To enrich the latter part of training, opportunities for special experience and study have been made available. Dr. John A. Downey, Resident, is working especially on the treatment of rheumatoid arthritis, both in the Physical Medicine Clinic and in the Arthritis Clinic of the Medical Service. Joint conferences with Dr. Seymour C. Post of the Psychiatric Service and representatives of the Orthopedic Service, Social Service Department and Nursing Service have been valuable.

Dr. Downey and Dr. Robert C. Darling are studying the effect of salicylates on exercise performance, utilizing the special treadmill room in the College of Physicians and Surgeons, which was constructed through the aid of the Bernard Baruch Gift. Clinical research is being carried on, exploring the value of ultrasound. At the Institute for the Crippled and Disabled, Dr. Shyh-Jong Yue is continuing his studies of prevocational medical evaluation in cerebral palsy and of newer developments in prostheses.

The committee concerned with coordinated activities in rehabilitation in Columbia University and its clinical affiliates has become active in surveying the areas for possible strengthening of the affiliations, particularly with the Institute for the Crippled and Disabled. Dr. Darling, as representative of the College, is chairman; Dr. Frank Stinchfield of the Orthopedic Service, is representing the Hospital.

Dr. Darling is chairman of the clinical advisory committee on the Study of Convalescent Care being conducted by the Division of Hospital Administration of the School of Public Health and Administrative Medicine. With Dr. Abraham Jacobs of Teachers College, he conducted a course in that College on medical aspects of disabilities and rehabilitation for rehabilitation workers in vocational and related fields. He contributed to the Institute on Rehabilitation Center Planning, conducted by the Conference on Rehabilitation Centers in Chicago and to the National Conference of Medical Directors of Physical Therapy Schools. Dr. William Benham Snow addressed a meeting of the Therapists Division of the New York State Department of Health on the Importance of Physical Medicine in Geriatric Medicine, and he continues his contributions to the New York City school program for handicapped children. Dr. A. David Gurewitsch traveled for four weeks in Russia observing medical and other

activities there; since returning, he has lectured on his observations to numerous medical and lay groups. His assistance has been valuable with Russian visitors to the Medical Center since his return. Dr. Morton Hoberman received a commendation for an exhibit of his work at the Joseph Bulova School of Watchmaking, which was shown at the meeting in London of the International Society for the Welfare of Cripples.

The Service is indebted to the Office of Vocational Rehabilitation, U. S. Department of Health, Education, and Welfare, for support of the fellowship training program. Additional funds from the same source support incidental expenses of the training including research experience. Funds for research have also been available from the Bernard Baruch Gift to Columbia University.

During the year 51,788 patient visits were made to the Physical Medicine and Rehabilitation Service and a total of 89,789 treatments were given. Distribution of these treatments was as follows: 33 per cent to private and semi-private patients, 18 per cent to ward patients, and 49 per cent to clinic patients.



*New clinic facility for evaluating psychiatric drugs in the care of selected patients is backed by research studies which are helping to show how these drugs act to affect the brain and other parts of the nervous system.*

# Psychiatry

LAWRENCE C. KOLB, M. D., *Director*

Better psychiatric, medical and surgical techniques, for both the treatment and prevention of mental illness have in recent years tended to decrease the patient population in mental hospitals and diminish the significance of infectious processes. But these changes have also emphasized the number of those suffering from chronic illness and given the outpatient department a greater importance in the treatment of mental illness. Hospital care has been a traditional focus of the therapeutic services and here has been directed the major therapeutic, teaching, and research interests of psychiatry as well as other medical specialties. The necessities of the times demanded this emphasis. Now it is generally recognized that in psychiatric disorders, and particularly the psychoneuroses, treatment should be aimed at maintaining the patient functioning in the community. Hospitalization is used only as a means of protecting the patient or the community from destructive behavior, providing the patient with relief from ongoing and persistent anxiety that prevents his participation in outpatient therapeutic programs, or allowing the application of therapeutic procedures that are best provided with the skills and special techniques made available by a hospital staff.

There has also been a growing recognition that effective treatment in an outpatient department demands the regular availability over a long period of time of a well-trained staff of psychiatrists, psychologists and social workers. Faced with the need to provide continuing care to the group of illnesses which are notably chronic, clinics which propose to do definitive work of a therapeutic type must develop a highly qualified staff in continuing and regular attendance. National, state and local authorities have recognized these needs by enacting laws and providing funds for the development of mental health clinic facilities. The State of New York is to be commended as the first to provide legislation and appropriations to meet the community mental health problem by providing clinics and other agencies for care.

It is pertinent to review briefly at this time the beginnings of the Vanderbilt Psychiatric Clinic, organized by Dr. Louis Casamajor of the Department of Neurology. It was psychoanalytically oriented and Dr. A. A. Brill was one of those who worked in it during the early days. In 1923, through the efforts of Dr. Thomas W. Salmon who had come on

as Professor of Psychiatry, a grant was obtained in the amount of \$15,000 from the Commonwealth Fund and Dr. Charles I. Lambert was made Chief of Clinic. With this \$15,000, salaries of the social workers, secretaries and psychologists were paid, and a volunteer staff was established.

In order to improve our resources for early diagnosis and prompt therapy for the mental and emotionally disturbed, the organization of the Vanderbilt Psychiatric Clinic was modified over the year. Dr. Robert B. McGraw, who has served as Chief of Clinic with distinction since July 1, 1930 when he succeeded Dr. Lambert, gave up his part-time position in order to allow for the appointment of a full-time clinic director. Dr. Robert Senescu was appointed to succeed him. Dr. McGraw continues to serve on the Executive Committee of the Psychiatric Service and the Department of Psychiatry, College of Physicians and Surgeons.

In the hope of further strengthening the professional staff of the clinic and also to experiment with a night clinic, conversations have been pursued during the year with representatives of the New York Community Mental Health Board. It is hoped that a contractual arrangement may be set up which may be helpful in our future development.

In keeping with the growing awareness of the importance of the outpatient department as the focus for preventive and therapeutic services and the need for using all possible community resources, the recent development of Columbia-Washington Heights Mental Health Project is worthy of note. This project, a collaborative venture between the Department of Psychiatry and the School of Public Health and Administrative Medicine of the College of Physicians and Surgeons has as its aims: 1. To survey and characterize a demarcated urban community of 100 to 150 thousand population (Washington Heights) surrounding the Columbia-Presbyterian Medical Center in terms of (a) Prevalence of mental illness and emotional maladjustments known to the medical profession and to the community's many agencies and organizations, (b) identification of mental health resources available to this population group and the degree to which known needs are being met or could be met, (c) determination of the attitudes of the community toward mental health and illness and identification of potential leaders for community mental health programs. 2. Based on the findings of the steps outlined above, to design an integrated program of community psychiatry.

### *Staff Changes*

To carry out the project described above, Dr. Viola Bernard of the Psychiatric Service was designated as Director of a Division of Community Psychiatry in both the School of Public Health Administrative



Medicine and the Department of Psychiatry of the College. The research team for the project consists of Dr. Bernard, Dr. Margaret Barnard of the College of Physicians and Surgeons, Dr. Bruce Dohrenwend, also of the College of Physicians and Surgeons, and Miss Barbara Kohlsaat. Miss Kohlsaat, who contributed so much to the Service in her capacity as Associate Director of Social Work at the Presbyterian Hospital-Neurological Institute, resigned the latter position to accept the research position for the several years of the project.

Dr. George E. Daniels, who has for years served The Presbyterian Hospital and the Vanderbilt Clinic, was appointed Director of the Columbia Psychoanalytic Clinic, to succeed its retiring Director, Dr. Abram Kardiner of the College of Physicians and Surgeons. Dr. Daniels' appointment reduces the time that he will be able to give to the Service of Psychiatry. The function and interrelationship of the Psychoanalytic Clinic with the Service of Psychiatry is described further in the section of this report on Therapeutic Programs.

The following changes took place in the staff of the Service of Psychiatry: The Vanderbilt Clinic Staff was saddened by the death of Dr. Lawson Lowrey whose distinguished contributions to the field of child psychiatry and mental health and whose qualities as an understanding clinical teacher endeared him to his colleagues and students over the many years of his service.

Dr. John Levbarg retired after many years of devoted service. Leaves of absence were granted to Drs. Edward Tauber, Robert Mearin, and Robert B. McGraw. Resignations from the staff were submitted and accepted from Drs. Elizabeth Bryan, Edith Buyer, John Frank, Herbert Holt, George Lake, Joost A. M. Meerloo, and Eda Priest. New staff members are Drs. Andre Ballard, Eugene Forster, Sheldon Gaylin, John Price, Judith Schachter, David E. Sobel, William Weber, and Bernard Wilkins.

The pediatric psychiatric clinic was distressed to learn in the summer of 1957 of Dr. Benjamin Balser's illness and his inability to participate in the work of the clinic during this year. During the year Dr. Elizabeth Huff joined the staff in June 1957, and Dr. Soll Goodman, who had served in the adult psychiatric clinic, returned to take active part in the pediatric clinic and in the children's service of the Psychiatric Institute. Dr. Hidro-Frank curtailed his activities on the Service when he assumed his new duties at the Psychiatric Institute. In the fall of 1957, Mrs. Herta Wertheim, who had made a valuable contribution to the diagnosis and care of our preschool patients, found it necessary to withdraw from her volunteer work. It is hoped that she will rejoin us over the next year.

### *Clinical Psychology*

Within the past year, on the recommendation of the Psychiatry Committee of the Medical Board, the clinical psychologists of the Medical Center were organized into an integrated administrative unit under the professional jurisdiction of the Department of Psychiatry. This unit is at present under the administrative coordination of Dr. Arthur Carr of the College of Physicians and Surgeons, who also holds the post of Senior Clinical Psychologist at the Psychiatric Institute. Miss Louise Hewson, Chief Psychologist of the Neurological Institute, serves as Assistant Coordinator. Concurrent with this reorganization, one full-time psychologist was assigned to the adult psychiatric clinic, an educational program to acquaint other professional services with the potential contribution of clinical psychology was undertaken, and a new method of referral for psychological examination was initiated in an effort to provide maximum utilization of the present limited facilities.

In conjunction with the College of Physicians and Surgeons, a training program for clinical psychologists at the pre- and post-doctoral levels is to be established with the assistance of a grant from the National Institute of Mental Health. Although this grant includes the immediate establishment of one senior training position and two pre-doctoral internships, approval was not received until the latter part of the year so the program will not begin until 1958.

Earlier it was mentioned that the Columbia Psychoanalytic Clinic provides an important, if limited, service for selected patients who come to psychiatry for treatment. Referral to this clinic is easily made through the Service Treatment Committee. Many of the attending staff of the Service also have teaching appointments in the clinic. The Columbia Psychoanalytic Clinic was the first center for training graduate physicians in the technique of psychoanalytic medicine to be established within a university medical center. It operates directly under the Department of Psychiatry, Columbia University, College of Physicians and Surgeons. The Clinic opened for training 13 years ago, with Dr. Sandor Rado of the College of Physicians and Surgeons as its first Director. Dr. Rado retired in 1955, and Dr. Abram Kardiner of the College of Physicians and Surgeons was Director from 1955-57. On July 1, 1957 the Clinic welcomed Dr. George E. Daniels as its new Director.

One of the most important aspects of training psychiatrists in psychoanalytic medicine is the treatment of outpatients, under supervision. For this reason, the Psychoanalytic Clinic has four therapeutic services available: Reconstructive Therapy, on which service patients are seen four to five times weekly for two to three years in psychoanalytic treatment.

For those patients who require less intensive treatment, there is a Reparative Service. Patients are seen here for a nine month period, twice a week. There is also a Service for Medical Patients which is concerned with those persons with psychosomatic conditions such as ulcerative colitis, ulcers, dermatitis, etc. Here, treatment usually terminates after nine months and the patient is seen one to three times per week. In 1955 a service for disturbed children was inaugurated. Children are seen for a nine month period, twice a week. Facilities are available for treatment of parents where indicated. Since the Psychoanalytic Clinic is essentially a training and not a service clinic not all patients who apply for treatment can be accepted. The Clinic has its offices in the Psychiatric Institute.

Last year approximately 1,000 application blanks were sent to persons seeking treatment. About 60 per cent of these carried through on their initial request and submitted the formal application. From January 1, 1957 until the end of the year, a total of 238 people have been in treatment. At present there are 138 patients receiving treatment on the following services: Reconstructive Therapy, 57; Reparative Therapy, 32; Service for Medical Patients, 40; Children's Service, 9.

### *Improved Clinic Program*

Improved programs of treatment were available in the Vanderbilt Clinic during the year. Among these were group therapeutic sessions for female patients offered by Dr. Bernard Schoenberg. The therapeutic activities of the psychiatric resident staff also contributed immensely to both the diagnostic and therapeutic work. Those members of the attending staff who contributed to the supervision of the various resident groups were, particularly, Drs. John Cederquist, John A. Cook, Arnold Cooper, Elizabeth Davis, Horace DeWitt, Charles Hogan, Pierre Lacombe, Alfred Messer, Ruth Moulton, Seymour Post, Edward Tauber, Albert A. Rosner, William R. Watson, Robert J. Weiss, and Robert A. Senescu. Special mention should be made of the valuable contribution made by Dr. Weiss both in the activities of the Vanderbilt Psychiatric Clinic and in the Residency Psychiatric Program of the Hospital. Dr. Weiss currently holds a National Institute of Mental Health Trainee Grant.

The in-patient consultations at the Hospital for the year totaled 661. In the emergency room 301 patients were seen in the same period. At the Vanderbilt Psychiatric Clinic approximately 3,000 treatment hours were devoted to 400 patients; the average time spent with each patient was between 7 and 8 hours. It may be mentioned that the increasing number of diagnostic consultations and therapeutic hours are related

directly to the development of the residency training program and its support by the superb group of experienced supervisors.

Dr. Sidney Malitz and his associates continued their evaluations of new pharmacological agents in the treatment of ambulatory patients in the outpatient services. The work is of too short duration to make definitive statements as to the impressions of drugs currently under study. A number of new phenothiazine derivatives and other tranquilizing agents have been or are in the process of being evaluated. These include SKF 5116, DC 674, KS 75, TP 21, KS 33 and Zoxazolamine. Concurrent animal studies on these drugs are being performed at the Psychiatric Institute. Also being studied is TZ 11 and IT 403, a recently synthesized drug with anti-depressant properties.

Clinical studies of two derivatives of d-LSD-25, ALD 52 and MLD 41 have been started in both patients and normal volunteers at the Psychiatric Institute.

In order to meet the needs of the clinic and provide a better screening of patients as they enter the clinic, a psychiatric resident has been assigned to the admissions desk of the Vanderbilt Clinic. To our knowledge this is the first time that such an arrangement has been made in any large clinic operation. This resident is responsible for the immediate detection and distribution with appointment of new patients coming to the clinic with mental and emotional disorders.

### *Teaching*

The reorganization of the Vanderbilt Psychiatric Clinic led to major modifications in instruction of medical students. Students are now given direct responsibility for the initial interview and study of patients admitted to the Clinic. Students are supervised in groups of two by members of the attending staff. In addition, a general clinical seminar for the students has been arranged for Mondays of each week. With the active participation of the student in the management of the patient and with the contribution of the resident staff in student training both the motivation of the student and service to the patient has greatly improved.

In the Group Clinic Dr. Bernard C. Holland was assigned responsibility for the psychiatric consultation service. Under his leadership, two psychiatric consultants report to the Group Clinic each afternoon and assist both students and attendants with the patients' psychiatric problems. On Mondays and Wednesdays, from 4-5 p.m., conferences are held with the senior students who present for discussion a patient seen in the Group Clinic. Dr. Holland, Dr. Weiss, and Dr. Soll Berl have taught in these conferences.

At the invitation of the Department of Nursing, Drs. Weiss and Senescu conducted a weekly faculty seminar with staff members of the School of Nursing. General problems of nursing, training and the psychiatric education of nurses are the subtopics for discussion. Dr. Elizabeth B. Davis participated in seminars on the psychiatric aspect of cases for the Social Service Department of the Hospital.

### *Pediatric Psychiatry*

The strengthening of the relationship between the Pediatric Psychiatric Clinic and the Children's Psychiatric Services of the Psychiatric Institute continued, following the lines described in last year's report.

During the past year the supervised services of third-year medical students have been used for many of the children referred for psychiatric consultation or treatment. The student studies are of invaluable assistance to the staff in determining the treatment needs of the children seen and in planning whether these can best be met here in the Medical Center or elsewhere in the community. In addition to providing a significant service for the children and their parents and a valuable training experience for the medical student, this use of the clinical clerk endows him with a sense of satisfaction as an integral member of the Service. For this experience the students attend both at the Pediatric Psychiatric Clinic and the Children's Outpatient Department at the Psychiatric Institute. The student becomes acquainted with the interviewing of children and their parents, and obtains some experience in the clinical psychiatric evaluation of the child and an understanding of the dynamics of symptom formation as they derive from disturbances in parent-child relations.

In order to provide close teaching supervision each instructor is assigned as preceptor of two or three students. The instructional group includes Drs. Benjamin H. Balsler, John P. Briggs, Marynia F. Farnham, John P. Lambert, William S. Langford, Kathryn F. Prescott of the Psychiatric Institute, Percy E. Ryberg, William A. Schonfeld, David E. Sobel, Raymond Sobel, Exie E. Welsch of the College of Physicians and Surgeons, and Virginia N. Wilking, with Dr. Rodman Gilder, Jr. who returned this fall after a year's leave of absence, and Drs. Huff and Goodman who joined the staff in the fall of 1957. The senior resident on child psychiatry, Dr. Joanne Lloyd-Jones, has participated in the program of instruction since the beginning of October, 1957.

As a part of the clerkship, Dr. Harlow D. Dunton provided clinical demonstrations of the more severe psychopathologies seen in children.

In addition to the work of this instructional group, the medical teach-

ing was supplemented by the contributions of Miss Elma Olson, psychiatric social worker of the Pediatric Psychiatric Clinic, and Miss Harriet Sternberg, psychiatric social worker of the children's psychiatric services of Psychiatric Institute. Their contribution adds a valuable experience assisting the student to assess in a practical way the use and availability of community social agencies.

Dr. Briggs, Drs. Lothar Gidro-Frank, Dunton, and Elizabeth Huff provided therapeutic services for children in the clinic, both in the Pediatric Psychiatric Clinic and at the Psychiatric Institute.

During the year several graduate pediatricians, by special arrangement, attended the Pediatric Psychiatric Clinic in order to increase their knowledge of the psychiatric aspects of pediatric practice.

As is the common experience in clinical psychiatric facilities for children, more children who need definitive psychiatric care are referred than the resources of the professional staff can meet. In part, this is due to the limited time available for therapeutic service, a situation which should improve when arrangements are completed to establish training facilities for career child psychiatrists. In addition, the capacity to provide such services is restricted by the inadequate number of psychiatric social workers. Down through the years the services of competent and trained psychiatric social workers have proven exceedingly valuable, since the social worker is usually assigned to assume responsibility for working with one or another member of the family. The fact that the child is not an isolated entity presenting a behavior problem but is a member of an interacting family unit is no longer a matter of question. The psychiatrist alone may not act as a therapeutic agent for all members of a disturbed family group. Here the social worker provides the additional help, as a member of the therapeutic team, that leads to effective treatment programs.

### *Language Disorder Clinic*

It seems worthwhile to mention the contributions of the Pediatric Language Disorder Clinic to the care of children in the Medical Center. This clinic, which functioned from its inception in 1941 as one of the specialty clinics within the Pediatric Outpatient Department, was designated as an integral part of pediatric psychiatry in 1953. It now is under the direction of Mrs. Katrina de Hirsch, Licentiate, College of Speech Therapy. The clinic meets two mornings a week. With Mrs. de Hirsch were Mrs. Jeanette Jansky since April 1953, and Mrs. Ann C. Turner since December 1955. This fall they were succeeded by Mrs. Jean Jordan, in October, and Mrs. Marion G. Carr in November. Again,

due to lack of available time, the clinic is able to offer only a limited amount of remedial reading and remedial speech work. Nevertheless, there have been a number of children with aphasic conditions for which the clinic has rendered great service in the development of language facility. Mrs. de Hirsch's skill and capacity to stimulate interest in her field have provided valuable learning experience for pediatric residents as well as staff members. A number of important publications have emerged from her work in the clinic.

During the year a decision was finally made that children through the age of 15 would initially be the responsibility of the child psychiatry services. The plight of the adolescent, for whom no special services have been designed in hospital or clinic practices, is well known and now receives greater attention across the nation. Since the adolescent still has a growing and developing personality as well as body, it has seemed logical to assign his problems to the child psychiatric services. Also, in practice, many pediatricians continue to see their young patients through the adolescent period. Furthermore, in the legal structure of the community adolescents who get into trouble are considered juvenile delinquents until the sixteenth birthday when they become youthful offenders. Nevertheless, when admitted either to The Presbyterian Hospital or at the Psychiatric Institute they must enter on the adult wards, and for general medical outpatient care they are seen on the adult services. It is not planned to establish a special adolescent unit within pediatric psychiatry or on the child psychiatric service of the Psychiatric Institute, but to assimilate these youngsters into the ordinary clinical practice by making special provisions for their management. During the past year children between 13 and 16 were registered to the service at the rate of 5 to 7 a month. Children who are involved with the law are not suitable for active treatment in our clinics due to the inordinate demand on time of personnel when legal matters intervene in treatment programs. This is not considered, however, as depriving such adolescents of treatment since most courts already have some psychiatric facility.

### *Research*

During the year a number of new investigations were instituted. Dr. Holland is examining various metabolic disturbances in the psychoses. Three aspects of these metabolic relationships are under study. They are: (1) The relation of adrenalin and nor-adrenalin to the symptomatology seen in neurotic and psychotic patients; (2) the activity of the adrenal cortex in schizophrenia; and (3) the relationship of porphyrinuria to the symptoms seen in patients with porphyria.

Dr. Joseph Schachter is developing equipment and plans for an investigation of the physiological reactivity of newborn infants, as part of a longitudinal study of emotional behavior.

With the cooperation of Drs. William Seaman, Morton Kligerman, and Norah Du V. Tapley of the Service of Radiology, Dr. Senescu, with the assistance of Drs. Carr, Judith Schachter, and Bernard Schoenberg, has been studying the emotional responses of patients in the Radiotherapy Clinic to neoplastic disease.

Dr. Weiss, with the aid of Drs. Carr and Schoenberg, and in conjunction with the Service of Dermatology, is engaged in a project which aims to determine which patients with neurodermatitis are responsive to brief directed psychotherapy.

Dr. Donald B. Douglas with Dr. Leon Roizin of the Neuropathology Department of the Psychiatric Institute has been doing studies on the localization and distribution in the central nervous system of LSD-25, using C-14 tagged molecules.

Dr. Berl is examining the possible relationship between glutamyl peptides and celiac disease in conjunction with Dr. Paul di Sant'Agnese of the Babies Hospital. In cooperation with Dr. Dominick Purpura of the Neurological Institute, Dr. Berl is also studying the relationship between brain injury, EEG spikes and  $\alpha$ -aminobutyric acid. Other research studies being done by Dr. Berl are the distribution of glutamic acid, glutamine,  $\alpha$ -aminobutyric acid and glutathione in brain areas; the effect of insulin on the metabolism of the substances just mentioned; and the blood brain barrier in relation to these four metabolites — all in conjunction with Dr. Abel L. Lajtha of the College of Physicians and Surgeons.

Dr. Kolb, with Drs. Carr, Alvin M. Mesnikoff and John D. Rainer of the Psychiatric Institute, instituted a clinical investigation of discordant psychosexual development in identical twins. With Dr. Ray E. Trussell of the School of Public Health and Administrative Medicine and Dr. Viola Bernard, he is participating actively in the studies of the Columbia-Washington Heights Mental Health Project.

Dr. Leon Moses is still engaged in several research studies. In collaboration with Dr. Edmund Goodman of the Service of Surgery, a three-lumen naso-gastric tube has been perfected and tested on a series of peptic ulcer patients. His other research studies are in the fields of obesity and essential hypertension.

Dr. Joseph Lubart is now preparing research material derived from a study of a group of non-toxic goitre patients seen in the Thyroid Clinic.

Dr. Hilde Bruch of the Service of Pediatrics continued the study of



obesity by follow-up observations on former child patients. She has reported the findings in book form. She also made systematic observations on the interaction of psychotherapy and medical management in serious cases of anorexia nervosa in adolescents and adults. In addition, she continues a study of the teaching of emotionally disturbed children with the aid of a grant from the Grant Foundation.

### *Staff Activities*

Dr. Hilde Bruch was invited to participate at a meeting of the National Health Council which conducted a symposium on problems of obesity and public education. She was also invited to participate in the Third European Congress on Psychosomatic Research which had as its chief topic "Hilde Bruch's Theory of Obesity."

Dr. Langford was inducted as President of the American Academy of Child Psychiatry in May 1957. He continues as Chairman of the Planning and Policy Committee of the American Orthopsychiatric Association. As a member of the Joint Commission on Mental Illness and Health representing the American Academy of Pediatrics, he was elected a trustee of the Joint Commission in September 1957.

Dr. Kolb was appointed Director of the Institute for Research in Mental Retardation, Columbia University for the period ending June 30, 1960, was elected a Fellow of the New York Academy of Sciences, elected Chairman of The Section of Psychoanalysis, American Psychiatric Association, and Councilor of the New York Society of Clinical Psychiatry. He was appointed Special Consultant of the Department of Health, Education and Welfare and Chairman of the Committee on New Training Facilities, American Psychoanalytic Association. He also served as Visiting Professor at the Lafayette Clinic, Wayne University, Detroit, Michigan.

Dr. Ruth Moulton was elected president of the William Alanson White Psychoanalytic Association.

Dr. Moses in the spring of this year was elected to Fellowship in the American Association for the Advancement of Science and also to the Science Honor Society of Sigma Xi of Columbia University.

Dr. John Cederquist is continuing his research study of juvenile delinquency for the Court of Special Sessions.

Dr. Lubart is serving as a member of a research team studying juvenile delinquency under the auspices of the Court of Special Sessions, New York City.

Dr. John A. Cook was appointed trustee of the Walter E. Meyer Research Institute of Law.

Dr. Zira DeFries is continuing with a clinical investigation sponsored by the Commonwealth Fund to study a group of patients in intensive psychiatric treatment for one to ten years who present a particular character structure in which ethical and moral issues are the main concern.

Dr. Bernard Pacella continues as Senior Consultant for the Kingsbridge Veterans Administration Hospital where a new residency training program is being developed in close collaboration with the Department of Psychiatry, Columbia University. Dr. Pacella was appointed Secretary of the Section on Religion and Psychiatry at the annual meeting of the American Psychiatric Association. He was recently appointed a member of the Ad Hoc Committee on Medical Ethics of the American Psychoanalytic Association.

Drs. Lambert and Raymond Sobel have been appointed members of the Westchester County Community Health Board.

Dr. Tauber of the Vanderbilt Clinic attending staff was appointed Chairman of Faculty and member of Executive Committee of the William A. White Institute. Dr. John Oliven was appointed visiting psychiatrist, Harlem Valley State Hospital. Dr. Percy Ryberg was appointed Clinical Director, Falkirk in the Ramapos Hospital, Central Valley, N. Y. Dr. Martin Schreiber became a member of the Medical Board, Hillside Hospital. Dr. Renatus Hartogs served as Medical Director of the New York Community Guidance Service. Dr. Eugene Forster served as Court Psychiatrist, Psychiatric Clinic of Court of Special Sessions, City of New York.

Dr. Carr was appointed the eastern regional representative for the Society for Projective Techniques and the Rorschach Institute. He is also serving as a member of the Subcommittee on Employment Conditions for the Clinical Division of the New York State Psychological Association.

Miss Louise Hewson participated as lecturer in the First American Congress of Legal Medicine and Law-Science Problems held in Chicago, Ill., under the auspices of the Law-Science Institute of the University of Texas.

The members of the department presented the results of their work in numerous lectures, seminars and other programs both here and abroad throughout the year.

### ***Acknowledgment***

The service is deeply grateful to the Christopher B. Smithers Foundation, Inc. for their recent grant to support the training of a psychiatrist interested in "young people." We are indebted also for a grant, arranged

through the courtesy of Dr. Robert Loeb, from the Hazel Hopkins Ford Fund to pursue the psychosomatic studies on the neurodermatitis project.

Acknowledgment is due also to the various grants made available by the National Institute of Mental Health to the Department of Psychiatry, College of Physicians and Surgeons, and those research projects under the New York State Psychiatric Institute, for purposes of strengthening the teaching of psychiatry to medical students, psychiatric residents, clinical psychologists, and for the Columbia-Washington Heights Mental Health program. All have contributed to our ability to care for patients as well as to our teaching and research activities. We continue to appreciate the warm and close collaboration with our colleagues on all other Services.



*New laminograph makes it possible for radiologists to film ultrathin horizontal sections of the body. This permits physicians to see areas deep within the body. Here radiologist injects radiopaque material into vein. Fluid will outline the pattern of blood vessels in the part of the body being studied.*

# Radiology

WILLIAM B. SEAMAN, M.D., *Director*

During the year the organizational structure of the Service as pertaining to patient care, teaching and resident training was reviewed and certain changes effected. All techniques, equipment and installations were intensively surveyed for radiation safety. A research program was instituted to investigate new techniques and equipment that will allow still further reduction in the amount of radiation received by the patient during diagnostic procedures. The image intensifier installed in Babies Hospital this year has resulted in a marked decrease in the radiation delivered to infants and children during fluoroscopy. More equipment of this type will undoubtedly be needed in the future. Film processing has been improved, reducing the amount of radiation needed for diagnostic examinations.

The trend toward the use of high energy radiation in the management of curable cancer is striking and indicates a need for additional supervoltage equipment. The betatron has been utilized at full capacity. It has also been used for treating patients with brain tumors since preliminary studies suggest that supervoltage therapy is a more effective type of radiotherapy in this disease.

In an initial step toward greater centralization of Presbyterian's radiotherapy service for patient care and toward wider educational opportunities for residents, the radiotherapy training program has been altered to include both Harkness Pavilion and the Neurological Institute. The training in diagnostic roentgenology has been expanded to include experience in urologic roentgenology.

To promote efficiency in ordering and filing X-rays, the hospital unit numbering system is being adopted for X-ray identification. A diagnostic cross-file punch card system has been inaugurated to record X-ray diagnoses. This should be invaluable for teaching and clinical research. A cancer registry index system of ward, clinic and private patients has been instituted to aid in research as well as to facilitate follow-up studies.

## *Personnel*

A number of changes in personnel have occurred. Dr. Samuel H. Madell left to join the staff of the radiology department of the Albert

Einstein School of Medicine. Dr. Jerome Nadelhaft accepted the position of Professor of Radiology at the Chicago Medical School and Director of Radiology at the Mount Sinai Hospital in Chicago. Dr. Donald J. Barnett resigned and entered private practice in Pittsfield, Massachusetts.

Dr. Leonard C. Doubleday joined the staff and is associated with Dr. Juan M. Taveras at the Neurological Institute. Other new staff appointments are Dr. Robert J. Hochstim, Dr. Spinks H. Marsh, and Dr. Alexander D. Crosett, Jr.

The following new residents were appointed: Dr. Robert Silbersweig, Dr. Herbert I. Goldberg, Dr. Normal E. Leeds, and Dr. Henry J. Powsner. Dr. Robert A. Evans returned from military service and Dr. Ergi J. Pesiri and Dr. Ronald W. Glover were given appointments as Visiting Fellows. Doctors David Hayes, Ronald E. Herson, Rob H. Kirkpatrick, and Maurice L. Bogdonoff completed their residency training.

Dr. Charles W. Schwartz, Associate Professor of Clinical Radiology, a member of this department for more than twenty years, passed away October, 1957. Dr. Schwartz had made many contributions to radiology in general and neuroradiology in particular.

Miss Avis Shelley retired after many years of excellent service as chief technician in Harkness Pavilion. This was a great loss since she was not only an excellent technician but a dedicated worker and her friendly manner and efficiency in handling patients was well known.

### *Research Studies and Other Staff Activities*

Dr. John Caffey gave the Ross Golden Memorial Lecture at the New York Academy of Medicine and the Preston M. Hickey Memorial Lecture at Wayne University, Detroit, Michigan. He was also elected honorary member of the Royal Society of Medicine and the American Orthopedic Association. Dr. William B. Seaman participated in a panel discussion at the annual meeting of the American College of Surgery and was guest speaker of the Central New York Roentgen Ray Society in Syracuse.

Dr. Harold W. Jacox continued as Associate Editor of the Journal of Radiology and Co-Editor of the Radiation Therapy Supplement of the Year Book of Radiology. He was appointed representative of the Radiological Society of North America on the American Standards Association. He continued to serve on the Radiological Coordinating Committee of the New York County Medical Society and is a member of the Planning Committee of the New York Roentgen Society for the Eastern Conference of Radiologists. Dr. Jacox is writing a chapter on radia-

tion therapy for a book on lung tumors. He is collaborating with Dr. Fred Vance Lucas of the Service of Pathology in a study of radiation effects of normal and cancerous tissue removed at autopsy and with Dr. C. Zent Garber of the Service of Pathology in a study of the effects of radiation on bone. He is also working with Dr. Equinn W. Munnell of the Service of Obstetrics and Gynecology and with Dr. Howard C. Taylor, Jr., Director of the Service, on a clinical study of the technique and results of treatment of cancer of the ovary.

Dr. Morton M. Kligerman continues as Co-Editor of the Year Book of Radiology and consulting Editor of the Cancer Year Book. He attended a conference on research in radiology at Highland Park, Illinois under the auspices of the Public Health Service. He presented papers at meetings of the American Radium Society, the American Roentgen Ray Society, and the Radiological Society of North America. He represented the American Roentgen Ray Society at a meeting of the sub-committee on acute and chronic effects of atomic radiation, which was held at Brookhaven National Laboratory. He gave a refresher course on rotation therapy with Dr. Edith H. Quimby of the College of Physicians and Surgeons at the meeting of the Radiological Society of North America. Dr. Kligerman and Dr. Daniel M. Shapiro of the Service of Surgery presented work on combination chemotherapy plus radiotherapy to the American Society for Cancer Research.

Dr. Josephine Wells is studying changes in the hips in steroid treated cases of rheumatoid arthritis with Dr. Eli Bauman of the Medical Service and Dr. Frank E. Stinchfield, Director of the Orthopedic Service. With Dr. Charles M. Steer of the Service of Obstetrics and Gynecology, she is beginning a study of the incidence of leukemia in children exposed to radiation during fetal life. Dr. Wells and Dr. Seaman are investigating changes in the cervical spine of patients with rheumatoid arthritis.

Dr. Juan M. Taveras resumed directorship of the X-ray Department of the Neurological Institute in March, 1957, after spending one year as head of the Presbyterian Hospital Division of the X-ray Department. Dr. Taveras was Visiting Professor of Radiology at the Cincinnati General Hospital and attended the Fifth Neuroradiological Symposium in Brussels, Belgium. He was guest speaker of the Radiological Society of Venezuela in Caracas and was made an honorary member of that society. He continues his research activities with Dr. Edward B. Schlesinger of the Service of Neurosurgery on the development and improvement of methods of detecting brain tumors with radioactive isotopes.

Dr. Kent Ellis was responsible for the development of the angiocardiographic program and began a museum file of angiocardiography.

He is studying the radiographic findings in transposition of the great vessels and post-operative gastro-duodenal ulcer. Dr. Ellis and Dr. Hochstim are studying post-operative bone changes in hyperparathyroidism. Dr. Ralph Schlaeger reviewed our experience with intravenous cholangiography and, with Dr. Harold D. Harvey and Dr. Edmund N. Goodman of the Service of Surgery and Dr. Henry Colcher of the Service of Medicine, studied the physiology of the gastric remnant following partial gastric resection.

Dr. Gerhart S. Schwarz exhibited his findings on the clinical value of cephalopelvimetry at the New York State Medical Society Meeting. In collaboration with Dr. Wolfgang Ackermann of the Francis Delafield Hospital, he presented an exhibit of non-neoplastic vertebral sclerosis at the meeting of the American Roentgen Ray Society in Washington. At the Radiological Society of North America Meeting in Chicago he presented an exhibit of the preliminary findings of the use of single-coated emulsion films. He is writing a book on clinical roentgenometry and is investigating the problem of the optimum silver content of photographic emulsions for roentgenography. Dr. Schwarz and Dr. Seaman are investigating the relationship of kilovoltage and radiographic effects with special reference to the construction of exposure guides as well as measuring radiation doses received by patients during diagnostic X-ray procedures.

Dr. Donald W. Johnson was responsible for teaching, research and complete clinical coverage in the field of urological radiology and instituted many technical improvements. Dr. Meyer Alpert was responsible for bone and joint roentgenography and is studying osseous sarcoidosis of the hand with Dr. Robert E. Carroll of the Orthopedic Service.

Dr. J. Luther Jarvis is investigating the incidence of idiopathic adrenal calcification in infants and children in an attempt to correlate this with events occurring at birth or pre-natally. Dr. Norah duV. Tapley and Dr. Kligerman with Dr. Ferdinand F. McAllister of the Service of Surgery and Dr. Julius H. Jacobson of the College of Physicians and Surgeons are investigating the effects of adrenal irradiation on experimentally produced ascites in dogs. Dr. Tapley continues to study the role of radiation therapy on retinoblastomas in conjunction with Dr. Algernon B. Reese of the Service of Ophthalmology.

Mr. George K. Nixon, chief X-ray technician, was elected president of the X-ray Technological Association of New York City and presented a paper on placentography at the Annual Convention of the X-ray Technicians Society of New York State. He was invited to participate in the Institute for X-ray Technicians in Denver, Colorado.



### *New Diagnostic Equipment*

An image intensifier was installed in the X-ray department of Babies Hospital. Two of the gastro-intestinal fluoroscopic rooms in Harkness and two in the Presbyterian Hospital X-ray division were equipped with spot film phototimers and vibrating grids. The bi-plane fluoroscope in the Emergency Ward was replaced with conventional diagnostic equipment. Several minor changes, such as new dictating and transcribing machines, larger quarters for the transcribers, and adoption of the unit numbering system, resulted in increased efficiency in the preparation of X-ray reports. Most of the film viewing boxes were replaced by small compact wall units which have greatly increased the available working space in the film reading areas. New angiocardiographic equipment and a new automatic rapid film processing unit have been ordered.

The work of the Radiological Research Laboratory continued along the lines described in previous reports. There are two separate activities: the research project for the Atomic Energy Commission, and problems allied with therapeutic radiology and with the medical uses of isotopes.

The research project for the Atomic Energy Commission operates under a contract between Columbia University and the AEC, and is under the direction of Dr. Gioacchino Failla of the College of Physicians and Surgeons. It consists of two parts: one concerned with radiologic physics, and the other with radiobiology. The work is carried out by a considerable staff of scientists and technicians. These studies occupy most of the time of Dr. Roberts Rugh of the College of Physicians and Surgeons, half that of Dr. Harald H. Rossi also of the College of Physicians and Surgeons. The work in radiologic physics involves the development of new methods of measuring (1) radioactive isotopes, and (2) tissue doses in terms of energy absorbed per gram of tissue, under various conditions and for all forms of ionizing radiations. The work in radiobiology involves the study of the biological effects of ionizing radiation of particular interest to the Atomic Energy Commission. A full report of work of the project has been issued by the AEC as Document NYO-2081.

### *Laboratory Activities Related to Hospital Work*

As in previous years, the Physics Group (Dr. Rossi, Mr. Francis de Friess, Mr. Richard Leibowitz, Miss Ginette Jacob and Miss Jane Heslin), engaged in a large amount of routine work, as well as consultation. These activities were increased considerably by the establishment of the Radiation Protection Office. This group surveyed most of the X-ray and radium installations in the hospital, checking radiation safety,

as well as actual machine output. In addition, a Film Badge Service was initiated which covers more than 300 individuals. While not a single case of exposure beyond the permissible limit was discovered, data obtained in this service have pointed up a number of deficiencies in technique of some personnel and corrective measures have further reduced the exposures incurred. All radium needles were checked for leakage and a redesign of the radium handling technique is in progress. The Radiation Protection Office engaged in many consultations with persons who were interested in their individual exposures.

Efforts to reduce patient exposure in diagnostic procedures continued. The objective was met both by structural changes in a number of machines and by cooperative studies with several diagnostic radiologists. Tests employing phantoms were made to determine the dose delivered to various body regions during diagnostic procedures. Projects are under way to evaluate still further the dose delivered during diagnostic procedures and a special ionization chamber and phantom have been built which will be used in the measurement of integral dose obtained in a large number of irradiation conditions. A number of systematic measurements of detailed dose distribution in large phantoms have also been performed.

A radiation facility incorporating five curies of cesium 137 is under construction. It will be used for precision calibration of all instruments used in the measurement of X-ray and gamma radiations.

An absolute determination of the output of the betatron was completed and the results presented at the June meeting of the Radiation Research Society.

Mr. Richard Leibowitz joined the Physics Group on April 8, 1957. Miss Ginette Jacob left in September, 1957 and Miss Jane Heslin joined in August, 1957.

The Radioisotope Laboratory, under the direction of Dr. Quimby, continues to receive and standardize all radioactive isotopes of iodine, phosphorus, gold and sodium, and occasional other shipments, and dispense them to clinical and research departments. A scintiscanner was installed and this service is available for patients.

The institutional broad license for possession of radioisotopes continues to be administered by the Institutional Isotope Committee. Dr. Failla is chairman of this committee; Dr. Quimby is also a member. About 80 applications were received and reviewed during the past year. Both regular diagnostic and therapeutic services and special cooperation with other groups on research projects continue to be carried on. All members of the staff are frequently consulted on such projects, and Drs.

Quimby and Rossi are actively cooperating in some studies.

In addition to their functions within the institution, members of the staff of the Radiation Research Laboratory take part in a wide variety of activities in national and international organizations.

Dr. Failla has continued to be active in work with the Atomic Energy Commission and other government agencies, both civilian and military, on problems related to atomic energy. He was Chairman of the Advisory Committee for Biology and Medicine of the AEC until July 1, 1957, and is a Consultant to the Division of Biology and Medicine of the AEC. He is a Consultant to the Brookhaven National Laboratory and the Argonne National Laboratory. He is a member of the Scientific Advisory Board of the Walter Reed Army Institute of Research and of the Advisory Panel on Medical Sciences of the Department of Defense. He is Chairman of the Radiation Instrument Panel of the Armed Forces Special Weapons Project, and a member of the Genetics Panel of the National Academy of Sciences. He is Vice-Chairman of the International Commission on Radiological Protection, a member of the International Commission on Radiological Units and of the Commission on Radiologic Units, Standards, and Protection of the American College of Radiology. He served as Vice-Chairman of the Symposium on "Marine Biological Applications of Radioisotope Research Techniques" in Naples, Italy in September, 1957.

Dr. Quimby is a member of the Advisory Committee on Isotope Distribution of the Atomic Energy Commission, of the National Committee on Radiation Protection, of the Committee on Handling and Disposal of Radioactive Isotopes of the International Commission on Radiological Protection, and of the Commissions on Education and on Radiological Units, Standards, and Protection of the American College of Radiology. She is an examiner for the American Board of Radiology, a consultant for various medical groups, and on the editorial advisory Boards of Radiology and Cancer.

Dr. Rugh, director of the Radiobiological Division of the Radiological Research Laboratory, is a member of Subcommittee M-1 of the National Committee on Radiation Protection, established for the study of standards and measurement of radioactivity for medical and radiobiological use.

Dr. Rossi is Chairman of Subcommittee 4 of the National Committee on Radiation Protection, dealing with heavy particles (neutrons, protons, and heavier), and has completed the draft of a Handbook on Neutron Protection up to 30 MEV.

## STATISTICS OF PATIENT CARE

## DIAGNOSTIC DIVISION

	1957		1956
	<i>Patient Visits</i>	<i>Examinations</i>	<i>Patient Visits</i>
P.H. ....	54,385	61,858	54,560
H.P. ....	26,972	31,475	27,245
B.H. ....	9,592	9,592	10,475
N.I. ....	6,291	12,568	6,733
Urology .....	4,772	8,385	4,672
Ophthalmology .....	705	705	681
Chest survey .....	16,603	16,603	18,576
Total .....	<u>119,320</u>	<u>141,186</u>	<u>122,942</u>

## RADIOTHERAPY DIVISION

	1957		1956	
	<i>Treatments</i>	<i>Patients</i>	<i>Treatments</i>	<i>Patients</i>
P.H. ....	5,245	348	6,011	448
H.P. ....	7,081	531	7,565	686
N.I. ....	4,538	221	5,541	257
Ophthalmology .....	616	66	714	63
Radium .....	69	67	79	79
Isotopes .....	89	89	64	64
Total .....	<u>17,638</u>	<u>1,322</u>	<u>19,974</u>	<u>1,597</u>

The figures for P.H. and H.P. include 179 patients who were given a total of 3,560 treatments on the Betatron. In 1956, 159 patients were given 3,329 Betatron treatments.

# Surgery

GEORGE H. HUMPHREYS, II, M.D., *Director*

Preservation of a proper balance between well-established or "standard" operations and the ever increasing number and variety of complex procedures characteristic of modern surgical advance, while maintaining a high standard of individual patient care, has become a major concern of the Service. With a fixed limit on beds, operating room time and house staff number, it is evident that the desirable development of new procedures often must carry with it difficult adjustments. A tendency to overcrowd beds, schedules and staff assignments is inevitable. The proportion between balanced service activity, on which the teaching and training program depends, and private practice, on which the now almost wholly geographic full-time attending staff depends for support, has also become a cause for concern. In addition, the tendency to form new subdivisions of special interest, often crossing departmental lines, to bring the wide variety of specialist competence together for the benefit of the patient, presents a particularly difficult challenge in organization.

The following comparative statistical summary presents a rough index of numerical trends for the past seven years. The total number of operations increased steadily from 1951 to 1956, when we reached a peak of almost 6,000. In 1957 it decreased appreciably, the decrease occurring altogether in the ward patient group — an undesirable trend. At the same time it is evident that since 1951 the "standard" procedures which form the solid teaching base of the Service have not increased in proportion to more complex operations. The latter require more staff effort, more operating room time and more hospital bed days for fewer total patients admitted. It is inevitable that these complex procedures, many of which are new and developmental, will be more frequent in the ward patient group.

## *Statistical Table*

### TOTAL OPERATIONS

	1951	1956	1957
Surgical Service . . . . .	4,105	5,926	5,318
Per Cent Ward Operations . . . . .	53%	45%	38%

## CLASSIFICATION

## A. "Standard"

Thyroid .....	364	348	326
Gastro-Intestinal .....	530	651	641
Appendix .....	203	181	189
Gall Bladder, Pancreas .....	341	489	469
Hernia .....	320	481	500
Other Abdominal .....	309	370	462
Rectal .....	307	335	335
TOTAL .....	2,374	2,855	2,922

## B. "Complex"

Thorax, Cardiovascular .....	164	304	359
Breast .....	328	507	640
Superficial & Plastic .....	675	958	1,065
TOTAL .....	1,167	1,769	2,064

C. Babies Hospital .....	564	1,302	422
Transfusions .....	13,537	11,457	12,934
Recovery Room .....	7,771	9,824	10,326

The decline in Babies Hospital operations does not reflect a decline in Pediatric surgery. It is, rather, a reflection of the same trend toward more complex operations. Because of the overcrowding in the Babies Hospital operating rooms, the lack of adequate anesthesia facilities and the absence of a recovery room, many of the more difficult operations on children cannot be performed with safety there. These children are, in consequence, operated upon in the adult operating rooms, thus increasing pressures on the 18th floor. The steady increase in recovery room admissions (which includes specialty as well as general surgical cases), is another expression of this trend. Reconstruction to improve the Babies Hospital operating room facilities is urgently needed, and plans are being drawn for this purpose.

After many months of laboratory preparation in the elaboration of surgical and mechanical techniques and in the development of teamwork in utilizing them, open heart operations were begun on patients. The first operation was performed on September 25, 1956 and in the past 16 months more than 20 such procedures have been carried out. It is interesting to know some facts in relation to these operations which are now being performed with increasing frequency and facility throughout the world. Every time such a procedure is carried out the immediate services of 17 persons are required for the performance of an operation, the crucial part of which may last only 15-20 minutes though the operating room must be set aside for the entire day. The team includes 4 surgeons,

3 anesthetists, 3 persons to operate the pump-oxygenator and 2 persons to operate, observe and report the findings of measuring devices which record vital functions continuously. In addition four specially trained sterile and unsterile nurses assist at the operation. The services of the blood bank are indispensable in preparing and supplying the proper type and amount of blood. The work of the bank alone in making feasible the safe handling of blood for these operations has required months of experimentation and research to develop types of apparatus and select materials for their construction which shall harm blood constituents the least and yet handle them efficiently. The physiological considerations involved in solving all these problems have at times seemed insurmountable.

The best results from operation have been obtained in patients with simple septal defects. One of the patients operated upon was found to have a large tumor of the heart. It was completely and successfully removed. As experience increases, operative and technical procedures improve and their performance becomes more familiar, correction of many of the more serious and more complicated congenital and acquired cardiac defects may be expected. The era ushered in by the successful performance of these operations has been likened to the introduction of anesthesia and aseptic technique.

Management of the surgical and technical procedures involved in the care of these patients is in the hands of a team consisting of Dr. George H. Humphreys, II, Dr. Shivaji Bhonslay, Dr. Ralph Deterling, Dr. F. F. McAllister, Dr. Aaron Himmelstein; Residents, Drs. Albert Starr, Norman Thomson and James Malm; Dr. Erwin Simandl, Research Fellow, Dr. Ottheinrich Hase of the Department of Anatomy, and Mr. Yousif Al-Naamen of the Department of Surgery. In addition Dr. Sidney Blumenthal and his group from Pediatric cardiology, Dr. Howard Bruenn and his group from Medical cardiology, Dr. Alfred Fishman and his group from the cardio-respiratory laboratory, Dr. Emanuel Papper and an assigned group from Anesthesiology, Dr. John Scudder and the blood bank service, and Dr. William Rogers of the Department of Anatomy, are integral and invaluable members of the team.

The importance of well organized teamwork is obvious if procedures of this sort are to be successful. In order to achieve this, two surgeons have participated in every operation, and the others have rotated in turn, while members of the Anesthesiology, Cardiology and laboratory groups are constantly in attendance both in the operating room and in the critical postoperative period.

Similar teamwork is essential in other special areas. In head and

neck surgery an effective team, including general and plastic surgeons, oral surgeons and radiologists have been working for several years under the direction of Dr. John Conley of the Service of Otolaryngology. A maxillofacial team, headed by Dr. George Crikelair of Plastic Surgery and including pediatric, otolaryngological, oral surgical and dental members is being formed, and a team with special interest in surgery of the hand is contemplated.

### *Service and Staff Activities*

The appointed time for the retirement of Dr. David C. Bull arrived during the past year. This event is so stated because, as with so many of these separations, there seems to be something artificial about it. At the time it is difficult to imagine the Surgical Service without those who retire from it, and yet, somehow it is perpetuated by those who remain. Dr. Bull says of his work that he was "the hewer of wood and the carrier of water for Allen O. Whipple." By this he may have meant that he was chief of the Surgical Out-Patient Department from 1923 to 1928 and when the Hospital moved to 168th Street became Chief of Surgery in Vanderbilt Clinic. He saw service on the Mexican Border in 1916 as a member of Squadron A Cavalry in the New York National Guard. In 1917, he was a 1st Lieut. and then Captain in the Medical Corps of the 107th Infantry in the American Expeditionary Force. The bare facts show that he received the Purple Heart, the Silver Star and Selective Service Medal decorations. More than that probably will never be known from him of these achievements.

He has always been interested and very active in the field of vascular surgery and blood replacement. He was a Founder, Medical Director and Chairman of the Board of Medical Control and Trustee of the Blood Transfusion Association and a member of the Medical and General Advisory Committee of the American Red Cross Blood Program. At times utterly inscrutable, he is a master of the unfathomable quip which remains so until light ultimately dawns and it is realized that his perception of a situation has been accurately summarized or his characterization of a personality has been neatly appraised. Although he is retired, we hope to see much of him in the capacity, if of none other, of David Chapman Bull.

Honors and elections to office came to many members of the Service. Dr. Arthur Purdy Stout was awarded the James Ewing Medal of the James Ewing Society. Dr. George H. Humphreys was elected President of the New York Surgical Society. Dr. David Habif was elected Secretary-Treasurer of the Halsted Society. Dr. Philip D. Wiedel served as



Chairman of the Committee on Admissions to the New York Academy of Medicine.

Dr. Ralph A. Deterling, Jr. was re-elected Treasurer-General of the International Cardiovascular Society. Dr. Deterling contributed a chapter on the surgical treatment of pulmonary emphysema in a volume on Pulmonary Emphysema written by Dr. Alvan Barach and Dr. Hylan A. Bickerman of the Medical Service. He also wrote a chapter on blood vessel transplantation in Vol. II of a book entitled "Transplantation of Tissues," by Peer, Williams and Wilkins.

Dr. Arthur H. Blakemore was elected President of the Vascular Society. With Dr. Arthur Voorhees, Dr. Blakemore published in June, 1957, a detailed description of the operative technique in portacaval shunt operations which he and Dr. Allen O. Whipple originated in The Presbyterian Hospital in 1943.

Recent staff appointments of surgeons who have completed their residency training at Presbyterian reflect the wisdom of a broad residency program which incorporates an opportunity for research and increasing patient responsibility. On September 1, 1957, Dr. Keith Reemtsma was appointed Assistant Professor of Surgery at Tulane University and at Charity Hospital, New Orleans, Louisiana. During his residency, Dr. Reemtsma in addition to his clinical and teaching interests and responsibilities was active in the research projects of the Surgical Metabolism Unit, particularly in the problem of fat absorption. He received the degree of Doctor of Medical Science from Columbia University on the basis of original research on the pathological anatomy of the cardiac conduction fibres in congenital heart disease.

On January 1, 1957, Dr. Richard Britton joined the surgical staff of the Cleveland Clinic. As a surgical intern, Dr. Britton worked with Dr. John Lockwood on fibrolysin. After returning from service, he worked with Dr. Habif on metabolic studies of patients with portal hypertension. Since becoming a surgeon at the Cleveland Clinic, he has performed the first portacaval shunt to be carried out there.

Dr. Albert Starr, after completing the residency in thoracic surgery, on June 30, 1957, joined the staff of the University of Oregon Medical School in Portland, Oregon. He is in charge of the research program in open heart surgery. During his residency, Dr. Starr worked with Dr. Bhonslay and Dr. Deterling in the Laboratory of Experimental Surgery on the problems of extracorporeal circulation and blood vessel replacement.

Dr. Hugh F. Fitzpatrick received an appointment at St. Luke's Hospital in charge of the surgical research laboratory on the service of Dr. Harold Zintel. Previous to his residency at The Presbyterian Hospital,

Dr. Fitzpatrick had worked out ingenious techniques for recording cardiovascular changes during major blood vessel and heart operations. During his residency he contributed enormously to the studies being made on patients undergoing these operations — studies which furthered the development of research leading to the performance of major blood vessel and open heart operations.

Dr. Charles Rob, Professor of Surgery at St. Mary's Hospital in London, England, visited the Hospital as Surgical Director pro tempore during the week of October 17, 1957. In this capacity, he delivered a lecture to the professional staff of the Medical Center on the indications for, technique and results of replacement of blood vessels in vascular disease of the extremities.

Among other foreign visitors, the Surgical Service was host to a group of Russian surgeons who presented a film on experimental transplantation of the heart. Professor Shigetsugu Katsura, Professor of Surgery at Tokohu University, Sendai, Japan, presented a film showing his technique for transplantation of a segment of jejunum to an area of resected esophagus. Professor Edmondo Malan, Director of the Department of Surgery at the University of Genoa, Italy, presented a paper at one of the Surgical Staff Conferences on the syndromes resulting from dilatation of normal arteriovenous shunts in the lower extremity. At another Staff Conference, Dr. Emilio Etala of Buenos Aires discussed the technique of total gastrectomy and Dr. Vojislav Stojanovic of Belgrade, Yugoslavia, discussed the technique of pericardectomy.

As usual, several surgical programs were presented at the request of surgical organizations from other parts of the country and to alumni of the Surgical Service on Alumni Day in April. Dr. John Powers, Director of Surgery at the Mary Imogene Bassett Hospital in Cooperstown, New York, gave the second Leon E. Sample Lecture on "The Hazards of Rural Living" to combined staff groups from Surgery, Orthopedics and Anesthesia. In January, a large group from the Surgical Service and surgeons from other parts of the world who were trained by Dr. Allen O. Whipple gathered in Boston at the 2nd Annual Meeting of the Allen O. Whipple Surgical Society presided over by Dr. E. D. Churchill at the Massachusetts General Hospital.

### **Research**

Ten years ago, the late Dr. John Lockwood received "a generous grant from the United States Public Health Service," as the annual report of 1947 states. This, with the cooperation and the assistance of the Hospital and the Medical School, made possible the establishment of the

Surgical Metabolism Research Unit which was installed and has continued to function on 14 East. At that time this was a new and very significant trend in the activities of surgical services in teaching hospitals. Its results are today so obviously valuable in the training of surgeons and in the practice of surgery that basic as well as clinical research are taken for granted as indispensable activities of all good surgical services. The purpose of the grant was to provide for long-term study of nutritional and metabolic disturbances in patients requiring major surgery. After this interval, it is interesting and gratifying to note the influence which this astute foresight has had upon the care of patients, the training of residents and the productive research activities of members of the house and attending staffs.

The Surgical Metabolism Unit was in operation by the end of 1947 under the direction of Dr. Lockwood. During the remainder of that year and the year following he, with Surgical Residents Dr. H. T. Randall and Dr. D. V. Habib began their important studies on water and electrolyte balance which brought together the significant data of earlier research as they related particularly to the management of surgical patients. Today these are regarded as basic expositions of physiologic responses to trauma and are in wide use in surgical practice throughout the world. Many of the problems studied in this unit crossed the borders of other fields of investigation and practice. One of these was thromboembolism which was of great concern to cardiologists, internists and neurologists as well as to surgeons. The laboratory and small five-bed ward adjacent to it which constitute the unit undertook investigations of this problem by Dr. Habib and Drs. S. W. Cosgriff and R. J. Cross of the Medical Service. This work helped greatly to clarify the disparate views held at that time regarding surgical versus medical measures in treating this frequent surgical complication and in evaluating drugs and methods of management now in common use in controlling it on both short-term and long-term bases.

Studies in nitrogen balance and in the use of supplemental nitrogen administration to depleted surgical patients were carried out in cooperation with Dr. S. C. Werner of the Medical Service. More recently, Dr. H. G. Barker, present director of the unit, with the assistance and participation of various surgical residents, has investigated the absorption of fat under various normal and pathological conditions. With the assistance of Drs. E. M. Papper, H. F. Fitzpatrick of the College of Physicians and Surgeons, H. F. Lowrance, C. McC. Smythe, former staff member, and S. E. Bradley, the Services of Anesthesia, Medicine and Surgery have cooperated in investigations of hepatic and renal function under various

types of anesthesia at operation and in the immediate postoperative period. These studies have helped greatly in elucidating the very serious problems of liver or kidney failure, in treating patients in whom these occur, or in using prophylactic measures under conditions in which occurrence is likely. Such studies have helped to make possible the development of operations in areas which until recently were believed inaccessible, such as those inside the heart. All of these studies have a most important and practical bearing upon the healing of wounds, and the capacity of the patient to withstand operation and anesthesia.

Among other important contributions to the care of surgical patients which have been made by the Research Unit was a study entitled "The Management of Cirrhosis of the Liver and Ascites with Particular Reference to the Portacaval Shunt Operation" completed in 1953 by Dr. Habib, in collaboration with Dr. Randall and Dr. Harry S. Soroff, former members of the staff. This work was probably the first to attack the problems of absorption of ascitic fluid in patients who would be benefited by portacaval shunt. The importance of it lay in the fact that about 40 per cent of cirrhotic patients requiring shunting procedures are especially bad surgical risks because of the severe degree of cirrhosis which the ascites portends. This is the group in whom shunting procedures are most urgently needed to prevent death from hemorrhage. It was found that the ascites could be eliminated in from one to six weeks by a rigidly low sodium intake combined with paracentesis instead of the three to six months or longer required by other programs. This constituted a major advance in the attack on one of the serious surgical problems in treating cirrhosis.

Another very important advance in this field, which is reported this year by Dr. Blakemore, is control of ammonia intoxication. In order to accomplish survival of the patient through the long operative procedure and postoperative period of nitrogen depletion, it is necessary to provide a very high protein intake beforehand. Ordinarily this cannot be accomplished without entailing the risk of ammonia intoxication. With the help of Miss Balbina Johnson and the Surgical Bacteriology Laboratory, the problem was solved by eliminating the intestinal bacteria responsible for the production of ammonia from the ingested protein by the use of Neomycin and Bacitracin. In the same field, Dr. Arthur Voorhees has redesigned a double balloon nasogastric tube for the control of hemorrhage from ruptured esophageal varices which also makes possible the rapid differential diagnosis between this and other upper gastro-intestinal sites of hemorrhage. Such are some of the important practical results of research carried out in the Metabolism Unit.

Over 30 publications have resulted from investigations which were carried out in the Surgical Research Metabolism Unit since its establishment ten years ago. In almost all of these, residents on the Surgical Service have participated actively. At the same time, the residents have been in immediate charge of postoperative patients to whom these studies were of very practical significance. This integration of investigation and residency training has proved to be of great value in the development of well oriented, thoroughly trained surgeons. It represents a shift in emphasis from the technical activities of the operating room solely, to a much broader view of the role of the surgeon in caring for patients.

Contributions of the Hospital have been greater than the physical alterations necessary to construct the unit, since it has also carried the salaries of the extra nurses and dietitians needed in the special unit. Thus it has been since its inception, and continues to be, an outstanding example of cooperation between Medical School, Hospital and public support in the advancement of medical science, of practical patient care and in the training of competent surgeons.

### *Experimental Surgery in the Laboratories of Surgical Research*

In addition to the activities of the Surgical Research Metabolism Unit, the Laboratories for Experimental Surgery have been unusually active during the past year. A large number of research projects have been undertaken within the Department of Surgery and in cooperation with other Departments which have requested assistance in conducting experiments requiring the specialized operative skills and techniques developed in our laboratories. Apart from purely experimental work, which is reported each year in the report of the Dean of the Medical School, certain projects having direct application to patients should be mentioned.

Drs. David Habif and Charles Findlay, in collaboration with Miss Balbina Johnson of the laboratory of surgical bacteriology, conducted an extensive study of operative wound infections, the nature of the organisms causing them, and the probable sources of contamination of clean surgical wounds. This is an ever-present problem of special importance when a large number of operations must be tightly scheduled within limited facilities. Although it is a source of satisfaction to learn from this study that our over-all rate of clean wound infection compares favorably with other large hospitals, there have been disturbing incidents which leave no place for complacency, and which lend special force to the importance of this continuing study. In an effort to reduce these complications to an absolute minimum, additional precautions recom-

mended as a result of this study have been put into effect by the operating room committee.

For the past five years Dr. Daniel Shapiro, who completed his residency in September 1955 and has remained as a member of the attending staff, has been studying in the laboratory the effect of combinations of compounds giving promise of cancer control. This work was initiated with the support of the Mary Madison McGuire Fund of The Presbyterian Hospital, and has more recently received generous support from pharmaceutical firms and a substantial grant from the National Institutes of Health. This year an evaluation of the most promising of these compounds, 6-aminonicotinamide, was initiated at The Presbyterian and Francis Delafield Hospitals by Dr. Frederic P. Herter.

Aspects of gastro-intestinal physiology have been under investigation for a number of years by Dr. Edmund Goodman and his co-workers in the Electrogastrogram Laboratory. These studies this year included the esophagus and the small intestine in both experimental animals and in human beings. The esophageal work was carried out with the collaboration of Dr. Charles Flood of the Medical Service and the studies on the stomach and small bowel were done in collaboration with Dr. Harold Harvey of the Surgical Service and Dr. Ralph Schlaeger from the Service of Radiology. The latter investigations sought to elucidate certain of the mechanisms of the "dumping syndrome" occurring in some patients who have undergone partial gastrectomy.

Dr. John M. Hanford is at present engaged in a study of the late effects of small doses of radiotherapy to tuberculous lymph nodes especially in relation to the possible development of cancer in patients so treated. In view of the disturbing incidence of thyroid cancer in patients who in youth have received radiotherapy to the neck for thymic enlargements, tonsillitis, burn scars, hyperthyroidism and other conditions in this general area, this study is of much interest. It is extremely unfortunate that many of the records containing accurately documented clinical observations necessary to conduct an investigation of this problem have been destroyed.

### *Surgical Pathology*

The increase in number of operations is reflected in a steady increase in the work of examining the tissues which have been removed. In 1957 a total of 10,698 specimens were examined, as compared to 5,761 in 1947. Numbers alone do not present a complete picture, however, for the complexity of examination of certain specimens, such as the meticulous search for cancer-bearing lymph nodes by clearing techniques, has

also added greatly to the time required to perform adequate study. Such studies, while they constitute a valuable part of the research and teaching function of the laboratory, also augment to a high degree the quality of patient service. This augmented service load has been carried by an attending and resident staff which has not been increased in over ten years, and seriously hampers the effective capacity of the laboratory in its more purely academic functions. Nevertheless it remains the most productive unit of the Service, as evidenced by authorship or collaboration by members of its staff in 32 of the 81 papers published from the Service this year.

Among the many research projects carried on in the laboratory, two have special clinical significance. Dr. Virginia Kneeland Frantz and her associates continued the study of the relationship between histological type and biological behavior in various forms of thyroid cancer. This work has its counterpart in the studies of patients being conducted by members of the Thyroid Clinic in which the correlation of histological morphology of "hot" and "cold" nodules is being evaluated after treatment with thyroid substances and L-triiodothyronine. These same hormones are being used also for their possible suppressive effect upon metastatic thyroid cancer which is no longer responsive to radio-iodine.

Dr. Robert Grinnell and Dr. Nathan Lane completed their studies on the relationship between benign and malignant diseases of the colon and rectum, defining the limits of benign disease and the indications for radical surgery. These studies are based upon a careful and extensive review of the surgical material available in the Laboratories of Surgical Pathology.

In October, 1957, the Pathology Laboratory of the Service of Urology, under the direction of Dr. Meyer Melicow, moved to the 14th floor of the Vanderbilt Clinic in the area occupied by the Laboratory of Surgical Pathology. The technical and clerical services of the two Services were amalgamated. The surgical specimens from the Service of Urology are being prepared and studied in the Laboratory of Surgical Pathology under the supervision of Dr. Lattes and Dr. Melicow.

Dr. Raffaele Lattes participated in the 3rd International of Clinical Pathology in Bruxelles and the 2nd International Symposium on Mammary Cancer in Perugia, Italy. Papers from the Laboratory of Surgical Pathology were presented at both congresses.

### *Plastic Surgery Service*

Due to the prolonged illness of Dr. Thomas W. Stevenson, Director of the Plastic Surgery Service, Dr. George Crikelair was in active charge

during the latter half of the past year. The Maxillo-Facial Clinic is being reorganized to include a full team approach toward the care of the cleft palate child. The Hospital has been approved for out-patient care for cleft palate patients by the Bureau for Handicapped Children of the New York City Department of Health. Dr. Melvin Moss of the Department of Anatomy was incorporated as an active member of the team conducting research in various aspects of the cleft palate program.

Clinical investigations were completed on the homotransplantation of skin in adrenalectomized patients and Dr. David M. Ju in collaboration with Dr. Elliott Osserman of the Delafield staff under the direction of Dr. Alfred Gellhorn observed prolonged survival time of homografts in patients suffering from multiple myeloma.

### *The Surgical Clinics*

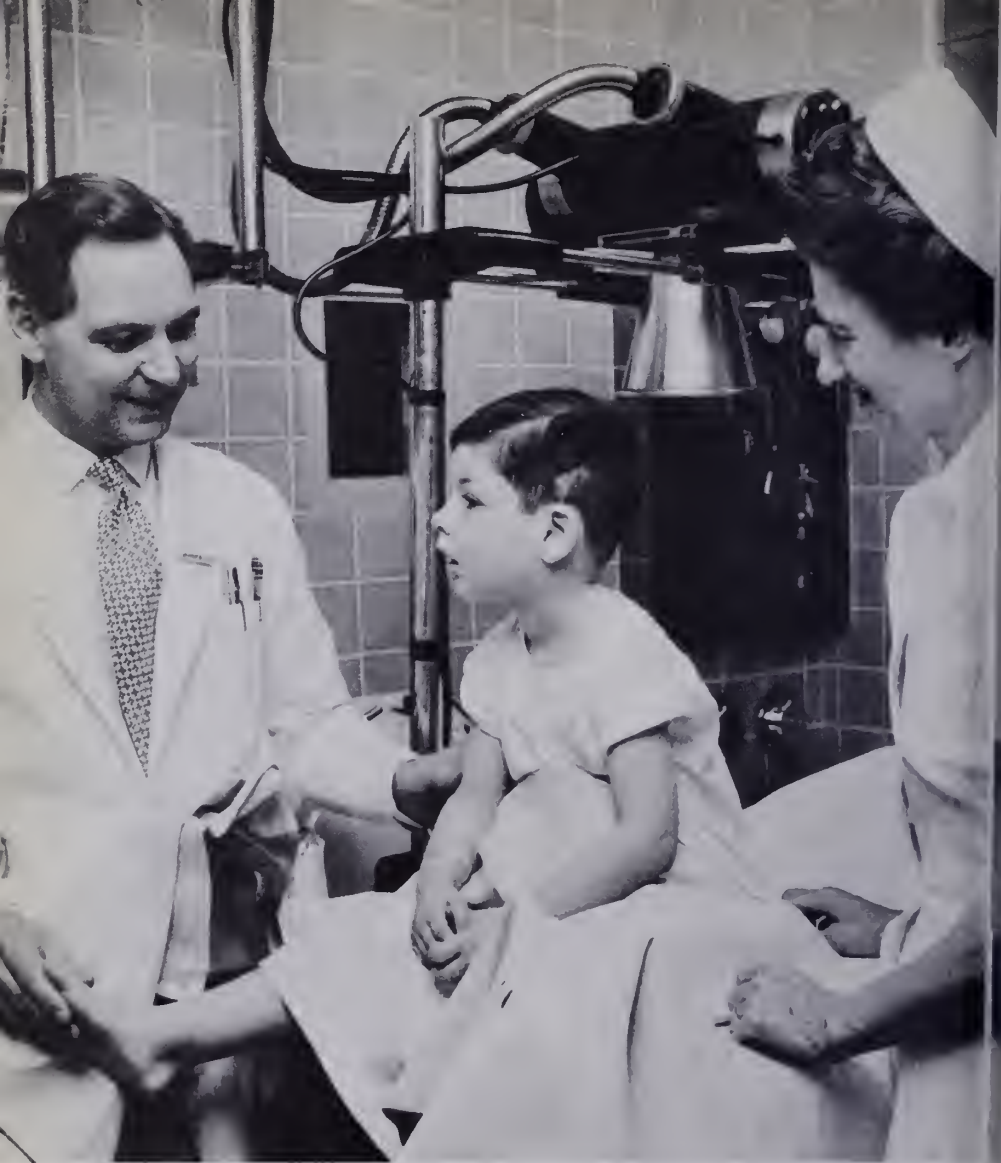
Plans have been crystallized for reorganizing the surgical clinics in order to bring them into closer relationship with the other activities of the Surgical Service with reference particularly to closer integration with ward services, training house staff and teaching students. This is an essential step in the overall unification of effort to improve the handling of patients and to teach clinical surgery.

Miss Gertrude Taylor reports a total of 8,075 patient visits in the Surgical Follow-Up Clinics for 1957. Again, the importance of obtaining help in collecting and utilizing worthwhile clinical information from the data available, but as yet inadequately exploited in these clinics, must be stressed in the hope that this need will be recognized by some individual who wishes to make an important and enduring contribution to the progress of medical science. The opportunity in our surgical clinics to make careful and significant studies of the natural histories and behavior of certain important human diseases is without equal.





*Open-heart operation requires 17-member surgical team. Blood is pumped out of the body, oxygenated in a plastic lung, and returned to arteries. With the heart thus by-passed in blood circulation, surgeons can open the heart and for the first time see defects.*



*Cystoscope department, modernized by blue-green tile walls and stainless steel equipment, provides new operating efficiency as well as cheerful setting for patient care.*

# Urology

JOHN K. LATTIMER, M.D., *Director*

During the year 1957, the Urology Service of The Presbyterian Hospital enjoyed a highly successful period of reconstruction and modernization of its cystoscopic facilities on the tenth floor. The cystoscopic department is now probably the most modern in the world, with a host of new technical devices built into the walls and ceilings of its glittering blue-green tile and stainless steel rooms. Moreover, all these new devices are extremely practical and operate in a most satisfactory manner, to increase the effectiveness of the department. To name a few of the features, the water sterilizers are built into the ceiling and the water lines are encased in special steam jackets so that the entire pipe-lines can be sterilized, as well as the contents. The anesthetic gases, oxygen, suction, and electrical power outlets come out of the walls or ceiling, there are concealed spot-lights in the soundproof ceiling to illuminate the face of the anesthetized patient and there are drains in the conductive ceramic tile floor, which can be flushed by remote control. These new rooms must be seen to be appreciated and the Service welcomes a continual stream of visitors with great enthusiasm. During the construction work, the cystoscopic department operated in temporary quarters and enjoyed the heaviest months of its career. No patient care was neglected during the construction work, thanks to the indefatigable head nurse of the cystoscopic department, Mrs. Margaret Reilly, who deserves great credit for her devotion to the work. The Service of Urology is especially appreciative to the members of the hospital engineering and maintenance staff for their cooperation and skill in designing the specially constructed items of equipment which have worked out so successfully. In addition to the cystoscopic department, new waiting-room facilities were built for the cystoscopic and urological X-ray area, several new stainless steel and green tile bathrooms were built along the tenth floor for the use of the semi-private and ward patients, the administrative offices were modernized, with special attention to the provision of adequate lighting, and the entire urological floor was brightened and its efficiency increased by the addition of better lighting, more storage space, and the building of separate offices for the nursing staff and resident staff.

The Urological Service of The Presbyterian Hospital was originally founded by Dr. J. Bentley Squier, and it is one of the largest urological

services to be found in any voluntary hospital. It enjoys a great physical advantage by being entirely on one floor, with urological X-ray service, cystoscopic rooms, laboratories and children's ward all on the tenth floor of the Hospital. There has been a tremendous increase in the number of urological examinations and procedures done by the Urological Service since its inception 29 years ago. The resident staff of the Urological Service has expanded to include eight residents, one visiting assistant resident from surgery, and one visiting fellow in pediatric urology. These men cover a service of approximately 100 beds, including private, semi-private, ward and children, plus the operating rooms, all urological diagnostic work and six half-day sessions of the out-patient department. Because of the great increase in urological X-ray examinations, the director of Radiology Service, Dr. William B. Seaman, assigned to the Urology Service a staff radiologist, Dr. Donald Johnson, and a full-time radiological resident. These men have made it possible for the Service of Urology to enjoy much closer supervision of the X-ray work and to have the advantage of many special radiological examinations such as tomography and other special X-ray examinations.

Another change in the Urological Service has been the conversion of the Squier Urological Service laboratory on the tenth floor entirely to urine examinations, both chemical and microscopic. This more efficient use of the facilities will enable the Urological Service to do chemical work in the field of kidney stone disease including analyses for uric acid, cystine and mucopolysaccharides, as well as those for calcium, phosphorus, and oxalate. This laboratory will operate under the supervision of Dr. Hans H. Zinsser.

Another new development in the Urology Service has been the coordination of our Department of Uropathology under Dr. Meyer M. Melicow with the Department of Surgical Pathology under Dr. Raffaele Lattes of the Service of Surgery. This closer cooperation will strengthen both departments in relation to personnel coverage and will enable the surgical pathology residents to have training in urology, as well as in their own field. The meetings of the Department of Surgical Pathology will benefit the urological pathologists as well.

### *New Cooperative Projects*

The Urology Service has been unusually successful in cooperating with the corresponding services in a number of other hospitals, such as the Delafield Hospital, the Veterans Administration Hospital in the Bronx, the U. S. Public Health Service Hospital on Staten Island and others. As a result, the combination of our large number of patients

with those of these other hospitals gives us access to perhaps the largest patient study group being seen by any public or private hospital service in the country. This is of immense value in assessing the effectiveness of any particular treatment. Within the structure of the Hospital, combined research projects have also been set up with the Departments of Biochemistry, the Service of Orthopedics, the Service of Neurosurgery and the Service of Medicine. In addition, Dr. Failla of the Department of Radiology has generously given us a great deal of assistance with our atomic energy projects in relation to the radiation of bladder cancers and the measurements of the iodine content of certain kidney masses. In the future, it is hoped that our resident staff can have further education in vascular surgery through cooperation with the Surgical Service.

### *Changes in Therapy*

An ultrasonic device for the shattering of urinary stones where they lie in the ureters is being developed on the Urological Service by Dr. Harold Lamport of Yale University and Dr. Stanley Braham and Mr. Gordon Kerbey, with the cooperation of Drs. Zinsser and Lattimer. The principle of this method is to pass a slender monel metal ribbon up the ureter, through the cystoscope, until this touches the stone. Then the stone must be held against the tip of this ribbon while ultrasonic vibrations course through the monel metal ribbon to destroy the stone. The problems involved in this effort have been very difficult to solve. The past year has been spent by Dr. Lamport's group in developing a strain gage technique for the evaluating of the amount of energy produced by the tip of the drill, by measurements taken at the hilt of the machine, where it enters the patient. Animal work is still going forward and must be carried further before any human work is anticipated despite the many successes in animals.

The new diagnostic tests for the adrenal gland tumor, pheochromocytoma, continue to prove very effective. Dr. Marcel Goldenberg of the Service of Medicine is able to diagnose this tumor accurately by means of the adrenalin and nor-adrenalin output in the urine, during episodes of high blood pressure caused by such a tumor. The scientific exhibit showing this method was presented at the Annual Meeting of the American Medical Association of New York in June, 1957.

The new operative technique to replace the extrophied bladder back into the abdomen of infants has been so successful that the Service is being sent numbers of these unfortunate children from outside physicians, for correction of the defect. The operation as practiced by the Urology Service here comes the closest to restoring the child to a normal appear-

ance, with the bladder back inside, of any method now in use. Previous methods employed some diversion of the urine into the intestinal tract or to some abnormal opening on the abdominal wall. While the operation may take from 6 to 10 hours, with work done by both urological and plastic surgeons, it appears to be well worth the effort, considering the encouraging results obtained so far.

Dr. James B. Campbell of the Service of Neurological Surgery, working in conjunction with the Service of Urology, has been able to improve bladder function in many patients with spinal cord disease by means of operations on the spinal cord or spinal nerves. Dr. Campbell, and Dr. Bassett of the Service of Orthopedic Surgery have been doing pudendal nerve surgery through an approach via the buttocks, with great success. This work has been endowed by research grants from the office of the Surgeon General of the Army, the Cerebral Palsy Association, and the Playtex Park Research Institute.

New techniques in treating genito-urinary tuberculosis, developed at this Hospital, involve the use of pieces of small intestine as substitutes for damaged portions of the urinary tract. Dr. Lattimer has demonstrated the use of patches of small intestine to splice out and enlarge the capacity of a bladder shrunken by tuberculosis, and has also demonstrated the use of small intestine to substitute for a ureter damaged by tuberculosis. This work will be presented to the American Urological Association Meeting next year.

In the study of the chemotherapy of kidney tuberculosis, our Urology Service continued in the forefront. The new anti-tuberculosis medication, Cycloserine, has been used against kidney tuberculosis on our wards, in conjunction with other drugs. Still newer drugs will be tested shortly. The results of chemotherapy for kidney tuberculosis at The Presbyterian Hospital have been presented to the Veterans Administration Annual Meeting for the Chemotherapy for Tuberculosis at St. Louis, Missouri, before the American College of Chest Physicians and the American College of Tuberculosis Physicians. The techniques and regimens developed at this Hospital have been adopted by the Committee on Therapy of Tuberculosis Association and recommended as the treatment of choice for this disease.

A standardized Columbia University cystogram technique was described further by Dr. Archie L. Dcan, Jr. in a paper delivered before the annual meeting of the American Urological Association. At the Pediatric Urological Group of the same meeting, Dr. Lattimer described our 24 cases of a condition called "congenital deficiency of abdominal musculature with associated genito-urinary anomalies." The importance and size

of this series can be judged by the fact that few teaching centers have been able to report more than four or five cases of this condition.

### *Changes in Staff*

The Urological Service has been saddened and has suffered a severe loss in the death of Dr. Earl Engle of the Department of Anatomy. Dr. Engle's work with Dr. John N. Robinson of the Urological Service, was instrumental in showing that the best time to bring an undescended testes down into the scrotum was at age 5 to 7, rather than at age 12, as had been taught previously. Dr. Engle was one of the world's great experts on fertility in the male and made the scientific study of the testis biopsy a standard laboratory procedure. His classical work with the gonadotrophic hormones in bringing down the testes in animals was later applied to humans with success.

Miss Cornelia B. McCoy, chief technician in the Squier Urological X-ray area, reached retirement age in February of this year. Miss McCoy has been with the service since its establishment as the J. Bentley Squier Urological Clinic in 1929, and her skill, dignity, and dedicated personality are well-known to her myriads of patients and to the parents of hundreds of children. The Urology Service feels very fortunate that Miss McCoy has elected to stay on, doing part-time research for us on the subject of the dilated urinary tract in children. Her knowledge of the subject, and of the Service, has been a tremendous asset to us and will enable us to produce further valuable work in this field.

Miss Helen Bates Haines, our most devoted and competent social service worker, reached the retirement point in September and was honored by a tea and reception in the Squier Clinic library. Her many friends gathered to give her a token of their regard and esteem in commemoration of her 29 years of service to the Squier Urological Clinic.

Dr. Hans H. Zinsser, whose father was the renowned Dr. Hans Zinsser of Columbia and Harvard Universities, joined our Service as a director of basic research and has been hard at work at organizing research projects and developing coordinated efforts with other departments, despite the fact that the Service of Urology is assigned very little laboratory space of its own. This space shortage has been the chief obstacle in the path of further research development within the Service of Urology. Dr. Zinsser's great knowledge and interest in the field of kidney stone treatment will shortly be apparent in a widened scope of research in this field in the Urology Service. The Urology Service sincerely hopes that laboratory space can be found to permit more adequate development of its research program.

Dr. George F. Cahill, Emeritus Director of the Urological Service and past president of the American Urological Association, lectured on problems in the operative management of pheochromocytoma and also delivered a paper on undergraduate teaching in urology at the American Urological Association Annual Meeting at Pittsburgh. Although Dr. Cahill had concluded his nine year term as an examining member of the American Board of Urology, he again voluntarily assisted in the examination of a large number of candidates in February, 1957, at the request of the American Board of Urology. In May of 1957 Dr. Cahill received the Barringer Medal of the American Association of Genito-Urinary Surgeons. This most distinguished award was presented by Dr. George W. Fish.

Dr. George W. Fish was re-elected treasurer of the Medical Society of the County of New York and re-appointed senior civilian consultant in urology to the United States Army, as well as area consultant to the Veterans Administration. Dr. Fish is also the official representative of the American Urological Association with the Armed Forces and is on the editorial board of the *Journal of Urology*.

Dr. Ralph C. Yeaw, is Director of Urology at St. Joseph's Hospital in Paterson, New Jersey, and a member of the executive committee of the New York Section of the American Urological Association.

Dr. Ralph J. Veenema, chief of our out-patient department, was appointed Director of the Urological Service at the Valley Hospital in Ridgewood, New Jersey.

### ***Clinical and Basic Research***

The Service of Urology was granted two rooms in which to conduct clinical and basic research. Despite these limited facilities, a great deal of basic and clinical research was initiated in the course of the past year. Dr. Charles T. Hazzard is pursuing clinical studies in hamartoma and gangrene of the testes of the newborn. Dr. Archie L. Dean, Jr., is working on the treatment of urethral prolapse, palliation of patients with cancer of the prostate using meticcortin, studies of various types of treatment for bladder cancer, more adequate methods of controlling post-prostatectomy bleeding by fulguration on the operating table, and voiding and resting intra-vesical pressures in patients with vesico-urethral reflux. He is also working on the development of prostatic models for improving the teaching of both undergraduates and residents, especially in relation to the early detection of cancer of the prostate. He is working further on more radical types of prostate operations for cancer of the prostate.

Dr. Harry Seneca continued the study of extracts of *Trypanosoma*



*cruzi* in the treatment of drug-resistant infections, a coordinated study of bacterial mutation as regards anti-biotic and chemotherapeutic agents, the use of steroids in infections and toxemias, including a study of steroids and chronic pyelonephritis, a study of metabolic capacities of bacteria found in conjunction with kidney stones and in the development of a variety of blood substitutes.

Drs. Meyer M. Melicow and Aurelio Uson of the College of Physicians and Surgeons, working in the uropathology laboratory, completed a review of polycythemia in renal cancer, incomplete extrophy of the urinary bladder, gonadal neoplasms in intersexes, urographic patterns in bladder neck obstructions, a review of Wilm's Tumor and abdominal masses in children and, with Drs. John E. Bowers and Louis J. Dougherty, a review of carcinoma of the prostate in terms of early latent and occult carcinoma. Their studies on true hemaphrodites continue as do those on tumor in undescended testes, and tumor developing in testes after orchiopexy. They are also studying ectopic ureteral openings in children. Many uropathology projects enlist the help of the resident staff to incorporate a research point of view in their approach to urology.

Dr. Ralph J. Veenema continued his evaluation of prostatic needle biopsies for cancer. He is in the midst of extensive clinical studies on stone cases of various types, and post-operative results with retropubic prostatectomy for prostatic cancer. He has been using a free-bladder epithelium graft in the repair of hypospadias.

Dr. J. Timothy Donovan completed a study of polycystic disease in adults, ureteral ectopia in children and is continuing work in stress incontinence in the female with Dr. D'Esopo of the Service of Obstetrics and Gynecology for correlation of the problems of urinary incontinence.

Dr. Stanford Pulrang studied urological conditions masquerading under the symptoms of gastro-intestinal tract pathology and continued his interest in congenital abnormalities.

Dr. John E. Bowers examined the clinical significance of abnormal prostatic secretions and completed a case study of adenoma of the kidney. In conjunction with the Schering Corporation he made a statistical analysis of abnormal seminal specimens in infertility. Dr. Bowers also recently published a comprehensive review of the disease called interstitial cystitis or Hunner's ulcer in *Surgery, Gynecology, and Obstetrics*. He also engaged in a study of cancer of the prostate with Drs. Melicow and Uson.

Dr. Stanley Braham continued his interest in neurogenic bladder dysfunction and delivered papers at the Bronx Veterans Hospital Paraplegic Service, as well as the Montefiore Hospital Staff Meetings, as a guest

speaker on this topic. Dr. Braham also worked actively with Dr. Lamport and Mr. Kerbey on the destruction of ureteral stones by ultrasonic methods. Dr. Braham is also beginning work on a study of renal function and the possible detection of renal tumors by measuring the excretion of radioactive substances into kidney cysts or tumors.

Dr. Reginald F. Seidel pursued his studies of the use of the Cattell "T" tube in urology and delivered a paper on this subject before the New Jersey State Medical Society in Atlantic City.

Dr. Clement A. Furey continued his experiment with the treatment of the very difficult disease known as Peyronie's Disease, which is the formation of a hard and painful nodule in the penis. He has been treating this by injections of metisteroids with some success. Dr. Furey also is conducting a study of phlebitis and embolism in patients with radical urological operations.

Dr. Hans Zinsser is actively studying the subject of kidney stone formation under a variety of circumstances, in conjunction with the group established by Dr. Veenema. He has been fortunate in having the cooperation and active help of Drs. Z. Dische, Joel Dain, T. D. Price and Karl Meyer of the Department of Biochemistry, College of Physicians and Surgeons, Dr. Bassett of Orthopedics, Dr. Seneca of our own Service, Dr. Lamport, and Mr. Kerbey in the Physiology Department. The National Lead Company laboratories have contributed to the important trace metal phases of the analysis of stones, and Abbott Laboratories have been interested in new development of stone dissolving solutions. Drs. Kermit L. Pines, David Miller, of the College of Physicians and Surgeons, R. J. Veenema and Hardy Ulm, of the Veterans Administration Hospital, have been very cooperative in the assembly of a large group of clinical cases. In addition, Dr. Zinsser's study of heavy metal accumulation in aging tissues, which has indirect bearing on the stone problem, has contributed X-ray assistance. A study of radioactive impregnated balloon catheters for the treatment of bladder papilloma was initiated here by Dr. Zinsser, with the help of Drs. Jacox, Failla and Gross in the Radiology Department. Dr. Zinsser's studies in infertility centering on sperm counting and sampling methods by electronic means continued with the help of Dr. Dick, Dr. Southam, and Dr. Miller in Vanderbilt Clinic. A project for the evaluation of androgens in the pre-operative preparation of male infants for later penile plastic surgery is beginning. He was fortunate in obtaining help from Dr. Victor Paschkis in the heat and fluid transfer laboratory of Columbia University for continuing theoretical calculations of kidney function. With Dr. Dean, he is exploring a transpubic approach to the prostate. It is possible that

by this route a more radical operation can be performed with better hemostasis and better preservation of nerve supply.

Dr. Lattimer continued to be actively engaged in the development and evaluation of new methods of treating kidney tuberculosis, not only in our own hospital and other hospitals in the area, but also across the country with the Veterans Administration and other tuberculosis groups. Dr. Lattimer was awarded a certificate in honor of his interest in kidney tuberculosis by the American Academy of Tuberculosis Physicians at the annual meeting in New York City in May. Dr. Lattimer and Dr. Johnson of the Radiology Service cooperated in a study of the roentgen diagnosis of pheochromocytoma. Dr. Lattimer presented a paper on this subject before the Roentgen Ray Society of New York City at the New York Academy of Medicine earlier this year.

Research in urological cancer was carried forward by a group led by Dr. Perry B. Hudson, a member of our Service who is also at the Francis Delafield Hospital Urology Service. New knowledge of the relation of hormones to cancer of the breast and prostate is being gained by studies on testicular vein blood, adrenal vein blood and peripheral vein blood. Analyses of the amounts of several hormones and their components are being carried out by chromatographic separation and identification. These studies tend to indicate a depletion of urinary estrogen following total adrenalectomy in patients with cancer of the breast. By perfusing dog kidneys with various steroid hormones a study has been made of the changes induced in these hormones by the passage through the kidneys. The Urological Cancer Research Group works not only in the cancer laboratories of the College of Physicians and Surgeons, but also at the Francis Delafield Hospital. Other members of the group are Drs. T. D. Price, and N. E. Lombardo of the Department of Biochemistry. The work has been supported by grants of the United States Atomic Energy Commission, the Public Health Service, the Damon Runyon Cancer Fund, the American Cancer Society and the New York City Cancer Committee of the American Cancer Society. Seventeen publications appeared in various scientific and medical journals over the past year and numerous lectures on the subject of urological cancer were given throughout the country by Dr. Hudson and his associates. Studies on the physical properties and the mechanism of denaturation of prostatic acid phosphatase are continuing. A number of inhibitors of the prostatic acid phosphatase have been identified and classified. Nucleic acid studies have continued with some information gained on the rate of renewal of individual chemical components of nucleic acid obtained from human adrenal, kidney, ovary, prostate and testis. Radioactive tracer substances

have been used to demonstrate that the rate of renewal of phosphorus and intracellular small molecule nucleotides bears a certain ratio in relation to their formulas.

The cancer research statistical group continued to measure the incidence of prostatic cancer in the aging male population and to compare, by statistical methods, survival rates after hormone depleting operations, and after other forms of therapy for prostatic and mammary cancer. Animal experimentation is going forward in an attempt to devise surgical techniques for the management of bladder cancer. Some improvement in present methods of diverting the urine into the bowel has been accomplished by new surgical techniques used by Dr. Hudson. Dr. Hudson delivered papers on the biosynthesis of human testicular steroid hormones, on latent cancer of the prostate, and on ureterosigmoidostomy before the northeastern section of the American Urological Association and the Clinical Congress of the College of Surgeons.

The members of the Service are grateful to all those who contributed to the research funds. These include the George F. Cahill Fund, the John K. Lattimer Fund, the Kate Wollman Fund, the Josiah Macy, Jr. Foundation, the Merck, Pfizer, Upjohn and Schering Corporations, the National Tuberculosis Association, the American Cancer Society, and numerous individual donors. Many of these grants were, of course, made to the College of Physicians and Surgeons of Columbia University but used jointly in the treatment of patients of The Presbyterian Hospital. There were 2,429 admissions to the Urology Service this year, making a grand total of 44,194 admissions since the inception of the clinic. Some 780 operations were performed during the year.

*REPORTS OF VOLUNTARY ORGANIZATIONS*

# The Alumnae Association

## School of Nursing

MRS. ROBERT H. E. ELLIOTT, *President*

The Alumnae Association wishes, again on his retirement this year, to pay tribute to Mr. Charles P. Cooper for his constant and loyal interest in our Alumnae Association. He became, by unanimous vote, an Honorary Member of our Association in June 1954.

The new catalogue of the Florence Nightingale Collection was published in March. The first copy was sent airmail to the bibliographer at the Wellcome Historical Medical Library in London, England, who is preparing a catalogue of all Nightingale material in the world. Complimentary copies have been sent to the family of the late Dr. Hugh Auchincloss, who was so instrumental in setting up our Collection of Nightingaliana, and to other donors of the collection. Copies have also been mailed to nursing and medical libraries in the United States, Canada and England where they have been received with much enthusiasm and appreciation. Our congratulations are extended to Miss Eleanor Lee who has been responsible for this publication. The Nightingaliana Collection is housed in a pleasant room just off the school library in Anna C. Maxwell Hall where it is available to the student nurses for study. Visitors from every part of the United States and from many other countries have enjoyed this remarkable collection of Miss Nightingale's books and letters which has grown steadily since the original gift in 1932 by the late Dr. Auchincloss in memory of his mother, Maria Sloan Auchincloss, on the graduation of his daughter, Maria Auchincloss Look.

A resolution was passed in February to pay tribute to honor, at her death, Dr. Gwendolen S. Jones, who had long been physician to the School of Nursing and the graduate nursing staff of the Presbyterian Hospital. During this past year the death of twelve Alumnae members was recorded.

Miss Margaret Arnstein, class of 1928, was appointed in April by the Surgeon General, as Chief of Public Health Activities, one of several major activities in the Public Health Service. As chief of the Division of Nursing Resources since 1949, she has directed the development of methods to help the nation's hospitals improve nursing service. This program included grants for research and fellowships in nursing and two million dollars in traineeships to offer nurses advanced education.

Our Alumnae have participated in several important conferences and conventions this year. Among our graduates who attended the International Congress of Nurses in Rome held from May 27-June 2, were the Misses Dorothy Rogers, Cora Shaw, Doris Ballard, Elna Saamanen, Beth Camcron and Dorothy Reilly.

During the National League for Nursing Convention in Chicago in May twenty Alumnae from all parts of the country enjoyed a very pleasant get-together luncheon, sponsored by the Alumnae Association.

On Monday evening, May 27, the Alumnae Association entertained the graduating class at a dinner dance at the Hotel Picrre. Dr. Yale Kneeland, Jr. a most able and humorous toastmaster introduced the speakers of the evening: Mrs. David Habif, Alumnae President, Mr. Cleo F. Craig, Vice-President of the Hospital, Dr. Willard C. Rappleye, Dean, Faculty of Medicine, Miss Helen Young, Miss Eleanor Lee and Miss Margaret Eliot. Miss Cecile Covell was warmly applauded as Chairman of Arrangements for the occasion.

The Distributing Fund received \$10,507.00 this year, which includes \$2,965.87 in royalties from two publications, "Lippincott's Quick Reference Book for Nurses" and "The Essentials of Nursing." These royalties are used for scholarships only. Ten scholarships were awarded to students amounting to \$800.00 and five graduate scholarships were awarded amounting to \$1,500.00.

In this past year the sum of \$3,960.00 was granted to members for sick benefits and \$11,650.00 in pensions.

Our two program meetings were held in Maxwell Hall. At the February Meeting the Alumnae were addressed by Mrs. M. Cochrane Cole, who discussed the art of flower arrangement. At the November Meeting we were fortunate in having Dr. A. David Gurewitsch as our guest speaker. His topic was "Observation of Medical and Nursing Education in the U.S.S.R." At this meeting, Miss Katherine M. Kennedy, evening desk clerk Maxwell Hall, was honored for her devoted service over the past 28 years to the students in Anna C. Maxwell Hall.

On June 7, after the Alumnae luncheons, the Class of 1957 was presented for membership at the Annual Meeting. The following officers were elected: President, Mrs. Robert H. E. Elliott, Vice-President, Miss Margaret Hawthorne, Corresponding Secretary, Miss Dorothy E. M. Robinson, Recording Secretary, Miss Andree L. Powell, Treasurer, Miss Helen Young, Assistant Treasurer, Miss Margaret Wells.

At this time, we would like to thank the Board of Trustees and the Hospital Administration for their ever generous help and unfailing support of our Alumnae Association.

# Board of Women Managers of the Babies Hospital

MRS. CASIMIR DERHAM, *President*

An important step for the Auxiliaries was taken this year by Mr. Frederick A. O. Schwarz, Acting President of The Presbyterian Hospital's Board of Trustees.

Mr. Schwarz appointed a Trustee Committee to serve as a liaison between the Board of Trustees and the Hospital's Auxiliaries and to cooperate in finding solutions to their mutual problems.

The Board of Women Managers extends a welcome to Messrs. John A. Gifford, John S. Burke and Dorrance Sexton, members of the new Committee, and hopes to present them with very few problems.

An annual budget of \$13,100 for the year 1957 was submitted, and approved by the Board. In addition to appropriations for Christmas dolls and the Residents' Loan Fund, the Emergency Nursing Fund, the Pediatric Psychiatric Clinic, the Recreational Therapy Department and the Volunteer Department were supported.

Mrs. Frederic F. deRham, Advisory Trustee on Nursing, reported that thirty graduate nurses have been added to the staff, and six additional nurses have been assigned to the children's special unit for patients who cannot be moved. The children's special unit on the 4th Floor has been extremely satisfactory.

During the year bills totalling approximately \$10,000 were approved for care provided by the Emergency Nursing Fund. This Fund has been generously supported by donations from Mrs. George F. Baker, Jr., Cribside Social Service Committee, Mrs. Frederic F. deRham, Miss Peggy Hitchcock, Mrs. Richard Migel, Mrs. Joseph V. McMullan, Mrs. John H. Reynolds, Mrs. Henry C. Taylor, Mrs. John S. Tilney and the Women's Auxiliary to the American Institute of Mining and Metallurgical Engineers.

The Board is grateful to the following for the many contributions received during the year for the various Hospital Funds, Wards and Departments: Mrs. B. Rionda Braga, Chase Manhattan Bank, De Coppet and Doremus, Mrs. Margaret Gallagher, Mrs. William Hale Harkness, Mrs. Charles V. Hickox, Mrs. Alexander L. Keyes, Mr. Frederick Lewisohn, Mrs. Manton B. Metcalf, Jr., Mrs. Richard Migel, Mr. Edgar A. Newberry, New York Telephone Company Doll and Toy Committee



and Directory Advertising Department, Mrs. Laurent Oppenheim, Jr. Mrs. Robert Porter, School of Dental and Oral Surgery of the College of Physicians and Surgeons, Seraphic Secretaries of America, Mr. and Mrs. Charles H. Thieriot, Jr., Mrs. Carl Tucker, Mrs. Douglas Williams, WOR Children's Christmas Fund and Young and Rubicam, Inc.

The Board welcomed Mrs. Thomas V. Santulli, Mrs. Arthur H. Christy, and Miss Ethel Donaghue as new members in 1957.

The resignations of Mrs. Henry A. Gerry and Mrs. Stuart M. Crocker were accepted with regret. Mrs. Crocker has been connected with the Hospital since 1923 and Mrs. Gerry since 1951.

Mrs. Douglas Williams, Chairman of the Board's Volunteer Committee, reported that the three new services inaugurated by the Department in 1956 have proven of value, particularly the Nurses' Aide Classes given in the evenings.

It was also noted that the change in parents' visiting hours to coincide with meal time has greatly facilitated the work of the nursing staff.

The addition of a salaried evening volunteer supervisor has enlarged the "Tender Loving Care" program, and made it more effective.

Five members of the Board attended the Volunteer Tea on January 24 to hear Dr. M. Irené Ferrer.

Mrs. James McCosh Magie, our representative to the Welfare Council of Greater New York, attended a Forum on "Our Changing Community" on May 8. Many prominent speakers presented all sides of the welfare problems. Mrs. Magie's report to the Board was extensive and of unusual interest in clarifying the social problems of the city.

The monthly Hospital luncheons were regularly attended by members of the Board and guests. These luncheons are extremely valuable in keeping the Board in touch with overall Hospital activities.

Mrs. John S. Tilney served as Group Leader of the United Hospital Fund Campaign in 1957 assisted by Mrs. Alexander Keyes as Chairman of Box Week and the following Team Captains: Miss Hope Kingsley, Miss Dorothy Mills and Mrs. Douglas Williams. A total number of 450 gifts amounting to \$36,117.65 was reported by Mrs. Tilney. The Board's quota for 1957 was \$32,210.00. Mrs. Keyes reported a total of \$249.11.

Mrs. Tilney and Mrs. Keyes are to be congratulated on their efficient chairmanships and excellent results. The Board members gave 100 per cent to the United Hospital Fund.

The Visiting Committees for the year gave fine, observant and helpful reports. Mrs. Richard Migel's was exceptionally good.

Speakers at the meetings were Dr. Rustin McIntosh, who outlined a case history of congenital malformation of the lower esophagus, and Dr.

James Wolff who talked on hematology and blood dyscrasias. The Board looks forward to these interesting and informative presentations.

Mrs. Neville J. Booker who has served on the House Committee for many years reports that the housekeeping standards of the Hospital have been wonderfully maintained during the year. In addition to painting, wall washing, and repairs of various sorts, the Hospital installed fluorescent lighting on the school and play floor, and also a new roof for the outdoor play area. New waiting benches for visitors were purchased and new type patient beds are gradually replacing old cribs.

Through the efforts of the chairman, Mrs. R. Peter Rose, the Recreational Therapy Department was completely modernized with new outdoor equipment this summer. This not only greatly enhanced the unit but added considerable to its scope. Financial gifts from the following made this program possible: Mr. Reginald P. Rose, Mr. James Campbell, Mr. R. Snowden Andrews, Mr. Howard C. Smith and Women's Auxiliary to the American Institute of Mining and Metallurgical Engineers.

The Board would like to express its appreciation to Mrs. Louis R. M. Del Guercio, who resigned November 1, for the years of outstanding service which she gave to the children of Babies Hospital. Miss Ruth Vickers, who served as her able assistant, has become director of the department, and is being assisted by Miss Merrill Wagner.

The President would like to thank all those who have helped make this year a successful one. The Board is ever grateful to Dr. Rustin McIntosh for his inspired leadership and to Miss Marjorie Peto, Mrs. Loretto Molzahn and our Unit Manager, Miss Elizabeth Callahan, for their invaluable interest and services.

## CRIBSIDE SOCIAL SERVICE COMMITTEE

MRS. CONRAD M. RILEY, *Chairman*

The Cribside Committee is delighted to be able to report at year end that the Babies Social Service Department is staffed with one case aide, five workers, a supervisor and its able director, Miss Mildred Stilwell. It is not a full complement but it is a tremendous increase over the first six months of this year.

During the summer the department was fortunate in having two young women working for it, one an undergraduate social work student and the other a case aide who remained with the department through the winter. They both were of great value to the department.

Some 107 children were sent to camps for the handicapped or were

placed in convalescent homes. Of these, 42 children went to The Mary Harkness Convalescent Home.

Two members of the staff were able to attend the American Orthopsychiatric Association meetings in Chicago.

It was with great pleasure that the Committee welcomed its new member, Mrs. Thomas Santulli. Last winter Mrs. Santulli was able to attend some staff meetings and thereby acquaint herself with the Social Service Department of Babies Hospital.

The Lenten Sewing Class made \$353.00 and sent many baby garments and sweaters to the Hospital.

The Bargain Box made \$7,631.73 net and the Cribside Committee is very grateful to the Chairman of the Thrift Shop and her hard working ladies.

At the spring meeting at the Hospital the Committee was privileged to have two pediatricians define the use of Social Service in their specialties, the Cardiac Clinic and the Premature Service.

Mrs. Riley was elected for a year to the United Hospital Medical Social Service Committee. This Committee held two sessions entitled "Problem Clinic," open to committee members and professional staff from all types of hospitals throughout New York. The time was devoted to the relation of the Medical Social Service Committees to the Medical Social Service professionals. It was of great benefit to many members of both groups.

The Cribside Committee allocated \$5,000 to the Emergency Nursing Fund this year. This money, usually contributed toward Social Service salaries, was not used during the current year and therefore was available.

The Committee voted \$500 for a Social Service Staff Development Fund to be used for additional social work courses for workers and for the purchase of books for the Social Service reference library.

The Chairman wishes to express her gratitude to all those who have helped the department during this past year — Administration, members of Cribside, Staff and especial thanks to Miss Stilwell.

# The Mary Harkness Convalescent Home Auxiliary

MRS. ROBERT C. WHEELER, *Chairman*

The Mary Harkness Convalescent Home continued to run smoothly during the past year under the dedicated direction of Miss Miriam Hubbard. Miss Hubbard's assistant, Miss Virginia Sorby, plans to enter the Navy in March, 1958. This will be a great loss to us. We continue to benefit from the services of Dr. William A. Bauman, Dr. Edward M. Wheeler, Dr. John T. Beaty and Dr. William B. Snow.

For the third year, we have been fortunate to have the services of two French-Canadian nurses for six-month periods. The increasing number of young married graduate nurses from the neighboring towns has helped establish good community relations.

The effective interest of Miss Hubbard and Miss Sorby in the social welfare of patients is evidenced by the many warm letters received and, most recently, by a new television set for the adult living room and three deck chairs for the use of off-duty nurses. The Auxiliary's Country Store has enabled patients to purchase personal items.

We are grateful to the Women's Auxiliary of New York Orthopedic Hospital for weekly movies; the Girl Scouts of Greenwich and Rye for parties, favors and entertainment; the Ladies' Auxiliary of St. John's Chapel in Byram for home-made cookies and cakes and occasional entertainment; the Joan McGrath Studio of the Dance in Port Chester for a dance recital; and the fifth group from the Greenwich Academy for a dramatic skit.

Other patient morale boosters included a home-like atmosphere at Christmas, with beautiful decorations, inside and outside. The child patients and Mr. Binkert's daughter, Barbara, with her talented friends, provided the entertainment at the Christmas party. Christmas Day was made festive with gifts from the ladies of the Presbyterian Church of Rye, dolls dressed by the ladies of the United States Trust Company, and personal gifts purchased with Auxiliary funds.

# Neurological Institute Auxiliary

MRS. H. S. FENIMORE COOPER, *Chairman*

During 1957, Social Service at Neurological Institute served a slightly less number of patients than during 1956. It is apparent, however, that the decrease in volume is based on sound planning and a more effective use of the social worker's time. The number of patients served, about a thousand, undoubtedly represents more accurately the number of patients for whom a definitely determined service is needed.

An increase in the funds used for patient care was voted, with about half of the expenditures assigned for camp plans for children. A larger amount was allocated for camp placements this year since the benefits to these children, selected on the basis of medical and social needs, have been so effectively demonstrated. An increased amount of money has also been made available for homemaker services and medical care needs, to help patients leave the hospital earlier.

Unfortunately, we had some staff losses. The greatest was in October, when Miss Barbara Kohlsaas, Associate Director, accepted an appointment to another Medical Center program. Miss Kohlsaas's leadership, vision and outstanding abilities will be sorely missed. Mrs. Dorothy Ettlenger, case supervisor, who had served admirably for some years, and Mrs. Elka Fink, a most able caseworker, left for personal reasons. Miss Helen Sabin, case aide, left for other employment. Miss Valerie Halse, our Fulbright Fellow from England, was transferred to the Medical Service to broaden her experience while in this country.

We have been happy to welcome Miss Alice Pickard who, as Assistant Director, will carry direct responsibility for the department; and, to the casework staff, Mrs. Dagmar Ransdorf, who had her student training at Presbyterian Hospital Social Service on scholarship granted by The Pfeiffer Foundation; Miss Barbara Mintz; Miss Carol Friedman; also, to the case aide program, Miss June Springer, a former volunteer in Babies Hospital.

Other highlights of the year included:

At our request, the chairman and one other member of each Auxiliary met with Acting President Frederick A. O. Schwarz and a group of Presbyterian Hospital Board members to discuss our various problems. Mrs. Byron Stookey, one of our former chairmen, spoke in behalf of the Auxiliaries. As a result of the meeting, Mr. Schwarz appointed a com-

mittee of three Trustees to act as liaison between the Auxiliaries and the Board.

The Board of Trustees House Committee, discontinued in 1956, has been replaced by two Advisory Trustees with whom Mrs. Willis D. Wood, again representing our Auxiliary, serves.

At our October meeting, Miss Gallagher reported on the fund of \$5,000 which we had voted late in 1956 for her to use in the special nursing fund. Because we feel her judgment is excellent, and it is most important for her to be able to meet without delay the patient needs which arise suddenly, it was decided to place an additional \$2,000 at her disposal.

Everybody's Thrift Shop, of which we are a member, was forced to move, creating a major task for our chairman, Mrs. Royall G. Cannaday, and her faithful committee. A successful tea was held at the new location, where business is booming as usual. A benefit was arranged by the chairman of that committee, Mrs. Henry A. Riley, netting \$400 worth of rummage. It cannot be emphasized too strongly that there is a continuous need for more and more rummage.

It seemed best to combine the Volunteer and Library committees under the fine leadership of Mrs. Bruce Brodie.

We were fortunate to have Mrs. Charles E. Adams take the chairmanship of the United Hospital Fund Committee when her able predecessor, Mrs. William Shippen Davis, felt obliged to retire.

Mrs. James C. Mackenzie, chairman of our membership committee, reports the resignations of two members, Mrs. George Jenkins and Mrs. William Shippen Davis, and the addition of three new members, Mrs. Charles Ulrich Bay, Mrs. John Sloane and Mrs. Lucius Clay.

We record with sorrow the death of Mrs. Stephen H. Philbin, one of our oldest and most valued members.

To Miss Elizabeth Prichard goes our appreciative thanks for the extra time and effort she gave to the supervision of the Social Service staff during the transitional period between Miss Kohlsaats departure and Miss Pickard's assumption of her new duties.

To all the devoted officers and members of our Auxiliary, and especially to our vice-chairman, Mrs. Sidney J. Weinberg, who carried on so well during my several months absence, go my heartfelt thanks.

# Women's Auxiliary of the New York Orthopedic Hospital

MRS. S. HAZARD GILLESPIE, JR., *Chairman*

Our first year under the direction of Dr. Frank E. Stinchfield has been a busy and stimulating one. The auxiliary has tried to inform itself better on the management and needs of our Hospital and to become more familiar with its personnel. We have met with Dr. Stinchfield who gave us an excellent picture of the changing scene in the orthopedic world; the vanishing of polio and the new discoveries in arthritis and bone research. We had a buffet supper with the residents and their wives and Mrs. Willis L. M. Reese had a summer outing at her place on the Hudson for staff families.

We have also built up a closer contact with the Board of Trustees. With their interest and encouragement we have had several meetings with various members of the Board which has led us to a better understanding of the aims and problems of the Medical Center as a whole.

Our chief interest continues to be our children's ward and we are very lucky in still having Mrs. Eva Beers as recreational therapist. Children and staff alike are equally grateful to her for her help in creating a pleasant, smooth-running atmosphere. She has had several very successful parties at Halloween, Christmas and Easter and has done some really remarkable handcraft work with the children. This program provides an opportunity for student nurses to observe the child at play and to become aware of him primarily as a person rather than purely a patient. We have had several gifts of equipment this year, and we are especially grateful to Miss Elizabeth Callahan of Babies Hospital for providing us with a piano, extra toys at Christmas and other supplies. Our movies are still shown every week in many parts of the Hospital as well as at the Mary Harkness Convalescent Home.

Miss Elizabeth Scully has taken charge of the Occupational Therapy Department and has put new life into the shop on our fifth floor. Both she and Mrs. Beers are greatly helped by volunteers, but could always use some more.

Since our last report Miss Delphine Wilde, our supervisor, has become Mrs. Roger Wolcott. She has done a magnificent job running the floor, teaching classes and attending staff meetings. She is most ably

assisted by Miss Hester Brown, and either one or the other reports at each auxiliary meeting.

Our two Miss Irwins, Margaret and Helen, have once again done a stupendous job in Social Service, covering a record number of cases and successful applications for appliances. They are unsparing in giving of their time and sympathy and many are the grateful patients who return to visit and thank them.

Under the leadership of Mrs. Edward H. Gerry and Mrs. William L. Cary we raised \$33,725.14 for the United Hospital Fund. Out of this and our own Special Fund we will contribute to our Babies Hospital ward, the Milbank Library, the Volunteer Department, the Residents' Loan Fund and the Nurses Scholarship Fund.

With deep regret we have accepted the resignation of Mrs. Harry Fowler and we have welcomed with great pleasure three new members, Mrs. Bearns Smith, Mrs. William Hutton and Mrs. Ethan Allan Dennison.

We are most grateful to the Hospital for all it has done for us this year, in particular the repainting and decorating of our entire floor. It is clean and fresh, ready for a busy year in 1958 which we hope will be our most active and useful year yet.



# Women's Auxiliary of the Presbyterian Hospital

MRS. JEROME P. WEBSTER, *Chairman*

In 1957 the Auxiliary continued its interest in the four projects which it was instrumental in starting and to which the members feel primarily obligated.

## *Volunteer Department*

Some 848 volunteers gave 81,640 hours of service in many departments. The quarters for volunteers are still crowded, and the demand for this service is still greater than the supply. The number of evening volunteers is growing, the daytime applicants are fewer. Many new volunteers have attended the weekly orientation courses given by the Personnel Department. Job descriptions drawn up by supervisors and volunteers are of value in interviewing new applicants. There has been more work done with teen-agers. The Red Cross has sent several Junior Aides, and a few schools send groups after school hours, who help as "baby feeders" in Babies Hospital. The Red Cross gave three evening courses for Nurses' Aides at the Hospital and 29 young women were "capped." The Service of Nursing supervised their practice work and has found these trained volunteers of great help on the wards.

The Hospital gave a tea for its volunteers in Maxwell Hall, where all volunteers were paid tribute, with 120 receiving service pins for their first 100 hours of service, and at the annual meeting of the United Hospital Fund 160 of our volunteers received recognition, including 11 who have given more than 4,000 hours of service.

The Volunteer Committee with representatives from each auxiliary has met at intervals. Miss Laura Vossler, Director of the Volunteer Department, has a new assistant, Miss Monte von Rosenberg. The Auxiliary sent Miss Vossler to the American Hospital Association Convention last autumn, where she was made a member of the Council on Hospital Auxiliaries, and she led a discussion group at the meeting. Miss Vossler is also a member of two committees of the United Hospital Fund: on Hospital Volunteer Services and of Directors of Volunteers.

### ***Milbank Library***

The Milbank Library for patients and staff was very fortunate in February to have Mrs. Dorothy Hood succeed the late Mrs. McKnight. Mrs. Hood has done a splendid work of organization in spite of many handicaps. She has a fine group of volunteers but needs more. Our Library Committee Chairman, Mrs. Howard Bruenn, took a course for library volunteers at the United Hospital Fund in preparation for her work and she is doing an outstanding job. We hope next year to have a full-time assistant in the Library, making it possible for the book carts to be taken more often to the wards, and to have someone at all times in the library to answer calls for books.

### ***Occupational Therapy***

The Occupational Therapy Department had a difficult start in 1957. Miss Helen White, its able director, left for a position with the United Hospital Fund, and two workers left to be married. The new director, Miss Elizabeth Scully, came in April, and through her enthusiasm the Department has taken a new lease on life. There is a full-time worker in Neurological Institute and another in the Institute of Ophthalmology. Twelve to fifteen volunteers work throughout the Hospital under the direction of Miss Jean Ritchie. More volunteers are needed and also supplies. Patients pay for supplies if they can, but many are unable to do so.

### ***Social Service***

The Social Service Department of the Presbyterian Hospital served approximately 16,000 patients in 1957. This is a smaller number than in 1956. However, with the new selective system of referral, this number represents more accurately the patients needing help with difficulties arising through illness, and the social workers concentrated their efforts on patients with real problems.

Although there are still staff vacancies, there is a greater stability this year. Some of the staff left for personal reasons, but several able and experienced social workers have come.

The Social Service Department and the Auxiliary gave a tea in August for Miss Helen Haines, who retired after 32 years on the staff. She was an outstanding member of the Department and her retirement is a great loss.

The Department received \$1,300 from the Havens Relief Fund through the Almoners, Mrs. Samuel W. Lambert, Jr. and Mrs. Ralph H. Boots.

The Anna Ball Kneeland Fund was again very helpful in furthering staff development. Five staff members took courses at the New York School of Social Work, and one was enabled to attend the Orthopsychiatric Conference in Chicago. The Auxiliary is planning to continue this fund which has proved its usefulness to the present staff and is also an attractive possibility in recruiting new workers.

### *Other Activities*

The Auxiliary has made donations to the House Staff Loan Fund. It is gratifying that our humble beginnings have developed and grown to be of much use in many emergency problems.

A benefit card party was given in the Spring, the proceeds going to the House Staff Loan Fund. We also made contributions to the Scholarship Fund of the Nursing Service, and to the Funds for special nursing for ward patients.

We have also given a helping hand to the house staff in the organization of a Nursery School for the children of the house staff and medical students living around the Hospital. After many years of hopes and disappointments this school opened in September with 16 children enrolled. The director is a Vassar graduate in child study, and she has an assistant. The children's parents labored for months with organization problems and finally leased and decorated an apartment of three rooms on the ground floor, with its own entrance, at 626 West 165th Street. The Auxiliary helped with the equipment and opening expenses. The charge of \$25 a month for each child is not sufficient to cover their expenses. We hope means will be found to keep the Nursery School. It is not an emergency morale booster, as is the loan fund, but a daily morale builder to the resident staff and their wives.

The United Hospital Fund Committee has had a banner year under the valiant leadership of Mrs. C. Redington Barrett. The Auxiliary passed its quota of \$29,146.

The Thrift Shop, our other major source of income, with Mrs. Paul B. Sheldon as Chairman, reports a profit for the year ending September 30, 1957 of \$4,464. Not as high as we would like it to be, but in October we opened a larger furniture shop on Third Avenue between 80th and 81st Streets. The new shop can keep more stock and accept larger pieces of furniture. Since October our profits from both shops are appreciably higher, and we believe next year's results will show a marked increase.

The Auxiliary welcomed eight new members in 1957: Mrs. Graham Clark, Mrs. Charles Edison, Mrs. Edward L. Howes, Mrs. Yale Kneeland, Jr., Mrs. Craven Nichols, Mrs. Charles Pratt, Mrs. Richard Stock,

and Mrs. Cornelius Tyson. At their requests, Mrs. Stanley M. Bysse, Mrs. Theodore Russell and Mrs. Edward B. Self were changed from Active to Associate Members, and Mrs. Lawrence H. Cotter from Associate to Active.

Space does not allow full appreciation to the Committee Chairmen for their devoted work throughout the year, or to the Board Members who have struggled over letters for the United Hospital Fund, or to others who have worked tirelessly and enthusiastically in the Thrift Shop, or in the Hospital. They have all given a labor of love to the Hospital we want to serve.

The Presbyterian Auxiliary is very grateful to Mr. Frederick A. O. Schwarz for his interest in and encouragement to us in the work we are trying to do, especially when he had so many important problems to face in the beginning of his term of Acting President. His appointment from the Board of the Committee on Auxiliaries (Mr. John A. Gifford, Chairman, and Mr. John S. Burke, Jr. and Mr. Dorrance Sexton) is very gratifying and stimulating, and we hope we will justify his faith in us. The Presidents of the Auxiliaries have met with Mr. Schwarz and this Committee, and have discussed a number of problems.

*TRUSTEES AND COMMITTEES - 1958-59*

# Trustees - 1958 - 59

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Allen, Miss Jonella  
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Ambye, Miss Edith  
Andino, Mrs. Esteban  
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Boots, Mrs. Ralph Henderson  
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Cohen, Mrs. Irving  
Cohen, Mrs. Isidore  
Cohen, Miss Renee  
Cohen, Mrs. Samuel  
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Connor, Miss Margaret  
Conway, Mrs. Frank  
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Engler, Mrs. Antoinette  
Epstein, Mrs. Deborah  
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# 1957 Publications of Members of the Professional Staff \*

## Anesthesiology

Apgar, V.

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- Changes in the heart and lungs at birth. *J. Pediatrics* 51:95-106.

Mark, L. C., Burns, J. J., Campomanes,

\* Many of the studies reported in these publications were supported by grants to Columbia University's College of Physicians and Surgeons, with which The Presbyterian Hospital is allied as the Columbia-Presbyterian Medical Center. In general, basic research is done in the laboratories of the College and clinical research in the clinics and wards of the Hospital. A number of studies are joint enterprises between Hospital and College.

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- The passage of thiopental into the brain. *J. Pharm. & Exp. Therap.* **119**: 35-38.

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*APPENDIX*

# Appendix

## STATISTICS

December 31, 1957

### BED COMPLEMENT

PRIVATE:	<i>No. Beds</i>	
Presbyterian Hospital (Harkness Pavilion).....	203	
Babies Hospital .....	10	
Eye Institute.....	19	
Neurological Institute .....	48	
Sloane Hospital .....	23	
Total Private .....	303	303
SEMI-PRIVATE:		
Presbyterian Hospital and Sloane Hospital:		
All Services (Harkness Pavilion).....	97	
Medicine .....	9	
Surgery .....	14	
Urology .....	31	
Orthopedic .....	55	
Otolaryngology .....	21	
Gynecology .....	13	
Obstetrics .....	29	
Babies Hospital .....	30	
Eye Institute.....	36	
Neurological Institute .....	43	
Total Semi-Private .....	378	378
WARD:		
Presbyterian Hospital and Sloane Hospital:		
Medicine .....	102	
Dermatology .....	8	
Metabolism .....	10	
Surgery .....	114	
Urology .....	36	
Orthopedic .....	67	
Otolaryngology .....	12	
Admitting .....	14	
Gynecology .....	35	
Obstetrics .....	81	
Babies Hospital (including premature nursery of 23 incubators) .....	152	
Eye Institute .....	37	
Neurological Institute .....	110	
Total Ward.....	778	778
MARY HARKNESS CONVALESCENT HOME.....		57
NEWBORNS (Sloane Hospital).....		1,516
Total.....		1,629

## HOSPITAL ADMISSIONS

	<i>Admissions</i>	
	<i>1957</i>	<i>1956</i>
<b>PRIVATE:</b>		
Presbyterian Hospital (Harkness Pavilion).....	5,532	5,586
Babies Hospital .....	362	383
Eye Institute.....	601	573
Neurological Institute.....	896	954
Sloane Hospital .....	772	732
Total Private .....	<u>8,163</u>	<u>8,228</u>
<b>SEMI-PRIVATE:</b>		
Presbyterian Hospital and Sloane Hospital:		
All Services (Harkness Pavilion).....	3,006	2,814
Medicine .....	182	130
Surgery .....	298	300
Urology .....	611	607
Orthopedic .....	1,111	1,096
Otolaryngology .....	1,153	1,157
Gynecology .....	586	530
Obstetrics .....	1,051	975
Babies Hospital .....	1,767	1,703
Eye Institute .....	1,419	1,412
Neurological Institute.....	1,012	1,106
Total Semi-Private .....	<u>12,196</u>	<u>11,830</u>
<b>WARD:</b>		
Presbyterian Hospital and Sloane Hospital:		
Medicine .....	1,522	1,560
Dermatology .....	104	106
Metabolism .....	120	111
Surgery .....	1,908	1,676
Urology .....	776	713
Orthopedic .....	995	1,194
Otolaryngology .....	427	459
Admitting .....	1,230	1,277
Gynecology .....	896	835
Obstetrics .....	4,131	4,053
Babies Hospital.....	2,950	2,825
Eye Institute .....	989	879
Neurological Institute.....	1,250	1,295
Total Ward .....	<u>17,298</u>	<u>16,983</u>
MARY HARKNESS CONVALESCENT HOME.....	721	749
Total .....	<u>38,378</u>	<u>37,790</u>
<b>INFANTS BORN IN SLOANE HOSPITAL:</b>		
Private beds .....	584	505
Semi-private and Ward beds .....	3,590	3,606
Total .....	<u>4,174</u>	<u>4,111</u>

## HOSPITAL OCCUPANCY

	Patient Days Care		Percentage of Occupancy	
	1957	1956	1957	1956
<b>PRIVATE:</b>				
Presbyterian Hospital (Harkness Pavilion).....	71,759	71,367	96.8	96.1
Babies Hospital.....	1,712	1,894	46.9	51.7
Eye Institute.....	5,760	5,199	83.1	74.8
Neurological Institute.....	15,292	16,358	87.3	93.1
Sloane Hospital.....	5,933	5,325	70.7	63.3
Total Private.....	<u>100,456</u>	<u>100,143</u>	<u>90.8</u>	<u>90.3</u>
<b>SEMI-PRIVATE:</b>				
Presbyterian Hospital and Sloane Hospital:				
All Services (Harkness Pavilion)...	29,793	29,375	84.1	82.7
Medicine.....	3,119	3,109	94.9	94.4
Surgery.....	4,928	5,015	96.4	97.9
Urology.....	7,445	7,376	65.8	65.0
Orthopedic.....	16,077	14,577	80.1	74.4
Otolaryngology.....	5,644	5,453	73.6	74.7
Gynecology.....	5,024	4,875	105.9	102.5
Obstetrics.....	7,214	7,225	68.2	68.1
Babies Hospital.....	12,718	11,512	116.1	104.8
Eye Institute.....	12,026	11,333	91.5	86.0
Neurological Institute.....	15,084	15,163	96.1	98.2
Total Semi-Private.....	<u>119,072</u>	<u>115,013</u>	<u>86.3</u>	<u>83.3</u>
<b>WARD:</b>				
Presbyterian Hospital and Sloane Hospital:				
Medicine.....	32,661	34,443	87.7	92.3
Dermatology.....	2,622	2,409	89.8	82.3
Metabolism.....	2,516	2,456	68.9	67.1
Surgery.....	34,910	35,276	83.9	84.5
Urology.....	11,368	11,534	86.5	87.5
Orthopedic.....	20,132	22,070	82.3	90.0
Otolaryngology.....	3,176	3,535	72.5	80.5
Admitting.....	2,430	2,609	47.6	50.9
Gynecology.....	12,113	11,721	94.8	91.5
Obstetrics.....	26,765	27,103	90.5	91.4
Babies Hospital.....	41,812	40,507	75.4	72.8
Eye Institute.....	7,938	7,501	58.8	55.4
Neurological Institute.....	29,960	31,022	74.6	77.1
Total Ward.....	<u>228,403</u>	<u>232,186</u>	<u>80.4</u>	<u>81.5</u>
MARY HARKNESS CONVALESCENT HOME.....	14,425	14,674	69.3	70.3
Total.....	<u>462,356</u>	<u>462,016</u>	<u>83.6</u>	<u>83.3</u>
<b>INFANTS BORN IN SLOANE HOSPITAL:</b>				
Private beds.....	4,531	3,925	54.0	46.6
Semi-private and Ward beds.....	22,283	23,082	67.8	70.1
Total.....	<u>26,814</u>	<u>27,007</u>	<u>65.0</u>	<u>65.3</u>



## OUT-PATIENT DEPARTMENT STATISTICS

Summary of Patients Treated:	1957	1956
Number of patients treated.....	<u>61,293</u>	<u>62,549</u>
Number of visits:		
Free .....	121,504	117,360
Pay .....	<u>287,503</u>	<u>289,386</u>
Total .....	<u>409,007</u>	<u>406,746</u>
Average visits per working day.....	<u>1,617</u>	<u>1,608</u>

Attendance Statistics:	<i>New to Clinics</i>	<i>Revisits</i>	<i>Total Visits</i>
Dermatology .....	4,636	28,279	32,915
Emergency and Admitting Wards.....	23,540	5,187	28,727
Group Clinic.....	3,894	23,160	27,054
Medicine .....	4,063	38,973	43,036
Neurology .....	2,248	14,001	16,249
Obstetrics and Gynecology .....	6,016	35,558	41,574
Occupational Therapy.....	59	474	533
Ophthalmology .....	4,608	23,178	27,786
Orthopedic .....	11,881	29,269	41,150
Otolaryngology .....	3,190	15,015	18,205
Pediatrics .....	5,751	45,097	50,848
Physical Therapy.....	1,298	14,826	16,124
Psychiatry .....	669	3,615	4,284
Surgery .....	20,117	31,437	51,554
Urology .....	<u>1,525</u>	<u>7,443</u>	<u>8,968</u>
Total .....	<u>93,495</u>	<u>315,512</u>	<u>409,007</u>

## PERSONNEL STATISTICS

	<i>On Duty December 31</i>	
	1957	1956
Administration .....	13	13
Assistant Secretary-Treasurer .....	44	46
Comptroller .....	90	91
Public Interest.....	13	13
Convalescent Home.....	42	43
Non-professional services:		
Buildings and Grounds.....	583	577
Food Service.....	375	375
Personnel and Protective.....	74	75
Other non-professional services.....	173	165
Professional services:		
Nursing .....	1,232	1,199
Professional Staff, Doctors' Offices & Research.....	386	381
Special Services .....	450	426
Vanderbilt Clinic and other.....	256	242
Total .....	<u>3,731</u>	<u>3,646</u>
Student Nurses .....	453	462
Volunteer Workers.....	388	385

**REPORTS OF THE TREASURERS**  
**THE ALUMNAE ASSOCIATION OF THE**  
**SCHOOL OF NURSING OF THE PRESBYTERIAN HOSPITAL**  
**IN THE CITY OF NEW YORK, INC.**

**BALANCE SHEET**

December 31, 1957 and 1956

**ASSETS**

	1957	1956
Capital Funds — securities and cash.....	\$716,349.84	\$689,576.63
Operating Funds — securities, cash, etc.....	10,506.14	12,814.19
Total Assets.....	\$726,855.98	\$702,390.82

**LIABILITIES**

<b>Capital Fund Reserves:</b>		
General fund.....	\$ 12,996.55	\$ 10,496.97
Benefit fund .....	149,988.03	145,693.68
Pension fund .....	493,089.84	477,558.38
Emma B. Kennedy Scholarship fund.....	25,545.84	25,046.82
Memorial Scholarship fund, '20.....	2,405.75	2,305.84
Helen Young Scholarship fund.....	28,909.93	25,660.92
Richard William Walsh Scholarship fund.....	1,618.87	1,418.93
Ruth C. Williams Scholarship fund.....	1,795.03	1,395.09
Total capital fund reserves.....	\$716,349.84	\$689,576.63
Operating Funds Reserves.....	\$ 10,506.14	\$ 12,814.19
Total Liabilities.....	\$726,855.98	\$702,390.82

**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**

Cash on hand January 1.....	\$ 9,729.87	\$ 10,164.35
<b>Receipts:</b>		
Sale of securities.....	\$ 25,045.33	\$118,697.16
Investment income .....	36,804.20	34,681.21
Legacy — Estate of Edith Joy Field.....		12,179.30
Donations .....	10,548.16	9,076.83
Dues and initiation fees.....	10,440.32	9,668.33
Dinner to graduating class.....	389.00	97.00
Loans repaid, etc.....	1,106.49	1,124.26
Total Receipts.....	\$ 84,333.50	\$185,524.09
	\$ 94,063.37	\$195,688.44
<b>Disbursements:</b>		
Purchase of securities.....	\$ 52,143.37	\$150,144.78
Clerical expense and fees.....	5,058.50	5,034.50
Pensions and benefits paid.....	15,610.00	16,857.50
Scholarships granted.....	2,300.00	2,983.33
Loans granted.....	100.00	
Donations .....	1,519.93	1,093.50
Printing, stationery and postage.....	6,179.06	6,452.92
Entertainment of graduating class.....	2,342.76	1,611.92
Miscellaneous .....	1,785.97	1,780.12
Total Disbursements.....	\$ 87,039.59	\$185,958.57
Cash on hand December 31.....	\$ 7,023.78	\$ 9,729.87

HELEN YOUNG, *Treasurer*

BOARD OF WOMEN MANAGERS OF THE BABIES HOSPITAL  
**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**  
 FOR THE AUXILIARY  
 For the Years 1957 and 1956

	<i>1957</i>	<i>1956</i>
Balance, January 1.....	\$ 104.03	\$ 246.63
Receipts:		
Membership dues.....	\$ 510.00	\$ 525.00
United Hospital Fund.....	5,689.05	5,996.97
Greater New York Fund.....	7,201.76	6,621.03
Total Receipts.....	<u>\$13,400.81</u>	<u>\$13,143.00</u>
	<u>\$13,504.84</u>	<u>\$13,389.63</u>
Disbursements:		
To Babies Hospital for:		
Emergency Nursing.....	\$ 6,000.00	\$ 6,200.00
Pediatric Psychiatric Clinic.....	1,500.00	1,500.00
Recreational Therapy.....	4,500.00	4,500.00
Volunteer Service.....	500.00	500.00
House Staff Loan Fund.....	250.00	250.00
Decorations, furniture and equipment, etc..	410.00	250.00
Miscellaneous.....	325.57	85.60
Total Disbursements.....	<u>\$13,485.57</u>	<u>\$13,285.60</u>
Balance, December 31.....	<u>\$ 19.27</u>	<u>\$ 104.03</u>

MARY S. B. BRAGA,  
*Treasurer*

BOARD OF WOMEN MANAGERS OF THE BABIES HOSPITAL  
**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**  
 FOR THE CRIBSIDE SOCIAL SERVICE COMMITTEE  
 For the Years 1957 and 1956

	1957	1956
Balance, January 1.....	\$12,108.84	\$ 3,847.92
<b>Receipts:</b>		
Membership dues.....	\$ 255.00	\$ 250.00
Donations .....	110.00	5.00
United Hospital Fund.....	7,083.65	7,570.12
Greater New York Fund.....	8,967.17	8,357.88
Investment income.....	730.13	672.64
Bargain Box Thrift Shop.....	7,631.73	3,502.06
Sewing Class dues and receipts.....	353.00	451.82
Repayments by patients of advances and loans..	81.00	138.00
Total Receipts .....	<u>\$25,211.68</u>	<u>\$20,947.52</u>
	<u>\$37,320.52</u>	<u>\$24,795.44</u>
<b>Disbursements:</b>		
Social service salaries.....	\$10,596.77	\$10,647.18
Travel of social service staff.....	67.29	90.00
Conference expenses, dues, subscriptions and meetings .....	259.65	26.00
Convalescent care.....	643.40	448.25
Advances to patients for convalescent care and miscellaneous loans .....	81.00	138.00
Relief assistance and extra for patients:		
Clothing .....	891.01	843.48
Milk and food.....	226.80	203.00
Christmas and Thanksgiving.....	229.00	221.66
Other .....	85.90	50.36
To Babies Hospital for:		
Emergency Nursing.....	5,000.00	
Social Service Staff Development Fund...	500.00	
Miscellaneous .....	65.39	18.67
Total Disbursements.....	<u>\$18,646.21</u>	<u>\$12,686.60</u>
Balance, December 31.....	<u>\$18,674.31</u>	<u>\$12,108.84</u>

JANET M. RILEY,  
*Chairman*

## NEUROLOGICAL INSTITUTE AUXILIARY

## SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS

For the Years 1957 and 1956

	<i>1957</i>	<i>1956</i>
Balance, January 1.....	<u>\$25,689.31</u>	<u>\$37,256.37</u>
Receipts:		
Donations .....	\$ 1,740.00	\$ 1,592.00
United Hospital Fund.....	10,964.90	11,749.17
Greater New York Fund.....	13,880.43	12,971.83
Everybody's Thrift Shop.....	12,337.07	12,676.31
Repayments by patients of advances and loans..	559.30	734.00
Total Receipts.....	<u>\$39,481.70</u>	<u>\$39,723.31</u>
	<u>\$65,171.01</u>	<u>\$76,979.68</u>
Disbursements:		
Social service salaries.....	\$23,379.29	\$26,749.18
To Neurological Institute for:		
House Staff Loan Fund.....	5,000.00	10,000.00
Library .....	1,200.00	1,200.00
Scholarship Aid to Graduate Nurses.....	1,000.00	
Social Service Development Fund.....	500.00	
Special Nursing Fund.....	2,000.00	5,000.00
Volunteer service .....	1,900.00	1,900.00
Advances to patients for summer therapeutic care and miscellaneous .....	559.30	734.00
Summer therapeutic care.....	3,503.93	2,268.00
Chronic care .....	1,942.05	524.88
Convalescent care .....	459.30	275.75
Medical relief .....	2,784.27	1,921.33
Recreation of patients.....		5.50
Staff travel, field and conference.....	273.39	93.95
Miscellaneous, postage, telephone and publications .....	821.49	617.78
Total Disbursements .....	<u>\$45,323.02</u>	<u>\$51,290.37</u>
Balance, December 31.....	<u><u>\$19,847.99</u></u>	<u><u>\$25,689.31</u></u>

KATHERINE G. FENIMORE COOPER,  
*Chairman*

## WOMEN'S AUXILIARY OF THE NEW YORK ORTHOPEDIC HOSPITAL

## SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS

For the Years 1957 and 1956

	1957	1956
Balance, January 1 . . . . .	<u>\$11,246.99</u>	<u>\$ 7,686.22</u>
Receipts:		
Donations . . . . .	\$ 8,718.81	\$ 5,230.02
Allocations from United Hospital Fund and Greater New York Fund Distribution . . . . .	4,000.00	4,000.00
Total Receipts . . . . .	<u>\$12,718.81</u>	<u>\$ 9,230.02</u>
	<u>\$23,965.80</u>	<u>\$16,916.24</u>
Disbursements:		
Recreational therapist salary . . . . .	\$ 3,225.49	\$ 2,854.54
Other recreational therapy expenses . . . . .	1,137.60	1,014.71
House Staff Loan Fund . . . . .	1,000.00	
Library . . . . .	700.00	700.00
Volunteer service . . . . .	1,100.00	1,100.00
Total Disbursements . . . . .	<u>\$ 7,163.09</u>	<u>\$ 5,669.25</u>
Balance, December 31 . . . . .	<u>\$16,802.71</u>	<u>\$11,246.99</u>

PAMELA F. FURSE,  
*Treasurer*

## WOMEN'S AUXILIARY OF THE PRESBYTERIAN HOSPITAL

## SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS

For the Years 1957 and 1956

	1957	1956
Balance, January 1 . . . . .	\$ 6,482.21	\$ 5,896.08
Receipts:		
Membership dues . . . . .	\$ 592.50	\$ 592.50
United Hospital Fund . . . . .	7,330.84	7,915.16
Greater New York Fund . . . . .	9,280.08	8,738.84
Donations . . . . .	69.00	292.88
Other (Card Party Benefit) . . . . .	907.98	
Stuyvesant Square Thrift Shop . . . . .	4,260.59	5,337.08
Total Receipts . . . . .	<u>\$22,440.99</u>	<u>\$22,876.46</u>
	<u>\$28,923.20</u>	<u>\$28,772.54</u>
Disbursements:		
To Presbyterian Hospital for:		
Occupational Therapy . . . . .	\$ 6,000.00	\$ 6,000.00
House Staff Loan Fund . . . . .	2,000.00	4,000.00
Library . . . . .	4,900.00	4,800.00
Scholarship Aid to Graduate Nurses . . . . .	1,000.00	
Special Nursing Fund . . . . .	1,000.00	
Volunteer service . . . . .	7,267.39	7,200.00
Miscellaneous . . . . .	1,925.63	290.33
Total Disbursements . . . . .	<u>\$24,093.02</u>	<u>\$22,290.33</u>
Balance, December 31 . . . . .	<u>\$ 4,830.18</u>	<u>\$ 6,482.21</u>

MARGARET T. STINCHFIELD,  
*Treasurer*

# Endowed Beds

(1) A gift of \$10,000 shall entitle the donor to nominate a patient to use and occupy one bed in the common wards of the Hospital free of charge (except for special service) for not more than ninety days in any one year.

The donor may at the time of making the gift appoint to another in his stead such right to nominate, provided the appointee is acceptable to the Hospital.

Such right to nominate may be exercised only: —

(a) During the life of the person having the right to nominate, if such right is in an individual.

(b) For a period of fifteen years, if such right is in a Corporation, Society or Association.

(2) Endowed Bed privileges are subject to all rules and regulations governing the admission, treatment, and discharge of patients.

(3) The Board of Trustees may in their discretion under special circumstances accept gifts for the endowment of beds on such other terms and conditions as they may deem best calculated to promote the objects for which the Hospital was established and is maintained.

(4) Periodic gifts may be made until endowment of a bed is completed, at which time the right to nominate shall commence.

## MEMORIAL ENDOWED BEDS FOR RESEARCH PURPOSES

A gift of \$10,000 shall entitle the donor to establish as a permanent memorial one memorial endowed bed for research purposes in a ward of the Hospital to be used and occupied by patients free of charge, except for special service.

The President of the Medical Board shall, subject to the approval of the Executive Vice President of the Hospital have the privilege of nominating patients to use and occupy a Memorial Endowed Bed for Research Purposes for not more than 90 days in any one year for a period of 15 years, subject to all rules and regulations governing the admission, treatment and discharge of patients. This privilege shall be assigned to the persons occupying these respective offices (President of the Medical Board and Executive Vice President of the Hospital) at the time the nomination is made.

## *Endowed Beds and Rooms*

### *Presbyterian Hospital*

- 1868 Mary J. Gelston  
1870 Henrietta A. Lenox (2 Beds)  
Washington R. Vermilyea  
A. R. Wetmore  
1871 John Laurie  
Mary Ann Parish  
1872 William Earl Dodge  
John T. Johnston  
Otis D. Swan  
Henry Young (2 Beds)  
1873 James Brown (2 Beds)  
John R. Ford  
Jonathan Sturges



- 1878 James G. and Henry G. deForest, in memory of  
Lockwood deForest Woodruff, M.D.
- 1880 William C. Rhineland
- 1881 Jennet L. and Robert L. Belknap, in memory of Aaron B. Belknap  
Fifth Avenue Presbyterian Church  
Henry B. Hyde, in memory of his son, Henry B. Hyde, Jr.  
John Stewart Kennedy  
Frederick and Henry G. Marquand  
Edwin D. Morgan (3 Beds)  
Mary L. Sheafe  
John L. Proudfit
- 1882 Heber R. Bishop (3 Beds)  
Mrs. Robert L. Stuart, in memory of her father, Robert McCrea  
Edwin D. Morgan  
Mrs. Moses Taylor
- 1883 Frederick Billings  
Reformed Protestant Dutch Church of the City of New York
- 1884 Nathaniel W. Conkling  
West Presbyterian Church, to be known as "Faith Presbyterian Church Bed"  
Madison Square Presbyterian Church, in memory of George W. Lane
- 1885 Brick Presbyterian Church, in memory of Dr. John G. Adams  
Richard Irvin
- 1886 Frederick Baker, in memory of Sarah Pyewell Baker  
Edward L. Beadle  
Brick Presbyterian Church, in memory of Miss Ann Adams  
Fourth Avenue Presbyterian Church Bed by Peter Cumming, in memory of  
Francis P. Schoals  
George E. Dodge  
Horace F. Hutchinson, in memory of Ellen B. Schoals  
Mr. and Mrs. William D. Sloane, in memory of their son,  
William D. Sloane, Jr.  
Henry S. Wilson, in memory of his son, Harry H. Wilson
- 1887 Fifth Avenue Presbyterian Church
- 1888 Broadway Tabernacle Society  
Samuel Inslee, in memory of Kate J. Inslee
- 1889 John Sloane, in memory of his mother, Euphemia Sloane
- 1890 Isaac V. Brokaw, in memory of Ernest B. Brokaw  
Sidney Dillon, in memory of Hannah Dillon  
Ambrose K. Ely  
Josiah M. Fiske  
O. B. Jennings  
Mrs. John Stewart Kennedy  
Amelia Kerr  
Robert Marshall  
Elizabeth S. and Emily M. Wheeler, in memory of James Boorman  
"The Davenport Bed"
- 1891 Sarah A. Havemeyer, in memory of her son, Hector C. Havemeyer  
Thomas Hope  
John E. Parsons, in memory of his children, E. L. P., K. M. P., and R. M. P.  
Mrs. A. R. Van Nest, in memory of her husband, Abram R. Van Nest
- 892 John Stewart Kennedy, in memory of his niece, Emma Stewart Baker  
Alexander Maitland, in memory of his mother, Mary C. Maitland
- 893 Maria S. Auchincloss, in memory of her husband, Edgar S. Auchincloss  
Frances T. Lord, in memory of her husband, George deForest Lord  
Presbyterian Church on University Place

- Presbyterian Home for Aged Women  
Margaret A. Sinclair, in memory of Mr. and Mrs. James Sinclair  
West-Park Presbyterian Church  
Young Men's Christian Association
- 1895 Mary Harrison  
Mrs. Clarence M. Hyde, in memory of her mother, Rebecca Babbitt  
John Stewart Kennedy, in memory of Mrs. Robert L. Stewart  
Mrs. James T. Murray, in memory of her husband, James T. Murray
- 1896 Anthony Dey, in memory of Joseph G. and Eliza D. Scott  
Jane Hope  
Esther J. Jennings, in memory of her husband, Oliver B. Jennings
- 1897 Mrs. Francis E. Baker, in memory of her father, James Rich Steers  
William S. Brown  
Helen Miller Gould, in memory of her parents, Mr. and Mrs. Jay Gould  
Margarette E. and Susan D. Griffith, in memory of their father, Griffith W. Griffith  
Mary J. Griffith, in memory of her husband, Griffith W. Griffith  
Rachel L. Kennedy, in memory of her mother, Mrs. Rachel C. Kennedy  
Annie S. Paton, in memory of her husband, William Paton  
Charlotte H. Skidmore, to be known as "The William L. Skidmore Bed"
- 1898 Brick Presbyterian Church  
Matilda A. Brown, in memory of her son, H. Auchincloss Brown  
First Presbyterian Church  
Mrs. Stephen V. Harkness, in memory of her daughter, Florence Harkness  
Jane Hope, in memory of her mother, Grace Corrie Hope  
John Stewart Kennedy, in memory of Rev. William G. Schauffler, D.D., LL.D.  
Mrs. Elliott F. Shepard, in memory of her daughter, Florence Vanderbilt Shepard  
Mrs. Elliott F. Shepard, in memory of her daughter, Marguerite Shepard
- 1899 William W. Cole, in memory of his mother, Mary A. Cole  
William Whitewright, in memory of his father, William Whitewright, "The Whitewright Beds" (10 Beds)
- 1900 Emily B. Hopkins, in memory of her husband, Moses Hopkins, "Moses Hopkins Memorial"  
Donald MacKay, in memory of his children, Edith Winslow and Walter Wise MacKay  
Caroline L. Macy, in memory of her daughter, Mary M. K. Willets  
Laura Roome, in memory of her sons, Harry and Alfred Roome  
Martha L. St. John, in memory of her mother, Sarah Ward  
Nathaniel Whitman
- 1901 Julia Billings, in memory of her husband, Frederick Billings  
Camilla L. Edwards, in memory of her husband, Walter Edwards  
Andrew J. Garvey, in memory of his mother, Elizabeth Jeffries Garvey (2 Beds)  
George Lauder  
Charles H. Marshall  
Justine Adele Stafford, in memory of her father, Justin A. Bliss
- 1902 Robert Graham Dun  
Margaret J. Plant, in memory of her brother, Simon Loughman
- 1903 Heber R. Bishop  
Lura Currier  
Mrs. Francis B. Harrison  
Julia J. MacCartee, in memory of her husband, Robert MacCartee  
Madison Avenue Reformed Church  
Adele Berry Sloane, in memory of her father, Abraham J. Berry, M.D.

- Justine Adele Stafford, in memory of her mother, Eveline C. Bliss  
 John T. Terry
- 1904 Virginia E. Fowler, in memory of Clarence E. Fowler  
 Susan Bevier  
 Mrs. William Starr Miller  
 Josephine Penford, in memory of Dr. Edward Livingston Trudeau, Jr.  
 Peter Reid, in memory of his wife, Jane Watson Reid  
 Francis A. Palmer
- 1905 Frederick G. Bourne  
 Helen C. Inslee, in memory of her husband, Samuel Inslee  
 Titus B. Meigs, in memory of his son, Titus B. Meigs, Jr.  
 Mrs. James T. Murray, in memory of Rev. John Hall, D.D., LL.D.  
 Sarah J. Parsons, in memory of her husband, Charles Parsons  
 Presbyterian Church on University Place
- 1906 Maria L. Campbell, in memory of Henry Pearsall Campbell  
 Susan W. Duncan, in memory of her husband, John P. Duncan  
 Samuel Keyser (3 Beds)  
 Sara Pyle McAlpin and James Tolman Pyle, in memory of their father,  
 William Scott Pyle  
 Reformed Protestant Dutch Church of Garden Street  
 John Sloane, in memory of his brother, Thomas Chalmers Sloane  
 John Sloane, in memory of his father, William Sloane
- 1908 William R. Craig, in memory of his sister, Florence Faxon Craig  
 George B. Goldschmidt, in memory of his mother, Celestine Goldschmidt  
 Samuel Anthony Goldschmidt, in memory of his mother, Celestine  
 Goldschmidt  
 Mrs. Stephen V. Harkness, in memory of her husband, Stephen V. Harkness  
 Charles H. Marshall, Jr.
- 1909 Rev. and Mrs. Robert Russell Booth, in memory of "Minnie and Willie"  
 Canadian Society of New York  
 Edward West Currier, in memory of his stepmother, Laura Currier  
 Edward West Currier, in memory of his stepbrother, Walter B. Currier  
 Edward West Currier, in memory of Edward W. Currier  
 Mary Jane Johnson, in memory of her husband, William H. Johnson  
 J. Theresa Keyser, in memory of her husband, Samuel Keyser  
 Julia Hannon Lyle  
 Winfield Tucker, in memory of Joseph, Isabelle and Adeline (3 Beds)  
 J. Spencer Turner, in memory of his first wife, Cornelia J. Turner
- 1910 Jane A. Townsend, in memory of her son, Randolph W. Townsend, Jr.  
 Jane A. Townsend, in memory of her son, Harmon W. Norton  
 Jane A. Townsend, in memory of her daughter, Emma L. Norton  
 Amelia Mott Graham, in memory of Malcolm Graham  
 Adeline Ives Latham, in memory of her husband, John Howard Latham  
 Josephine G. Lord, in memory of her husband, Franklin B. Lord
- 1911 Brearley School Girls and others interested, in memory of Madam Bertha  
 Beck, "Madam Beck Memorial Teacher's Bed"  
 Harriet Coles, in memory of her sisters, Susan and Anna Codman  
 Caroline Thorn Kissel, in memory of her husband, Gustav Edward Kissel  
 Katherine Spencer Leavitt, in memory of her husband, Rev. William Leavitt  
 (2 Beds)  
 Reformed Low Dutch Church of Harlem  
 Frederick Sturges, in memory of his father, Jonathan Sturges  
 William Stuart Tod, in memory of his brother, George Tod
- 1912 Melville de Wolf, in Children's Ward, "Emma de Wolf Bed"  
 Gustavia A. Senff, in memory of her husband, Charles A. Senff

- 1912 Mrs. Christopher M. Bell, "The Dennistoun Bed"  
Cornelia Eaton, to be known as "The Dr. Reuben S. Carpentier Memorial"  
(3 Beds)  
Mrs. Jeremiah V. Meserole, in memory of her son, Abraham Meserole  
Josephine Penfold  
Jane G. Phelps, in memory of her husband, Anson G. Phelps, Jr. (2 Beds)
- 1914 Hugh D. Auchincloss, in memory of his mother, Elizabeth Auchincloss  
Jane Elizabeth Grannis, in memory of her mother, "Charlotte Williams Platt  
Bed"  
William H. Penfold, in memory of Josephine Penfold  
Louise Tillinghast, in memory of her sister, Amelia C. Babcock  
Minnie Hackett Trowbridge (6 Beds)
- 1915 A Friend, in memory of Sophia Kellogg Stebbins and Mary Tompkins  
Kimball  
A Friend  
Mrs. Jeremiah V. Meserole, in memory of her father-in-law, Abraham  
Meserole  
Mrs. Jeremiah V. Meserole, in memory of her husband, Jeremiah Vanderbilt  
Meserole  
Mrs. Jeremiah V. Meserole, in memory of her brother, Adolphus Clock  
Mrs. Jeremiah V. Meserole, in memory of her parents, Alfred and  
Anna Maria Clock
- 1916 Emil C. Bondy, in memory of Margaret Carson Cowan  
Central Presbyterian Church  
Mr. and Mrs. James Petrie Chalmers, in memory of James Petrie  
Chalmers, Jr., "Chalmers Memorial Bed"  
Robert A. Chambers, in memory of his father, Robert Chambers  
Dunlevy Milbank, in memory of his mother, Ella Dunlevy Milbank  
William D. Sloane (3 Beds)
- 1917 Emeline Y. Danforth, in memory of Mrs. William B. Jenkins  
Harris Brisbane Dick, to be known as the "Harris Brisbane Dick Free Bed"  
Sarah C. Miller  
Albert Winter, in memory of Adaline Benson Winter
- 1918 Ida Leora Olmstead, to be known as "Leora McCammon Bed"
- 1919 Samuel Elliott  
Elizabeth Keys, in memory of her daughter, Edith Keys  
Rutgers Presbyterian Church  
James R. Steers, in memory of his former wife, Rebecca E. Steers  
John W. Sterling
- 1920 William C. Boschen, to be known as the "Boschen Bed"  
Rosa Franklin (4 Beds)  
Francis P. Furnald  
Mrs. Francis P. Furnald  
Mary A. Harriot, to be known as the "Margaret Harriot Alms"  
Mary A. Harriot, to be known as the "James Harriot Alms"  
Mrs. Henry O. Havemeyer, in memory of her parents, George William and  
Matilda Adelaide Elder  
Margaret J. Orr, in memory of her mother, Ann Boyd Orr  
Anna St. John, in memory of her brother, Milton St. John
- 1921 Mrs. Peter B. Wyckoff, to be known as the "Sidney Dillon Bed"  
Henry M. Gescheidt  
Ralph E. Prime, in memory of his daughter, Ruth Havens Prime  
Joseph K. Gwynn  
Charles S. Ward, in memory of his friend, Sophie L. Kinman  
Charles S. Ward

- 1922 Minetta C. Howenstine (8 Beds)  
 Christina C. Munro, in memory of her husband, John Munro  
 Anna M. Romaine, in memory of Dr. William I. Detmold  
 Arnold Thayer (2 Beds)  
 Hamilton B. Tompkins, in memory of his wife and himself
- 1923 Lydia Augusta Brown  
 Josephine Newman Hall
- 1924 Bohemian Society "Lidumil"  
 Cordelia F. Turrell  
 Nannie Gyles Johnson (Children's Ward), in memory of her son,  
 Shirley Everton Johnson  
 Mrs. William John Fitzgerald
- 1925 Christina Bond  
 In memory of Julia C. Skidmore  
 George Clarke  
 Elizabeth J. Hofer (2 Beds)  
 In memory of Catherine Parke and Horatio C. Kretchmar  
 Edward M. Morgan Memorial Association (4 Beds)  
 In memory of Edward M. Morgan  
 Jennette Robertson, to be known as "Helen C. Inslee Endowed Bed"
- 1926 Elizabeth Ellen Auchincloss, to be known as "E. E. Auchincloss, Jr. Bed"  
 Members of the New York Stock Exchange, to be known as the  
 "Seymour LeGrande Cromwell Memorial" (2 beds)  
 Edmund Penfold (2 Beds), in memory of Josephine Penfold and  
 William Hall Penfold  
 Dr. M. Allen Starr, in memory of Allen Egbert Starr  
 John B. Trevor, in memory of Emily N. Trevor  
 West End Collegiate Church  
 George D. Widener
- 1927 Second Presbyterian Church in the City of New York  
 Ellen Mills Borne, in the Children's Ward, two beds to be known as  
 "John E. Borne Bed" and "Nellie M. Borne Bed"  
 Virginia Marquand Monroe, in the name of the Young Men's Christian  
 Association  
 Mrs. Charles H. Senff, to be known as "Dr. George A. Tuttle Bed"  
 W. Frazer Gibson, in memory of his mother, Jeanette Frazer Gibson, to be  
 known as "Jeanette Frazer Gibson Bed"  
 Augustus C. Gurnee, two beds in memory of his mother, Mary M. Gurnee  
 Eliza V. Nicholson  
 Mrs. Murray W. Dodge and Mrs. Franklin Lord, in memory of their mother,  
 Mrs. Fordyce D. Barker (Single Ward Room)  
 Dunlevy Milbank (Single Ward Room)  
 F. Ethel Wickham, in memory of her father, William Hull Wickham, to be  
 known as "William Hull Wickham Bed" (Single Ward Room)  
 Anna A. Johnston, in memory of her parents, William G. and  
 Adriana C. Gardner  
 Anna A. Johnston, in memory of Lewis, Anna, Edward and Mary Johnston  
 (Single Ward Room)  
 Broadway Presbyterian Church, to be known as the "Walter Duncan  
 Buchanan Bed"
- 1928 North Presbyterian Church  
 In memory of McKevers Bayard Brown (Single Ward Room)  
 Caroline B. Sellev (4 Beds)  
 Red Cross Rooms for Nurses (3 Single Ward Rooms)  
 Robert W. deForest (Single Ward Room)

- Henry W. deForest (Single Ward Room)  
 James R. Steers  
 Jane Livingston Armour, in memory of John A. Livingston  
 Jane Livingston Armour, in memory of Herman O. Armour  
 In memory of Meredith Howland Pyne  
 Stella C. and Roi C. Megrue (Single Ward Room)  
 Mrs. E. C. Wills, in memory of her mother, Mrs. J. F. Ackerman, and her  
 sister, Mrs. W. Clarence Reed
- 1929 Caroline White, in memory of her sister, Eliza W. White  
 Elizabeth A. Hays, in memory of William and Charlotta Hays
- 1930 Mr. and Mrs. Ernest Trow Carter  
 The Presbyterian Church in the Town of Rye, N. Y.  
 Mrs. Arthur E. Lauderbach, in memory of her mother and father,  
 Esther Hull Jackson and Peter A. H. Jackson  
 Mary L. Walker Peters, to be known as "The Charles Grenville Peters and  
 Mary Walker Peters Free Bed"  
 Marie F. Coddington, to be known as "The Emilie Coddington Bed"
- 1931 Mrs. Clara Beales Obrig, in memory of Adolph Obrig and Clara Beales Obrig  
 (Single Ward Room)  
 Alfred V. Meserole, in memory of his mother, Evelina A. Meserole
- 1932 In loving memory of Justine Adele Stafford (Mrs. W. F. Stafford)  
 by her sister, Ida Evelina Bliss
- 1933 Mrs. John A. Hance and Mrs. Irene Louise Hance, in memory of  
 James R. Jesup
- 1934 Ida Adams, in memory of her sister, Sadie E. and her brother,  
 Robert F. Adams (Single Ward Room)  
 Josephine Leyboldt, in memory of her brothers, Louis and Frederick  
 Leyboldt (2 Beds)
- 1935 Walter J. M. Donovan, in memory of his father, Timothy Donovan
- 1936 Elizabeth P. Hewes, to be known as "The Elizabeth P. Hewes Bed"  
 Dunlevy Milbank, in memory of his mother, Ella Dunlevy Milbank  
 Mary S. Thayer, to be known as "The Orlando Thayer Bed"
- 1937 Margaretta J. Gamble, to be known as "The Gamble Bed," in memory of her  
 father and mother  
 Jeremiah Milbank, in memory of his father, the late Joseph Milbank
- 1938 Susetta L. Goss, to be known as "The Goss Bed," in memory of her parents,  
 Rev. C. C. Goss and Theodosia C. Goss  
 Annie Miller, to be known as "The Mrs. Alexander Miller Memorial Bed,"  
 in memory of her mother, Mrs. Alexander Miller  
 Bertha H. Minturn, in memory of her most faithful and beloved nurse,  
 Mary Humphries  
 Henry T. Sloane, to be known as "The Euphemia Sloane Coffin Bed,"  
 in memory of his sister Euphemia Sloane Coffin
- 1939 "In Memoriam"  
 Dunlevy Milbank, in memory of his mother, Ella Dunlevy Milbank
- 1940 George Gibbs, to be known as "The George Gibbs Bed"
- 1942 Mrs. Huntington McLane, to be known as the "Therese K. Thorne Bed,"  
 in memory of her mother  
 Cornelia Livingston Pell, in memory of Alfred Duane Pell  
 Frank Wallach, in memory of Ida May Wallach
- 1943 Stuart Duncan, to be known as "The Stuart Duncan Bed"
- 1944 Anonymous, to be known as "The Dr. William Darrach Bed"  
 John Fraser, in memory of his parents, Alexander and Elizabeth Fraser
- 1945 Robert W. Carle, in memory of his mother, to be known as the "Cornelia

- Willets Carle Bed" for general hospital use including harelip and cleft palate cases
- 1947 W. and J. Sloane  
 Frederick Sturges, Jr., Mrs. Mary Armit Sturges, Mrs. Catharine Armit Chapman and Frederick Sturges, III, in memory of Frederick Sturges Walter S. Gifford, in memory of his son, Walter Sherman Gifford, Jr. Ida L. Darling, known as the "Richards Memorial Bed"  
 John Sloane, in memory of his wife, Elsie Nicoll Sloane, to be known as the "Elsie Nicoll Sloane Bed"  
 Elisa Smith Mabon, in memory of her husband, James Brown Mabon
- 1948 Otto M. Eidlitz, to be known as the "Eidlitz Bed"
- 1949 Effie B. Shearman
- 1950 Isabel Shields Kemp, to be known as "Mary M. Shields and the Dr. Robert Coleman Kemp Free Bed"
- 1951 Gerrish Hill Milliken
- 1952 William Dzus, to be known as the "Ukrainian Institute of America, Inc. Bed"
- 1953 Estate of Charlotte C. Garretson, to be known as the "Charlotte Higbee Kelsey Bed"  
 W. Alton Jones Foundation, Inc., to be known as the "Nettie Marie Jones Bed"
- 1954 Estate of M. Samuel Stern to be known as the "M. Samuel Stern Memorial"
- 1955 Estate of Robert J. Eidlitz to be known as the "Marc Eidlitz Bed"  
 Mrs. John S. Holbrook, in memory of her parents John Johnston and Mary Sloane Sinclair
- 1956 Estate of Aurie Dell Black to be known as the "Aurie Dell Black Bed"  
 Robert W. Carle to be known as the "Adele Skiddy Carle Bed"  
 Estate of Adolph Riesenber to be known as "The Adolph and Anna A. Riesenber Bed"
- 1957 George F. Cahill, M.D., to be known as the "Endowed Bed for Personnel of the Squier Urological Clinic"  
 Edward H. Carle, in memory of his father, to be known as the "John J. Carle Bed"  
 Mrs. William J. Demorest, in memory of her parents, Wealthy H. Lewis and Richard James Lewis  
 Chancellor Kent Lodge 870, Free and Accepted Masons, in memory of George J. Weissman  
 Morris Morgenstern Foundation, to be known as the "Sadie B. Morgenstern Bed"  
 Estate of Mary Ross Potter, to be known as the "Georgianna Morley Bed"  
 Estate of Mathilde S. Sterne, to be known as the "Simon Sterne Beds" (2 Beds)  
 Board of Trustees of The Presbyterian Hospital in honor of and to be known as the "Charles P. Cooper Endowed Bed"

## MEMORIAL ENDOWED BEDS FOR RESEARCH PURPOSES

- 1948 Mrs. William Barclay Parsons, in memory of her husband, William Barclay Parsons  
 Muriel Jane Rudinger Foundation, Inc., to be known as the "Muriel Jane Rudinger Bed"
- 1950 Charles E. Culpeper Foundation, Inc. (2 Beds)
- 1952 John F. Bush Memorial Bed  
 Estate of Selma Boyd, two beds each to be known as a "Boyd Bed"  
 Bruce Barton, in memory of his wife, to be known as the "Esther Randall Barton Memorial Bed"

- 1953 Herman Goldman Foundation, Inc., in memory of Theresa and Frank Goldman  
W. Alton Jones Foundation, Inc., in memory of Mamie W. Marvin
- 1954 Mr. and Mrs. Charles P. Cooper, in memory of Mrs. Cooper's father,  
Doctor Charles Lathrop Parsons  
John Shepard Parke Memorial Bed  
Mr. and Mrs. Sidney J. Weinberg, in memory of their parents
- 1955 Bruce Barton, in memory of Clyde Scott and Helen Barton Stilwell, to be known as the "Clyde Scott and Helen Barton Stilwell Memorial Bed"  
George F. Cahill, M.D., Research bed in the Department of Urology  
Mr. and Mrs. Charles P. Cooper, in memory of Mrs. Cooper's mother,  
Mrs. Charles Lathrop Parsons  
Herman Goldman Foundation, Inc., in memory of Theresa and Frank Goldman  
Williams-Adler Foundation Bed

## ENDOWED ROOMS

- 1903 Henry H. Rogers
- 1905 Mrs. Morris K. Jesup, to be known as the "Eliza De Witt Memorial Room"
- 1910 Mrs. John Stewart Kennedy, in memory of her husband, to be known as the "J. S. K. Memorial Room"
- 1912 Peter Cumming, to be known as "Peter Cumming Memorial Room"
- 1926 Alumnae Association of the School of Nursing of The Presbyterian Hospital, to be known as the "Amabel G. Roberts Memorial Room"
- 1928 Mrs. William Sloane, to be known as "The William Sloane Room for Graduate Nurses"
- 1930 The Sarah A. Hard Taylor Memorial Fund, to be known as "The Sarah A. Hard Taylor Room"
- 1935 Mrs. Herbert Neal, in memory of her husband, James Norman Hill, deceased
- 1937 S. Augusta Mora, in memory of her husband, Frank Mora, and mother, Sarah Robson Van De Water

***Babies Hospital***

- 1892 The Cribside Committee, known as "Cradyl-Nyst"
- 1894 Miss Ellen James Evans  
Mrs. Henry G. Trevor
- 1895 Mrs. Evan T. Walker  
Mrs. Richard Arnold, in memory of Georgiana Arnold
- 1897 Mr. and Mrs. Charles M. Fry, known as the "Mr. and Mrs. Charles M. Fry Bed"  
Mrs. George Kemp, "For the use and purposes of the Hospital"
- 1898 Mrs. Oliver G. Jennings, known as the "Brewster Bed"
- 1899 Mr. and Mrs. John Sherman Hoyt, in memory of John Sherman Hoyt, Jr.
- 1900 Mrs. Elizabeth Chamberlin Lockwood, in memory of Emily Beaver Chamberlin
- 1902 Mr. and Mrs. W. E. Dodge, in memory of Grace Osborn  
Henry P. Wertheim, in memory of Clara W. Wertheim
- 1904 Mr. and Mrs. George Arents, in memory of George Arents Brown  
Estate of Mrs. Charles Harvey Hartman
- 1905 Mrs. J. Henry Lane  
Mrs. Daniel S. Lamont, known as the "Julia Lamont Bed"
- 1907 The Cribside Committee
- 1908 Arthur W. Butler, in memory of Elizabeth Marshall Butler



- 1910 Dr. and Mrs. L. Emmett Holt, in memory of Kenneth M. Holt  
Edwin Clarence Moller, in memory of Peter Moller
- 1911 Emily A. Watson, in memory of Wheeler Watson  
Mrs. Bradley Martin, in memory of David Bradley Martin
- 1912 In loving memory of J. Bradley Cumings, endowed by his friends. "Greater love hath no man than this, that a man lay down his life for his friends."—*St. John 15:13*
- 1914 Mrs. Andrew Carnegie, in memory of Archibald Fraser Barrow  
Mrs. Robert W. Todd, known as the "Mabel Todd Bed"
- 1916 Mr. and Mrs. John Chandler Moore, in memory of Edward de Bébian Moore  
Mrs. John Hubbard, in memory of Margaret Fahnestock  
Mrs. Clarence M. Hyde, known as the "Clara Mathewson Hyde Bed"
- 1917 Harris Brisbane Dick, known as the "Harris Brisbane Dick Free Bed"  
Mrs. Edward S. Harkness, known as the "Thomas Stillman Taylor Bed"
- 1919 Mr. and Mrs. Daniel Schnakenberg, in memory of their daughter,  
Anna Kate Bartlett  
Mrs. John Jay Knox, in memory of John Jay Knox  
Mrs. John Jay Knox, in memory of Dr. Reuel B. Kimball
- 1920 Mrs. Andrew Carnegie, "A thanks offering for Louise Carnegie Miller"
- 1921 The Estate of Jacob H. Schiff
- 1922 The Cribside Committee, in memory of Sarah Elizabeth Williams  
Mr. and Mrs. Simon Guggenheim, in memory of their son,  
John S. Guggenheim
- 1923 Mr. and Mrs. Herman Armour Nichols, "In loving memory of  
Marie Louise Nichols"
- 1929 The Estate of Julia M. Stout
- 1930 Edith C. Thompson, in memory of her mother, Mrs. Grace H. Thompson
- 1934 West End Collegiate Church
- 1935 The Estate of Daniel Schnakenberg, in memory of his children,  
Daniel Schnakenberg, Jr., and Marie Schnakenberg
- 1936 The Estate of Carrie Guggenheim
- 1938 The Estate of Emily S. Hornblower, in memory of her stepdaughter,  
Susie Sanford Hornblower
- 1949 Dr. Frederic H. Bartlett, "Endowed in loving memory of Frederic H. Bartlett, M.D., 1872-1948, by his patients and other friends to commemorate his many years of faithful service in Babies Hospital"
- 1950 The Estate of Emelyn L. Coolidge, in memory of Marianna Wheeler and Emelyn L. Coolidge, M.D., to be known as "The Wheeler-Coolidge Bed"
- 1957 Estate of Martha S. Reynolds, in memory of her mother,  
Ernestine Schaffner

### ***Neurological Institute***

- 1929 Red Cross Endowed Bed for Nurses  
Rivington-Dwyer Endowed Room for Nurses
- 1943 Alice Dunning Starr, in memory of her husband, Allen Starr

### MEMORIAL ENDOWED BEDS FOR RESEARCH PURPOSES

- 1952 Estate of John Bahrenburg, in memory of John H. Bahrenburg and Elizabeth Bahrenburg (Sixteen Beds)

### ***New York Orthopedic Hospital***

- 1883 Miss C. B. Hicks, continued in perpetuity by Buchanan Winthrop
- 1886 Mrs. Elizabeth Milbank Anderson, four beds, in memory of  
J. Milbank Anderson

- 1891 Alfred Corning Clark, three beds  
Edward Severin Clark, two beds, to be known as the "Edward Severin Clark Beds"  
Mrs. Henry S. Winthrop
- 1893 Mrs. William D. Sloane, in memory of William Douglas Sloane, Jr.  
James K. Gracie, in memory of Anna Bulloch Gracie  
Miss Sarah B. Gibbs
- 1894 Mrs. Richard Tylden Auchmuty, two beds, in memory of  
Richard Tylden Auchmuty  
James H. Jones
- 1896 Mrs. William Astor, in memory of Helen Roosevelt  
Mrs. Evan T. Walker, in memory of John J. Walker
- 1897 Mrs. William D. Sloane, two beds, one bed in memory of Maria Louise  
Vanderbilt and one in memory of Emilie Vanderbilt Burden
- 1898 Mrs. Charles B. Alexander, for her daughter, named the  
"Harriet Alexander Bed"
- 1901 Mrs. N. A. Baldwin, in memory of Louise Suydam Duer  
Mrs. Benjamin Brewster, in memory of Benjamin Brewster  
Henry T. Sloane, Jessie and Emily Sloane, bed endowed by their father  
Mrs. Marion Story, in memory of M. Furman Hunt
- 1902 James Henry Smith, two beds, in memory of George Smith  
Miss Emily A. Watson, in memory of Mrs. Mary J. Walker
- 1904 Miss Cornelia Prime, in memory of her brother, Temple Prime  
Miss Helen Phipps  
James K. Gracie, in memory of Esther Gracie Ogden
- 1906 Miss Caroline White  
Mrs. M. Dwight Collier, in memory of Maurice Dwight Collier
- 1908 Mrs. H. N. Munn, Mrs. Augusta Munn Tilney and Orson D. Munn,  
in memory of Henry Norcross Munn
- 1911 Estate of Everetta C. Whitney  
Miss Josephine C. Smith, in memory of her father, Dr. Edward A. Smith,  
and her mother, Rebecca Miller Smith
- 1913 Estate of Marion de Forest Clark, in memory of Julian Bouton Clark  
An anonymous donor, to be known as "Mary Townsend Cuyler Bed"  
Carolina F. Butterfield, in memory of Frederick Falconer Butterfield
- 1915 Miss Emily Trevor  
Mrs. Frederick W. Vanderbilt, to be known as "The Louise Bed"  
George Grant Mason, two beds, in memory of his uncle, James Henry Smith
- 1916 Henry M. Tilford, in memory of Catharine Hunt Tilford  
Estate of Miss Clementine Furniss, to be known as the  
"Clementine Furniss Bed"  
An anonymous donor
- 1917 Mrs. Charles H. Senff, in memory of her little son, Henry Senff  
Mrs. A. Murray Young, in memory of her great uncle, Wilson G. Hunt
- 1919 R. Fulton Cutting, to be known as the "Helen Suydam Cutting Bed"  
Mrs. Frederick Delano Hitch  
Levi P. Morton, in memory of Anna Livingston Morton  
Miss Georgiana G. R. Wendel, two beds, "In Memory of My Sister,  
Augusta A. S. Wendel"  
Various donors, in memory of Theodore Roosevelt
- 1920 Mrs. John Hobart Warren
- 1921 Mrs. Winthrop W. Aldrich, in memory of her little son,  
Winthrop Williams Aldrich, Jr.  
F. Ambrose Clark, to be known as "The Florence L. Clark Bed"
- 1922 Mrs. David T. Dana, in memory of her mother, Mrs. M. Dwight Collier

- 1924 Estate of Charlotte Bruce Bickmore, in memory of  
 Albert Smith Bickmore, Jr.  
 Mrs. Louise Ward McAlister Lewis, in memory of her mother
- 1925 Miss Elizabeth J. Hofer, two beds, in memory of Horatio C. Kretchmar  
 Percy Chubb, in memory of his wife  
 Junior Red Cross of the Public Schools of New York  
 Mrs. Douglas Robinson, in memory of her friend, Charles Allen Munn
- 1926 Junior Red Cross of the Public Schools of New York
- 1927 Darrach Home for Crippled Children, in memory of Dr. May Darrach
- 1928 Mrs. Mary L. Schoonmaker, ten beds, in memory of Sylvanus Lothrop  
 Schoonmaker and Frank Layng Schoonmaker  
 Estate of Henry D. Dickinson, in memory of Hathaway M. Dickinson
- 1930 James T. and Sarah Bancroft Leavitt, to be known as the  
 "Mrs. James T. Leavitt Bed"
- 1934 Henry C. deRham, Frederic F. deRham and Clarisse deRham Rutherford,  
 in memory of their parents, Charles and Emily Howe deRham
- 1935 Mrs. Percy R. Pyne and family, in memory of Meredith Howland Pyne
- 1936 Miss Elizabeth Stewart Hamilton, in memory of Mrs. John Hobart Warren,  
 to be known as the "Harriette Mott Warren Bed"  
 Mrs. Edward S. Harkness, to be known as "Dorcas House Bed"  
 in dear memory of Wilma Gideon
- 1938 Miss Grace Howard Potter, to be known as the "Howard and Mary Louisa  
 Potter Bed," in memory of her father and mother
- 1955 General and Mrs. E. F. Maude, in memory of Mrs. Maude's father,  
 Robert I. Brewster  
 Estate of Carrie Rosenshine, to be known as "The Lillie Rosenshine—  
 Marjorie L. Kaufman Bed"
- 1956 Estate of Adolph Riesenbergl to be known as "The Adolph and  
 Anna A. Riesenbergl Bed"

ENDOWED ROOMS

- 1922 Glenn Ford McKinney, a ward room in the country branch, in memory of  
 his wife, Jean Webster McKinney
- 1929 400 of his friends and associates, a room in the private pavilion, in memory  
 of H. Le Roy von Lackum, M.D., surgeon in this hospital, 1916-1928

*Institute of Ophthalmology*

(Including Herman Knapp Memorial Eye Hospital)

- 1883 Mrs. Oswald Ottendorfer
- 1884 Miss Henrietta A. Lenox
- 1895 Miss Mary Morris van den Heuval
- 1897 Mrs. Giovanni Ceccarini
- 1913 Miss Catherine A. Bliss  
 Miss D. Willis James
- 1918 Truman Peck Stone
- 1921 Miss Rosie Bernheimer (In memory of her parents)
- 1923 Miss Mary Wiley (In memory of her brother, George Wiley)
- 1928 Mrs. Matilda Townsend Palmer
- 1931 Leo Doblin
- 1936 Charles M. Brooks
- 1957 Mortimer and Harriet M. Marcus Foundation, Inc. to be known as  
 "The Mortimer and Harriet M. Marcus Endowed Bed"

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# Gifts and Bequests

The activities of Presbyterian Hospital and its various constituent hospitals and divisions at the Medical Center are supported to a substantial extent by the income from bequests of friends who desire to insure the continuation of their help to the sick of New York.

Bequests may be made in the following form:

**Form of Bequest** *I give and bequeath to The Presbyterian Hospital in the City of New York the sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) to be applied to the use and benefit of the said Hospital, under the direction of the Trustees thereof.*

In case it is desired to specify the particular use to which the bequest is to be put, such use may be specified in place of the words "to be applied to the use and benefit of the said Hospital, under the direction of the Trustees thereof." in the form of bequest given above.

In case it is desired to make the bequest to the Hospital as a memorial "In memory of \_\_\_\_\_" may be added to the Form of Bequest.

In all instances the gift should be to "The Presbyterian Hospital in the City of New York" in its full corporate name even when specifying the particular use to which the gift is to be put.

The Presbyterian Hospital in the City of New York, by reason of the consolidation of its constituent hospitals at the Medical Center, will receive gifts made to The Presbyterian Hospital in the City of New York, to the Babies Hospital of the City of New York, to Neurological Institute of New York and to New York Orthopaedic Dispensary and Hospital. It is, therefore, not necessary to change the provision of any will naming any of the foregoing constituent hospitals as a beneficiary.

THATCHER M. BROWN, JR.,  
Treasurer

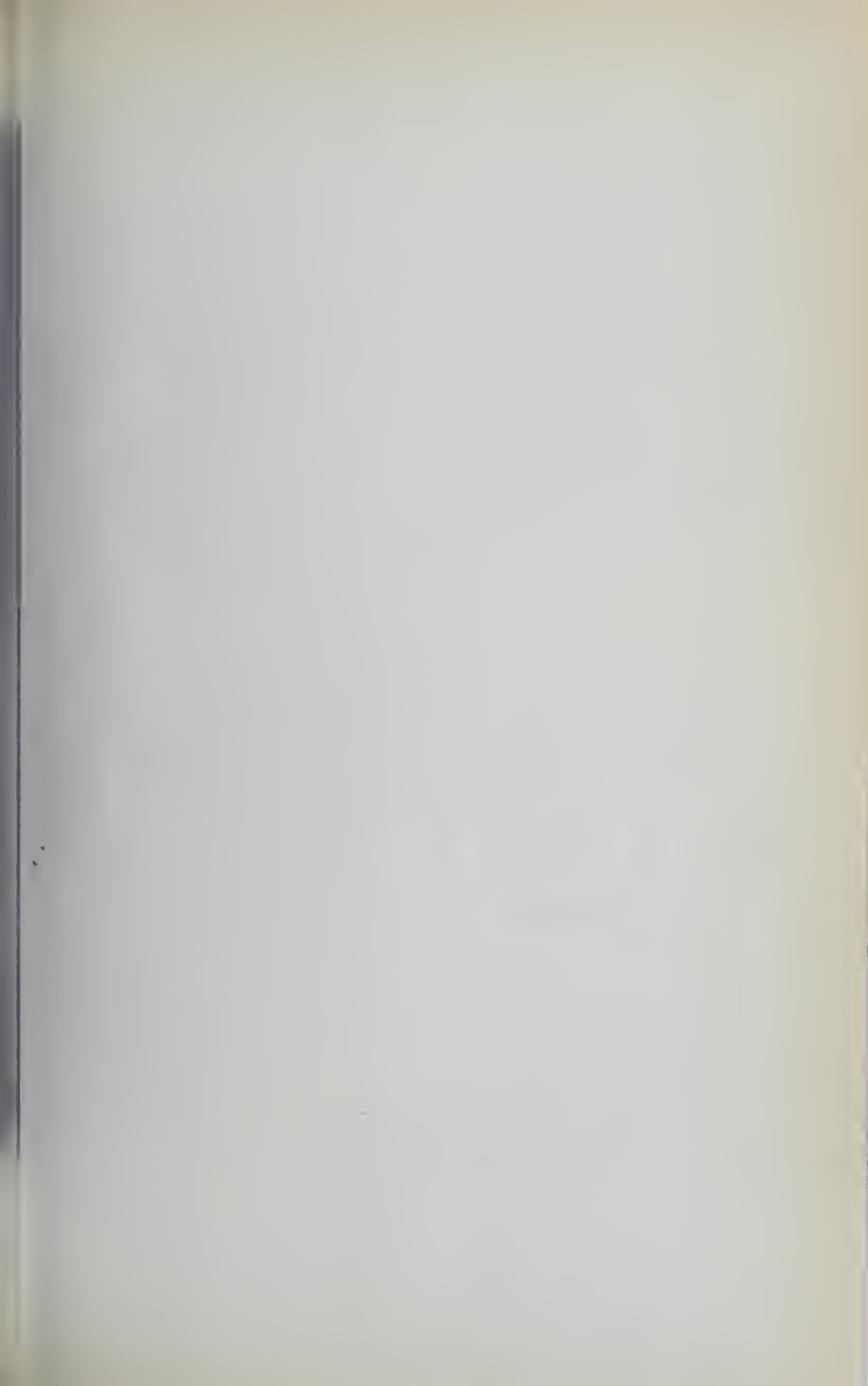
THE  
FLOOR  
OF THE  
HOSPITAL  
IS  
SUPPORTED BY  
VOLUNTARY  
CONTRIBUTIONS



1957









# Medical

PRESBYTERIAN HOSPITAL AT COLUMBIA-PRESBYTERIAN

# Center



*1958 Annual Report*



**th**



**ANNUAL  
REPORT**

For the Twelve Months ended  
December 31, 1958

**THE PRESBYTERIAN HOSPITAL  
IN THE CITY OF NEW YORK  
AT THE COLUMBIA-PRESBYTERIAN  
MEDICAL CENTER**

622 West 168th Street, New York 32, N. Y.

**INCLUDING:**

Babies Hospital • Harkness Pavilion  
Institute of Ophthalmology • Mary Harkness Home  
Neurological Institute • New York Orthopaedic Hospital  
Presbyterian Hospital • Sloane Hospital for Women  
Squier Urological Clinic • Vanderbilt Clinic

This year's report is dedicated to the most important person in the Medical Center, the patient, and to those entrusted with his care.

The Medical Center comprises modern buildings and facilities for the carrying out of patient care, closely integrated with teaching and research. But it is the 7,500 people who serve within the Medical Center who give life and breath to this concept.

"Those who serve" includes every worker—professional, non-professional, student, and volunteer. These are the people who provide the best in care of the patient today and contribute toward advancements in health and medical science tomorrow.

*The front cover* is representative of the 1,800 members of the professional team—the attending physician, the resident doctor, and the nurse—who are directly responsible for the treatment and care of the patient.

*The inside and back covers* are representative of a very few of the vast number of persons, in addition to the doctors and nurses, whose skills are necessary in the functioning of a medical center and in the service of the patient.

*Sixteen pages* (beginning on page 17) further illustrate the diverse talents required in providing care for 128,000 patients who each year are treated in the hospitals, clinics, and doctors' offices of the Medical Center.

*Cover photographs by Elizabeth Wilcox. Photographs on pages 17-32 by Elizabeth Wilcox, Henry Haberman, and Arthur Schat and Werner Wolff of Black Star.*

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# Origin and Functions of the Medical Center

The Medical Center comprises a group of long established hospitals of high standing which, in affiliation with the College of Physicians and Surgeons of Columbia University, furnish an integrated program to provide the highest quality of medical care for the sick and injured, to advance knowledge about the cause, prevention and treatment of disease and disability, and to train men and women in the professions of medicine, dentistry, nursing, public health, and allied fields. Through the affiliation between the hospitals and the University the members of the staffs of the hospitals are nominated by Columbia University, and teaching and research are conducted in all the hospitals.

The Presbyterian Hospital in the City of New York is the corporate title for all the voluntary hospitals and clinics at The Columbia-Presbyterian Medical Center. Some 128,000 patients a year are cared for in the hospitals, clinics, and doctors' offices of the Medical Center. The group consists of the following units:

## ***The Presbyterian Hospital***

The Presbyterian Hospital, founded as a general hospital in 1868 by James Lenox, was originally located on the block bounded by Madison and Park Avenues between 70th and 71st Streets. On April 25, 1911, Presbyterian Hospital made its original arrangement with Columbia University's College of Physicians and Surgeons for coordinating the care of the sick with the educational and research program of the University. Now Presbyterian Hospital is the largest single unit of the Medical Center. The Hospital occupies a 22-story building in which are the wards of the Medical and Surgical Services, Obstetrical and Gynecological Service, Urological Service, Ear, Nose and Throat Service, Dermatological Service and the Orthopedic Surgery Service.

## ***Babies Hospital***

Babies Hospital, 167th Street and Broadway, founded in 1887, provides for general medical and surgical care of infants and children up to

their thirteenth birthday, and care for premature babies. The total capacity of the Hospital is 196. One floor is devoted to the care of private and semi-private patients. Both outdoor and indoor playrooms are provided for convalescent children. Laboratories are operated for the diagnostic and research work of the Hospital in pathology, microbiology and chemistry. An X-ray and fluoroscopic department is operated under the direction of the Hospital radiologist. An outpatient department is maintained in Vanderbilt Clinic by the attending and house staff of the Hospital. In addition to the general medical and surgical clinics, there are special clinics for children suffering from heart disease, tuberculosis, epilepsy, asthma and other diseases.

### ***Harkness Pavilion***

Harkness Pavilion, 180 Fort Washington Avenue, erected when the Medical Center was established in 1928, is available for the accommodation of 300 adult private patients of the attending staff.

### ***The Mary Harkness Convalescent Home***

Mary Harkness Convalescent Home, King Street, Port Chester, N. Y., opened in 1937 to provide convalescent care for adults. In a beautiful country setting, facilities are available for the convalescent care of 35 adults.

### ***The Institute of Ophthalmology***

Institute of Ophthalmology, 635 West 165th Street, opened in 1933, has complete facilities for the medical and surgical treatment of adult and child patients with diseases of the eye. There are private, semi-private and ward beds, with a total capacity of 92. On January 1, 1940, the work of the Herman Knapp Memorial Eye Hospital was taken over by the Institute.

### ***The Neurological Institute***

Neurological Institute, 168th Street and Fort Washington Avenue, one of the first nongovernmental hospitals in this country for the treatment of nervous diseases, was founded in 1909. It moved from East 67th Street to the Medical Center in 1929. Its affiliation with The Presbyterian Hospital has made possible a broad basic program of teaching and research in neurology and in the treatment of diseases of the nervous system and surgical conditions of the brain and nervous system. Facilities are provided for 201 beds, of which 104 are for ward patients.

### ***New York Orthopaedic Dispensary and Hospital***

The New York Orthopaedic Dispensary and Hospital opened as a dispensary in 1866 largely because of the interest taken in the care of the crippled by Theodore Roosevelt, father of the President of the same name. In succeeding years, the dispensary grew into a hospital with beds for ward and private patients. In 1911, the first spinal fusion operation for Potts Disease (tuberculosis of the spine) was performed by Dr. Russell A. Hibbs. This successful operation opened an entirely new era in the treatment of this disease. The Orthopaedic Dispensary and Hospital was located in its own buildings at 420 East 59th Street until December, 1950, when it moved to the Medical Center. On the 5th floor of the main building, 622 West 168th Street, facilities are available for the care and treatment of orthopedic conditions and fractures in children and adults.

### ***The School of Nursing***

The School of Nursing was founded in 1892 for the training of nurses. Since 1935 its educational program has been under the supervision of the Department of Nursing of the Faculty of Medicine of the College of Physicians and Surgeons of Columbia University. A thirty-two-month course in nursing is conducted, and graduates receive the degree of Bachelor of Science from Columbia University.

### ***The Sloane Hospital for Women***

Sloane Hospital for Women was built at West 59th Street and Amsterdam Avenue and presented to Columbia University by Mr. and Mrs. William D. Sloane in 1886. It now occupies three floors of the Presbyterian Hospital building for ward and semi-private patients and one floor in Harkness Pavilion for private patients. There are 181 beds, of which 116 are ward beds.

### ***The J. Bentley Squier Urological Clinic***

The J. Bentley Squier Urological Clinic occupies the 10th floor of the Presbyterian Hospital building and the 10th floor of Babies Hospital. There are 67 beds for the care of adults and 19 beds for children. There are laboratories fully equipped to do diagnostic, X-ray, bacteriological, pathological, fluoroscopic, and research work. This unit has two large, especially equipped, operating rooms. The urological outpatient department is in Vanderbilt Clinic.

### *Vanderbilt Clinic*

Vanderbilt Clinic, Broadway and 167th Street, presented to Columbia University by the Vanderbilt family in 1888, is the common outpatient department and admitting service for all the wards of all the units of The Presbyterian Hospital. It is a fully equipped dispensary offering complete medical, surgical and specialty services. Eligibility to the Clinic is determined by the admitting physician and the clinic interviewer and is limited to those unable to afford a private physician. The Group Practice Clinic, organized in 1946, has proved a forward step in the diagnosis and treatment of patients.

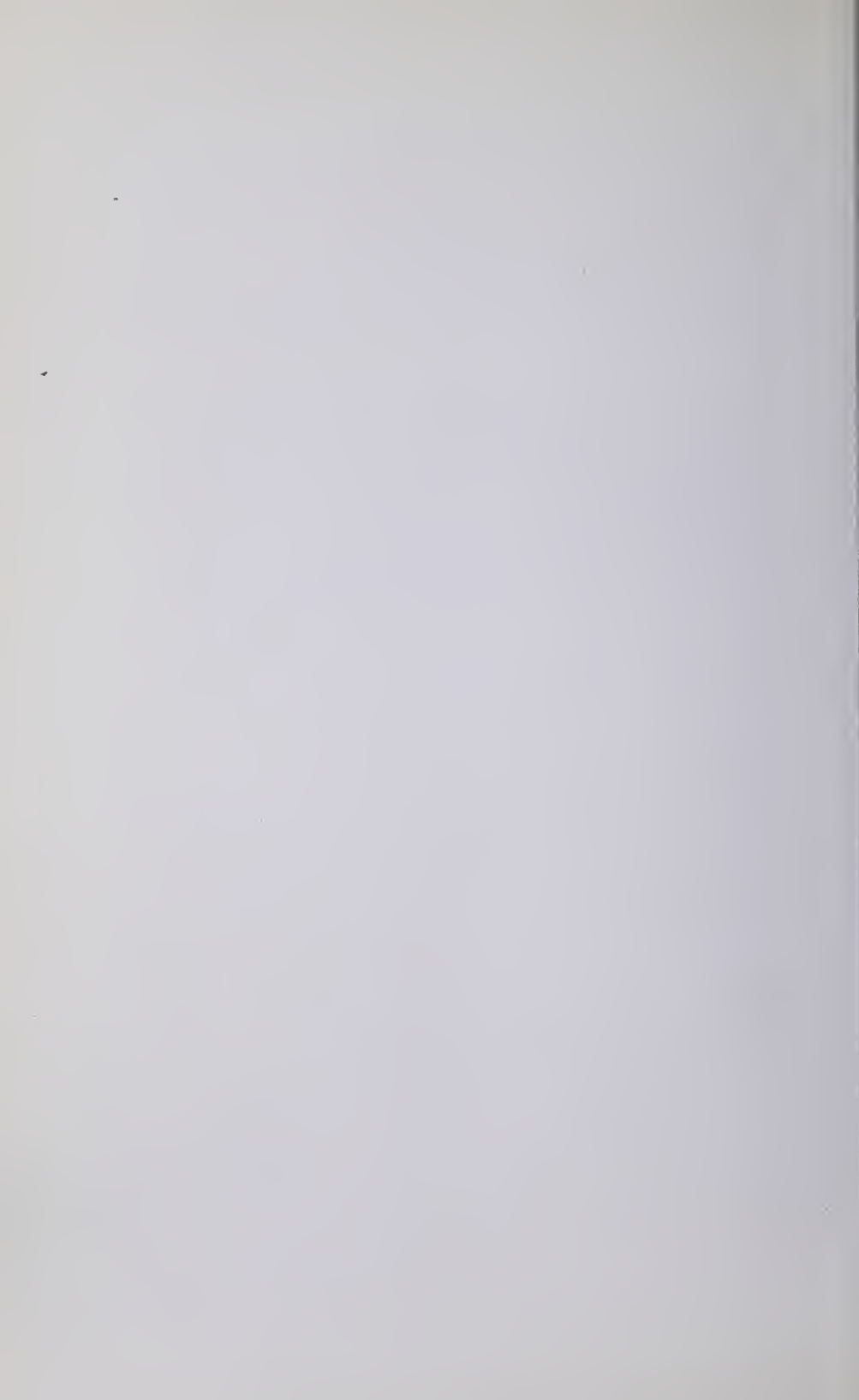
### *Other Patient Care Institutions Located at the Medical Center*

The New York State Psychiatric Institute and Hospital, built and maintained by the State of New York, is a 174 bed hospital with provisions for the study and treatment of all types of psychiatric disorders.

The Francis Delafield Hospital, built and maintained by the City of New York, is a 295 bed hospital for the treatment and study of cancer.

The Washington Heights Health and Teaching Center was built and is maintained by the City of New York.

*REPORT OF THE PRESIDENT*



# Report of the President for 1958

This is the ninetieth year in which the Presbyterian Hospital in the City of New York has served humanity, and the thirtieth year in which the Hospital has been a part of the Columbia-Presbyterian Medical Center. Looking backward at this fruitful history, two conclusions seem to me to be outstanding:

First, that in rising above the economic and racial separateness that was the custom of their time, James Lenox and the small group with him gave a new dimension to Christian charity by opening their hospital to all, "without regard to race, creed, color or ability to pay." It is hard to realize this was an unusual idea in New York ninety years ago, but it was.

Second, with the concept of a *Medical Center* in which outstanding specialists from all fields have the facilities and the opportunity to work together in a unified and even wholesale attack on disease, Edward S. Harkness and the group assisting him gave a new projection to medical research and treatment. So accepted is this idea today that it is hard to realize that it was thought to be daring only thirty years ago, but it was.

Thus, Presbyterian Hospital has been in the forefront of two of the most significant advances, scientific and social, of its time. It is a useful thing for those who are currently its friends and supporters to recognize the vision of those who preceded us. For it is upon this foundation that we must continue to build.

The handful of men responsible for what is today the largest privately supported hospital in the United States, probably in the world, were moved by what they called "the theory of Christian accountability." In a day when crippled children begged on New York's gas-lit streets, and the fourteen-hour day was the lot of the working man and woman, Lenox and his associates raised \$500,000 to provide for the well-being of their less fortunate neighbors. Although they saw to it that their hospital building reflected all "recent developments in medical science" and "provided sunlight, ventilation and interior salubrity," they were unaware that the returns of their initial philanthropy might also eventually be measured on a scale apart from and in addition to that of Christian charity — the scale of medical science.

When the founders met, few members of New York's medical profession had accepted the germ theory of disease, vaccination for smallpox was still debated, and Louis Pasteur was just beginning to report to the world his conclusions about identifiable microorganisms. Typhus and other pestilences were attributed to "bad air" and, indeed, the sunlight and ventilation that figured so prominently in the plans for the Hospital were perhaps the major therapeutic instruments available to physicians of the day.

The alliance of a teaching hospital with a medical school, and setting both within the scientific standards and other resources of a great university, is a procedure that we today take for granted. But it was an important, much debated, and truly significant step when the trustees of Presbyterian voted to align the Hospital with Columbia University's College of Physicians and Surgeons. Thus, Presbyterian became a teaching hospital and the services of Columbia's medical teachers and students became available to the patients in the clinics and wards of the Hospital.

In a year when physicians had little more than quinine and digitalis to assist them, few could have foreseen the degree to which the worldwide advance of science would change the practice of medicine and the dimensions of human life by this mid-century.

Too few still today recognize how much of this change is the result of the concept of the role of triple alliance of patient care, teaching and research in the function of a medical center. This is truly scientific medicine because it is the only pattern that puts the worker in basic sciences — the biochemist, the physiologist, the microbiologist, and many another specialist — on the clinical team. This group of specialists joins clinicians in appraising the medical problems of each clinic patient.

Much credit for the present status of scientific medicine at the Medical Center must go to Edward S. Harkness, the leader of the small group of men who in the 1920's met to begin the difficult task of bringing together eleven general and specialized hospitals, institutes and clinics and the Columbia medical school as a single geographic unit.

It is this physical unity, with hospital beds and clinic examining rooms adjoining research and diagnostic laboratories and teaching amphitheatres, that makes it possible to put all of today's specialized medical knowledge at the disposal of a single patient. It is the Medical Center pattern that promotes the centralization and economic use of the costly diagnostic and therapeutic instruments of modern medicine.

Recently we have heard much about "comprehensive medicine" — as if the idea of the patient as a whole, thinking, breathing person with anxieties and aspirations were a new thing under the scientific sun.



Not so, for at this Medical Center we owe a great deal to the compassionate insight of a generation of dedicated medical men who, while devising the special tools of science, never lost sight of the fact that the patient is a human being.

Physicians don't treat diseases, they treat people. Thus the physician must always be more than a medical scientist. The art of medicine, as one of our doctors has said, is the "creative and compassionate application of a scientific discipline to a human problem."

Our Group Clinic pattern has been important because it has shown that all the specialized resources of modern scientific medicine can be employed under the guidance of a single physician — who is "my doctor" to the patient. Within the framework of a properly designed group practice, the "family doctor" can use all the vehicles of modern science and yet have time for the warmth and human understanding with which the horse-and-buggy doctor saved lives.

Other evidence bearing on the effectiveness of the triple alliance of patient care, teaching, and research can be seen in the reports of services on the following pages. Here directors of our professional services have set forth something of their work. I commend these reports to your attention.

Rising family incomes and health and hospital insurance plans have made it possible for a growing number of patients to pay for private and semi-private care. But even in these prosperous times about half of the patients who came to the Medical Center last year were able to meet only a part, and in many cases no part at all, of the expenses of the care they received.

Following is a summary of last year's financial results:

In 1958 the Presbyterian Hospital provided 461,900 days of hospital care for 38,800 inpatients and clinic care for 59,600 outpatients, who made 403,400 clinic visits.

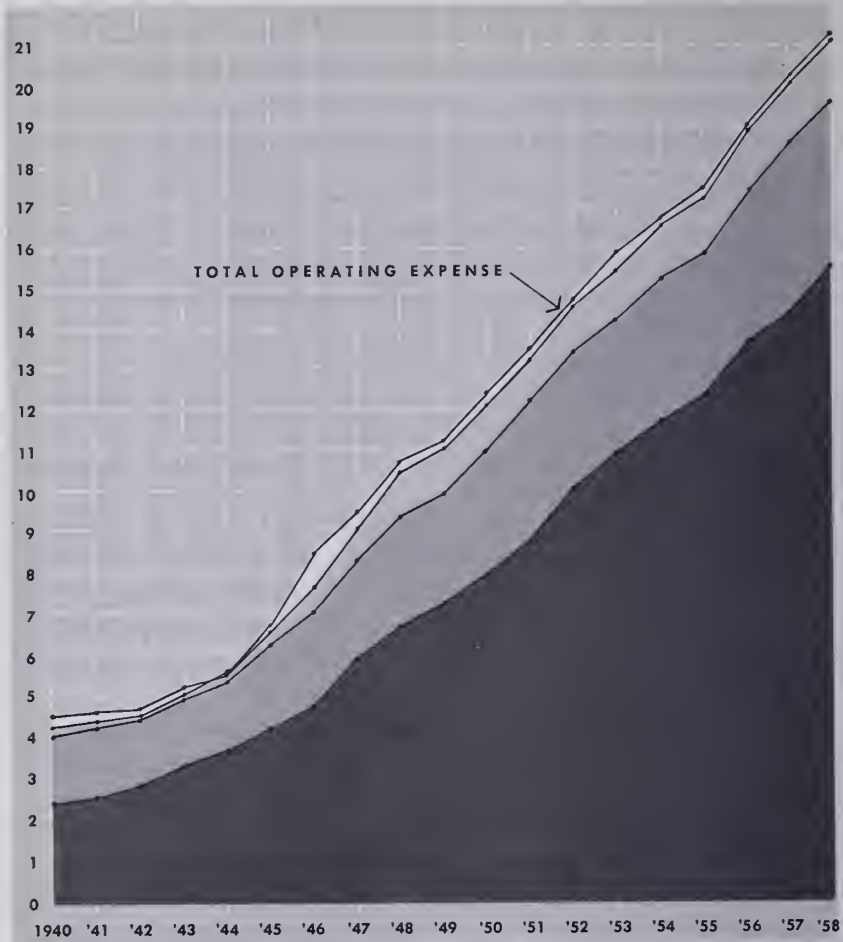
This cost \$12,489,000 for salaries and \$8,858,000 for supplies, services and depreciation, totaling \$21,347,000 as outgo.

We received \$15,587,000 from patients, \$1,641,000 from other services, totaling \$17,228,000 as income. This left a net operating loss of \$4,119,000 which only because of endowment income and gifts were we able to come close to meeting.

Although the Hospital has no formal association with the Presbyterian Church, the religious spirit of its founders is still very much a part of the resources for healing. Services of three faiths are regularly held in The Pauline A. Hartford Memorial Chapel and are broadcast over the Hospital's radio. Also, volunteers assist patients able to leave their

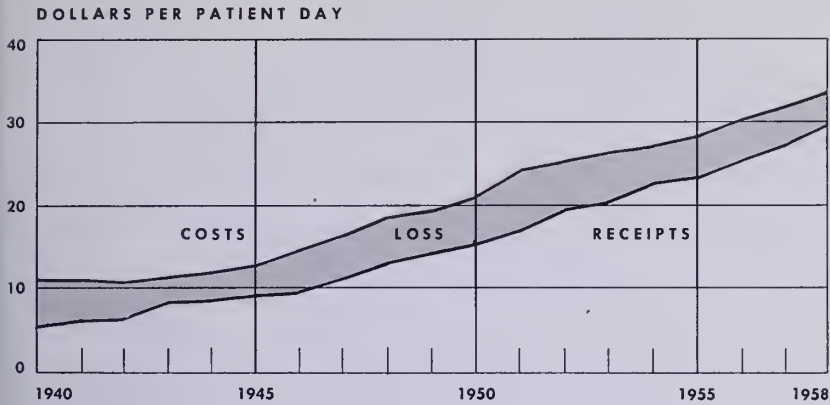
### Operating Expense and Income, The Presbyterian Hospital 1940-1958

IN MILLIONS OF DOLLARS



- PATIENT INCOME
- ENDOWMENT INCOME AND GIFTS
- OTHER SERVICES INCOME
- NET LOSS

### *Average Receipts and Costs (In Patients)*



rooms in attending these services. Chaplains of three faiths are available twenty-four hours a day for prayer or counsel at the request of patients.

The contribution of 969 men and women who last year gave a total of 102,251 hours of volunteer service to the care of patients here is of great importance in the life of our Hospital. To these volunteers we owe not only essential services but also much of the personal warmth and extra comfort that aids recovery.

And this opportunity could not be allowed to pass without a most sincere word of commendation for all our personnel. Their wonderful spirit and devotion results in a quality of work that reaches the very highest level day after day and year after year.

In expressing our gratitude to the many individuals, foundations and estates who have supported the work of the Hospital over the past year, it is hard to find better words than those used by one of the founding members of the Society of the Presbyterian Hospital in the year the Hospital received its first patients. The language is that of 1872, but the harvest of subsequent years has given it a meaning beyond the highest hopes of these civic pioneers: "He that giveth to the poor lendeth to the Lord. Is not the security unexceptionable?"

CLEO F. CRAIG,  
*President*

March 16, 1959





*Concept of the Medical Center: care of patients . . .*



*teaching . . .*



*and research.*



*In the "creative and compassionate application of  
a scientific discipline to a human problem" . . .*



*the biochemist . . .*





*the pathologist and other laboratory scientists join . . .*

*the skilled technician . . .*





*the nurse . . .*

*and the examining physician on the clinical team . . .*





*whenever medical care is needed.*

*Volunteers contribute extra comfort . . .*





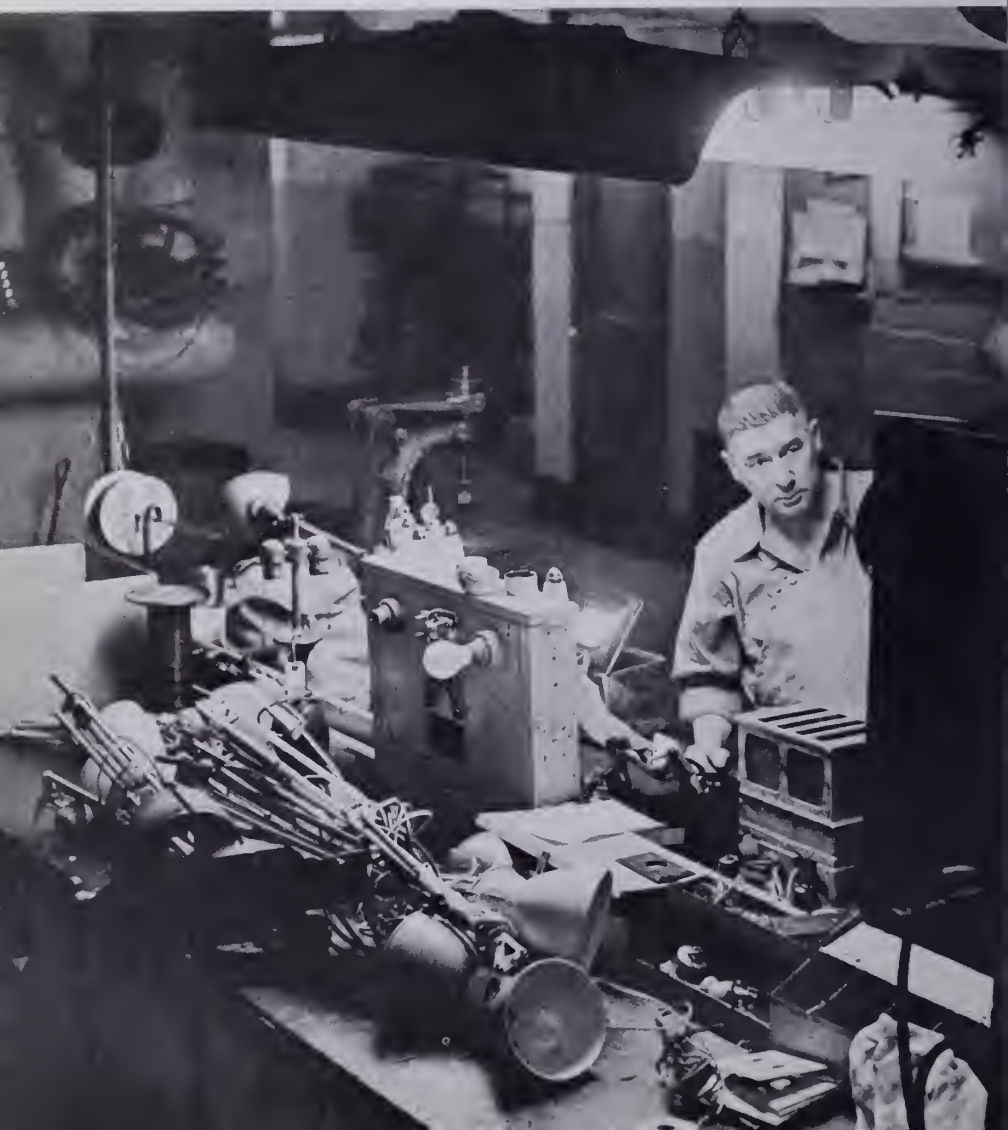
*and many services, valuable aids to recovery . . .*



*all part of the resources for healing.*



*Throughout the Medical Center work goes on — in the maintenance shops . . .*





*at the telephone switchboards —*



*service devoted to fulfillment of the concept of patient care, teaching, and research.*

# Report of the President of the Medical Board

The continued concern of the Medical Board for its responsibility to the Trustees for the professional care and treatment of patients has been manifest in the activity of its numerous subcommittees and the vigorous discussion at its monthly meetings.

## **Membership**

Following revision of the Medical Board in the previous year to include faculty members from certain departments not represented by corresponding hospital services, there has been little change in membership. In March the death of Dr. Thomas W. Stevenson, Jr., was regretfully recorded. Dr. George F. Crikelair who had, during Dr. Stevenson's illness, acted for him, was appointed to his place. In June rotation among service representatives returned Dr. Conrad M. Riley in place of Dr. Hattie E. Alexander in Pediatrics, and Dr. Charles M. Steer in place of Dr. Saul B. Gusberg in Obstetrics and Gynecology. At the same meeting Dr. Joseph C. Turner was appointed to succeed Dr. Dana W. Atchley upon his retirement on July 1. Dr. Lawrence C. Kolb was elected Vice-President, and Dr. George H. Humphreys, II, President of the Medical Board, succeeding Dr. Franklin M. Hanger. With Dr. Atchley's retirement from active membership, the Board lost a wise and faithful counsellor. Dr. Hanger's term of office covered transitional years of great importance, during which his tact, diplomacy and ready wit surmounted many obstacles and steered the Board skillfully through difficult and sometimes stormy passages. Fortunately Dr. Hanger continues as an active member, available to counsel and guide his successor.

On July 1, 1958, Dean Willard C. Rappleye retired. As an ex officio member of the Medical Board he had been a faithful attendant for the twenty-eight years of his service. The Board misses his presence and his helpful advice in the numerous matters which touch on University activity or policy with which it necessarily deals. In his place the Board is happy to have the help of Dr. H. Houston Merritt, already a valued member of many years in his capacity as Director of Neurology.

### *Communications*

The centrifugal forces of a multi-departmented expanding staff have increasingly concerned the Board and its committees. To retain cohesiveness and mutual understanding, existing means have been further developed and new mechanisms explored. In January a Committee on Public Relations was appointed to assist Dr. James E. McCormack to guide professional policy in the increasingly complex task of the Public Interest office. The mechanics of telephone communication and the possibilities of radio-paging were explored. The Staff Committee, itself created in answer to the need of better interdepartmental communication at the junior staff level, worked long and hard to improve channels of information and undertook a variety of tasks assigned to it with helpful vigor. In November a thoughtful report of their Subcommittee on Professional Staff Remuneration was referred to the Joint Committee on Staffing of the Medical Center, which is studying the larger aspects of this difficult problem. They are currently exploring the problems of teaching in relation to private patient care and are about to undertake a study of "Home Care Programs" as they may affect our Hospital. The Planning Committee, whose function of recommending structural change has been largely superseded by the Joint Committee of the Medical Board and the Faculty on Facilities, continues to serve as a useful forum for discussion with the administration of many problems. At this committee's meetings the continued presence from time to time of members of the Board of Trustees is especially appreciated.

### *Committee Activities*

The major work of the Medical Board is accomplished through its seventeen standing committees. In addition, six ad hoc committees have been appointed to deal with special problems, and four important joint committees with the Faculty of Medicine: the Committee on Facilities, the Committee on Staffing, the Advisory Committee on Private Practice, and the Joint Radioisotopes Committee, have been established to deal with large policy decisions for the Medical Center as a whole. Members of all of these committees devote many hours of service to the end that the safety and welfare of our patients may constantly be guarded and improved. Only the most important can be mentioned here.

The Residency Program Committee, under the chairmanship of Dr. Howard C. Taylor, Jr., established a broad framework of principle around which a unity of program can be built. Especially noteworthy was the establishment of a joint psychiatric residency with the New York State Psychiatric Institute. In September Dr. Hanger succeeded Dr. Taylor as chairman of this important committee.

The Blood Bank Committee reported in February on its large assignment. Problems of blood procurement, brought into special prominence by the needs of the open-heart surgery program, were reviewed and new avenues explored. The problem of serum hepatitis continues to be of grave concern, and to receive the committee's special attention.

In April the Diagnostic Laboratories Committee was able to report a real step forward in the establishment of a central diagnostic laboratory unit on the fourteenth floor of the College of Physicians and Surgeons building. Here, in four rooms released for the purpose by Dr. Harry P. Smith, all of the routine work previously scattered through seven laboratories was centralized. New and ingenious labor-saving devices were installed which enable the laboratory to carry out a larger number of certain frequently requested determinations more quickly, more accurately, with smaller blood samples than before. At present some 65 per cent of all routine chemistry determinations are done in this laboratory and methods of increasing the proportion are under study.

Provision for meeting the sudden and disrupting demands which might be made of the Hospital in the event of a major catastrophe have continued to concern the Emergency Committee. Plans have been formulated for dealing with situations of varying magnitude, and a manual of instructions has been issued. One walk-through drill for professional personnel has been held. An unannounced drill with simulated casualties is considered essential by the committee to bring out functional defects in the present organization.

The Social Service Committee reported in December a substantial improvement in over-all status of this department, which had been of grave concern to all of the professional staff. The Medical Board is especially appreciative of the part played by the chairman, Dr. Frederick R. Bailey, in setting up a teaching program in this department. The result, both in improved morale and in potential production of needed personnel, promises to restore standards to their former high level.

### ***Construction Program***

The Medical Board and its Planning Committee have noted with satisfaction and gratitude the many structural improvements which are under way. Reconstruction of the main bank of elevators already promises much needed relief of congestion on the chief avenue of physical communication. Expansion and revision of the Neurological Institute promises greatly increased effectiveness of that unit. New equipment in the radiology department has already resulted in improved service affecting every clinical department, and the construction of a new angiocardiology unit, now nearing completion, will answer a long-felt need.

Replacement of antiquated sterilizers in the original four operating room suites on the eighteenth floor has just begun, and provides an opportunity for improving the efficiency of this busy area in many other ways. At the same time a new special recovery room is under construction in space acquired from the University, for the especially demanding needs for care and study of patients undergoing cardiac surgery. This unit will be equipped with the most modern monitoring equipment and will be a model in advanced patient care. Progress toward centralization of diagnostic laboratories has already been noted. In addition, many less major changes have been made or are planned, all directed toward the comfort and safety of our patients and the efficiency and effectiveness of their care.

Many other needs for structural change are still in the planning stage. Approved in principle by the Planning Committee are revision of the operating rooms and related facilities and provision of more adequate laboratories in Babies Hospital, construction of new private practice offices, improvement of parking facilities, better housing for house staff and other professional workers, and other changes of lesser magnitude but no less importance. In reviewing and establishing priorities for these many needs of the Hospital and integrating them with equally demanding needs of the College, the Joint Committee on Facilities has worked long and hard. It is now agreed that the most pressing need of all is a substantial increase in research laboratory space in the College. Closely linked with this is the construction of a library and auditorium building, the relocation of the laundry and the construction of a service building. A large combined effort of Hospital and University will be necessary to realize these plans.

For the improvements which have been and are being made the Medical Board is most grateful to the wisdom of the Trustees and the far-sighted leadership of the past Presidents, Mr. Charles P. Cooper and Mr. Frederick A. O. Schwarz. It is also grateful for the many generous donations and grants from many sources which have made them possible. The Medical Board is especially mindful of the untiring efforts of the administrative officers of the Hospital in dealing with the complex and sometimes conflicting desires of the professional staff, and in reconciling them for the benefit of the whole. Finally, the Medical Board is confident that the Hospital is fortunate in having as President, Mr. Cleo F. Craig under whose wise and vigorous leadership it can look forward to new advances in the pioneering tradition of the Medical Center.

GEORGE H. HUMPHREYS, II, M.D.  
*President of the Medical Board*



**REPORT OF THE TREASURER**

## EXHIBIT A

## THE PRESBYTERIAN HOSPITAL

Balance

DECEMBER 31

## ASSETS

	<i>December 31</i>	
	1958	1957
<b>ENDOWMENT FUNDS ASSETS:</b>		
Investments:		
Bonds and stocks — at cost or contributed value (market value — 1958, \$81,620,051) . . . . .	\$60,718,057	\$60,123,888
Mortgages receivable, etc. . . . .	97,306	101,611
Cash . . . . .	1,906	135,722
<b>TOTAL ENDOWMENT FUNDS ASSETS . . . . .</b>	<u>\$60,817,269</u>	<u>\$60,361,221</u>
<b>PLANT ASSETS:</b>		
Property and equipment at cost (less accumulated depreciation — 1958, \$13,838,100; 1957, \$13,371,072) . . . . .	\$20,850,242	\$20,542,997
Replacement Fund — Bonds and stocks — at cost (market value — 1958, \$6,963,418) . . . . .	5,179,566	4,124,655
<b>TOTAL PLANT ASSETS . . . . .</b>	<u>\$26,029,808</u>	<u>\$24,667,652</u>
<b>CURRENT FUNDS ASSETS:</b>		
Investments — Bonds, etc. — at cost (market value — 1958, \$1,710,528) . . . . .	\$ 1,700,645	\$ 2,200,260
Cash . . . . .	545,091	499,564
Accounts receivable (less reserve — 1958, \$266,088; 1957, \$265,572) . . . . .	2,345,129	1,962,003
Supplies and materials . . . . .	386,015	409,259
Interest accrued and dividends receivable . . . . .	530,724	508,026
Prepaid insurance, etc. . . . .	88,555	38,849
<b>TOTAL CURRENT FUNDS ASSETS . . . . .</b>	<u>\$ 5,596,159</u>	<u>\$ 5,617,961</u>
<b>TOTAL . . . . .</b>	<u><u>\$92,443,236</u></u>	<u><u>\$90,646,834</u></u>

## EXHIBIT A

E CITY OF NEW YORK

et

ND 1957

## FUNDS AND LIABILITIES

*December 31*  
1958                      1957

ENDOWMENT FUNDS (Exhibits C and D).....	<u>\$60,817,269</u>	<u>\$60,361,221</u>
PLANT FUNDS:		
Capital invested in property and equipment.....	\$20,850,242	\$20,542,997
Replacement funds:		
Buildings .....	1,477,409	1,179,231
Furniture, fixtures and equipment.....	<u>3,702,157</u>	<u>2,945,424</u>
TOTAL PLANT FUNDS.....	<u>\$26,029,808</u>	<u>\$24,667,652</u>
CURRENT FUNDS AND LIABILITIES:		
General fund (Exhibit C).....	\$ 3,027,940	\$ 2,942,078
Special expendable funds (Exhibit C).....	1,457,789	1,661,181
Accounts payable .....	473,754	384,330
Patients' credit balances.....	69,612	60,629
Accrued payroll and other expenses.....	<u>567,064</u>	<u>569,743</u>
TOTAL CURRENT FUNDS AND LIABILITIES....	<u>\$ 5,596,159</u>	<u>\$ 5,617,961</u>
 TOTAL .....	 <u>\$92,443,236</u>	 <u>\$90,646,834</u>

## EXHIBIT B

## THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

## STATEMENT OF INCOME

For the Years Ended December 31, 1958 and 1957

	<i>Year Ended December 31</i>	
	1958	1957
<b>OPERATING INCOME:</b>		
Care of patients.....	\$15,586,951	\$14,542,289
Other services .....	1,641,159	1,541,811
TOTAL .....	<u>\$17,228,110</u>	<u>\$16,084,100</u>
Transfer from special expendable funds (Exhibit C):		
For research .....	457,027	413,814
For other designated purposes.....	493,827	475,815
TOTAL OPERATING INCOME.....	<u>\$18,178,964</u>	<u>\$16,973,729</u>
<b>OPERATING EXPENSES:</b>		
Administration .....	\$ 229,731	\$ 224,221
Assistant Secretary-Treasurer .....	159,575	163,793
Comptroller .....	373,908	348,764
Public Interest .....	127,555	105,217
Convalescent Home .....	203,763	231,643
Non-professional services:		
Buildings and Grounds.....	2,678,689	2,684,563
Food Service .....	2,516,810	2,416,211
Personnel and Protective.....	258,061	245,406
Other non-professional services.....	680,444	645,949
Professional services:		
Nursing .....	5,602,585	5,192,920
Professional Staff, Doctors' Offices & Research..	2,613,271	2,520,018
Special Services .....	3,047,750	2,837,074
Vanderbilt Clinic and other.....	1,550,298	1,472,160
Provision for depreciation:		
Buildings .....	269,000	262,800
Furniture, fixtures and equipment ( <i>see note</i> )...	1,035,900	1,021,100
TOTAL OPERATING EXPENSES.....	<u>\$21,347,340</u>	<u>\$20,371,839</u>
NET OPERATING LOSS.....	<u>\$ 3,168,376</u>	<u>\$ 3,398,110</u>
<b>OTHER INCOME FOR GENERAL PURPOSES:</b>		
Investment income .....	\$ 2,550,000	\$ 2,700,000
Contributions .....	607,698	658,428
TOTAL OTHER INCOME FOR GENERAL PURPOSES	<u>\$ 3,157,698</u>	<u>\$ 3,358,428</u>
NET LOSS (charged to general fund — Exhibit C)...	<u>\$ 10,678</u>	<u>\$ 39,682</u>

NOTE — Includes appropriation in each year of \$350,000 to provide for a portion of the depreciation which occurred prior to the adoption of depreciation accounting in 1953.

## EXHIBIT C

## THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

## SUMMARY OF FUND CHANGES

For the Years Ended December 31, 1958 and 1957

	<i>Year Ended December 31</i>	
	1958	1957
<b>ENDOWMENT FUNDS</b>		
Balance, January 1.....	\$60,361,221	\$59,743,254
Add:		
Legacies and contributions.....	\$ 338,673	\$ 549,214
Gain (loss) from investments sold or redeemed..	( 69,761)	( 45,960)
Transfers from special expendable funds.....	187,136	114,713
	<u>\$ 456,048</u>	<u>\$ 617,967</u>
Balance, December 31.....	<u>\$60,817,269</u>	<u>\$60,361,221</u>
<b>GENERAL FUND</b>		
Balance, January 1.....	\$ 2,942,078	\$ 2,722,007
Add:		
Unrestricted legacies .....	\$ 491,972	\$ 426,968
Gain (loss) from investments sold or redeemed..	4,559	( 443)
	<u>\$ 496,531</u>	<u>\$ 426,525</u>
Total .....	<u>\$ 3,438,609</u>	<u>\$ 3,148,532</u>
Deduct:		
Net loss (Exhibit B).....	\$ 10,678	\$ 39,682
Expenditures for property and equipment.....	399,991	166,772
	<u>\$ 410,669</u>	<u>\$ 206,454</u>
Balance, December 31.....	<u>\$ 3,027,940</u>	<u>\$ 2,942,078</u>
<b>SPECIAL EXPENDABLE FUNDS</b>		
Balance, January 1.....	\$ 1,661,181	\$ 1,455,320
Add:		
Legacies and contributions.....	\$ 803,003	\$ 680,640
Investment and other income.....	629,562	666,784
	<u>\$ 1,432,565</u>	<u>\$ 1,347,424</u>
Total .....	<u>\$ 3,093,746</u>	<u>\$ 2,802,744</u>
Deduct:		
Transfers to:		
Operating income (Exhibit B).....	\$ 950,854	\$ 889,629
Endowment funds .....	187,136	114,713
Expenditures for property and equipment.....	374,282	55,065
Miscellaneous .....	123,685	82,156
	<u>\$ 1,635,957</u>	<u>\$ 1,141,563</u>
Balance, December 31.....	<u>\$ 1,457,789</u>	<u>\$ 1,661,181</u>

## EXHIBIT D

THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK  
**ENDOWMENT FUNDS**

December 31, 1958

## THE PRESBYTERIAN HOSPITAL:

Anonymous .....	\$ 665,926
Anonymous — For Support of	
Residency Training .....	270,500
Arnstein, Daniel G.....	75,000
Baker, Frances E.....	11,058
Baker, Mrs. Frederick, Pathological Department	8,500
Briddon, C. K., Gold Medal.....	2,559
Brookman, Henry D.....	50,000
Cary, Caroline Catherine.....	50,000
Coakley, Cornelius G.....	652,559
Coakley, Cornelius G., Memorial.....	30,000
Colgate, Hannah, Memorial.....	60,794
Collins, Perry McDonough.....	548,999
Columbia University for Vanderbilt Clinic and Sloane Hospital .....	1,400,000
Cook, William W.....	114,849
Cragin Fund .....	68,819
Davis, Isabel G.....	813,999
Delano, Moreau .....	4,000
Department of Surgery Research.....	9,370
Dodge, The Cleveland H.....	310,500
Dortic Memorial .....	99,024
Dows, Mrs. David.....	7,700
Dows, Margaret E.....	5,360
Educational and Scientific Work.....	285,528
Eichner, Joseph Herman and Hannah, in Memory of.....	8,576
Eidlitz, Otto M.....	415,272
Eidlitz, Robert J.....	152,500
Endowed Bed .....	1,814,109
Endowed Bed — Research .....	182,113
Faulkner, The Edward Daniels, Memorial for the Study and Treatment of Arthritis.....	100,000
Fiske Fund .....	104,236
FitzGerald, Frederick H. and Josephine F.....	141,363
Flagler, Alice Manderlick.....	250,142
Foote, Edwin Bancroft.....	175,949
Ford, George W. and Eliza Lawson.....	330,911
General Endowment .....	264,481
Goldschmidt, Henry Philip.....	5,000
Gondran, Sophie M. and Adolph L.....	100,000
Griffith, Griffith W. and Mary Jones, Memorial.	1,319,573
Haller, Maria L.....	2,609
Harkness, Edward S.....	6,188,794
Harkness, Edward S., Memorial.....	14,000,000
Harkness, Edward S., Research.....	500,000
Harkness, Mary Stillman, Memorial Endowment	250,000

## ENDOWMENT FUNDS, December 31, 1958 (Continued)

## THE PRESBYTERIAN HOSPITAL (Continued):

Harkness, Mary Stillman, Memorial Research..	50,000
Harkness, The Mary S., for Convalescent Care..	1,003,045
Harkness, William Hale, Memorial.....	43,416
Hartford, The John A., Foundation.....	300,000
Hill, Marguerite S.....	5,500
Institute of Ophthalmology, The.....	3,412,942
Jesup, Morris K. and Maria DeWitt.....	100,000
Jones, David, Memorial.....	300,000
Jones, Margarette A.....	166,255
Keller Memorial.....	500
Kennedy, John Stewart.....	1,828,714
Kinnicutt, The G. Herman, Flower.....	5,000
Knapp, The Herman Memorial Eye Hospital Endowed Bed.....	60,375
Lattimer, Dr. John K.....	48,504
Lindley, Erasmus C.....	50,000
MacMillin, Isabel, Memorial.....	1,409,359
Maloy, The Frank and Selena, Memorial.....	25,000
Martin, Frederick Townsend.....	10,000
Maxwell, Anna C., Memorial Library.....	7,201
McCosh, Dr. Andrew J., Memorial.....	100,192
McCready, Jeanne Campbell.....	106,529
McGuire, Mary Madison.....	260,006
Medical Laboratory Development Endowment..	100,000
Medical Scientific.....	317,226
Miller, Margaret G.....	60,275
Moore, Paul, Research.....	85,000
Nathan, Garfield Arthur.....	257,750
O'Connor, Fenwick.....	7,000
Ottman, for Cancer Research.....	20,000
Parkin, Alice Temple.....	50,000
Prostate, Fund for Research.....	1,431
Quick, The Walter R.....	15,060
Research and Development in Anesthesiology..	55,000
Rogers, Henry H., Memorial.....	30,294
Sage, Dean, Memorial.....	28,253
Sage, Dean, Scholarship.....	7,000
Sage, Russell and Margaret Olivia, Memorial...	878,188
School of Nursing.....	203,230
Sherry, The Bertha, Memorial.....	653,401
Sidman Trust.....	1,072
Sloane Hospital.....	783,257
Sloane Hospital Babies' Alumni.....	19,237
Sloane Hospital Research.....	25,000
Squier Clinic.....	113,636
Stilson, Ellen J. and Minnie.....	21,029
Stone, William Ridgley, Memorial.....	81,033
Surgical Fellowship.....	60,000
Terry, John T., in Memory of.....	40,767
Tod, J. Kennedy, Memorial.....	100,102
Tolfree, The Caroline O. and James E., Memorial.....	157,370

## ENDOWMENT FUNDS, December 31, 1958 (Continued)

## THE PRESBYTERIAN HOSPITAL (Continued):

Urological Service Research.....	9,591
Valentine, Isaac E., Memorial.....	563,227
Van Norden, Kathryn L.....	2,609
Vanderbilt Clinic .....	156,806
Webster, Dr. Jerome P., Library of Plastic Surgery .....	30,861
Weinman, Moses .....	5,360
Weisl, Alice .....	110,000
Welles, Frances Swan.....	10,000
Westlake, Emory H. and Caroline B.....	27,092
Wheeler, The Dr. John M., Memorial.....	73,791
Williams, William .....	342,658

\$46,646,816

## THE BABIES HOSPITAL:

Cleft Palate Cases.....	\$ 8,333
Cribside Social Service Committee.....	12,828
Educational Therapy .....	1,000
Eichner, Joseph Herman and Hannah, in Memory of.....	8,576
Endowed Bed .....	37,426
General Endowment .....	10,000
Harkness, Edward S., Educational and Scientific	600,000
Harkness, Edward S.....	1,199,775
Harkness, Mary Stillman, Memorial Endowment	250,000
Kimball, Reuel B.....	57,738
Lambert, Dr. Charles I., Memorial.....	11,000
McIntosh, Dr. Rustin.....	16,921
Rathbone, R. Bleecker.....	15,000
Rumson Fund .....	20,470
Videre, Leontine, Foundation.....	9,976
Wilcox, Herbert B., Memorial.....	2,000

2,261,043

## NEUROLOGICAL INSTITUTE:

Blair Memorial .....	\$ 3,127
Endowed Bed — Research .....	166,049
Ogilvie, Clinton, Memorial.....	9,970

179,146

## NEW YORK ORTHOPEDIC HOSPITAL:

Bridgman, Statira .....	\$ 2,500
Endowed Bed .....	623,343
Farrell, Dr. Benjamin P., in Memory of.....	7,656
General Endowment .....	833,259
Hibbs, Russell A., Memorial Library.....	36,068
Hurst, The Thomas D. and Kate.....	5,000
Kane, Annie C., Fellowship.....	1,000,000
Rathbone, R. Bleecker.....	15,000
Smith, Dr. Alan DeForest, Lectureship.....	6,601
Tower, Mary T., in Memory of.....	30,569
Watson, Emily A.....	2,502,256
White, Emily Vanderbilt.....	20,000
Willard, Mary Livingston.....	5,000

5,087,252

Gain from Endowment Fund Investments Sold or  
Redeemed since November 1, 1946.....

6,643,012

TOTAL ENDOWMENT FUNDS.....

\$60,817,269



**ACCOUNTANTS' OPINION**

THE PRESBYTERIAN HOSPITAL  
IN THE CITY OF NEW YORK:

We have examined the balance sheet and supporting schedule of endowment funds of The Presbyterian Hospital in the City of New York as of December 31, 1958 and the related statement of income and summary of fund changes for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and schedule of endowment funds and the statement of income and summary of fund changes present fairly the financial position of the Hospital at December 31, 1958 and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

HASKINS & SELLS  
*Certified Public Accountants*

New York  
January 30, 1959.

**REPORT OF THE AUDITING COMMITTEE**

TO THE BOARD OF TRUSTEES OF THE PRESBYTERIAN HOSPITAL  
IN THE CITY OF NEW YORK:

Pursuant to Article VII of the By-Laws of The Presbyterian Hospital in the City of New York, the undersigned Auditing Committee appointed by your Board has chosen, with your approval, the firm of Haskins & Sells, as independent certified public accountants, to make an examination of the books and accounts of The Presbyterian Hospital in the City of New York for the fiscal year 1958.

We submit herewith, after due consideration by this Committee, an opinion of Messrs. Haskins & Sells dated January 30, 1959 relating to the Corporation's balance sheet and schedule of endowment funds as of December 31, 1958 and related statement of income and summary of fund changes for the year then ended, as the results of a satisfactory examination of the said books and accounts. Your Committee recommends that the opinion and financial statements be accepted and approved.

JOHN A. GIFFORD, *Chairman*  
JOHN S. BURKE, JR.  
DORRANCE SEXTON  
*Auditing Committee*

New York  
February 4, 1959.

## EXHIBIT E

**GROUP RETIREMENT PLAN ESTABLISHED BY  
THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK**

The retirement benefits provided by the Hospital under its Group Retirement Plan are partly provided by a Trust Fund established with the Guaranty Trust Company of New York and partly insured by the Travelers Insurance Company. The amounts set aside for retirement benefit purposes, which are not part of the assets of the Hospital, aggregated \$5,234,928 at December 31, 1958. In accordance with the Hospital's undertaking under the Group Retirement Plan the amounts already set aside are sufficient to provide for all retirement benefits to which employees now retired and employees now eligible to retire at their own request are or would upon retirement be entitled under the Plan. In addition, they include provision for that portion of future retirement benefits to employees not now eligible for retirement at their own request, which has been funded through December 31, 1958 under the systematic program followed by the Hospital in financing such benefits.

Following is the Trustee's report for the year ended December 31, 1958 of the Retirement Fund Trust established by the Hospital:

Assets in Fund — January 1, 1958.....	\$1,839,200
Payments to Fund.....	167,000
Net Income from Investments including Net Profit on Investments Disposed of.....	85,142
	\$2,091,342
Disbursements for Retirement Benefits.....	77,467
Assets in Fund — December 31, 1958.....	\$2,013,875

	<i>Book Value*</i>
Consisting of:	
U. S. Government Obligations.....	\$ 110,762
Industrial, Railroad, Public Utilities and Miscellaneous Bonds	1,132,147
Preferred Stocks .....	141,038
Common Stocks .....	617,882
Cash .....	12,046
	\$2,013,875

\* The cash and approximate market value of the securities held as of December 31, 1958 totaled \$2,272,313.

GUARANTY TRUST COMPANY OF NEW YORK,  
*Trustee*

By WILLIAM F. LACKMAN,  
*Vice President*

Following is a summary of the Retirement Fund Trust and the Travelers Insurance Company reserves at December 31, 1958:

Retirement Fund Trust — Guaranty Trust Company of New York, Trustee .....	\$2,013,875
Travelers Insurance Company Reserve for Annuities Purchased..	3,221,053
Total .....	\$5,234,928

*REPORTS OF SERVICES*



# Anesthesiology

EMANUEL M. PAPPER, M.D., *Director*

The clinical duties of the Anesthesiology Service were relatively unchanged from those of 1957 as far as the number of operative procedures requiring anesthesia was concerned. The increasing number of surgical procedures of magnitude which presents special problems in anesthesia was more apparent in 1958 than in previous years. At the other end of the surgical scale, many diagnostic and minor procedures previously performed with local anesthesia were performed with other forms of anesthesia requiring the services of an anesthesiologist. Patients' requests appeared to be the major factor in this trend. These changes in practice resulted in a significant increase in the time devoted to the administration of anesthetics.

During 1958, 21,840 anesthetics were administered. The increased utilization of the various forms of regional anesthesia, constituting approximately 25 per cent of the total number, was also noteworthy. There was a continued use of muscle relaxants during general anesthesia for the greater safety of patients and improvement in operating conditions for the surgeons. Muscle relaxants were used in 30 per cent of patients given general anesthesia.

The increased employment of precise instruments as aids in patient care during the course of clinical anesthesia continued during 1958. Efforts directed toward the employment and development of precise instruments to monitor the vital functions of anesthetized patients have increased.

Dr. Duncan A. Holaday has been particularly interested in studying the basic requirements for satisfactory monitoring instruments. This included the evaluation of a new cardioscope, two peripheral pulse monitors, a respiration monitor, and two methods of monitoring heart rate. He also was associated with the design of a pneumotachograph for the registration of instantaneous airway pressure, flow rate, and minute volume. The second device was a fetal pulse rate recorder which is still in the research phase.

All these instruments have utility, but none seems to be ideally suited for routine use in the operating room. Their limitations are the result of inconvenience in establishing smooth and efficient operation:

interference with instrumentation from electrostatic fields, artifact due to movement, and inaccurate registration of the signal being monitored. Additional improvement along these lines appears to require the cooperative effort of design engineers and clinicians in order to provide clinically useful information on such vital functions as respiration, circulation, and the depth of anesthesia. Such plans are in preparation.

There have been several changes in clinical practice. Some changes have consolidated previous gains, others have been the product of laboratory research applied to clinical care, while some methods have been new and previously untried. Hypothermia as an aid to neurosurgical operations has been firmly established in the past year. The procedure has been considerably simplified, made safer, and more effective. It has been developed to the point where it has been possible to include it as part of the training given residents. The trend noted in previous years toward the increased use of mechanical ventilators has continued. Members of the Service continue to demonstrate an interest and creative ingenuity in the application of various mechanical respirators to anesthetic and resuscitative care. They have played an important part in collaborating with manufacturers and engineers to improve the design of anesthetic respirators. New models of respirators have been used daily, providing more versatile and better anesthetic care for patients. Anesthesia apparatus widely used in the United Kingdom was also obtained this year and has been a valuable addition to our equipment.

The anesthetic agent Fluothane has been more firmly established in anesthetic practice during the last year. It has been used chiefly as a reinforcement to nitrous oxide and oxygen in non-rebreathing circuits. It has become increasingly obvious that this agent is valuable and safe when precisely metered and when used in a non-rebreathing system. To provide these requisites, several Fluotec instruments have been obtained. The non-rebreathing valves designed by Dr. M. Jack Frumin and developed by Mr. Arnold Lee, engineer, have been of great value in the safe use of Fluothane and also in the use of non-rebreathing techniques for other purposes in anesthesia and resuscitation. The ability to provide convenient and safe noninflammable inhalation anesthesia has improved the care of neurosurgical, orthopedic, and urological patients since X-ray and cautery make it necessary to avoid flammable agents.

In keeping with the need to observe and correct possible physiological derangements during anesthesia, Dr. Robert M. Epstein has completed rebuilding a Liston Becker carbon-dioxide analyzer. It will provide a completely portable apparatus to monitor respiration in both operating and recovery rooms in a most useful manner.

During 1958, recovery rooms were established in the Babies Hospital and the Institute of Ophthalmology. The postanesthetic care provided in these recovery rooms has been excellent. The Nursing Service participated in these developments with particular effectiveness and enthusiasm. A special type of recovery unit is under construction adjacent to the recovery room in the Presbyterian Hospital. This unit will be used for the care of patients who have undergone intracardiac operation during extracorporeal circulation.

In Babies Hospital, Drs. Herbert Rackow and Ernest Salanitri continued their development of techniques for better anesthetic care of infants and children. The facilities for operations upon patients with cleft lip and palate appear to be highly satisfactory. The connections between masks and valves for the different types of all apparatus have been standardized. It is now possible to administer anesthesia or to provide for resuscitation promptly, conveniently, and effectively with any type of anesthetic apparatus.

In the Sloane Hospital for Women, Dr. Frank Moya has been in charge of anesthesia since the latter part of 1958. He reintroduced chloroform analgesia during the second stage of labor and delivery with the Tecota Inhaler, developed by Dr. Shih Hsun Ngai. This method proved to be both safe and effective in providing analgesia during labor, without cardiovascular or hepatic toxicity because of the low concentrations of chloroform employed. Dr. Moya has begun the use of nitrous-oxide-oxygen anesthesia in combination with muscular relaxation produced by succinylcholine for cesarian sections. The purpose is to determine, in those patients in whom general anesthesia is necessary for cesarean section, whether nitrous-oxide-oxygen and succinylcholine may not be more satisfactory from the standpoint of infant vigor at birth than has been the case with cyclopropane. To this end, investigations of the transfer of succinylcholine across the human placenta are in progress to supplement the clinical study.

Drs. Edgar C. Hanks, Albert Levy and Harold J. Corder have collaborated with the members of the Surgical Service in the care of patients undergoing intracardiac operations during extracorporeal circulation. They have made progress in improving the understanding of the problems. An improved Cardiac Pacemaker was acquired for postoperative care in those patients who develop heart block following open heart surgery. This new unit permits visual and audible monitoring of the electrocardiogram; if the cardiac rate slows sufficiently or if cardiac arrest occurs, the Pacemaker is automatically turned on after the lapse of a pre-set time interval.

Dr. Hanks and Dr. Ngai have introduced a new muscle relaxant, Imbretil. This agent was first developed in Austria at the Pharmacological Institute of the University of Vienna. Because of its great potency and its dual mode of action, it was thought to be of both theoretical and practical interest, although trials of it in Central Europe were brief and somewhat uncontrolled. To determine its possibilities, Dr. Emanuel M. Papper, together with an Anglo-American group of clinicians and scientists spent several days during the spring in Austria, Germany, and Switzerland investigating the possible utility of this agent. It looked promising enough to warrant clinical trial and investigation in the United States. Clinical and experimental data are being collected currently.

Dr. Charles C. Wycoff introduced the technique of cervical peridural anesthesia in Presbyterian Hospital. It is a valuable method which has utility in a limited number of patients. Its applicability is being studied more extensively under the direction of Dr. Jean Henley, Department of Anesthesiology, in the Francis Delafield Hospital. Dr. Wycoff has also designed an 18-gauge needle of small diameter with attached plastic tubing for administration of intravenous fluids. Its use is being evaluated at the present time.

Dr. Vance Lauderdale, Jr., has improved the methods of anesthesia record-keeping so that a great amount of the information obtained during operation and in the immediate postoperative period can be summarized in a relatively limited space. He has also maintained a file of interesting cases and has investigated thoroughly those cases in which death was due to anesthesia or in which anesthesia contributed to the death. He has also done yeoman work in maintaining the adequacy of function of certain of our anesthesia apparatus and mechanical respirators.

Another development in patient care was the introduction of an improved method for the performance of brachial plexus block, by Dr. Leonard Brand. The method differs from the standard method in that it eliminates the possibility of causing pneumothorax or transient diaphragmatic or recurrent laryngeal paralysis.

### *Staff Activities*

During the year Dr. Virginia Apgar received a sabbatical leave of absence to enroll in the Johns Hopkins School of Public Health as a candidate for the Master of Science degree. Her purpose is to apply public-health techniques and principles to obstetrical anesthesia and to the problems of the newborn. During the year Dr. Rita Ann Jacobs resigned to join the staff of Memorial Center for Cancer and Allied



Diseases, in New York City. Dr. Moya joined the attending staff in July, 1958, and has taken charge of anesthesiology for the Obstetrical Service in the Sloane Hospital for Women. Dr. Cyril Sanger joined the attending staff in September of 1958 and brings to us some of the valuable methods and traditions of British practice in anesthesia. Dr. Irving Berlin of our resident group will join the attending staff on January 1, 1959.

In 1958, 29 papers by members of the Service were published or in press; these are listed in the bibliography elsewhere in this report. During the year, 79 scientific papers were presented before scientific and medical organizations.

The teaching program in the Service was particularly enriched in 1958 through the provision of a training grant to Columbia University for the encouragement and training of anesthesiologists for academic careers in this specialty. As part of this program the Service was particularly fortunate in having Dr. Robert D. Dripps, Professor of Anesthesiology at the University of Pennsylvania, as a Visiting Professor during part of December. We were also particularly fortunate to enjoy addresses and operating room "rounds" conducted by Dr. Geoffrey Organe, Dean of the Faculty of Anaesthetists of the Royal College of Surgeons of England; Professor Geoffrey Dawes, of Oxford University; and Dr. T. Cecil Gray, Director of the Department of Anaesthesia at the University of Liverpool, England.

### ***Research Studies***

The research activities of the Anesthesiology Service were conducted in collaboration with the College of Physicians and Surgeons of Columbia University. These investigations were made possible by the support of the National Institutes of Health, the Department of the Army, the National Foundation for Infantile Paralysis, the National Tuberculosis Association, the Burroughs-Wellcome Fund and Abbott Laboratories.

#### **NEGATIVE AIRWAY PRESSURES IN ANESTHESIA**

Dr. Holaday, Dr. Seamus Lynch and Dr. Levy initiated an investigation on the effects of various negative pressure patterns in anesthetized human patients. The premise of the study was that increased resistance and uneven distribution of gas in the lungs could result from the use of negative airway pressures caused by a collapse of bronchi ranging in size from 2 to 5 mm. in diameter. Preliminary studies did not support this hypothesis completely. Air trapping was not observed in some patients but was seen in others. Further study is necessary to de-

termine which patients are most subject to air trapping during the application of negative pressure to expiration.

#### RESPIRATORY STUDIES IN CATS

Dr. Holaday, assisted by a medical student, Mr. Munro J. Levitzky, studied the effects of anesthesia and some aspects of artificial respiration on the respiratory drive in cats. The objective of such studies was a better understanding of prolonged apnea which is occasionally observed in subjects following the use of muscle relaxants. An ingenious technique was devised by which activity of the respiratory center could be monitored as a function of the motor outflow in a fibre of the phrenic nerve without significant interruption of the nerve supply to the diaphragm. Artificial respiration was produced by the experimental respirator developed by Dr. Holaday and Dr. Christen Rattenborg, during the latter's period of training in the Department of Anesthesiology. It was observed that the respiratory center's sensitivity to  $\text{CO}_2$  tension tends to be constant but could be altered by deepening anesthesia with a barbiturate or subjecting the animal to periods of anoxia or hypercarbia. If the circulation of the animal remained good, recovery usually occurred. However, if excessive positive or negative airway pressures were used, strong inhibitory or stimulatory effects, respectively, of short duration were observed. It was concluded that the respiratory center reacts in a stable manner to chemical factors but changes rapidly in response to kinesthetic stimuli.

#### MUSCLE RELAXANT PHARMACOLOGY

Dr. Hanks, Dr. Ngai, Dr. Bernard R. Fink and Dr. Holaday engaged in a study of the pharmacology of the muscle relaxant Imbretil and certain anti-relaxant substances. The studies were conducted in anesthetized human subjects with the aid of the electromyographic method developed by Dr. Fink and the physical and biochemical methods previously developed by Dr. Holaday. The studies completed thus far suggest that the respiratory center responds in a stable manner to the chemical stimulation by  $\text{CO}_2$  in man during general anesthesia but that it changes rapidly in response to stimulatory and inhibitory reflexes initiated by altering airway pressures. This pattern resembles that found in studies conducted with animals. In the patient who breathes spontaneously, the integral of the electromyogram of the diaphragm may be correlated to a remarkable degree with the volume of air exchanged when the resistances to respiration are maintained at a constant value. Imbretil, which is a potent muscle relaxant of a depolarizing type, can be antagonized under certain circumstances with thiamine, which also appears to stimulate respiration.

However, subsequent doses of thiamine may actually increase the intensity of neuromuscular blockade.

These studies demonstrate that it is possible to perform precise pharmacological studies on humans with the same accuracy as can be accomplished in the laboratories of pharmacologists on animals.

#### PHYSIOLOGY OF NEWBORN INFANTS

The joint study conducted by Dr. Apgar, Dr. Leonard Stanley James, Dr. Holaday, Dr. C. Edward Prince and Dr. Irvin Weisbrot provided new data of value in understanding neonatal physiology. These studies of acid-base balance and respiratory gas tensions in the newborn infant demonstrate that the newborn exhibits a sharp reduction of buffer base and a rise of  $\text{CO}_2$  tension at a time when the oxygen saturation is increasing rapidly and the  $\text{CO}_2$  content is static or increasing. Certain of the blood electrolytes exhibit parallel alterations. Potassium is elevated and lactic acid is increased. The lactic acid pyruvate ratio is also increased. These changes reach a peak in 10 or 15 minutes after birth and gradually return to normal. The  $\text{CO}_2$  tension usually reaches a normal value more rapidly than the metabolic changes. The magnitude of these changes correlates closely with the condition of the infant one minute after birth as determined by the Apgar scoring method. The reciprocal relationship observed between the  $\text{CO}_2$  tension and the buffer base is remarkably similar to the relationship between these values in the adult patient who is subjected to hypoventilation during general anesthesia. The biochemical changes tend to support the general thesis that the newborn infant, contrary to popular belief, does not possess important protective mechanisms against asphyxia. Furthermore, the consistent appearance of these changes indicates that the birth process is an asphyxial one. It can be concluded, therefore, that obstetrical practice should be directed toward expedient delivery and protection of the infant by all means available. These workers showed furthermore that vigorous respiration can occur spontaneously in the absence of measurable oxygen in the umbilical artery blood. The failure to breathe at birth is probably caused by depressant drugs or the severity of the respiratory and metabolic acidosis, which in turn is the result of intra-uterine asphyxia. The measure of anoxic insult during the birth process can be estimated by the pH, the  $\text{pCO}_2$  and the buffer base of the newborn infant's blood. These observations stress the need for active ventilation and reoxygenation of the newborn who is depressed after birth. Another practical application of these studies is the observation that regional anesthesia interferes less with these functions than inhalation anesthesia, suggesting that it can be

used in infants with fetal distress in preference to general anesthesia, when feasible. Dr. James and his associates also studied hemodynamic activity in the first hours of life and verified the fact that the ductus arteriosus remains open after the onset of respiration and showed further that there is a bidirectional flow through the ductus during each cardiac cycle. The volume of shunt from the pulmonary artery into the aorta is greater in the first minutes of life and decreases to a small quantity by the end of one hour.

#### INSTRUMENTATION AND DEVELOPMENT OF EXPERIMENTAL TECHNIQUES

Dr. Holaday has guided a medical student, Mr. Robert J. DeWitt, in the design and planning of an electrical analogue of the lung to study the effects of artificial respiration on the mechanics of respiration. To carry out this project, Mr. DeWitt has been granted a Radio Corporation of America Fellowship for medical instrumentation. Dr. Holaday collaborated closely with Drs. Ralph A. Deterling, Norman B. Thompson and Shivaji B. Bhonslay, of the Surgical Service, in their work in the open-heart program. He assisted members of the Surgical Service in setting up a laboratory for measurements in connection with the use of extracorporeal circulation.

Dr. Holaday continued his studies during the year to improve technical procedures in the laboratory. Among these has been the development of an ultramicro pH electrode and an ultramicro method for the preparation of plasma samples for electrolyte measurement. Dr. Holaday has also developed a lightweight, low dead-space pneumotachograph which may be operated in a closed system and in the presence of 100 per cent humidity. This apparatus has been most useful and has excited interest in other departments.

Dr. Frumin has continued his studies of the analgesic state. Much of the effort has been along lines of instrumentation, in collaboration with Mr. Arnold Lee. They have studied methods of vaporization of Fluothane and chloroform and have developed methods of analysis with commercially available equipment. Their absolute point of reference has been the measurement of gas density and, as a secondary method, the application of the infrared method of gas analysis. Dr. Frumin and Mr. Lee developed a non-rebreathing valve of high quality and a pressure equalizing device to take care of excessive gas inflow into the anesthetic system. They have also developed a simple, reliable respirator for intermittent positive pressure, which is now in clinical trial.

Dr. Fink continued his development and interest in electromyography as a method of monitoring ventilation during anesthesia. Much of this work was performed in collaboration with Drs. Ngai and Holo-

day. They showed that the integrated electromyogram of the diaphragm could serve as an index of air flow during anesthesia. The applicability of this method to the study of the partially curarized patient is under investigation. Clinical measurements of the effects of muscular relaxants and antidotes on muscle activity and ventilation and carbon dioxide elimination are being made during general anesthesia.

Dr. Epstein studied 4-iodoantipyrine as a potential blood flow tracer. This study established the absence of uniform tissue water distribution of this material.

#### STUDY OF ANESTHETICS IN LABORATORY ANIMALS

Dr. Ngai studied the action of the muscle relaxant Imbretil in the cat. The neuromuscular blockade produced by Imbretil was found to be potentiated by neostigmine, edrophonium, and pyridine-2-aldoxime (2 PAM) and antagonized by thiamine and a decamethonium antagonist developed by Dr. Edwin J. deBeer of the Burroughs-Wellcome Laboratories. In man, however, the decamethonium antagonist potentiated the block of Imbretil. Dr. Ngai also showed that 2 PAM potentiated the action of succinylcholine and decamethonium and antagonized the effect of d-tubocurarine in the cat. Dr. Ngai also studied the effects of irradiation with X-rays on the tolerance to anesthesia in the rat. These studies were performed in collaboration with Dr. Roberts Rugh, Department of Radiology. They investigated the tolerance to pentobarbital in the rat subjected to sub-lethal X-irradiation. In controlled experiments, it appeared as though the sleeping time were prolonged on the second post-irradiation day. The mechanism of this prolongation of barbiturate hypnosis is under investigation.

#### STUDIES OF DRUGS IN ANESTHESIA

Dr. Lester C. Mark, in collaboration with Dr. Brand, completed studies of methitural. Drs. Mark and Brand showed that methitural is metabolized slowly in man and demonstrated that its relatively short duration of action is due to rapid accumulation in the body fat. Methitural, therefore, has the same advantages and disadvantages inherent in thiopental and other intravenously injected barbiturate anesthetic drugs. Drs. Mark and Brand also studied a non-barbiturate intravenous anesthetic. This drug produced hyperventilation immediately after injection, followed by a transitory pause in respiration. It has a short duration of action but there is a problem in finding an appropriate and safe solvent for the agent. At the present time, propylene glycol and sodium benzoate are mixed to provide a vehicle for solution. Further studies of this material must be halted until a better method of preparation and a better

vehicle can be found. Drs. Mark and Brand have continued their efforts to provide useful antagonists to the action of barbiturates. They have thus far studied N-allyl thiobarbiturates, which proved to be ineffective in lessening the effects of an anesthetic dose of thiopental.

Dr. Wycoff is studying the action of digitalis in the anesthetized normal dog. He is also studying the influence on blood pressure of endotracheal intubation in the presence of surface anesthesia. He found that despite adequate surface anesthesia from the standpoint of endoscopic manipulation, the blood pressure still rose upon instrumentation of this part of the respiratory tract. He also confirmed previous observations that succinylcholine was associated with the development of hypertension in some patients.

# Dermatology

CARL T. NELSON, M.D., *Director*

During 1958 patient visits to the Dermatology Outpatient Department of Vanderbilt Clinic numbered 33,077. There were 111 admissions to the Dermatological Service in Presbyterian Hospital and 963 other inpatients were treated in consultation with other services. The serological research laboratory carried out 937 specific treponemal serologic tests for Medical Center patients and the laboratory of the division of mycology examined 4,210 specimens. These totals indicate that the facilities of this Service were utilized to near-capacity in 1958. The continued rise in the demand for specialized mycological examinations, especially for deep fungi, has been particularly evident in recent years. This emphasizes the increased importance of such examinations in the management of patients admitted to the Medical Center, although at times it has severely taxed the facilities of our laboratory.

Dr. Dabney Moon-Adams retired in June as Attending Dermatologist. An accomplished clinician and member of the staff of the Presbyterian Hospital for nearly thirty years, Dr. Moon-Adams was particularly interested in the management of congenital syphilis. She gave many years of expert and devoted service to the innocent victims of this disease. Drs. Max Liebmann, F. Philip Lowenfish and James E. Ridgway became Attending Dermatologists in Vanderbilt Clinic, effective July 1, 1958. Also as of that date, Dr. Joseph S. Shapiro became an Assistant Attending Dermatologist in Vanderbilt Clinic and Dr. Irving Abrahams, a former member of the resident staff, was appointed Assistant Dermatologist in Vanderbilt Clinic.

## **Research Studies**

The clinical investigative and research activities of the members of the Service during the past year are outlined below. These studies were carried out in Presbyterian Hospital and Vanderbilt Clinic, but as in previous years, the laboratories of the College of Physicians and Surgeons were also utilized in many instances.

Dr. Leslie P. Barker continued an investigation of biotin metabolism in infants with Leiner's disease. This study included the development of methods for the determination of biotin in blood and also was extended

to include an evaluation of the efficacy of this compound in the treatment of various types of desquamative erythrodermas in infants and children. In collaboration with the Departments of Pathology here and at St. Luke's Hospital, Dr. Barker also continued the histologic investigation of developmental variations in fetal and infant skin.

Dr. Helen O. Curth continued her long-term studies on the genetic pattern of acanthosis nigricans and its relationship to visceral cancer. Dr. Curth also extended her studies on Behçet's syndrome and obtained some evidence to suggest that both a vasculitis and a blood coagulation defect may be associated with this condition.

Dr. Bohdan E. Dobias, of the Department of Dermatology, and Dr. Abrahams investigated further the properties of an endotoxin derived from *C. albicans*. Chemical identification of this product is still incomplete but evidence has been obtained to indicate that it may have some therapeutic effect in mice with transmitted and spontaneous leukemias. Dr. Anthony N. Domonkos completed an investigation of neutron activation analysis of arsenic in the skin of patients with certain types of keratoses and cutaneous epitheliomas. Dr. Domonkos also initiated studies on the efficacy of colchicine-like compounds in the treatment of keloids. With Dr. George C. Andrews, he also studied further the effectiveness of current protective measures used in the treatment of dermatological patients with X-rays and radium.

Drs. Paul Gross and Saul L. Sanders continued an investigation of the alkali-neutralizing capacity of human skin in various eczematous dermatoses. This work also included an investigation of the effects of vitamin A and certain unsaturated fatty acids on the alkali-neutralizing capacities of skin and the possible therapeutic effects of these substances in so-called numular eczema. Dr. Sanders also initiated studies on the effect of hypo- and hypersensitization on the clinical course of dermatophytic infections due to *T. rubrum*. This work has been undertaken in collaboration with the Division of Mycology and entails the use of purified antigenic fractions of *T. rubrum* which have hitherto not been available. Dr. Lowenfish completed a study of the value of combinations of corticosteroids with fungistatic agents in the local management of superficial fungus infections of the skin.

Dr. J. Lowry Miller and Dr. Justina H. Hill of the Department of Dermatology, initiated an investigation of the comparative value of the Reiter protein complement fixation test and the *T. pallidum* immobilization reaction in the detection of syphilis. This work has been undertaken to determine if certain chemically identified fractions of spirochetes may be utilized for specific serologic testing in lieu of the more complicated and expensive treponemal immobilization reactions. In collaboration



with Dr. Norman A. Parrott and Dr. Hill, Dr. Miller also continued the long-term study of the significance of persistent biologically false positive reactions to the standard serologic tests for syphilis in otherwise normal individuals. Recently this work has been particularly concerned with the origins of such false positive reactions in children. Drs. Leo Schweich, John T. McCarthy and Paul G. Meyer completed a clinical investigation of the value of combinations of antimalarial drugs in the treatment of chronic discoid lupus erythematosus. The results of this work suggest that combined therapy with these drugs has a distinct advantage in the management of this chronic and disfiguring disease.

Dr. Margarita Silva, Department of Dermatology, continued the study of the nutritional requirements of dermatophytes. The results of this work indicate that some amino acids and certain fractions of egg albumin can inhibit the growth of dermatophytes. These and other studies on the effect of various agents on the proliferation of fungi in keratin have employed the shell membrane of the hen's egg as a source of sterile keratin. This relatively new technique promises to yield considerable information that heretofore has not been obtainable by *in vitro* methods. Dr. Silva and Mrs. Irene Weitzman, Department of Dermatology, in collaboration with Dr. Bruce R. Marshall, of the Service of Otolaryngology, also completed a clinical and mycologic study of mucor-mycosis. As in previous years, the Mycology Division of Vanderbilt Clinic again provided much of the clinical material for these studies.

Dr. Milton B. Sloane investigated the effectiveness of a derivative of triamcinolone, one of the newer corticosteroids, in the topical treatment of various inflammatory dermatoses. Dr. Shapiro continued his studies on the efficacy of non-specific treatment of chronic allergic eczema in post-adolescent patients whose skin eruption is refractory to other forms of therapy. Dr. Shapiro also directed the treatment of patients with the newly acquired specialized equipment for skin planing. Facilities for this procedure have been made available in Presbyterian Hospital and the members of the resident staff and fellows have participated in the treatment of selected patients. Dr. David R. Weakley, in collaboration with Dr. Paul A. di Sant'Agnesse, of the Pediatric Service, began a histochemical study of the functional activity of sweat glands in patients with cystic fibrosis of the pancreas. This investigation has been undertaken in an effort to delineate further the abnormalities of sweat gland metabolism in patients with this disease.

Dr. Nelson, with Dr. Herschel C. Gore and Dr. Jack Eisert, extended the studies on the specificity of the Kveim reaction in sarcoidosis and the identity of the chemical complexes responsible for this phenomenon.

Thus far the results of this work do not suggest that the mycolic acid-polysaccharide esters isolated from Kveim antigen are the chief factors responsible for the production of this unusual reaction in patients with sarcoidosis. With Mrs. Julia M. Einbinder, of the Department of Dermatology, Dr. Nelson also studied further the effects of serotonin-antagonists, corticosteroids and other hormones on tissue electrolyte changes in various types of hypersensitiveness.

### *Staff Honors and Activities*

A number of honors and distinctions came to members of the Service during the year. Members of the staff also continued their active participation in the proceedings of various scientific and educational organizations. Dr. Andrews served as Chairman of the Permanent Committee on Long Range Radiation Effects of the American Dermatological Association and again was a member of the Committee on Education of the American Academy of Dermatology and Syphilology. Dr. Barker became Chairman of the Section on Dermatology and Syphilology of the New York Academy of Medicine and also was appointed Director of Dermatology at St. Luke's and St. Barnabas Hospitals. Dr. Helen O. Curth lectured before six scientific assemblies in various parts of the United States during the year. Dr. Domonkos again served as Chairman on the Panel on Dermatologic Photography at the Annual Meeting of the American Academy of Dermatology and Syphilology. Drs. Gross, Kesten and McCarthy lectured at the Fourteenth Annual Meeting of the American Academy of Allergy. Dr. Kesten also continued to serve as Secretary of the American Board of Dermatology and as a member of the Advisory Board of Medical Specialists. Dr. Miller was Chairman of the Section on Dermatology and Syphilology of the Medical Society of the State of New York. He also participated in the Ninth Annual Symposium on Recent Advances in Venereal Diseases, and lectured before the Guilford County Medical Society of North Carolina. Dr. Silva participated as guest lecturer in a course on "Principles of Mycotic Disease" at the Armed Forces Institute of Pathology, Washington, D. C. She also lectured before the Section on Mycology of the New York Academy of Sciences and participated in a symposium on career opportunities in microbiology at Goucher College. Dr. Nelson was elected an honorary member of the Société Française de Dermatologie et de Syphiligraphie and served as Treasurer of the American Dermatological Association. He also continued as a member of the Committee on Cosmetics of the American Medical Association and of the Committee on the Cutaneous System of the National Academy of Sciences.

### *Acknowledgments*

It is again a pleasure to express sincere thanks to the professional staff and to the nursing and administrative staff of the Presbyterian Hospital for their cooperation and assistance in the care of patients and the instruction of the resident staff during the year. The Service is also deeply grateful for the support given its research program by the Alfred P. Sloan Foundation; the Cole Foundation; the American Cancer Society; Duke Laboratories, Inc.; Lehn and Fink Products Corporation; the Fund for Research, Inc.; Merck, Sharp and Dohme Research Laboratories; and E. R. Squibb & Sons. Acknowledgment is also due the National Institutes of Health for several grants which contributed to our clinical research activities and to our ability to care for patients.

# Medicine

ROBERT F. LOEB, M.D., *Director*

## *The New Director*

In 1921 Dr. Walter W. Palmer, Director of the Medical Service and Bard Professor of Medicine in the College, built the foundations for what was to become, under his leadership, a Department and Service of unusual strength. The following profile which characterizes the qualities, both personal and professional, of Dr. Palmer, may serve a useful purpose in delineating those characteristics to be sought in an individual to carry on the healthy and solid traditions established.

This man must have integrity, wisdom, solid judgment, selflessness, warmth and understanding. He must have a deep and abiding interest in the problems posed by medicine — in science, education and patient care. His scientific background must include at least one area in the study of which he has developed appreciation of the scientific method, inexorable critique, and a sense of relative values in scientific endeavor. He himself must have imagination but also the capacity to stimulate and encourage those about him. He must have an understanding concern for the aims of medical education at its various levels and insight into the current and potential problems of health as related to the community as well as to the individual. He should be a *sound clinician* with broad experience in medicine not limited to his area of special interest. The term *sound clinician* merits some sharpening of definition. The soundness of a clinician is not measured by his capacity to recognize the exotic in medicine. He is not an individual with authoritarian omniscience. The great clinician discerns the essence of a problem and recognizes how to seek and where to find pertinent information — he is not one who believes himself to be in possession of it. By his intimate comprehension of disease mechanisms in one area based on his own investigative efforts he has developed a scientific critique which permits him to understand how to approach the patient's problem in other areas, for surely there is a common denominator. In human relations he must be an example of tolerance, warmth and humility; in science a gentle but austere scholar as willing to follow as to lead; and, finally, in the care of the patient a dedicated servant to his fellow man.

It is a great satisfaction to announce that on July 1, 1959, Dr. Stanley

E. Bradley will become Director of the Medical Service and Chairman of the Department of Medicine. He, happily, embodies these qualities, and Internal Medicine, with the outstanding and loyal colleagues here, is assured a bright and dynamic future.

### *Staff Changes*

A number of significant changes have taken place in the staff during the past year. Dr. Dana W. Atchley became Professor Emeritus of Clinical Medicine and Consultant to the Presbyterian Hospital. Happily, staff, students and patients will continue to remain the beneficiaries of his stimulating influence, for he will continue to practice in the Harkness Pavilion and will do some teaching on a voluntary basis. Dr. Atchley first came to the Presbyterian Hospital as Coolidge Fellow in 1916 under Dr. Warfield T. Longcope, Bard Professor of Medicine at that time. After an interim of two years spent at Johns Hopkins with Dr. Walter V. Palmer, he returned to Columbia when Dr. Palmer was appointed successor to Dr. Longcope in 1921 as Director of the Medical Service. Dr. Atchley was then designated Assistant Attending Physician, in charge of the chemical research laboratories, at the Presbyterian Hospital and has subsequently served as Attending Physician. He became a recognized leader in basic research in the field of electrolyte physiology, and his studies of the electrolyte disturbances in diabetic acidosis stand as a classic in clinical investigation. His wisdom, integrity, his warmth of personality, his rapport with and devotion to his patients, his humility and ability to evaluate problems at the bedside made it inevitable that he would be recognized as one of the great physicians. His kindness, generosity and sparkling wit endear him to his colleagues. Dr. Atchley has distinguished himself both abroad and at home as a philosopher in the field of medical thought through his writings on medical education. His influence on colleagues and students on the Medical Service cannot be overemphasized. His constant emphasis on values and on "disciplined intellectual processes," his insistence on the development of critical analysis of clinical data, his capacity for precise and lucid expression have given us priceless heritage.

Dr. René Wégria resigned to become Chairman of the Department of Medicine and Director of the Medical Services of St. Louis University. Dr. Wégria has had a distinguished career in the field of experimental cardiology. With this background and an unusual flair for teaching and patient care, he is admirably equipped for eminent achievement in his new post. Dr. Frederick H. Shillito, long an Assistant Physician, resigned on September 1 to become Associate Director of the Institute of Industrial

Medicine and Associate Professor of Medicine at the University of Michigan. Dr. Shillito has had long experience in the field of industrial medicine during his years of association with the Presbyterian Hospital. Dr. Julian I. Kitay, a visiting fellow, leaves in June of 1959 to assume duties as a full-time Assistant Professor of Medicine at the University of Virginia. Dr. Richard J. Cross, Assistant Attending Physician and Assistant Dean of the College of Physicians and Surgeons, has resigned to become Associate Dean at the University of Pittsburgh where he will collaborate in his activities with Dean Sargent Cheever, a former intern on the Medical Service of the Presbyterian Hospital. Dr. Calvin H. Plimpton is extending his leave of absence to serve as Professor of Medicine at the American University in Beirut, Lebanon.

During the past year the position of the Social Service Department has been greatly strengthened. Through the efforts of Dr. Frederick R. Bailey, Chairman of the Social Service Committee, and the generosity of the Gustavus and Louis Pfeiffer Foundation, a grant has been made to the College of Physicians and Surgeons for the appointment of an educational director, Miss Barbara E. Judkins, and other teaching personnel. Miss Judkins, whose title in the Department of Medicine is Assistant Professor, and her associates have assumed the responsibility for all of the teaching programs in Social Service at the Medical Center.

#### DR. MARCEL GOLDENBERG

It is with deepest regret that the death of Dr. Marcel Goldenberg is reported. Dr. Goldenberg served on the staff of the Presbyterian Hospital from 1944 until his death on July 30, 1958. Dr. Goldenberg, during his association with the Presbyterian Hospital and the College, made notable fundamental contributions to medical knowledge, the results of which have found wide application in medical practice throughout the world. He was the first to demonstrate that nor-adrenalin is secreted by the adrenal gland as well as is adrenalin. With Dr. Henry Aranow, Jr., he developed the benzodioxane diagnostic test for the presence of adrenal tumors known as pheochromocytomas. With the late Dr. Eleanor Baldwin and Dr. Kermit L. Pines, Dr. Goldenberg first described the differences of action of nor-adrenalin and adrenalin on the circulation in man. Dr. Goldenberg also first introduced nor-adrenalin in the treatment of shock — a procedure of the greatest importance. With Dr. Gerald Cohen, Research Associate in Biochemistry. Dr. Goldenberg also developed precise methods for the simultaneous quantitation of adrenalin and nor-adrenalin in human blood. He, with his collaborators, has developed a simple screening test for the diagnosis of pheochromocytomas based on measurements of catechol amines in the urine.

### Staff Activities and Honors

During the past year Dr. John V. Taggart was appointed a Career Investigator by the American Heart Association. He is the first internist to have received this distinction and is one of six individuals who have become recipients of this award. Dr. Charles A. Ragan with Dr. Harry M. Rose shared a \$5,000 award from the Gairdner Foundation in Toronto, Canada, for the discovery of the first medical test for the diagnosis of rheumatoid arthritis. Dr. Ragan also delivered the Heberden Oration in London, England, and received the medal of the Heberden Society for his studies on rheumatoid arthritis. Dr. Ragan was appointed to the National Advisory Council for Arthritis and Metabolic Diseases of the United States Public Health Service. Dr. Stanley E. Bradley has been invited to deliver a Harvey Society Lecture on "The Circulation of the Liver." He has served as an Editor of *Circulation* and of the *Journal of Medical Education* in the past year. He also addressed the Third Congress of Cardiology in Brussels, Belgium. Dr. George A. Perera was elected to the Editorial Board of *Circulation Research*. He addressed the Congress of Cardiology in Brussels, Belgium, and visited the Soviet Union under the auspices of the American Friends Society. Dr. William B. Sherman was appointed a member of the National Advisory Council on Allergy and Infectious Diseases of the Public Health Service. Dr. Charles A. Flood was appointed to the Governing Board of the American Gastroenterological Association. Dr. Alvan L. Barach delivered a series of lectures at the Fifth International Medical Congress in Tokyo, Japan, and Dr. Paul A. Marks addressed the International Biochemical Congress in Vienna, Austria. Dr. Alfred P. Fishman joined the Editorial Committee of the *Journal of Clinical Investigation* and became an affiliate of the Royal Society of Medicine of London. He also participated in the World Congress of Cardiology in Brussels, Belgium, and the Conference on Emphysema of the Ciba Foundation in London, England. Dr. Alfred Gellhorn addressed the International Society of Hematology in Rome, Italy, and Dr. John H. Laragh gave a lecture at the University of Hong Kong. Dr. Pines was again elected to the Board of Directors of the New York Diabetes Association and Dr. Felix E. Demartini became Secretary-Treasurer of the American Rheumatism Association. Dr. Dickinson W. Richards and Dr. Robert F. Loeb were made members of the Executive Committee of the Health Research Council of the City of New York. Dr. Loeb was the recipient of the first Treadwell Award of the Massachusetts General Hospital and became the 1959 recipient of the Kober Medal of the Association of American Physicians. He was also designated a Master of the American College of Physicians. He served as Consultant to the Director General of the World Health

Organization at a conference in Geneva, Switzerland. Dr. Loeb was reappointed to the National Science Board by the President.

As in the past the Medical Service has been host to a large number of distinguished foreign visitors who have enriched the educational program. Fellows from abroad and from other medical institutions in the country have also been participating in the clinical and laboratory activities. Special mention should be made of a series of seminars devoted to problems of genetics, arranged by Dr. Helen M. Ranney. These exercises have met with an enthusiastic reception by staff and students and a number of distinguished scientists, including Drs. Milislav Demerec, Rollin Hotchkiss, George W. Beadle and Tracy Sonneborn and others, contributed to their success. Dr. Theodore T. Puck delivered the second Michael Heidelberger Lecture.

### ***Research Activities***

As in past years the research program, with the exception of studies in the Cardio-Respiratory Laboratory and the Radio-Iodine Laboratory of the Hospital, has continued to be carried on in the cramped laboratories of the College of Physicians and Surgeons by the staff which serves both the Presbyterian Hospital and the College. The salaries of the staff and the funds for research are made available from the resources of both institutions. This interdigitation of effort is not only highly desirable but is essential for the research program here at the Medical Center. It must again be stressed that the physical facilities for research are wholly inadequate for the responsibilities which should be assumed by the Medical Service with the expansion of challenging opportunities in the field of medical science. It should further be stressed that the monies available for the support of the present full-time group, not to mention the need for its expansion, are pitifully inadequate. Were it not for the generosity of contributions to the Daniel G. Arnstein, the Alice Weisl and the Laboratory Development Funds as well as for the financial assistance of other donors, it would be impossible to continue activity of the present group.

### **RENAL AND HEPATIC PHYSIOLOGY**

Studies of renal and hepatic physiology in man and dog have continued during the past year in the laboratory of Dr. Bradley. Associated with Dr. Bradley during the year have been Dr. Salvador U. Vial, of the Catholic University of Chile; Dr. William I. Cranston, of Oxford University, England; and Dr. Oswaldo Luiz Ramos, of Sao Paulo, Brazil — all Fellows of the Rockefeller Foundation. Dr. Norman B. Javitt also has worked with this group for the past six months as a Fellow of the



American Heart Association, as has Dr. Henry O. Wheeler, a Markle Scholar, and Dr. Robert M. Epstein, of the Anesthesiology Service. Dr. Wheeler has continued his work on the storage and transfer of Bromsulfalein (BSP) by the liver. He has been able to show that Thulium is selectively disturbed in Dubin-Johnson disease (three patients) and is more markedly impaired than is storage in obstructive jaundice. He has completed a study with Dr. Jay I. Meltzer, a former assistant resident, and Dr. Cranston on the hepatic excretion of indocyanine green which he found is removed from the blood as efficiently as BSP and completely recoverable from the bile. Using dogs fitted with a Thomas fistula he and the group have embarked upon studies of biliary electrolyte and acid-base excretion. To date these studies suggest that reactions are handled by active and selective transfer systems and that hydrion is excreted in some reciprocal relation with the stomach that may be determined by the peculiar composition of portal venous blood. Drs. Cranston and Vial have worked intensively on the physiology of the pyrogenic reaction in the dog. They have found that endogenous pyrogen, like exogenous pyrogen, induces renal hyperemia. Drs. Vial, Cranston and Ramos have been active in evaluating electrolyte excretion in patients with renal insufficiency during application of an abdominal binder or assumption of the upright position. Despite fixation of the urinary composition in this situation, under many circumstances these stresses have been found to induce marked changes in sodium and potassium excretion, presumably because reduction in filtration permits greater efficiency of tubular function. Work on glucose titration in dogs, carried out in collaboration with Dr. Jean Oliver, of Summit, New Jersey, and Dr. Laragh, has been completed. This study revealed a close structural-functional correlation in terms of the ability of the proximal segment to reabsorb glucose relative to filtered load as compared with proximal segment volume relative to measured glomerular surface. Drs. Meltzer and Javitt have been primarily active in working out, with the assistance of Mrs. Katherine F. Baker, the composition of BSP metabolites discovered in bile and blood of man and dog by Dr. Meltzer last spring. At present it appears that these substances may be conjugates of BSP derivatives and glutathione.

The group working with Dr. Taggart has continued its studies on the renal tubular secretory mechanism. A number of compounds, most of them foreign to the body, compete for transport by this system. All of the compounds studied previously have been weak acids possessing either a carboxylic or sulfonic acid group. Earlier attempts to identify the biochemical reactions responsible for tubular secretion have concentrated on possible types of covalent chemical bonding between the acidic

group and the cellular carrier. During the past year work in the laboratory has demonstrated that chlorothiazide, an orally effective diuretic, is also actively secreted by the transport mechanism. Although chlorothiazide is a weak acid, it contains neither a carboxylic or sulfonic acid group. This finding, together with other recent observations, suggests that covalent bonding is not involved in the interaction between the transported compound and the cellular carrier. It now appears probable that weaker types of chemical bonding are of major importance in the transfer process. Dr. Alvin Essig and Dr. Thomas E. Morgan, Jr., are currently synthesizing several series of compounds which should be useful in appraising this possibility. Representative of these is one group in which the benzene ring of hippuric acid is substituted with one, two or three hydroxyl groups in various arrangements. Such substitutions should have predictable effects on transport in the event that van der Waals forces are of importance in the transport mechanism. A considerable effort was made during the past year to obtain uniform suspensions of isolated cells from the kidney cortex, for it was believed that suitable preparations would be of value in kinetic studies of transport. The cells obtained by certain techniques appeared to be morphologically intact and exhibited sustained respiration *in vitro*, but the capacity to transport various test substances was lost during the preparative procedures.

#### METABOLISM OF SALICYLATES

Dr. David Schachter has continued studies on the metabolism of salicylates with the development of a sensitive *in vitro* test for the capacity of various tissues to form salicyl glucuronides. Evidence was obtained that conjugation with glucuronic acid, a major pathway in the metabolism of many hormones, drugs and metabolic end-products, occurs in the gastrointestinal tract, urinary bladder, lung and spleen, in addition to the liver and kidney. In the intestinal mucosa this conjugation can serve as a mechanism for the absorption of salicylate from the intestinal lumen. In related studies on the bilirubin glucuronides, a chemical method was developed for the estimation of bilirubin mono- and diglucuronide in the direct-reacting bilirubin of bile, plasma and urine. This estimation was applied to a study of the direct-reacting bilirubin in the plasma and urine of patients with non-hemolytic jaundice. The major pigment found in the plasma of these patients was the monoglucuronide, whereas the diglucuronide was the main conjugate in the urine.

#### MECHANISM OF CALCIUM ABSORPTION

An investigation of the mechanism of calcium absorption in the small intestine was initiated by Dr. Schachter to provide information

concerning one of the critical processes which regulates calcium metabolism in the body. Sacs of everted small intestine were studied *in vitro*, and an active transport of calcium from the mucosal to the serosal surfaces was observed. With intestinal sacs from the rabbit and rat, the calcium transport was dependent on oxidative phosphorylation and the supply of vitamin D in the diet. Growing and pregnant rats transported calcium more readily than animals beyond the growth period or non-pregnant. Further studies are in progress to define the biochemical mechanisms involved in this transport and the role of vitamin D. Dr. Fred H. Katz, assistant resident, Mr. Samuel M. Rosen, fourth-year medical student, and Dr. Eugene B. Dowdle, fellow from the University of Cape Town, Union of South Africa, have collaborated with Dr. Schachter in these studies.

#### ANALYSIS OF MUCOPOLYSACCHARIDES OF CONNECTIVE TISSUE

The major effort of the laboratory under the direction of Dr. Karl Meyer has been the structural analysis of mucopolysaccharides of connective tissue by methods combining enzymatic degradation and organic-chemical reactions used in carbohydrate chemistry. By these methods and infrared spectroscopy, the structures of chondroitin sulfate A and C have been finally established, in collaboration with Drs. Philip Hoffman and Alfred Linker, both Associates in Biochemistry. Their only difference resides in the position of the sulfate group: that of A is esterified in the 4- and that of C in the 6-position of the galactosamine moiety. The main features of the structure of chondroitin sulfate B have also been ascertained by studies in this laboratory and at Harvard. It seems noteworthy that this laboratory — in which hyaluronic acid, chondroitin sulfate B and C were first isolated — had the good fortune to have a major share in the elucidation of their structures. Similar investigations are under way on the structures of heparitin sulfate and keratosulfate. Of greater clinical interest are studies on two hereditary diseases of connective tissue, Hurler's and Marfan's syndromes. In collaboration with Dr. Melvin M. Grumbach, of the Pediatric Service, it has been found that the tissues and the urine of patients with Hurler's syndrome contain two mucopolysaccharides in high concentration, chondroitin sulfate B and heparitin sulfate. From the rib cartilage in two cases of Marfan's syndrome, keratosulfate and chondroitin sulfate C were isolated. In subsequent studies it was found that normal human cartilage, which was believed to contain mainly chondroitin sulfate A, instead contains mainly chondroitin sulfate C and keratosulfate. It appears that maturation of cartilage is accompanied by a shift in the production of mucopolysaccharides. These and other findings are the basis of a new approach to

the problem of the normal and abnormal organization of connective tissue. Three new collaborators have joined Dr. Meyer's group this year: Dr. David A. Kaplan, Fellow of the American Rheumatism Association; Dr. Shigehiro Hirano, an organic chemist from Kyoto University, Japan, now with the Department of Medicine; and Dr. Gerard M. Turino, of the Cardio-Respiratory Laboratory.

#### OXALOACETATE IN RELATION TO KETOSIS

Dr. Donald F. Tapley has continued his studies on the relation of tissue levels of oxaloacetate to the development of ketosis. With the help of Mr. William V. Shaw, fourth-year medical student, it has been shown that there are normal levels of oxaloacetate in the livers of diabetic rats in which significant ketosis has developed. Previous studies by Dr. Tapley have shown that thyroxine can alter certain morphological and biochemical features of mitochondria, and that the thyroxine is bound to the mitochondria. It has been found that the binding of thyroxine to mitochondria is dependent upon two parts of the molecule, the iodo-substituted phenolic ring and the alanine side-chain, with the former being more important. In conjunction with Mr. Shaw, it has been found that the effect of thyroxine on the morphology of mitochondria is due to the two substituted phenolic rings; the phenolic hydroxyl group and alanine side-chain are apparently not involved in this action of thyroxine. In conjunction with Dr. Wendell B. Hatfield, assistant resident, and Mr. Frank F. Davidoff, fourth-year medical student, a study is being conducted to determine the *in vivo* distribution of various thyroxine analogues.

#### INVESTIGATIONS OF RED BLOOD CELLS

Drs. Paul A. Marks and Anne B. Johnson, with Dr. Erich Hirschberg, Assistant Professor of Biochemistry, Department of Medicine, have been studying the effect of *in vivo* aging on human erythrocytes. A method was developed to separate young and old red cells, based on the fact that young erythrocytes are less osmotically fragile. It was found that the levels of certain red cell enzymes decreased with the *in vivo* aging of these cells. In association with Dr. Ruth Gross, of the Department of Pediatrics, Stanford University School of Medicine, studies were carried out on the hereditary and biochemical aspects of the erythrocyte enzymatic defect (glucose-6-phosphate dehydrogenase) associated with increased susceptibility to hemolytic anemias following ingestion of such agents as primaquine, phenacetin, sulfonamides, fava bean and naphthaline. Investigation of lipid synthesis in red cells as related to *in vivo* aging and increased susceptibility to hemolysis are being carried

out by Drs. Marks and Gellhorn, who were recently joined by Dr. Cheviot S. Kidson, of the University of Sydney, Australia.

#### ADRENALIN AND NOR-ADRENALIN STUDIES

Dr. Cohen, with the late Dr. Goldenberg, continued studies of the pharmacology and biochemistry of the neurohormones, adrenalin and nor-adrenalin. From a study of the plasma levels of hormone attained during intravenous infusions in man, the following estimates were obtained: 30 seconds for the turnover time of the blood pool of either hormone, and 0.04  $\mu\text{g.}/\text{kg.}/\text{min.}$  and 0.01  $\mu\text{g.}/\text{kg.}/\text{min.}$  for the average normal endogenous secretion rates of nor-adrenalin and adrenalin, respectively. In addition, it was demonstrated that both hormones are extraordinarily stable in plasma or in whole blood, in contrast to the rapid destruction which is generally encountered in aqueous solution at a similar pH. Active uptake of 80 per cent of hormone by erythrocytes was noted to occur in normal human whole blood; erythrocyte adrenalin and nor-adrenalin were bound in biologically active form as demonstrated by bioassays with lysed preparations.

#### CARDIO-RESPIRATORY LABORATORY

The members of the Cardio-Respiratory Laboratory continued their investigations on the relation between the respiration and circulation in normal man and in patients with heart or lung disease. The staff included Dr. Alfred P. Fishman, Director, and six research fellows: Drs. Gerard M. Turino (New York Heart Association), Edward H. Bergofsky (Polachek Foundation), Robin W. Briehl (Public Health Service), Glenn A. Langer (Banbury Foundation), Donald L. Bornstein (New York Heart Association) and Donal M. Billig (Public Health Service). They were joined in their research activities by Dr. Roberta M. Goldring, a trainee of the New York Heart Association; Drs. John A. Wood, Lloyd C. Fisher and David E. Lehr, all of the Medical Service; Dr. Aaron Himmelstein, of the Surgical Service; and Drs. Sidney Blumenthal, Sylvia Griffiths and Beverly C. Morgan, of the Pediatric Service. Several studies mentioned in previous reports were brought to completion during this year. Thus, the studies on the pulmonary collateral circulation demonstrated that large collateral blood flows to the lungs existed in patients with congenital pulmonary stenosis; by way of contrast, no collateral blood flow could be demonstrated in patients with bronchogenic carcinoma or recent occlusion of the pulmonary artery; intermediate values for blood flow were obtained in patients with bronchiectasis, long-standing ligation of a pulmonary artery, and idiopathic clubbing of the digits. The diffusing capacity of the lungs for

carbon monoxide and oxygen was compared at rest and during exercise by Drs. Turino and Bergofsky. These studies delineated the factors other than the area and extent of the pulmonary membrane that may influence the value of the pulmonary diffusing capacity. In a parallel study, Dr. Briehl completed a mathematical consideration of principles involved in the estimation of the diffusing capacity for oxygen and derived a simplified method for its calculation.

Other studies from the Cardio-Respiratory Laboratory have included an elucidation of the characteristics of the pulmonary circulation by means of temporary occlusion of one pulmonary artery, and analyses of the state of the respiration and circulation in kyphoscoliosis, in pneumoconiosis and in bullous emphysema. To accomplish these studies, new analytic tools, such as the polarograph for oxygen, a modified carbon dioxide analyzer and a nitrogen meter have been incorporated into the laboratory armamentarium. Also, Drs. Wood and Fishman, with Drs. Harold G. Barker and Keith Reemtsma, of the Surgical Service and Dr. Paul A. di Sant'Agnesse, of the Pediatric Service, have continued their comparison of the absorption of neutral fat and fatty acids and the chloride concentration in the sweat of adults suffering from chronic pulmonary emphysema and children with fibrocystic disease of the pancreas. The observations suggest that certain adults with emphysema may represent "formes frustes" of fibrocystic disease.

#### HYPERTENSION

Dr. Perera has now accumulated considerable evidence that the accelerated or "malignant" form of hypertension is a unique entity, not dependent solely upon the intensity of a previous hypertensive process. His arguments include the demonstration of differences in incidence, in constitutional characteristics, and in onset, course and response to therapy. He has also shown that the evolution of primary hypertension, when contracted in childhood or youth, is no more rapid than when it develops in later life. By means of matched treated and untreated patients, identical in all measured parameters, Dr. Perera has obtained preliminary data suggesting that anti-hypertensive drugs have little or no effect on the duration of life except in some patients with the "malignant" form of the disease. In addition, he has conducted clinical and metabolic studies with chlorothiazide and trimethidinium in hypertensive patients.

#### EDEMA

During the past year Dr. Laragh has extended his studies of electrolyte metabolism and hormonal factors in the production of edema. With Drs. Henry O. Heinemann and Felix E. Demartini, observations on the

mechanism of action and clinical usefulness of chlorothiazide have been continued. Renal clearance studies in man indicate that chlorothiazide acts at a different site in the kidney than mercurial diuretics. The findings suggest the presence of more than one transport mechanism for sodium conservation. In addition, the studies provide rationale for the combined use of the two agents. Dr. Laragh, Dr. Helen M. Anderson, and Dr. Paul Brazeau, formerly of the Department of Pharmacology, have completed studies demonstrating a normal capacity for potassium excretion in sodium-depleted dogs. The hyperkalemia which occurs in the sodium-depleted dogs thus appears to result from extrarenal mechanisms. Clearance studies were carried out with potassium bicarbonate and potassium chloride. It was shown that the bicarbonate infusion potentiates chlorothiazide natriuresis, while the infusion of the chloride salt does not. With Dr. Seymour Lieberman, Associate Professor of Biochemistry, Department of Obstetrics and Gynecology, and Dr. Stanley Ulick, Service of Obstetrics and Gynecology, Dr. Laragh has studied the rate of secretion of aldosterone by adrenal glands in man, employing the tritium-labeled steroid. In patients with cirrhosis and nephrosis marked hypersecretion of aldosterone has been found which is independent of dietary sodium intake. In contrast, patients with congestive heart failure and comparable sodium retention do not manifest hypersecretion. These studies have been made possible by the use of apparatus presented to Dr. Laragh by Mr. Daniel G. Arnstein.

#### ARTHRITIS CLINIC

The following studies have been carried on with the Edward Daniels Faulkner Arthritis Clinic, under the direction of Dr. Ragan. Dr. Charles L. Christian, a fellow of the Arthritis and Rheumatism Foundation, has continued to study the aggregated gamma globulin which reacts with the rheumatoid factor. His present concept of the rheumatoid factor is that it reacts with gamma globulin in a physical state similar to that in which it exists in immune complexes. The aggregated gamma globulin fixes complement in the absence of combination with specific antigen. This is one of the few promising leads presently available concerning the pathogenesis of rheumatoid arthritis. Dr. André Peltier, visiting fellow from the Hôpital Cochin, Paris, France, has worked with Dr. Christian on serological reactions in rheumatoid arthritis and has found that there is a 15 per cent incidence of false positive FII tanned sheep cell agglutination reactions in syphilitic sera. A group of fourth-year medical students, on a trip to Liberia, established, as well, that the frequency of false positive FII reactions was high in the native African population. Dr. Christian, in conjunction with Dr. Daniel L. Larson, has developed

a serological test for systemic lupus, utilizing latex particles which are coated with a desoxyribonucleic acid protein complex. Dr. Robert F. Willkens, a trainee of the Public Health Service, worked with Dr. Larson in further purification of the lupus factor. Dr. Ronald W. Lamont-Havers and Dr. Arthur I. Snyder reviewed their experience with the nephrotic phase of systemic lupus. Dr. Willkens and Dr. Eric J. Southwood, also a trainee of the Public Health Service, conducted a post-mortem study of patients with rheumatoid arthritis at the Presbyterian Hospital and the Goldwater Memorial Hospital and established that the frequency of cardiac lesions in this disease is quite high and that necrotizing arteritis occurred in conjunction with rheumatoid arthritis in the "pre-steroid" era. Dr. Kaplan, trainee of the Public Health Service, is with the group this year and is working with Dr. Meyer on the localization of keratosulfate in cartilage in relation to aging. Dr. Pierre Lambert, visiting fellow from the Hôpital Cochin, is studying the parabiotic rat as a model of immunologic tolerance. Drs. Christian, Southwood, Peltier and Snyder presented the results of their studies at the American Rheumatism Association. Dr. Albert W. Grokoest, working with Dr. Ralph Schlaeger, Service of Radiology, is continuing to study the skeletal abnormalities seen in a group of children with rheumatoid arthritis. Some of these changes may be related to disturbances in growth, but others are distinctly unusual and their pathogenesis has not been elucidated. Dr. Demartini has continued his studies of urate metabolism. Dr. Henry D. Grossfeld, Department of Medicine, has concluded his work on the respiration of fibroblasts and suggests that, with physiologic concentrations of hydrocortisone *in vitro*, there is a stimulation of respiration and glycolysis by fibroblasts, whereas with high doses, there is an inhibition of respiration, an increase in glycolysis, inhibition of protein synthesis and excessive glycogenesis of amino acids. Seminars continue for the fourth-year students during their period in the Group Clinic, and the students from Goldwater Memorial Hospital meet with Group Clinic members at regular intervals.

#### MITRAL COMMISSUROTOMY FOLLOW-UP STUDY

Dr. Larson, with Dr. Dorothy Estes and Dr. Tor Richter, is conducting a long-term follow-up study on patients who have undergone mitral commissurotomy. Data have been obtained on approximately eighty patients with an average follow-up period of four years. Objective evidence of improvement was rare in this group. It would appear that less than half of the total had a significant increase in exercise tolerance over the pre-operative state. Late post-operative thromboembolic episodes were unusual in the group that had one or more infarctions before opera-



tion. With Dr. Lawrence Schulman, of Johns Hopkins University, a study is in progress on the relationship between rheumatoid arthritis and disseminated lupus erythematosus. The natural history of the clinical course has been observed in approximately fifty individuals presenting both diagnoses. In general, these patients are older women with a longer clinical course and with relatively low titers of circulating "rheumatoid factor." The order in which various clinical manifestations make their appearance is exceedingly variable and leads one to the conclusion that any individual with a polyarthritis of undetermined etiology may have disseminated lupus erythematosus.

#### CANCER RESEARCH STUDIES

Laboratory investigations by Dr. Gellhorn on the effects of thioxanthones against experimental tumors have revealed that one representative, Miracil D, has a significant effect on a variety of tumors and particularly, experimental leukemias. Toxicity studies define the dosage limits of safety in relationship to therapeutic effect as well as specific normal tissue susceptibility. Clinical trials have been initiated with the compound which at the present writing have not shown significant anti-tumor effect. The clinical and laboratory studies of patients with plasma cell myeloma and related dysproteinemic states have continued by Dr. Elliott F. Osserman in the Francis Delafield Hospital. Efforts have been made to relate the clinical and pathological manifestations in individual cases to the physicochemical characteristics of the specific paraproteins elaborated. Study of a group of twenty-five patients whose sera have been demonstrated to contain myeloma-type proteins, but in whom clinical manifestations of this disease are absent, has established that the disorder of protein metabolism may be demonstrable for many months or years before recognizable clinical signs or symptoms appear. Histochemical study of the transplantable plasma cell tumor of the C<sub>3</sub>H mouse strain has provided evidence that the elaborated paraprotein accumulates in the cytoplasm of the pathological plasma cells, and is released into the circulation only after degeneration of the cell and sequestration of the cytoplasm. A similar sequence of events has been demonstrated in a human plasmocytoma and in the involved lymph nodes of a patient with the related disease state, macroglobulinemia.

#### PNEUMONIA-ANTIBIOTICS STUDY

Dr. Yale Kneeland, Jr., and Mrs. Katherine M. Price, Department of Medicine, concluded their bacteriological study of 201 lungs at autopsy during 1958, and these voluminous data are now being evaluated and prepared for publication. Some of the investigators' conclusions are as

follows: To begin with, the protocols of 200 consecutive autopsies performed in 1928-1929 were reviewed, and it was noted that, while death due to classical lobar pneumonia occurred more frequently in the pre-antibiotic era, the incidence of terminal broncho-pneumonia was almost the same today as thirty years ago, in spite of the fact that two-thirds of the present series of patients were receiving antibiotics at the time of death. However, a comparison of the bacteriological findings in the present series with those recorded in the older literature reveals a striking change in the microbial incitants of terminal pneumonia. Pneumococci, hemolytic streptococci, and *H. influenzae* have almost entirely disappeared from the scene, and their places have been taken by newcomers, of which the principal figure is *Staphylococcus aureus*. Some observers have felt that terminal staphylococcal pneumonia may be caused by the unjustified use of antibiotics. This did not seem to be the case here, as pneumonia was found approximately as often in patients who were not under antibiotic treatment as in those who were. In the latter group, however, the treatment was obviously ineffectual, as there was only one instance of a patient dying of staphylococcal pneumonia who was being treated at the time of death with antibiotics to which that particular strain was sensitive. Of the Gram-negatives that have appeared on the scene, the most important would appear to be *Pseudomonas aeruginosa*. This would seem to be an antibiotic-induced superinfection. The same statement cannot be made for *Proteus*, *Klebsiella aerogenes*, and *E. coli*. While these organisms seem to have less inherent capacity as pulmonary pathogens than the staphylococcus, nevertheless they have emerged in a limited way to take the place of the older pathogens. Enterococci and alpha streptococci did not appear to be incitants of terminal pneumonia. Very rarely terminal pneumonia is due to higher bacteria, and this event appears to be abetted by antibiotic and steroid therapy. In this series, all such patients had irreversible underlying disease.

#### RESPIRATORY AND HISTAMINE STUDIES

Studies of the deposition of aqueous aerosols on the respiratory tract, continued by Dr. Barach in collaboration with Drs. Hylan A. Bickerman, Gustav J. Beck and Eduardo R. Pons, Jr., indicate that inhalation of nebulized solutions at a mouth temperature of 125° F. resulted in a condensation or rain-out effect which promoted expectoration of retained secretions in patients with broncho-pulmonary disease, as well as decreased the time required to produce mucus for the diagnosis of pulmonary cancer. One ounce (30 cc.) of 20 per cent propylene glycol can be nebulized every ten minutes with a suitable pump. Recently developed portable oxygen breathing apparatuses have been tested to determine the

effect of oxygen inhalation during exercise in patients with chronic pulmonary insufficiency. Subjective relief of dyspnea appears to be correlated with a decrease in minute volume of respiration. An extensive study of the oxygen response in respect to electrocardiographic and ventilatory performance is in progress in collaboration with Dr. Bickerman, Dr. Beck and Dr. Krishan G. S. Nanda, of the Columbia research division at Goldwater Memorial Hospital.

Studies on the mechanism of histamine release *in vitro* from leucocytes of ragweed sensitive subjects have been extended by Dr. Elliott F. Middleton, Jr., and Dr. Sherman. Further observations on the relation of ragweed pollen extract concentration to the magnitude of histamine release have shown that at very high antigen levels less histamine is released. This phenomenon is analogous to decreased antibody precipitation in the region of antigen excess. Phenol and iodoacetate are able to inhibit the release reaction. Participation of sulfhydryl enzyme systems is not established by the iodoacetate inhibition, however, since other sulfhydryl inhibitors fail to influence the reaction. Further experiments on inhibition by chelating agents (EDTA, citrate, oxalate) have indicated that free calcium ions are required, and that in the presence of ionic calcium there is a direct relationship between magnesium ion concentration and histamine release. Heated allergic plasma and washed blood cells release histamine as well as the unheated plasma control. Further studies on the role of complement in human allergic reactions are under way.

#### ENDOCRINE INVESTIGATIONS

The following fellows have worked with Dr. Joseph W. Jailer in the Endocrine Laboratory in the Department of Obstetrics and Gynecology during the past year: Dr. Julian I. Kitay (Commonwealth Fund), Drs. Andrew G. Frantz and Wilfred E. L. Gordon (Public Health Service) and Drs. Donald A. Holub and Leonard V. Fisher (National Foundation). In collaboration with Dr. Nicholas P. Christy, it had been previously demonstrated that during the third trimester of pregnancy there is an increase in the plasma corticoid levels and an increased responsiveness to administered ACTH. The reason for this is becoming more apparent. It has now been shown that at least a part of the elevated plasma corticoid levels may be explained by the fact that the half-life of administered hydrocortisone is greater than normal; consequently the hydrocortisone is not as readily degraded as in the non-pregnant individual. The defect in the degradation mechanism appears to reside in the inability to conjugate the tetrahydro-hydrocortisone derivatives. There is also circumstantial evidence that the elevated levels of hydro-

cortisone found during pregnancy may possibly be biologically inactive and therefore do not cause hyperadrenalism. Further investigations into the cause of the adrenal hyper-responsiveness in Cushing's syndrome have shown that when pituitary irradiation is successful in this disorder, this hyper-responsiveness disappears. A similar type of hyper-responsiveness occurs in some patients with active acromegaly. In view of these findings, growth-hormone preparations have been tested for their ability to potentiate the action of ACTH, and it has been found that some extracts can do this in both normal and hypophysectomized animals. Drs. Holub and Kitay have investigated the ACTH content of the rat pituitary under various experimental conditions and have come to the conclusion that the administration of exogenous ACTH interferes with the release of ACTH from the pituitary. If this is confirmed by further studies it would indicate that the concurrent administration of ACTH with steroids is not beneficial to the organism but may actually be detrimental.

In collaboration with Dr. Robert A. Fishman, Neurological Service, Dr. Christy has investigated the rate of entry of hydrocortisone into the cerebrospinal fluid of dogs. Contrary to earlier observations, it has been found that this steroid crosses the blood-brain barrier in moderate quantities, but that its water-soluble metabolites (glucuronides), which are found in abundance in the urine, appear in cerebrospinal fluid in trace amounts, if at all. With Dr. Marks, detailed balance studies have been performed in two subjects receiving large doses of the estrogenic substance, diethylstilbestrol. Neither patient showed an increase in urinary corticosteroid values, nor was there an increase in the amount of excreted mineralocorticoid (aldosterone) despite the appearance of gross edema in one of the subjects. With Dr. Frederick G. Hofmann, Department of Pharmacology, Dr. Christy has engaged in a study of the steroid hormones secreted by adrenal cortical tumors of mice. Preliminary results suggest the presence of estrogenic material, but not of corticosteroids (C21 compounds).

During the past year Dr. Sidney C. Werner, in collaboration with Dr. Richard J. Block and Mr. Richard H. Mandl, of the Boyce Thompson Institute for Plant Research, established a method for the determination of the iodinated compounds in serum. Use of this method, together with anion exchange chromatography, has revealed that each of these substances, as well as thyroxine, had an affinity for a specific serum protein. This finding is potentially of clinical importance. With Dr. Ephraim Otero-Ruiz, of Bogota, Colombia, currently a fellow, the assay of thyrotropin in 0.05 to 0.1 milliunit doses has been accomplished, using a modification of the method of McKenzie. Investigation is in progress

of another assay method devised in this laboratory which may well yield greater sensitivity. Work continues with Dr. Beatrice C. Seegal, Department of Microbiology, upon the properties of an antiserum developed against purified pituitary extracts with thyrotropic activity. With Professor Howard L. Levene, Department of Mathematical Statistics of Columbia University, study of the kinetics of iodide effect upon the thyroid is being completed. Dr. Abbie I. Knowlton and Dr. Emily N. Loeb, Department of Medicine, in continuing studies on the hypertensive action of adrenal cortical steroids, have explored the effects of certain "hypotensive" agents. With the steroid, 17- $\alpha$ -propyl-4, 5 $\beta$ -dihydro-19-nortestosterone, it was not possible to confirm the hypotensive effects of the compound in hypertensive rats receiving desoxycorticosterone (DCA) previously reported by Sturtevant, nor was any blood-pressure-reducing effect obtained from the administration of this steroid to hypertensive adrenalectomized rats receiving cortisone. In conjunction with Dr. Herbert C. Stoerk, Merck Institute for Therapeutic Research, the effect of chlorothiazide on steroid hypertension has been studied. In rats with established DCA hypertension, even high dosages were without effect on the blood pressure. However, if the diuretic administration was initiated concomitantly with the steroid injections, the development of hypertension was prevented, even though the drug did not prevent the accumulation of excessive quantities of sodium, characteristic of the carcasses of hypertensive DCA rats. Chlorothiazide proved totally without effect on the hypertension resulting from cortisone administration.

#### BLOOD CHEMISTRY STUDIES

Dr. Joseph C. Turner and Dr. Anderson have continued studies on the chemistry of the mammalian red cell membrane. The findings suggest a relation between size and shape, on the one hand, and phospholipid composition on the other. The species differences examined indicate that smallness of size (ruminants) correlates with absence of lecithin, while uniquely oval shape (camels) is associated with extraordinarily firm binding of all phosphatides. A new method of preparing red cell membranes (ghosts) has been developed, which has provided a greater reproducibility in chemical analysis than was possible heretofore. The most notable fact emerging from the application of this method is that surprisingly large and constant amounts of hemoglobin appear to be associated with the ghosts — the pigment thus seems to be a component part of the membrane. Since this view is at variance with the orthodox assumptions of physiology, other kinds of evidence must be secured. Dr. Anderson has also continued her investigations on hemorrhagic disorders in patients. Definition of specific plasma coagulation deficiencies

has been made in 51 of 202 patients studied during the past twelve months. A special investigation has been begun of patients with polycythemia vera; bleeding that has not been accounted for in terms of recognized abnormalities is a familiar clinical manifestation of this disease. In 15 of 17 patients so far studied a previously undescribed defect, apparently of a thromboplastic substance, has been found. Dr. Stuart W. Cosgriff has tested a variety of techniques for their safety in the long-term use of anticoagulants. This type of treatment has been employed over a period of years in the management of a number of disorders, including carotid arterial insufficiency, thrombosis, multiple cardiac infarctions, rheumatic-embolic disease and recurrent pulmonary embolism from venous thrombosis.

Dr. Ranney has continued studies of various aspects of hemoglobin in patients and in experimental animals. Studies of the rate of appearance of  $\text{Fe}^{59}$  in two major components of hemoglobin in the same individual, begun three years ago, were completed. In no case were different rates of  $\text{Fe}^{59}$  incorporation detected in major hemoglobin components, and no evidence of sequential synthesis or of interconversion of major hemoglobin components in humans was obtained. However, the minor rapid hemoglobin component of patients with hemoglobinopathies and of normal rabbits was found to exhibit increasing  $\text{Fe}^{59}$  activity with erythrocyte aging. Whether this change in specific activity represents an interconversion of hemoglobins in the aging erythrocyte or a heterogeneous distribution of hemoglobin in erythrocyte stroma is under study. Studies of hemoglobin variation in inbred mice continued, in collaboration with Dr. Salome Waelsch, of the Department of Anatomy of the Albert Einstein College of Medicine. Newer electrophoretic techniques and solubility studies of Kink and DBA mice have revealed consistent biochemical differences between the hemoglobins of these inbred strains. There is no obvious explanation for this example of polymorphism in mice, but the genetic control of these hemoglobin differences has been well established. Preliminary studies of the hemoglobin components of patients with disseminated carcinoma were carried out, in collaboration with Mr. Richard G. Druss and Mr. Theodore H. Johnson, fourth-year medical students. These studies indicated significant deviations from normal in the hemoglobin F and hemoglobin  $\text{A}_2$  components in the patients, but final evaluation awaits better methods for quantification of these minor components.

#### INVESTIGATIONS OF DRUG INFLUENCES

In collaboration with Drs. Lewis P. Rowland and Paul F. A. Hofer, of the Neurological Service, Dr. Aranow has systematically

tested a group of patients with muscular weakness with curare, edrophonium and with neostigmine in an endeavor more precisely to define myasthenia gravis. The data suggest that this may be a syndrome rather than a single entity of specific causation; some patients have shown marked sensitivity to curare, but have not responded to even large doses of neostigmine; others have shown the classical diminution in weakness after neostigmine but have not been affected by the standard test dose of curare; a few patients have been observed with what appeared to be clinically typical myasthenia gravis who never responded to any of the anticholinesterase drugs, but showed no lesions at post-mortem examination that explained their weakness. With Dr. DeWitt S. Goodman, Dr. Kermit L. Pines has set up a method for the determination of serum unesterified fatty acids and has carried out serial determinations in patients with mild diabetes following oral administration of a new therapeutic agent, Chlorpropamide. A decrease in the level of unesterified fatty acids was found to parallel a fall in the blood sugar with a rise of the fatty acid level at the end of five hours. The curve resembled that following the administration of insulin. Further studies on unesterified fatty acids in diabetes are contemplated in the hope of obtaining information about the appearance of complications in patients with mild carbohydrate abnormalities. With Dr. Edgar Leifer and Dr. Goodman, Dr. Pines has made observations on the response to Chlorpropamide in two patients with diabetes following total pancreatectomy and in six with spontaneous diabetes. No detectable hypoglycemic response was observed in diabetes following pancreatectomy, but adequate control was obtained in four of the six patients with spontaneous diabetes. In one, Chlorpropamide appeared to be more effective than Tolbutamide. With Dr. Hans W. Neuberg, Dr. Pines' study of vibratory perception threshold in patients with and without diabetes is being concluded.

During the past year Drs. James A. L. Mathers and Charles A. Flood have continued studies on disorders of esophageal motility, including the evaluation of various mechanisms for the production of pain of esophageal origin and associated reflex cardiovascular effects. Dr. Sidney Fink and Dr. Flood completed a study of the influence of various drugs upon esophageal motility. Dr. Flood with Dr. George C. Hennig has completed a study of the long-term course of hiatus hernia under conservative management. Dr. Michael J. Lepore is continuing studies on the usefulness of the  $I^{131}$  tagged fat tests in the malabsorption disorders, with Dr. Harold G. Barker, Surgical Service. A study on the prognosis in regional enteritis, carried out with Dr. Frank Gump, of the Surgical Service, is being concluded.

# Neurological Surgery

J. LAWRENCE POOL, M.D., *Director*

## *Clinical Activities*

During the year 1958 particular attention has been devoted to the treatment of certain circulatory disorders of the brain and of primary malignant brain tumors.

Circulatory disorders that have received special attention include intracranial aneurysms, angiomatous arteriovenous malformations, intracerebral hemorrhages and carotid artery thromboses. Since promptness in diagnosis is so important in these conditions, an effort has been made to carry out angiographic studies as soon as possible after admission to the Hospital, with a view to appropriate surgical intervention in sufficient time to save life and prevent paralysis. Most such patients are seen and followed by a team of neurologists, neuroradiologists and neurosurgeons: Drs. Melvin D. Yahr and James F. Hammill, of the Service of Neurology; Drs. Juan M. Taveras and Leonard C. Doubleday, of the Service of Radiology; and Drs. Lester A. Mount, Joseph Ransohoff and J. Lawrence Pool, of the Service of Neurological Surgery. There is no doubt that this kind of concerted attention to a challenging problem is highly effective in terms of improving techniques and clinical results.

Advances emerging from this intensive study of intracranial aneurysms include recognition of the value of bilateral cerebral angiography and promptness in diagnostic work-up and surgical intervention before the effects of hemorrhage, cerebral vasospasm, cerebral edema or recurrent bleeding lead to permanent injury or death.

Concentration on the problem has also established the fact that intracranial aneurysms are the cause of subarachnoid hemorrhage in over 50 per cent of such cases, which explains the increasing number of aneurysms that are diagnosed and operated upon with each succeeding year. More than 30 patients with an intracranial aneurysm, for example, were operated upon during 1958, as compared with only 10 in 1955 and an average of 20 in each of the intervening years.

Angiographic, operative and laboratory studies related to the aneurysm problem have been carried out that show that major cerebral arteries are capable of vasospasm similar to that which may affect arteries elsewhere in the body. Cerebral vasospasm of this sort, whether im-



mediate or delayed in onset, we now know may lead to transitory or permanent neurological deficits or fatal cerebral edema, and is thus another reason why promptness in the diagnosis and surgery of intracranial aneurysms is so important.

We have also learned, as have others, that patients over fifty-five years of age or those who are in a comatose or moribund state can seldom be saved by aneurysm surgery, whereas those who are younger than fifty-five can generally be saved. For this latter group the mortality rate has been reduced to 11 per cent, even when operated upon while actively bleeding. The mortality rate for all groups is 25 per cent, and more than 50 per cent for the group not treated surgically.

Technical improvements stemming from our studies include improvements in the use of hypothermia under the direction of Dr. Bernard R. Fink, Service of Anesthesiology, and the use of miniature removable clips temporarily applied to key branches of the circle of Willis to facilitate the dissection and permanent occlusion of aneurysms. A specially designed new type of clip, the Pool-Pfeiffer self-locking clip, has also been devised for the obliteration of unusually large aneurysms. This work and allied research has been financed in part by the Mortimer and Harriet M. Marcus Gift for Brain Research.

Primary malignant brain tumors (glioblastoma multiforme) are also being attacked by a team approach in which combined therapy is used, consisting of radical surgery, X-ray treatment and chemotherapy. Particularly active in this work, participated in by most members of our staff, are Drs. Ransohoff, Pool, Taveras and Dr. Hartwell G. Thompson, Service of Neurology; Dr. Alfred Gellhorn, Service of Medicine; and Dr. Margaret R. Murray, Department of Surgery. Aided by special funds, such as the Brain Tumor Research Gift and the John Gunther, Jr., Memorial Gift for Research in Brain Tumors in Children, a cooperative approach to this problem is well under way.

In the past year over 1,100 neurosurgical operations have been done, including a number of combined lumbar disc and fusion surgical procedures in the Presbyterian Hospital and operations at the Delafield Hospital. Fewer ventriculograms (93) were necessary in 1958 than ten years ago, whereas more arteriograms (over 500) were done, nearly half by the Service of Neurological Surgery and the remainder by the Service of Neurology. Relatively few pneumoencephalograms were required, in contrast to the usual large proportion of myelograms.

Brain tumor surgery accounted for approximately one-fourth of the major surgical procedures, while intervertebral disc surgery represented somewhat more than one-fourth of the total. Only five prefrontal lobotomies were done during the past year compared with 50 or more annually

before the advent of tranquilizer drugs a few years ago. Stereotaxic operations on the globus pallidus relieved tremor and/or rigidity to a varying degree in 12 patients. Total removal of the pituitary gland in seven patients with advanced breast cancer resulted temporarily in relief of pain and/or regression of metastatic growth in some but not all cases. It is felt that earlier rather than pre-terminal hypophysectomy might well prove of greater benefit in suitably selected patients.

Significant improvement has continued in the results of surgical treatment of acoustic nerve tumors. In the past year, for example, there were no deaths among the 12 patients operated on for this type of tumor, while during the past four years 45 acoustic neurinomas were totally or subtotally removed with a mortality rate of less than 10 per cent as compared with a mortality rate of over 20 per cent in previous years. Five hypoglossal-facial nerve anastomoses were carried out in 1958 for restoration of the facial palsy that may follow total removal of some acoustic nerve tumors. Of 15 such procedures in the past four years, for which there has been sufficient follow-up time, there were unsatisfactory results in only three cases.

### ***Research Activities***

Dr. Edward B. Schlesinger has been active for ten years in developing an improved technique for the location of brain tumors, hemorrhagic and other lesions by a radioactive scanning method. This work is being carried forward with Dr. Taveras, Dr. Halford Clark, neurochemist, and Miss Sheila deBoves, of the Department of Neurological Surgery. A high level of accuracy in locating these lesions has now been attained. A particularly useful application of the technique is the ability to test the patency of the ventriculo-pleural shunts used for the treatment of obstructive hydrocephalus. This project has been financed by a grant from the American Cancer Society.

Dr. Mount, in cooperation with Dr. Taveras, has continued his studies concerning the collateral circulation of the brain.

Dr. Fritz J. Cramer has studied the pathology and treatment of spinal cord lesions, such as osteoarthritic ridges and some of the more rare spinal tumors, that present difficult problems.

Dr. Ransohoff has investigated the treatment of hydrocephalus by improved cerebrospinal fluid shunting procedures; surgical treatment of intractable epilepsy of temporal lobe origin, with Dr. Yahr, Dr. Eli S. Goldensohn, of the Service of Neurology, Dr. Shirley Ferguson-Rayport, of the Department of Neurological Surgery, and Dr. Pool; and methods for excising hazardous congenital aneurysms of Galen's vein, with Dr. John Litvak.

Dr. James W. Correll continued to study fat metabolism in experimental animals, and the anterior surgical approach for the treatment of incapacitating scoliosis, kyphosis and gibbus.

Dr. Thomas J. Bridges has worked out a method of treating Raynaud's disease that has failed to respond to sympathectomy. This approach consists of selected anterior rhizotomy and is based on his previous clinical research on peripheral circulatory changes mediated by anterior nerve roots.

Dr. James B. Campbell continues his work concerning the treatment of congenital bladder dysfunction in children and young adults. He is also active in perfecting methods for speeding the regeneration of peripheral nerves, which eventually may be applicable to spinal cord regeneration. These research projects are supported by the Army Medical Service, Research and Development Command, Office of the Surgeon General; Public Health Service of the Department of Health, Education and Welfare; National Institutes of Health; and the United Cerebral Palsy Research and Educational Foundation, Inc. His laboratory, which has a staff of ten, is used also for the training of residents in research methods.

Dr. Hubert L. Rosomoff, senior resident, has investigated protective effects of hypothermia and the use of anorganic bone and freeze-dried dura for cranioplasties. The results of this work and these substances have proved highly satisfactory.

Dr. Edgar M. Housepian has greatly improved X-ray, instrumentation and brain charting techniques for stereotaxic procedures used in the alleviation of tremor and rigidity of dyskinetic diseases.

Dr. R. James Seymour has been active in a detailed study of the nerve supply to the major arteries of the brain.

Dr. John N. Potanos, while on leave of absence, spent a year engaged in biochemical research on important aspects of the chemistry of the brain earning the degree of Doctor of Medical Science. Dr. David A. Miles will continue this work, on leave of absence, in 1959.

Dr. Litvak, in addition to a study, with Dr. Ransohoff, of the pathology and surgical treatment of congenital aneurysms of Galen's vein, is also working out a new method for the treatment of intracranial aneurysms of the circle of Willis.

### *Visitors and Observers*

During the year many visitors from neurosurgical clinics, both here and abroad, have visited our operating rooms and wards and attended various meetings or conferences. In addition, we were privileged to

have several colleagues from abroad observe our work for protracted periods as unofficial visitors. During the past ten years we have had representatives of eighteen foreign countries as observers, research workers or members of the resident staff, and it is hoped that this policy can be continued.

### *Fiftieth Anniversary of Neurological Institute*

The year 1959 will mark the fiftieth anniversary of the founding of the Neurological Institute, the first institute of its kind in America. The major events of the anniversary celebration will be held on May 15 and 16, 1959. A series of special meetings was arranged to take place before that time. Two of these meetings were held at Presbyterian Hospital in December of 1958; one, a combined meeting of the New England Neurosurgical Society and the New York Neurosurgical Society, and the other, a local regional meeting of the American College of Surgeons.

### *Expansion of Activities*

The year 1959 also marks the tenth year during which the Director of the Service has been privileged to serve in this capacity. With the cooperation and support of the Hospital and the College, it has been possible to add three members to the attending staff and two to the resident staff during this period. Ten years ago the Service had no research facilities; we are now fortunate in having two experimental laboratories, which are in active use. One laboratory is under the direction of Dr. James B. Campbell, while the other, under the direction of Dr. Dominick P. Purpura, Department of Neurological Surgery, has been made possible by the generosity of the Paul Moore Neurosurgical Research Gift. A room for clinical studies, devoted to radioactive scanning, is under the direction of Dr. Schlesinger. It is significant to note that most of our research work, whether on a clinical or laboratory level, is carried out in conjunction with other Services and Departments of the Medical Center.

Thirty-five papers by members of the attending and resident staff were published during the past year, as compared with only seven papers ten years ago. This does not include thirteen additional articles published in 1958 by Dr. Purpura and his research associates in the Department of Neurological Surgery.

Plans for the future include improvement of X-ray facilities, remodeling of part of the tenth floor operating room suite, and addition of a group recovery unit, using existing facilities on the ninth floor of the Institute.

***In Appreciation***

In closing, appreciation is expressed to the Trustees and Hospital administrative staff for making possible the renovation of the first floor conference room, new elevators, X-ray equipment and a psychiatric floor. The members of the Service wish to express appreciation to all the members of the nursing and other professional staffs who have cooperated so productively and effectively with us in our work and, in particular, to Dr. H. Houston Merritt and the members of the Neurology Service.

# Neurology

H. HOUSTON MERRITT, M.D., *Director*

The year 1958 was marked by the beginning of the improvements in the facilities at the Neurological Institute. Renovation of the auditorium on the first floor has been completed, construction of the new elevator shafts has been started and the twelfth floor is being remodeled for the care of psychiatric patients. When all of the contemplated changes are completed, the Neurological Institute will be able to expand its activities and serve more efficiently the needs of the Medical Center in the care of patients with diseases of the nervous system, as well as expand its activities in clinical research.

## *Clinical Activities and Staff*

The clinical activities of the Service of Neurology have continued to increase, particularly in the Vanderbilt Clinic and at the Babies Hospital. The Neurological Service, in cooperation with Dr. Rustin McIntosh and the staff of Pediatric Service, has pioneered in the development of the new specialty of pediatric neurology. Advances in the control of infectious disease and preventive pediatrics are reflected in the gradual change in the kinds of diseases seen on the pediatric wards. It is now estimated that approximately 25 per cent of patients admitted to the Pediatric Service are suffering with diseases of the nervous system. This has created a demand for physicians trained in both pediatrics and neurology. To help meet this need, the Service of Neurology is training a number of pediatricians. Drs. Isabelle Rapin and Charles Kennedy completed their training in July. Dr. Kennedy has returned to the University of Pennsylvania, where he is Associate Professor of Pediatrics in charge of the Neurological Service at the Childrens' Hospital. Dr. Rapin has joined the staff of the Neurological Service at Albert Einstein College of Medicine, Yeshiva University. Those in training at the present time include Drs. Elisabeth Decker, Arnold P. Gold, Melvin Greer, Alanson Hinman, John H. Menkes and Stuart Weiss. There is also one Foreign Fellow, Dr. Sabine Pelc, of Belgium, Fellow of the Pan American Sanitary Bureau. Dr. Arthur Winter from Montefiore Hospital spent two months in the study of pediatric neurology at the Institute.

We report with deep regret the deaths of Dr. Irving J. Sands and Dr.

Francis Ansanelli. Dr. Sands was associated with the Neurological Service for over twenty-five years and at the time of his retirement in 1956, he was appointed Consultant in Neurology. Dr. Ansanelli had been a member of the Service for twenty years and was Associate Attending Neurologist at the time of his death.

### **Research Activities**

The research activities of the members of the Neurological Service, in cooperation with the members of the Department of Neurology, have continued to expand.

Drs. Sidney Carter and Joseph Ransohoff, of the Service of Neurological Surgery, conducted a two-day seminar on pediatric neurology at the annual meeting of the American Academy of Pediatrics, in Chicago. Dr. Carter participated in the Symposium on Kernicterus at the meeting of the American Academy for Cerebral Palsy, in New Orleans, and in the Postgraduate Seminar on Neurology and Neurosurgery at the University of Kansas School of Medicine. Dr. Carter was chairman of the course in pediatric neurology given at the meeting of the American Academy of Neurology, in Philadelphia, and moderator of a panel on recent advances in pediatric neurology at the spring meeting of the American Academy of Pediatrics, in New York. A study of optic neuritis in children, by Drs. Carter and Kennedy and Dr. Frank D. Carroll, of the Ophthalmological Service, was presented at the annual meeting of the American Academy of Neurology. Drs. Carter and Ransohoff continued the evaluation of the effect of chemopallidectomy on involuntary movements in children. Dr. Carter served as a member of the Neurology Graduate Training Grant Committee of the United States Public Health Service and of the ad hoc committee to review applications for participation in their collaborative project on cerebral palsy. He is also Chairman of the Professional Advisory Council of the Cerebral Palsy Association of New York City.

Dr. Daniel Sciarra has continued studies on new anticonvulsant drugs. Dr. Sciarra and Dr. Stuart W. Cosgriff, of the Service of Medicine, are conducting a study of the use of anticoagulants in patients with cerebral thrombosis or embolism.

Drs. Eli S. Goldensohn and Paul F. A. Hoefler reported briefly on the electroencephalographic findings during status epilepticus and in inter-ictal records, at the annual meeting of the American League Against Epilepsy. In April, 1958, Dr. Hoefler gave a lecture on therapy of myasthenia gravis, before the joint meeting of the New York Academy of Medicine and the New York Neurological Society. He was elected

to honorary membership in the Sociedad Sudamericana de Electroencefalografia y Neurofisiologia Clinica.

Dr. Goldensohn and Dr. Robert Katzman have continued their studies on the distribution of direct current potentials in the brain. Dr. Goldensohn and Mr. Leonard Zablow, Department of Neurology, are making further studies on an electrical impedance method for recording respiration. Its possible use for the quantitative measurement of ventilation, as well as for recording respiratory patterns, is being investigated. Dr. Goldensohn and Dr. William K. Hass have continued their investigation on the electroencephalographic changes associated with thrombosis of the internal carotid artery. Dr. Goldensohn, Dr. Hass and Drs. Elliot Weitzman and Robert R. Engisch are investigating body tilting and carotid compression as methods for activating electroencephalographic abnormalities in cerebral vascular insufficiencies. Drs. Goldensohn, Rapin and Hoefler have continued their study in various age groups on the relationship between electroencephalographic changes measured during hyperventilation and levels of carbon dioxide measured throughout the respiratory cycle.

Dr. Melvin D. Yahr, with Mr. Harry W. Dougherty, graduate student in the Department of Biochemistry, is studying the blood levels of anti-convulsant drugs in order to more accurately determine therapeutic and toxic levels of these drugs in patients with convulsive seizures. Drs. Yahr and Ransohoff and Dr. Roger C. Duvoisin are studying the effect of dilantin on trigeminal neuralgia. Intravenous and oral dilantin have been administered to fifteen patients with facial pain. Preliminary results indicate that intravenous dilantin may abort an attack of trigeminal neuralgia. Dr. Yahr, with Dr. Leonard J. Goldwater, Department of Public Health and Administrative Medicine, is evaluating the work performance of epileptic patients in industry. The purpose of this study is to measure the work performance of individuals with epilepsy in various industries in relationship to characteristics of the illness and type of job. It is hoped that data derived from this study will be helpful in counseling patients and employers in the placement of epileptic patients. Dr. Yahr has been studying the effect of chlorothiazide (Diuril) on patients with increased intracranial pressure. Five patients with increased intracranial pressure due to various causes have received this drug. No conclusive results have been obtained as yet. Dr. Yahr has been active in the study of the cerebral aneurysms and subarachnoid hemorrhage, with Drs. H. Houston Merritt and James F. Hammill and members of the Services of Neurological Surgery and Radiology. Since the study began, in 1957, seventy patients have been studied. Detailed clinical, angiographic and pathological data are being collected to determine the natural history of



this disease, as well as the effect of various types of surgical procedures on cerebral aneurysms and arteriovenous malformations. Similar studies are being carried out in other neurological centers throughout the nation. It is hoped that with pooling of data from all these centers, a better understanding of this problem and its treatment will be forthcoming.

Dr. Joseph Moldaver is studying patients with facial nerve paralysis following brain surgery for the removal of acoustic nerve tumors. This work is being done with Dr. J. Lawrence Pool and Dr. Laibe Kessler, assistant resident, of the Service of Neurological Surgery. Dr. Moldaver is also studying the indications for surgery in severe Bell's palsy with Dr. Edmund P. Fowler, Jr., of the Otolaryngology Service.

Dr. Lewis P. Rowland is working in the laboratories of Dr. David Shemin, Department of Biochemistry, on the biosynthesis and function of carnitine. This quarternary ammonium compound is found in high concentration in skeletal muscle but its origin and function are unknown. He has continued work in the Myasthenia Gravis Clinic with Dr. Hoefer and Dr. Henry Aranow, Jr., of the Service of Medicine. Studies are underway on the evaluation of therapeutic efficacy of a long-acting anticholinesterase drug and the evaluation of curare as a diagnostic test. Members of the Myasthenia Gravis Clinic are also cooperating with Drs. Duncan Holaday and M. Jack Frumin, the Service of Anesthesiology, in the development of a positive pressure respirator for the treatment of patients with respiratory failure. Dr. Rowland and Dr. Erich Hirschberg, Assistant Professor of Biochemistry in the Department of Medicine, are studying the serum enzymes in patients with muscular dystrophy.

The study of the exchange of radiosodium between plasma and cerebrospinal fluid in the dog has been completed by Dr. Robert A. Fishman. The rate of exchange of this ion between these fluid compartments is strikingly constant. It is not significantly altered by the administration of steroids, hypertonic or hypotonic fluids, systemic alkalosis or acidosis, insulin hypoglycemia, nor adrenalin-induced hypertension, chlorothiazide, dilantin or prostigmine. There is no direct correlation between alteration in intracranial pressure and the sodium exchange rate. However, the inhibition of carbonic anhydrase with diamox results in a reduction, and the administration of pitressin in an increase, in the sodium exchange rate. These data demonstrate the relative constancy of the blood-cerebrospinal fluid barrier to the exchange of sodium. The exchange of sodium is in part an active process dependent upon the enzyme carbonic anhydrase. The effect of pitressin demonstrates that anti-diuretic hormone has an effect on the membranes of the blood-cerebrospinal fluid barrier which permits more ready ion transfer. The study of factors influencing sodium transport is being extended to the exchange between blood and

brain. Dr. Fishman, using paper electrophoresis, is continuing the study of the cerebrospinal fluid proteins in various disease states, in collaboration with Dr. Elliott F. Osserman, Service of Medicine.

The striking effects of cortisone on the central nervous system are poorly understood. Experiments are now in progress by Dr. Fishman, in collaboration with Dr. Nicholas P. Christy, Service of Medicine, in a study of the exchange of steroids between plasma and cerebrospinal fluid in the dog.

Dr. Hartwell G. Thompson, Jr., with Dr. Alfred Gellhorn, Service of Medicine, and Dr. Hirschberg, has been measuring the levels of phosphohexose isomerase, lactic dehydrogenase and transaminase in the cerebrospinal fluids and serum of patients with a variety of malignant tumors and neurological diseases.

Dr. Thompson, with Dr. Juan M. Taveras, Radiology Service, and Drs. Gellhorn and Hirschberg, has instituted a more intensive study and follow-up of patients with glioblastoma. This study will involve a trial of newer anti-tumor drugs, alone and in combination with surgery or radiotherapy; the analysis of several components of fresh human glioblastoma tissue; and the operation of a tumor registry to follow all patients with glioblastoma.

Drs. Thompson and Taveras are collecting data on the results of treatment of patients with glioblastoma during the past fifteen years. This review will serve as a basis of comparison for the study just begun on the glioblastoma patients treated with chemotherapy plus surgery and radiotherapy.

Dr. Lewis J. Doshay has continued the study of new compounds in the treatments of patients with paralysis agitans. Dr. Frederick J. Agate, Department of Anatomy, and Dr. Doshay are continuing their work on the construction of instruments for the measuring of muscle tension and abnormal movements. Dr. Doshay presented a paper on the "Treatment of Parkinson's Disease," at the Fifth International Congress of Therapy, in Holland.

Dr. William Amols has continued work on the clinical evaluation of new drugs in the treatment of disorders of the nervous system. Trilafon (Perphenazine) has been shown to be dramatically effective in the suppression of vertigo in Ménière's disease. Another compound (Smith, Kline & French #5883) has been found to be a potent and effective antiemetic agent.

The Immunochemical Laboratories at the Neurological Institute, under the direction of Dr. Elvin A. Kabat, Department of Microbiology, are operated jointly by the Departments of Microbiology and Neurology. The major studies are concerned with the elucidation of the structural

units determining blood group A and B specificity, the structural basis of immunochemical specificity of antigens and studies of cerebrospinal fluid globulins in the diseases of the central nervous system.

Mr. Peter Z. Allen, graduate student in the Department of Microbiology, and Dr. Kabat have completed a study of the duration of the antibody response in man to dextrans and blood group substances and compared their findings with those reported earlier for the pneumococcal polysaccharides and diphtheria toxoid. Antibodies to the polysaccharides and the blood group substances are formed by the administration of 1 mg. subcutaneously, reach maximum levels three weeks later and show only relatively slow rates of decline for periods of up to 12 years. By contrast, however, antibodies to diphtheria toxoid decline to low levels within a few months after immunization.

Dr. Frederic C. McDuffie, now Assistant Professor of Medicine at the University of Mississippi Medical School, Mr. Allen, Dr. Curtis A. Williams, of the Rockefeller Institute for Medical Research, and Dr. Kabat have immunized rabbits with specific precipitates of blood group A and human anti-A and of blood group B substance and human anti-B. These antisera gave rise to several antibodies, one of which was the usual antibody to  $\gamma_2$  globulin; in Coomb's test this antibody was capable of reacting with erythrocytes coated with the usual variety of Rh antibody, anti-D. Antibodies to  $\gamma_1$  globulins were also found but there was no evidence that they were associated with antibodies reacting in Coomb's test.

Mr. Joel W. Goodman, graduate student in the Department of Microbiology, and Dr. Kabat are studying the cross reactions of various dextrans with types 2, 9, 12 and 20 antipneumococcal sera in efforts to determine the structures responsible for cross reactivity. Dr. Kabat and Miss Ada E. Bezer, Department of Neurology, have studied the capacity of fractions of dextran of differing molecular weight to stimulate antibody production in man. Dextran fractions with molecular weights of 90,000 or above give good antibody responses, but with products with molecular weights of 50,000 or below there is a sharp drop in antigenicity.

Dr. Calderon Howe, Service of Medicine, Dr. Gerald Shiffman, Associate in Microbiology in the Department of Neurology, Miss Bezer and Dr. Kabat are engaged in a study of the effects of enzymes from two strains of *Clostridium tertium*. One of these destroys blood group A substance while the other does not. Enzymes from both strains, however, destroy the capacity of A, B and O (H) substances to cross react with type 14 horse antipneumococcal serum; this is attributable to the  $\beta$  galactosidase activity of the enzymes, with the  $\beta$  splitting off of terminal linked galactosyl residues. Mild acid hydrolysis of the non-dialyzable

residues obtained after enzyme treatment causes a striking increase in cross reactivity. The other constituents split off from the blood group substances by the clostridial enzymes are being isolated chromatographically, and efforts are being made to determine the groupings associated with destruction of blood group activity.

Dr. Irving Finger, Visiting Fellow in the Department of Neurology, has completed a study of the antibodies produced in Schick negative individuals by the administration of small doses of diphtheria toxoid. In all instances an anamnestic response was obtained not only to the toxoid itself, but to numerous other diphtherial proteins present as impurities in the preparation used. The production of antibodies to impurities as well as to diphtheria toxoid casts serious doubt upon the contention that certain individuals produce a non-precipitating variety of diphtheria antitoxin which could passively induce wheal and erythema sensitivity in human skin.

### *Staff Activities*

Dr. Kabat was appointed a member of the Institute of Biological Sciences Advisory Committee on Biochemistry to the Office of Naval Research. Dr. Kabat was also elected an honorary member of the Columbia Chapter of Alpha Omega Alpha. Mr. Allen, who received his Ph.D. in Microbiology in October, 1958, was awarded a National Research Council Post-Doctoral Fellowship to do work in carbohydrate chemistry at the Lister Institute in London with Dr. W. J. Whelan. Dr. Finger accepted a position as Assistant Professor of Biology at Haverford College, in Pennsylvania.

Dr. Merritt continued to serve as Chairman of the Program Planning Committee of the Council of the National Institute of Neurological Diseases and Blindness of the United States Public Health Service; Chairman of the Fellowship Committee of the National Multiple Sclerosis Society; Chairman of the Fellowship Committee of the National Foundation for Infantile Paralysis; and Chairman of the Medical Professional Advisory Board of the United Cerebral Palsy Association. Dr. Merritt acted as Visiting Professor at the University of North Carolina for a week in April.

During the year the Service received visitors from all over the world.

### *Acknowledgment*

The research work of the various members of the Service has been aided by grants to the College of Physicians and Surgeons from the following: American Philosophical Society, Association for the Aid of Crippled Children; Charles Ulrich and Josephine Bay Foundation; Foundations'

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It gives me great pleasure to express my gratitude to the entire staff for their sincere cooperation throughout the year. Special thanks are extended to the administrative and nursing staffs of the Hospital for their invaluable assistance. We are particularly indebted to Dr. J. Lawrence Pool and the staff of the Neurological Surgery Service for the fine spirit and cooperation in the care of patients and the instruction of the resident staff of the Neurology Service.

# Nursing

ELEANOR LEE, R.N., *Director*

The most effective use of its personnel to maintain a high standard of nursing care has been the primary concern of the Nursing Service. Although the graduate nursing staff is larger than ever, the greater demands made upon nurses in the increasingly complex scientific and social environment of the Hospital have resulted in new plans for recruiting, staffing, and patient care, and a closer coordination of the nursing service with other departments.

## *Nursing Staff*

The quota of graduate nurses has been maintained at a high level. Among the total nursing staff of 726, 425 were new appointees, of whom 68 were graduates of the Department of Nursing. During June, July and August, only five per cent of the positions were unfilled. Owing to the stabilization of the staff in 1958, the employment of college students as nursing aides was not necessary as in previous summers. Since October the employment of graduate nurses has exceeded the quota; most of the additional nurses, averaging eighteen in number, are on special assignment in Harkness Pavilion and some in Babies Hospital. Throughout the year all nursing positions in pediatrics have been filled, as pediatric nursing continues to attract the largest number of nurses.

In spite of the maintenance of a high quota of graduate nurses, resignations do occur. Most are for such reasons as marriage or pregnancy, family or health problems, travel or study elsewhere. The turnover figure for graduate nurses for 1958 was 53 per cent. Because of a long interval between the first and second salary increase for nurses, both graduate and practical, and for infant care technicians, a particularly large proportion of resignations occurs at the end of the first year, especially among head nurses. In an attempt to reduce this turnover, on December 1 the monthly wage progression scales for nurses were revised, decreasing the interval of time between minimum and maximum salary.

## RECRUITMENT OF NURSES

Recruitment of staff nurses has been placed on a national and international basis by means of an effective publicity program, headed by

Miss Marion D. Cleveland, Director of Nursing Service. During the year, 2,000 inquiries concerning employment were received from nurses all over the world. Full-page monthly advertisements in the *American Journal of Nursing* describe the scholarship aid available to staff nurses for continuing study, as well as housing and other personnel policies. In response to the March and April advertisements, some 650 requests were received for the 26-page picture booklet, *Nursing at the Columbia-Presbyterian Medical Center*, which shows how the staff nurses work, live, and spend off-duty hours.

Among the factors attracting nurses to the Medical Center are tuition aid and housing facilities. Apartments have been filled constantly, with a total of 404 graduate nurses occupying Edward S. Harkness Hall, Cabrini Terrace, Park Terrace East, and Linwood Apartments.

In 1958 tuition aid was granted by the Hospital to 88 members of the nursing staff for study in six colleges and universities during the spring term and to 101 members of the nursing staff during the autumn term. Five graduate nurses were awarded Arthur Williams Scholarships of \$500 each.

#### STATISTICS

Eighty per cent of the general duty nurse staff come from 193 schools of nursing in 34 states, as well as Puerto Rico, and 20 per cent from foreign countries, including 48 nurses from England and Scotland, 41 from Canada, and 18 from Ireland, and one each from six other countries. Some 21 per cent of the general duty nurses are married, 24 per cent have Bachelor of Science degrees, and 2 per cent graduated from the new two-year junior college programs leading to the Associate in Applied Science degree or Associate in Arts degree.

Among the head nurses, 80 per cent have university degrees or are now studying to complete degrees and one-third are graduates of our own school. Eighteen per cent are married.

#### *Group Nursing and Special Assignment*

A most important contribution of the nursing service has been the continuation and expansion of its plans of group nursing units and special assignment of staff nurses. These two plans were inaugurated in 1952 and 1955, respectively, as means of providing intensive around-the-clock nursing care for acutely ill patients of ward, semi-private or private status. Such care constitutes a serious problem because of the steadily diminishing supply of private duty nurses, a nationwide problem resulting from social and economic changes.

The general duty nurses who give care under these two plans are members of the nursing staff of the Hospital and receive salaries from the Hospital, in accordance with established general duty nurse wage scales. A total of eighteen general duty staff nurses is assigned to the four group nursing units. In addition to the two original group nursing units established in 1956 in Harkness Pavilion 11-Annex and a third unit organized in 1956 on the fourth floor of Babies Hospital, a new group unit was started in March, 1958, on the ninth floor of Babies Hospital. Group nursing in these two pediatric units requires a minimum of nine graduate nurses, three assigned to day duty and three each to evening and night duty. In a forty-hour week this plan provides two graduate nurses on duty at all times. The cost to the individual patient for intensive nursing care under the group nursing plan, \$18 for 24 hours, is considerably less than the \$48 charge for three private duty nurses for the same period.

The difficulty of obtaining private duty nurses during the evening and night hours has led to the development of the special assignment plan whereby staff nurses are assigned to the care of acutely ill patients by the various unit nursing offices. The plan has continued to be used in Harkness Pavilion, Babies Hospital and for the patients of the Medical and Surgical Services. There are thirteen authorized positions for special assignment nurses. Patients are charged for this care at the established rate of \$16 for eight hours of individual care or \$11.25 per patient when one nurse cares for two patients.

An increase of 500 requests for private duty nursing care filled by staff or special assignment nurses was reported for October, 1958, over the same month of the previous year. The number of requests filled by private duty nurses or medical students was approximately the same for both years. As a result of these two plans, during 1958 there was a decrease in the number of requests for private duty nursing care that could not be filled. Unfilled requests were limited almost entirely to less urgently needed care.

Graduate nurses employed under the special assignment plan are able to give the specialized nursing care required by some patients, such as newborn infants undergoing surgery. Throughout this year, at least four graduate nurses on special assignment were needed to care for open-heart surgery patients in Babies Hospital.

A new program for permanent evening and night duty was put into operation during 1958. Although permanent evening and night nurses increase the stability, continuity, and calibre of patient care, staff nurses have usually considered these hours of duty less desirable. Moreover, frequent rotation of these shifts has been a source of discontent. But



rotation can be reduced to a minimum if sufficient numbers of nurses can be induced to choose these hours of duty.

An increased differential salary plan for permanent evening and night duty of six months or more went into effect on July 1. The plan provides for a differential of sixty dollars per month for evening duty and fifty dollars per month for night duty. Graduate nurses who rotate through day, evening and night duty will continue to be paid a differential of forty dollars for evening duty and thirty dollars for night duty.

Priority for Harkness Hall apartments is given to nurses on permanent evening and night duty. In-service programs and social activities for evening and night nurses continue to attract larger numbers of nurses.

As a result, the number of general duty nurses on permanent evening and night duty totaled 224 at the end of December, as compared with 114 in June.

### ***Educational Programs***

The in-service educational programs have been expanded for all groups on the nursing staff — professional nurses and practical nurses, including infant care technicians and auxiliary nursing personnel. During 1958 about 100 new nursing aides and attendants were given a fifteen-hour course in simple patient care and basic techniques. A monthly program dealing with various specialized aspects of patient care also was given for the group. The turnover figure for nursing aides for 1958 was 34 per cent, which represents an increase of seven per cent over the previous year.

An over-all orientation program, including a tour of the Medical Center, is given for new staff nurses. The in-service program is continued under the direction of the supervisor and head nurse in the clinical unit to which the new nurse is assigned. The social committee has been active in welcoming new graduate nurses with teas, dances and tickets for the theatre, radio and television shows. Miss Lillian A. Oring, Administrative Assistant, Nursing Service, in charge of in-service education, has assisted also with the weekly orientation program for all new personnel.

Other in-service programs for all graduate nurses concerned new medical developments, instruction by staff nurses in nursing care of specialized patients, and information regarding the activities and problems of other hospital services relating to patient care. An especially significant development was the inauguration of a special in-service training program on the nursing care following open-heart surgery.

Committees of the various groups on the nursing staff, professional and non-professional, have met regularly during the year and presented reports at a monthly meeting of the assistant directors of nursing.

## NURSING SUPERVISORS

Special attention was given also to the responsibilities and problems of the supervisors and head nurses. Monthly meetings, including a program on new developments or procedures, were held on two successive days in order to facilitate attendance by the entire group. Two regular meetings were scheduled also for the supervisors and head nurses on evening and night duty.

During the spring a study of supervisor activities was made in five clinical areas: neurology, general surgery, obstetrics, urology, and outpatient. The purpose of the study was to determine what proportion of time the nursing supervisor spends on different kinds of activities. Analysis revealed that the total amount of time spent by five supervisors on each area of activity in the five clinical units averaged 28 per cent in the planning and coordination of the program of nursing care, 27 per cent in the management of the unit, and 15 per cent in each of the following: activities associated with personnel, participation in educational programs for nursing students and miscellaneous.

The study was undertaken with a twofold goal in mind: to utilize the facts obtained in the study to improve both patient care and unit management, and to utilize the facts in developing a field experience course at the Hospital for graduate students working toward a Master of Arts degree in supervision in nursing in clinical services, in the Division of Nursing Education at Teachers College, Columbia University. Eight students from Teachers College had full-time field work experience during the month of June.

***Practical Nurses***

The practical nurse has been given increased responsibility in the care of patients in certain areas. As a result of a three-month study, a new staffing pattern for night duty on two patient-units of thirty beds each has been established on the Orthopedic Service. Three graduate practical nurses on permanent night duty, supervised by a graduate professional nurse also on permanent night duty, have replaced two graduate professional nurses. Practical nurses on both evening and night duty have also proved satisfactory under a similar plan on some units of the Service of Obstetrics and Gynecology. A new increased differential of \$45 for permanent evening duty and \$37.50 for permanent night duty became effective July 1 for practical nurses and infant care technicians. Those who rotate through day, evening and night duty are paid a differential of \$40 for evening and \$30 for night duty.

### ***Improved Facilities***

The extensive modernization, refurnishing and redecoration of six floors of Harkness Pavilion have added much to the pleasures of nursing care. The high-low beds, lounge chairs, and new indirect lighting installations provide comfort for the patient and a more efficient and satisfying environment for the practice of nursing. All of the Sloane Hospital nurseries and the Harkness Pavilion eighth floor nursery have been equipped with a total of 113 new individual bassinets which are proving most satisfactory. Opportunities for teaching patients and giving comprehensive patient care are provided nurses by the extension of modified rooming-in on the Obstetrics Service to the twelve-bed ward on the fifteenth floor of Presbyterian Hospital.

On the twelfth floor (women's surgical service) of the Hospital, a new tray room was completed in December, providing modern facilities for cleaning, sterilizing, and storing surgical supplies. A nursing aide has been assigned to this room full-time for the cleaning and autoclaving of treatment trays, syringes, and surgical supplies — thus saving the time of the professional nurse for patient care.

The new recovery rooms opened during 1958 in various units of the Hospital also make for better nursing care. The addition of positions for two graduate nurses and one nursing aide to the staff of the new recovery room in the Institute of Ophthalmology provides additional safeguards for patients after general anesthesia. It is of special importance for the children who are cared for in this recovery room following eye surgery.

A six-bed recovery room was opened in May on the ninth floor of Babies Hospital across from the two operating rooms and adjacent to the group nursing unit. Perfectly equipped for any emergency situation, as well as for immediate postoperative care, it accommodates all pediatric surgical patients except those following open-heart or orthopedic surgery. The nursing staff for this recovery area was provided by reassigning some of the staff nurses.

### ***General Staff Activities***

Miss Mary E. Windrow was appointed Assistant Director of Nursing Service, for the Services of Medicine and Surgery, November 15, replacing Miss Ruth M. Guinter, who resigned to be married.

Miss Windrow's former post, Administrative Assistant, Nursing Service, in charge of auxiliary personnel, has been assumed by Mrs. Marilyn J. Hamel.

Miss Bernice R. Derby returned in July from a two-year leave of absence for study at Western Reserve University where she received a

master's degree in Nursing Service Administration. Miss Derby is senior supervisor on the Service of Obstetrics and Gynecology.

Miss Rose Mary Hoynak, senior supervisor, Medicine and Surgery, was granted a leave of absence for the autumn term to complete her master's degree at Teachers College. During this fall her field work project has been the new special care unit for patients after open-heart surgery.

Members of the nursing staff attended the following meetings: American Hospital Association Institutes — Miss Helen L. Scott, Nursing Service Administration, Philadelphia, Pa., November, and Miss Margaret Wells, Staffing Departments of Nursing, Chicago, Ill., December; Misses Margaret Antes, Marguerite P. Jansen, Doreen Kolditz, Patricia Manes, Bernice McCarthy, American Nurses Association Biennial Convention, Atlantic City, N. J., June; Misses Christina Clifford, Marilyn Larson, Gilda Mancinelli, National Congress of the Association of Operating Room Nurses, Philadelphia, Pa., February; Misses Eleanor Lee, Arline Gleason, Margaret Simoson, New York State League for Nursing, Rochester, N. Y., October; Misses Mary Carey, Carolyn Dawson, Ann Freyfogle, Jane Gaffney, Charlotte Pfau, Margaret Simoson, Marguerite Walters, New York Heart Association Conference on Cardio-Vascular Surgery, New York, N. Y., January; Miss Cecile Covell, National Association for Practical Nurse Education, San Diego, Calif., April; Misses Lee and Cleveland, New York State Education Conference on Research in the Area of Nursing, New York, N. Y., October; Miss Mary I. Crawford, moderator of panel at Conference on Maternity Care, Department of Health, New York, N. Y., October; and Miss Guinter, vice-chairman of nursing program, and Miss Covell, author of "A Man is Hurt" (presented by cast of nurses, a doctor and physical therapist from the Service of Neurology), American College of Surgeons Annual Meeting in New York, N. Y., March.

Some sixty-five visitors from all over the world, interested in various aspects of nursing, visited the Medical Center during the year.

The following members of the nursing staff visited other hospitals: Misses Cleveland and Crawford and Mrs. Delphine Wolcott, Toronto Western Hospital and others in Toronto, Canada, to study centralized food service; Misses Oring and Windrow, Johns Hopkins Hospital, Baltimore, Md., October, to observe research activities in patient care.

Miss Margaret G. Arnstein, Chief of Public Health Nursing Branch of the Public Health Service of the Department of Health, Education and Welfare, and an alumna of our own school, was the speaker at the graduation exercises of the Class of 1958. Her address, "Balance in Nursing," was published in the *American Journal of Nursing*, December,

1958. Dr. Willard C. Rappleye, retiring Dean of the Faculty of Medicine, Columbia University, gave the class an inspiring message. Mr. Frederick A. O. Schwarz, Vice-President of the Hospital, presided and Mrs. Frederic F. deRham, member of the Board of Trustees, presented the diplomas to 110 members of the class.

### ***Acknowledgment***

The nursing staff wishes to acknowledge the fine contribution of the volunteers in assisting with patient care, especially the teen-age volunteers, the Candy-Stripers, in the evening play program for children in Babies Hospital. The escort service has been extended from Vanderbilt Clinic to help in other areas, such as the transportation of children from Babies Hospital to other units of the Center. Two courses for Red Cross Volunteer Nurse's Aides, given at the hospital, were completed by fourteen volunteers in the spring and eighteen in the autumn. These evening volunteers were assigned to the various surgical services. In addition two groups of volunteers have been given an orientation to patient care by Miss M. Cyrilla Page, Administrative Assistant, Nursing Service, assisting with in-service teaching.

The genuine interest and cooperation of the professional staff and the administrative staff of the Hospital have been very much appreciated by the nursing staff.

# Obstetrics and Gynecology

HOWARD C. TAYLOR, JR., M.D., *Director*

A continuing feature of the work of the Service of Obstetrics and Gynecology in the last few years has been the pressure on the ward service facilities, brought about by the increasing number of expectant mothers applying to register for delivery. This has been accompanied by little increase in the demand for semi-private and private services. The situation constitutes an unexpected reversal of trends reported elsewhere and provides at least a temporary reassurance that current teaching systems in obstetrics are not going to have to be radically revised in the next few years.

The total number of deliveries, 4,466, again is an increase over previous years. This figure now represents an increase of 44.0 per cent over 1948 and 80.1 per cent over 1938. If the ward service alone is considered, the 1958 figure of 3,105 represents an increase of 78 per cent over 1948 and 101 per cent over 1938. This increase, it must be emphasized, has taken place with little change in total bed capacity. There has in fact been some decrease in the number of private beds as a result of the ninth floor being reassigned for general admission patients and the conversion of some ward beds to semi-private. The increased work-load serves to explain the expansion of the resident staff which has occurred during this period.

## *Clinical Statistics*

I. VIABLE DELIVERIES	1945-1954 (average)	1955	1956	1957	1958
Ward .....	2,086	2,671	2,815	2,779	3,105
Semi-Private .....	740	804	806	829	763
Private .....	655	493	499	582	598
Total .....	3,481	3,968	4,120	4,190	4,466
II. GYNECOLOGICAL OPERATIONS	1945-1954 (average)	1955	1956	1957	1958
Ward .....	792	782	845	919	900
Semi-Private .....	269	485	527	564	632
Private .....	523	430	386	419	406
Total .....	1,584	1,697	1,758	1,902	1,938

III. PERINATAL MORTALITY	1945-1954 (average)	1955	1956	1957	1958
Ward .....	30.9/M	24.8/M	25.6/M	27.2/M	25.4/M
Semi-Private and Private...	24.1/M	19.3/M	15.3/M	21.2/M	24.9/M
IV. CLINIC VISITS	1945-1954 (average)	1955	1956	1957	1958
Obstetrical .....	21,609	24,404	25,502	24,781	27,369
Gynecological .....	15,227	17,086	16,499	16,793	16,888
Total .....	36,836	41,490	41,001	41,574	44,257

The further increase of ward deliveries noted in 1958 has at times strained the capacity of the Service to some extent. The problem is made more difficult by the inevitable occurrence of "peaks" and "valleys" in obstetrical admissions. Labor in a sense is always an emergency, and it is not possible to schedule admissions in such a way as to provide a steady rate of bed occupancy. To obtain an average occupancy of the theoretically desirable 85 per cent, it appears indeed certain that at times only 60 per cent of the beds will be filled and at other times 110 per cent or more.

The days when occupancy exceeds 100 per cent constitute periods of trial for the staff of doctors and nurses. The problem is solved in part by using semi-private beds for ward patients and of putting up extra beds in the space in the middle of the wards. Some patients are sent home earlier than usual, although the average stay for a new mother continues to be longer than it apparently is in the great majority of American maternity hospitals. Nursery facilities in these periods are also overtaxed. Nursing care and the amount of individual attention are necessarily restricted. From this description it might seem obvious that recommendation of a decreased rate of acceptance of registrants is in order, but against the too ready adoption of such a policy a few arguments may be offered. The description given in the preceding paragraph is for peak days of occupancy and not for standard days. Annually, the average number of deliveries per obstetrical bed in the Presbyterian Hospital is still substantially less than that of the average for hospitals in the United States. Finally, the rising birth rate promises in the next few years so to affect the facilities and personnel of all maternity services in the United States that it may be improper for the Presbyterian Hospital to avoid accepting its share of the increased load.

### *Clinical Activities*

With these general comments on the work of the obstetrical division of the Service, the detailed statistics may be referred to and a few additional points commented upon.

On the Obstetrical Service, there has been another slight increase in the number of private deliveries but a similarly slight decrease in the semi-private category. Comment has previously been made on the relationship of these figures to the movement of many families to suburban New York and their acceptance of the obstetrical service of the developing community hospitals in their town.

The number of ward, semi-private and private gynecological operations remains about the same, a limit having been apparently set by the number of beds and operating hours available to the Service.

In 1958, there were only three deaths among the 4,466 women delivered in the Hospital. It should again be pointed out that any death occurring during pregnancy or in the immediate post-partum period is counted as a maternal mortality, regardless of the cause. During the past year, none of the three maternal deaths was due to obstetrical causes: one was due to carcinoma of the large bowel; one, to a recurrent brain tumor; and one, to an unusual metabolic disease affecting the central nervous system. The Service at Presbyterian is the recipient of those cases in which pregnancy complicates the many serious illnesses which bring patients to the Medical Center.

The perinatal mortality for the year was 2.49 per cent on the private and semi-private services and 2.54 per cent on the ward service, or 25 losses per 1,000 deliveries. It must be remembered that this figure includes all stillbirths and deaths of infants weighing over 500 grams who are born alive but die during the first four weeks of life. The mortality figures are valuable for comparison, but give a somewhat erroneous picture of the situation unless it is noted what a large percentage of the losses are occurring in immature or premature infants. The figure for losses among full-term babies is therefore very much smaller than that for the total perinatal mortality. The relationship of weight to chance of survival and a key to an understanding of the perinatal mortality figures in general is given in the following table prepared by Dr. Charles M. Steer in a recent study of perinatal mortality.

<i>Weights</i>	<i>Total Births</i>	<i>Total Stillbirths &amp; Neonatal Deaths</i>	<i>Per Cent Perinatal Mortality</i>
500 to 1,000 grams.....	34	32	94
1,000 to 1,500 grams.....	42	37	88
1,500 to 2,500 grams.....	358	40	11.2
Over 2,500 grams.....	4,194	40	0.96

### ***Research Activities***

The report on research activities is based on the program carried on jointly by the clinical staff of the Service in the Presbyterian Hospital and



of the teaching and research members of the Department of Obstetrics and Gynecology. In the report on the work in gynecological cancer, it should be noted also that the Gynecological Service at the Francis Delafield Hospital is staffed entirely by members of the attending staff at the Presbyterian Hospital and that both treatment and research in gynecological cancer are conducted in the Delafield Hospital.

#### ENDOCRINOLOGY AND FERTILITY

The work of Dr. Landrum B. Shettles on early human development has been extended to include growth, maturation, nutrition, fertilization and the early cleavage stages of the human ovum. His field of investigation therefore covers the period from the development of the egg cell in the ovary itself until approximately five-and-one-half days after fertilization. In September, Dr. Shettles presented an exhibit and read a report on his work before the 32nd Congress of the German Gynecological Society, in Frankfort, Germany.

Dr. Anna L. Southam has conducted a follow-up study of young women with disorders of ovarian function who have been seen in the Endocrine Clinic of the Sloane Hospital. It was found that in many instances in which severe menstrual abnormalities are present in adolescence, the abnormal pattern is continued in adult life. In women somewhat older, that is to say, during the child-bearing period, a special risk of subsequent development of carcinoma of the endometrium at an early age was noted among the women in whom adenomatous hyperplasia had been diagnosed. This transition was noted in four of nineteen women who dated the onset of their abnormal menstrual bleeding from the menarche. It was also observed that a wedge resection of the ovaries in women with such abnormal menstrual periods frequently resulted in the resumption of ovulation and the possibility of pregnancy.

The hormones which are so important in the control and coordination of the endocrine function in the reproductive system continue to be studied in the laboratories of the Department by Dr. Seymour Lieberman, Associate Professor of Biochemistry, and Dr. Joseph W. Jailer, Associate Professor of Clinical Medicine. In each laboratory a group of enthusiastic and effective associates have helped to make it possible to carry out major programs of research.

Dr. Raymond L. Vande Wiele, working with Dr. Lieberman, has been interested in determining the metabolic precursors of the most abundant 17-ketosteroids, including androsterone, etiocholanolone and especially dehydroisoandrosterone. These steroids have special importance in those syndromes that are characterized by abnormal hair development and other signs of virilism. They are derived from precursors

which may originate either in the adrenals, the testes or the ovaries.

Dr. Samuel Solomon has also been working on the metabolic precursors of dehydroisoandrosterone and has established the fact that 17-hydroxypregnenolone may serve as the intermediate for this important ketosteroid. Dr. Solomon is likewise investigating the intermediates between cholesterol and pregnenolone. He has published his findings from a study demonstrating that human fetal adrenal glands are capable of converting progesterone into androgens and corticosteroids.

Dr. Shlomo Burstein has continued his efforts to develop better methods for the analysis of various naturally-occurring steroid metabolites. His results on the hydrolysis of urinary steroid sulfates have been published. On the basis of these findings, he has developed a precise and sensitive technique for estimating those 17-ketosteroids which occur in human plasma in the form of their sulfates.

Dr. Jailer, in collaboration with Dr. Nicholas P. Christy, Service of Medicine, has previously demonstrated that during the third trimester of pregnancy there is an increase in the plasma corticoid levels and an increased responsiveness to administered ACTH. The reason for this has become more apparent, for it appears that the half-life of administered hydrocortisone is greater than normal and consequently that hydrocortisone is not as easily degraded. They have also found some evidence that the elevated levels of hydrocortisone found during pregnancy may possibly be biologically inactive and for this reason do not cause hyperadrenalism.

Dr. Robert A. Munsick is working in the laboratory of the Department of Pharmacology under Dr. Harry B. vanDyke, studying the comparative antidiuretic potencies of lysine and arginine vasopressins in the pig. He has also been studying the excretion of 5-hydroxyindoleacetic acid, the principal metabolite of serotonin, in normal women and in women with severe menopausal symptoms. This work, leading to negative conclusions, seems to have excluded serotonin as one of the agents responsible for the flush of the menopause, although some evidence has previously existed in favor of a relationship.

#### PHYSIOLOGY AND ABNORMALITIES OF PREGNANCY

The long-standing project undertaken by Drs. Albert A. Plentl and Mary Jane Gray on evaluation of sodium and water metabolism in normal and toxemic pregnancies, utilizing radioactive sodium and deuterium oxide as tracers, was completed during the past year. Certain significant differences were found in the women with toxemia of pregnancy as compared to normal pregnant and non-pregnant women.

The subject of placental infarction and other placental lesions has

been the object of combined pathological and biochemical study by Dr. William A. Little. It has been observed that lactic dehydrogenase is elevated in the sera of pregnant women with premature separation of the placenta, an observation which may have a valuable place in clinical diagnosis.

The fibrinolytic enzyme system, in relation to the development of hypofibrinogenemia and the production of hemorrhage in obstetrical and surgical patients, has continued to be investigated by Dr. Louise L. Phillips. Work with the fibrinolytic system has been extended to include study of some patients undergoing open-heart surgery, in cooperation with the Service of Surgery, and some patients with prostatic carcinoma, with the Service of Urology.

Oxygen utilization of fresh placental tissue in various normal and pathological states has been studied by means of Warburg respirometric determinations by Dr. Emanuel A. Friedman. Dr. Friedman has also been studying the effects of various pharmacological substances in augmenting lactation and milk-ejection by direct measurement, utilizing a newly-developed technique. Dr. Munsick, in collaboration with members of the Department of Pharmacology, is continuing study of various analogues of the neurohypophyseal hormones, vasopressin and oxytocin.

Following his study of the placental transfer of the blood group antigens between mother and infant, Dr. Vincent J. Freda turned his attention to the transfer of blood group antibodies. Thus far, the findings indicate that although the antigens may pass directly to the mother via the amniotic fluid and fetal membranes, the blood group antibodies primarily pass from mother to fetus via the placenta. No significant amounts of antibody have yet been detected in amniotic fluid. This study also confirms the observations of several other investigators that the iso-agglutinins in mothers who are in blood group O, traverse the placental barrier more readily than the iso-agglutinins in mothers who are in groups A or B. This, with the finding that the iso-agglutinin titer in group O mothers is as a rule much higher than in group A or group B mothers, would explain why A-B-O hemolytic disease is seen almost exclusively in group O mothers.

#### LABOR AND PARTURITION

Investigations of the problems of labor and delivery during the past year have been largely in the field of clinical observation and statistical analysis. Dr. Steer and Dr. Arnold N. Fenton have completed a clinical study of fetal distress during labor with special attention to the indication for cesarean section in the treatment of this complication. Dr. Friedman has completed an analysis of the effects of caudal-epidural anesthesia on

the progress of labor, by means of the graphicostatistical methods, which relate cervical dilatation to the elapsed time of labor. Drs. Friedman and Little have also completed a study of the factors which affect the mortality of the second of twins.

Drs. Gray and Plentl have continued their observation of the effectiveness of the oxytocic agent, spartein sulfate. It appears to be an excellent agent for stimulation of labor, and on nearly 2,000 patients not a single authenticated side reaction has been recorded. Dr. Plentl has also been interested in a new type of obstetrical forceps, the spatula of Thierry, that has been largely unknown in this country until now.

#### THE FETUS AND THE NEWBORN

The important studies on the physiology of the newborn, being carried out in the Sloane Hospital under the direction of Dr. James and other members of the Service of Anesthesia, have continued. Emphasis during the last year has been on the biochemical effects of asphyxia and on the hemodynamics of the first hours of life.

Some degree of asphyxia, usually of brief duration, occurs as a result of the delivery process and is a normal finding in all newborn infants. Asphyxia in the newborn has been shown to produce the same biochemical changes as in the adult, namely, a respiratory acidosis followed by a superimposed metabolic acidosis. A considerable degree of hemoco-concentration is present in the most severe cases of asphyxia neonatorum and with this may be associated high levels of both sodium and potassium. Under normal conditions these values fall within the normal range by the end of the first hour. If not too prolonged, the effects of asphyxia, acting through the chemoreceptors, are probably responsible for the initial gasps of the infant. Attempts to alter these conditions by administration of oxygen have not been successful, for in a group of forty infants delivered after the mother had been given 100 per cent oxygen for five to sixty minutes prior to the birth of the infant, the oxygen level in both the umbilical vein and artery was not significantly greater than among mothers in the large control group.

With regard to the hemodynamics of the first hours of life, the phenomenon of the ductus arteriosus remaining open after the onset of respiration has been verified and additional information obtained indicating that there is a bidirectional flow through this shunting channel during each cardiac cycle. The volume of shunt from the pulmonary artery into the aorta is greatest in the first minutes of life and decreases to a very small quantity at the end of one hour.

The development of the fetus and its condition at birth obviously depend to a very large extent upon placental function, in particular

that of transmission of substances from maternal to fetal circulation. During 1958 the work in the laboratory of Dr. Plentl was largely concerned with isotope tracer studies using various radioactively-tagged elements and compounds to study this function.

Because of the small quantities of isotopes to be used as tracers, extremely sensitive methods had to be worked out for the determination of these substances and degradation procedures for microsamples had to be developed. The exchange mechanisms for carbon dioxide were first investigated by injecting bicarbonate labelled with radiocarbon into the fetal circulation of pregnant primates. Similarly, the exchange mechanisms and metabolic breakdown of lactic acid was investigated, and it could be shown that the fetus in utero burns lactic acid in a manner identical to that of the adult organism. This represents evidence that the energy of the fetus in utero is obtained by an aerobic oxidation, at least under normal conditions. The amount of oxygen consumed by the fetus must, therefore, be the same per unit weight as that of its mother.

The problem of transmission of red cells from fetus to mother is being investigated also by tagging the fetal blood of monkeys with radioactive chromium and detecting the appearance of these cells in the maternal circulation. Although it is known that the transmission of maternal red cells to the fetal circulation occurs occasionally, the reverse, i.e., the transmission of red cells from fetus to mother, has never been established.

#### GYNECOLOGICAL CANCER RESEARCH

The general coordinated program was continued for the study of biological and biochemical factors underlying the quality of malignancy and different degrees of tissue differentiation in ovarian tumors. Dr. Margaret E. Long, Department of Obstetrics and Gynecology, extended her work in this area to the study of endometrial carcinoma, in which the same correlation between nucleolar differences and degree of differentiation was noted as in ovarian carcinoma. During the year progress was made in the cytochemical assessment of glycogen, glycoprotein, lipids, cholesterol, succinic dehydrogenase, alkaline phosphatase and  $\beta$ -glucuronidase in endometrial tissues. Also in this area, Dr. Helena deRoeth, Department of Obstetrics and Gynecology, has been studying the *in vitro* survival time of ovarian tumors with regard to the influence of such biochemical characteristics as the consumption of oxygen and the production of lactic acid and pyruvic acid. She was, however, unable to find any relationship between the survival time and the histological grade of the tumor. Dr. Saul Bader, of the Department of Obstetrics and Gynecology, is studying the histology of graded ovarian papillary serous tumors and

has noted that the number of dividing cells increases with increased histological grade, and that the mitotic activity in the heterogenous cell population of a tumor was found to be attributable to a single cell type. Dr. Hyman Guthwin, Department of Obstetrics and Gynecology, has continued his efforts to fractionate gynecological human tumors into various cellular components.

Radiosensitivity testing of cervical cancer has continued under the direction of Dr. Saul B. Gusberg, with the collaboration of Dr. Grace Gales Herman. Such a degree of prognostic accuracy has been obtained as to permit the testing method to be clinically applied. Accordingly, this cytological method will be integrated into the general program for the treatment of cancer of the cervix, and the decision as to whether a patient should be treated by radiation or surgery will to some extent be based upon the indications given by this test.

Dr. Gusberg is working with Drs. Alan L. Kaplan and David Marshall on a further study of uterine cancer precursors in the cervix and endometrium. With Dr. Robert E. Hall, he is making a study of the relationship of endometrial cancer to prior treatment of patients with large doses of estrogens.

Statistical studies on the results of treatment of carcinoma of the endometrium have been made by Dr. Gusberg and reported at several meetings, with the result that certain changes in the standard treatment of this disease will be adopted by the Service. With a similar purpose, Dr. Henry Clay Frick, II, has studied the end results of treatment of cancer of the cervix and more recently has made a special examination of the types of complication resulting from radiation and surgical treatment. The analysis of the patients with carcinoma of the cervix treated with radium and external radiotherapy and then subjected to pelvic lymph node dissection was completed by Dr. Gray, Dr. Gusberg, and Dr. Ruth J. Guttmann, of the Department of Radiology. From this study it was concluded that the combination of full radiotherapy and major cancer surgery, as carried out in this series, produced a high morbidity; and the results seemed to show also that high doses of radiotherapy alone are capable of destroying cancer cells in lymph nodes in a rather large percentage of cases.

With the assistance of Dr. Fumio Doko, Department of Obstetrics and Gynecology, Dr. Harold M. M. Tovell has been studying the morphological and cytological changes following the radiation of a transplantable human epidermoid cancer. Dr. Marshall, with Dr. Guthwin, has been engaged in a study to determine if measurement of the respiration of Ehrlich ascites tumor cells in the Warburg apparatus is a practical method of measuring cell damage after incubation with tetrozolium salts. Dr. W.

Duane Todd has been reviewing cervical biopsies taken at the Sloane Hospital during the 1920's and 1930's, searching in particular for intra-epithelial carcinomas that may have been overlooked at that time.

### *Special Projects*

#### THE COLLABORATIVE STUDY OF CEREBRAL PALSY

The collaborative study to determine the epidemiology of cerebral palsy has been carried out in its pretest phase during the past year. This study is part of a nation-wide cooperative effort to elucidate the genetic, socio-economic, maternal, antenatal, intranatal, and postnatal factors that may play a role in the causation of many of the little understood neurological deficits of children. Sixteen universities are cooperating in this study, which is under the direction of the National Institute of Neurological Diseases and Blindness of the National Institutes of Health. Besides the Department of Obstetrics and Gynecology, the Departments of Anesthesiology, Neurology, and Pediatrics are participating in this study, with Dr. D. Anthony D'Esopo as Project Director. It is proposed that about 500 mothers will be carefully observed and studied during their ante-partum periods and labor. Their children will then be followed at specified intervals until the sixth year of age by pediatricians, neurologists and psychologists. The data from the detailed protocols that have been devised will be sent to the National Institutes of Health by each of the collaborating institutions for coding and study. Drs. Friedman and Gray are assisting in the collection of the obstetrical data.

#### GRADUATE PROGRAM IN MATERNITY NURSING

Eight students completed the requirements for the Master of Science degree in maternity nursing during the 1957-58 academic year. Seven students are presently enrolled in the graduate program in maternity nursing which began in September, 1958. In addition, four students enrolled in the graduate program in maternal and child health at Yale University School of Nursing, affiliated with the Columbia University program for two months of clinical experience during the summer of 1958. In this program, emphasis is being placed on developing clinical experience which demands depth of understanding and skilled judgment in the care of normal patients and in the prevention or detection of complications throughout the maternity cycle.

#### THE SLOANE HOSPITAL BULLETIN

During the past year the *Bulletin of the Sloane Hospital for Women* has continued to be in demand as evidenced by an increase in paid circu-

lation of 10 per cent over that of the past year. An added attraction has been the incorporation of regular book reviews under the editorship of Dr. Harold Speert. Dr. Friedman has become an assistant editor, in charge of case histories from the weekly staff conferences of the Sloane Hospital.

#### CLASSES IN PREPARATION FOR CHILDBIRTH

There has been continuation of the classes, instituted several years ago, to give expectant mothers and fathers psychological and social preparation for childbirth. In the last year, on a voluntary basis, there were 387 expectant mothers registered in these classes. (Of these, 180 had applied for admittance on the private services and 207, the ward services.) In addition there were 173 fathers enrolled. The scope of the work can be gauged by the fact that 2,946 attendances at regular and special sessions were recorded. There continues to be a small but increasing demand for these preparation classes; much credit is due Dr. Marion D. Laird and Miss Rosina D. Thomas, R.N.

#### *Staff Activities*

On June 30, 1958, Dr. E. Everett Bunzel reached the statutory age of retirement. Dr. Bunzel interned at the old Sloane Hospital for four months, then served as an intern for one year at Bellevue Hospital and returned to Sloane in 1919 for a three-year residency. In 1922 he joined the attending staff. His appointment at the time of retirement was Attending Obstetrician and Gynecologist at Sloane Hospital and Clinical Professor of Obstetrics and Gynecology at Columbia University College of Physicians and Surgeons. Fortunately for the Service, Dr. Bunzel will continue in a consultant capacity and the institution will have the benefit of his wide clinical experience and a link with the older days of the Sloane Hospital.

During the past year the Service has recorded visits from eighty-four foreign physicians from thirty-three countries. Special programs were given by the Service for four visiting groups, namely, the Tri-City Obstetrical and Gynecological Society, composed of the New York, Philadelphia, and Boston organizations; the Long Island Chapter of the American College of Surgeons; the Obstetrical and Gynecological Travel Club; and a group of obstetricians from Egypt. During the year there were three visiting fellows from abroad: Dr. Fumio Doko, of Okayama, Japan; Dr. Maurice Grynfogel, of the University of Toulouse, France; and Dr. Ilse Schindl, of the University of Zurich, Switzerland.

Members of the Service were elected to a number of scientific socie-



ties: Dr. Frick, to the American College of Surgeons; Dr. Dean J. Grandin, to the New York Obstetrical Society; and Dr. Gusberg, Secretary of the New York Obstetrical Society. Dr. Howard C. Taylor, Jr., served as the American member of the Executive Council of the International Federation of Gynecology and Obstetrics and as President of the American Gynecological Society.

A number of important committee posts also have been filled by members of the Department during the last year. Dr. Lieberman has served as advisory member of the Committee on Research on the Pathogenesis of Cancer of the American Cancer Society and on the Biological Research Committee of the Planned Parenthood Association. Dr. Gusberg has been a member of the Advisory Committee on Research and Treatment of the American Cancer Society. Dr. Grandin has been appointed to the Medical Advisory Committee of the Planned Parenthood Association. Dr. Gilbert J. Vosburgh has served on the Joint Committee on Obstetric Anesthesia of the American College of Obstetricians and Gynecologists and the American Society of Anesthesiologists, and on the Advisory Committee of the Association for the Aid of Crippled Children in their Survey of the Placenta and Its Membranes. Dr. Hall has been appointed Assistant Editor of the *American Journal of Obstetrics and Gynecology*.

Members of the Service have traveled extensively to attend meetings and to give lectures. Dr. Lieberman addressed the Steroid Biochemistry Symposium at the Fourth International Congress for Biochemistry in Vienna, Austria, in September and was invited to present a paper before the 1958 Laurentian Hormone Conference in Blaney Park, Mich. Drs. Plentl, Munnell, Jailer and Freda presented papers before meetings of the American College of Surgeons. Dr. Steer participated in a seminar on "The Uterus" at the New York Academy of Sciences, and was moderator of a panel discussion on X-ray pelvimetry at the New York Academy of Medicine. Dr. Jailer gave several outside lectures, including the Alpha Omega Alpha Lecture at the New York Medical College, an address before the American College of Physicians and one at the University of Oregon Medical School. Dr. Little presented a paper before the Society for Gynecologic Investigation, in Los Angeles, Calif.

Dr. Long attended a number of medical meetings, including the International Meeting of the Belgian Royal Society of Gynecology and Obstetrics in Brussels, and the International Cancer Conference in London, England. Dr. Vosburgh attended a Josiah Macy, Jr., Foundation conference on "Gestation" and a conference on "Nurse Midwifery," held in Baltimore, Md. Dr. Gusberg presented papers on carcinoma of the endometrium, at the International Cancer Congress in London, the Interna-

tional Meeting of the Belgian Royal Society of Gynecology and Obstetrics in Brussels, and at staff conferences at the Radiumhemmet in Stockholm, Sweden.

A book entitled *Obstetric and Gynecologic Milestones, Essays in Eponomy* by Dr. Harold Speert was published in the fall of 1958. This is a study of the obstetricians and gynecologists of the past whose names have been applied to structures, syndromes, instruments or procedures and are in common usage today. The book is a valuable addition to the rather meager source books devoted to historical aspects of the specialty. Dr. Alvin J. B. Tillman is preparing a book on "Toxemia of Pregnancy" and Dr. Steer, a new edition of *The Evaluation of the Pelvis in Obstetrics*, a book originally written by the late Dr. Howard C. Moloy, formerly with the Department of Obstetrics and Gynecology.

### ***Acknowledgments***

Special acknowledgment is due the Isabel MacMillin Fund for its support of certain members of the staff whose work is fundamental to the research program. Thanks are also due the foundations and other agencies from which support for research has been obtained, namely, the Josiah Macy, Jr., Foundation, the American Cancer Society, the Damon Runyon Memorial Fund, the United States Public Health Service, and the Population Council.

# Ophthalmology

JOHN H. DUNNINGTON, M.D., *Director*

Twenty-five years have passed since the official opening of the Institute of Ophthalmology on January 12, 1933. During this time there have been 61,399 patient admissions and 54,197 operations. Analysis reveals that the annual number of admissions and operations has doubled since the early years of the Institute, a fact which attests to the continuous and growing demands made upon the Service.

In April, 1958, on the occasion of the annual Alumni Meeting, two days were devoted to scientific presentations by both staff and alumni. At this time 44 of the 63 alumni were present. The continued interest and great loyalty of the alumni are sources of much satisfaction to the director and are most stimulating to the entire staff. Year after year these former residents come back to renew friendships and exchange scientific opinions. It is also with pride that we note that nine of our former residents are currently serving as executive officers of the departments of ophthalmology at other universities.

## *Staff Changes*

The resignation of Dr. John P. Macnie is recorded with great sorrow, for his faithful and efficient services are sorely missed, as are those of Drs. Robert P. Burns and John McTigue. Dr. Burns has joined the Department of Ophthalmology at the University of Oregon in the capacity of Assistant Professor. Upon completion of his residency, Dr. Robert M. Ellsworth was appointed Assistant Ophthalmologist.

## *Clinical Advances*

In the past quarter century ophthalmology has seen many advances, and the Institute of Ophthalmology has figured prominently in this progress. Much of the original work in keratoplasty and many steps in the solution to the problem of retrolental fibroplasia took place in our Institute. The staff has contributed greatly to improvements in the surgery of cataracts and ptosis, as well as in the care of retinal detachment and the management of retinoblastoma and orbital tumors. We are justly proud of our accomplishments and look forward with confidence to the advances of the next quarter century.

In 1958 one such improvement was the completion of the recovery room. In this area great flexibility is provided by six portable stretcher beds that can be used interchangeably for adults and children. At each stretcher location there is a built-in wall unit containing the most modern equipment for immediate treatment of any post-anesthetic complications. This attractive and cheerful room is air-conditioned and humidified to add to patient comfort. It is staffed by trained nurses who continuously minister to the needs of the patient and monitor vital signs until the patient is stable and awakened.

Another important feature in the further improvement of patient care was the acquisition of the Meyer-Schwickerath light-coagulator. This machine, which has a beam of light four times hotter than the sun, is used in the treatment of certain retinal lesions. Under the supervision of Dr. Graham Clark, it is currently being evaluated as a means of preventing retinal detachment.

Several of our specialty clinics deserve comment at this time. The Tumor Clinic, directed by Drs. George R. Merriam, Joseph A. C. Wadsworth and Ira S. Jones, has been in operation for several years and has proved itself a necessary and effective adjunct to patient care. It has as its major aim the early recognition and treatment of ocular neoplasms. The Retina Clinic, recently established, is an expansion of the Knapp Memorial Laboratory of Physiological Optics and is headed by Dr. Charles J. Campbell and Miss Catherine Rittler. In this unit a wide variety of pathological conditions of the retina are being studied by such methods as electroretinography, flicker perimetry and retinal photography.

The inactivity and monotony imposed on many of our in-patients has been relieved by the increased use of the Talking Book. The machines used for these books are purchased through the New York State Commission for the Blind and the records are obtained from the New York Public Library. This year a former patient presented us with two gift subscriptions to the *Reader's Digest* in recorded form, and two others gave us two new phonographs. A gift of a phonograph and records was also made by a close friend of the Institute. All of these gifts are greatly appreciated by the patients and the staff.

### ***Staff Activities***

The staff members continue to participate in the activities of international, national and regional ophthalmological societies. Ten members represented the Service at the meeting of the International Congress of Ophthalmology held in Brussels, Belgium, in September. Dr. Algernon B. Reese was guest of honor of the Japanese Ophthalmological Society

in Migata City, Japan, and addressed this society on "The Diagnosis and Treatment of Retinoblastoma." Dr. Gordon M. Bruce was guest speaker at the installation of the newest chapter of Alpha Omega Alpha, at Dalhousie University, Nova Scotia. Dr. Charles A. Perera spoke before the Mexican Ophthalmological Society on "Ocular Lymphoma."

At the annual meeting of the American Academy of Ophthalmology and Otolaryngology, fourteen members of the staff participated in the scientific program. Dr. Reese was senior member of its council in 1958, and Dr. John H. Dunnington was elected President for 1959. Dr. Reese is Vice-President of the American Ophthalmological Society; Dr. Maynard C. Wheeler, Secretary-Treasurer; and Dr. Bruce, Editor of the Society's *Transactions*, with Dr. Perera as Associate Editor. Six members of the department gave scientific presentations at the Society's annual meeting. Dr. Dunnington continued on the editorial staff of the American Medical Association *Archives of Ophthalmology*, with Drs. Frank D. Carroll and Andrew deRoeth, Jr., and Dr. Wadsworth as Associate Editors. Dr. Reese is one of the editors of the *American Journal of Ophthalmology*, and Dr. Philip Knapp is an editor of the *Survey of Ophthalmology*. Dr. Raymond L. Pfeiffer continued as Associate Editor of the *New York State Journal of Medicine* and as consultant to the New York State Commission for the Blind.

Dr. Bruce served as Chairman of the American Board of Ophthalmology and was re-elected to the office for 1959. Dr. Dunnington continued as Vice-President of the National Society for the Prevention of Blindness and as a director of the Recording for the Blind, the Heed Ophthalmic Foundation and the Knights Templar Eye Foundation. Dr. Reese was appointed to the Board of Scientific Counselors of the National Institute of Neurological Diseases and Blindness. The Association for Research in Ophthalmology, in recognition of his many contributions to ophthalmology, awarded Dr. Reese the Proctor Medal. Dr. Bruce continued as ophthalmologist on the Specialty Advisory Committee of the Surgeon General's Office, United States Navy.

Sectional meetings of the American College of Surgeons were addressed by Drs. Knapp, Clark and Wadsworth and Dr. Robert Mc.C. Day, and the American Radium Society by Dr. Merriam. Among the guest lectures given by the staff were those of Dr. Raynold N. Berke, on the surgical treatment of ptosis, exophthalmos and hypertropia, before the Texas Ophthalmological Association and the Cook County Postgraduate School of Medicine, Chicago, Ill.; Dr. Dunnington, on cataract, glaucoma and strabismus, at State University of New York, Upstate Medical Center, in Syracuse; Dr. Wheeler, on strabismus, at Stanford University, Calif.; and Dr. Wadsworth, on retinal detachment, extraocular tumors, and

complications following intraocular surgery, before the North and South Carolina Eye, Ear, Nose and Throat Society. At the annual meeting of the New York State Medical Society, Dr. Clark discussed "Recent Advances in Ocular Surgery" and, along with Dr. Wadsworth, participated in a symposium on retinal detachment. Dr. Perera was elected Chairman of the Eye Section of the New York Academy of Medicine.

### **Research Studies**

During the year many members of our staff have devoted time and interest to research studies. Attention is constantly being directed to the important task of correlating clinical findings with laboratory data in order to attain a more inclusive body of ophthalmic knowledge. Many of these research activities are performed in collaboration with other departments of the Medical Center, thereby adding new dimensions to each scientific project explored.

#### ATTENDING STAFF MEMBERS

Investigative work on ocular wound healing was continued by Dr. Dunnington in association with Dr. Virginia L. Weimar, of the research staff of the Department of Ophthalmology. Specifically, studies were undertaken to determine the influence of the epithelium upon corneal wound healing. The results of their work showed that the epithelium exerts a profound effect upon the formation of fibroblasts in a healing corneal incision. It was also shown that any removal of epithelium from the wound site caused an alteration in the appearance of the cells important to wound healing.

Employing modern methods of study, both Dr. Willis S. Knighton and Dr. deRoethth have continued their research work on glaucoma. These methods include many aspects of tonography in addition to a comparison of the tensions obtained by the electronic tonometer and the new aplantation tonometer. The usefulness of a new drug, phospholine iodide, is being assessed by Dr. Knighton. Dr. deRoethth has in progress a project on experimental diabetic retinopathy in the rat. A study is being made of the metabolic characteristics of the retina of rats in which alloxan diabetes has been produced. Particular attention is being given to the respiration and glucose utilization of these diabetic retinas *in vitro*.

Dr. Carroll has maintained his interest in optic neuritis in children. Dr. Clark has completed a five-year study on electro-surgical currents and has assessed their effects on ocular tissues. He is also continuing his work on the electronic recording and measurement of the actions of the extra-ocular muscles. In conjunction with the Thyroid Clinic, Dr. Day is still engaged in a study of the ocular changes associated with thyroid dys-

function. With Dr. George K. Smelser, of the research staff of the Department of Ophthalmology, Dr. Day performed laboratory experiments in an attempt to produce exophthalmos in fish. Also in association with Dr. Smelser, Dr. Jones began experimental work to demonstrate lymphatic vessels in the orbit. In addition to this work, Dr. Jones is continuing his studies on the factors influencing the size and growth of orbits. The chemical changes that take place in the lens in radiation cataract are under study by Dr. Merriam and Dr. Zacharias Dische, Professor of Biochemistry, Department of Ophthalmology, to determine if the lens can recover from effects of ionization as clinical observations suggest.

In cooperation with the Department of Neurology, Dr. Frank Payne is studying the value of slit-lamp microscopy and stereo-ophthalmoscopy of the fundus in the diagnosis of neuro-ophthalmic diseases. Dr. Ellen F. Regan has been investigating the effect of heparin on corneal wound healing. She is also working with Dr. Dische on the hexosamine content in healing ocular incisions. Bacteriophage typing of staphylococci in post-operative infections has been explored throughout the year by Dr. Burns. Using the tissue culture technique, Dr. Burns has also been studying cytomegalic inclusion disease and herpes simplex viruses. Dr. Campbell continued his work in the Physiological Optics Laboratory, and utilizing several new tests, he is studying the functional changes in various retinal disease entities. Macular visual fields are being used as a technique affording precise measurement of one aspect of macular function. Dr. Campbell also reported the new method of oscillography with photographic recording for better quantitative measurement of the time factors in the electroretinogram. A new and more versatile adaptometer as part of this work is currently under construction.

Dr. Anthony Donn, in addition to his studies on the clinical use of P<sup>32</sup> as an aid in the diagnosis of intraocular malignant melanomas, has done basic research on corneal transparency. These investigations have shown that the corneal epithelium actively secretes sodium ions, and that the direction of this transport is from the tear fluid into the corneal stroma and not from the cornea into the tears, as formerly believed. He is also attempting to evaluate the possibility of using plastic material for corneal replacement in keratoplasty. Dr. Ellsworth is endeavoring to measure macular function by means of X-ray with opaque media. In addition to this study, he is tabulating both the results of diagnostic laboratory tests and the response to therapy in ocular toxoplasmosis.

#### RESIDENT STAFF MEMBERS

Keen interest in clinical and experimental research is being shown by the resident staff. Dr. John L. Goble has been studying the treatment of

accommodative esotropia and is making a comparison between the results obtained with glasses, orthoptics, muscle surgery, diisopropylfluorophosphate and bifocals. The ocular findings in congenital hemolytic diseases is the subject of Dr. Joan E. Hollenberg's clinical investigations. Dr. Harold F. Spalter has continued his work with Dr. Reese and Dr. George A. Hyman, Service of Medicine, on triethylene melamine (TEM) labelled with  $C^{14}$ . This compound has been successfully synthesized and will be used in animal tumor experiments to determine the distribution of  $C^{14}$  tagged TEM when administered by various routes. It is hoped that the compound eventually can be used to determine the role of action of TEM in retinoblastoma. Dr. Spalter has also been investigating retinal artery pressures. The use of the ophthalmodynamometer as a tool in the diagnosis of carotid artery thrombosis is being explored and the results to date suggest a more routine use of this simple technique. Various immunological factors in the development of uveitis are being studied by Dr. George R. O'Connor. He has developed a method for demonstrating precipitating antibodies to *Toxoplasma* in the serum and aqueous humor of certain patients with granulomatous uveitis. Attempts to isolate specific antigenic components from crude extracts of the *Toxoplasma* organism are currently being made.

### ***Intradepartmental Activities***

The Orthoptic Laboratory, which has been in operation for nine years and is headed by Miss Sally Moore, continues to furnish definitive information about ocular muscle imbalance and also serves as a therapeutic tool both pre- and postoperatively. The John M. Wheeler Library, supervised by Miss Nora Lock, served 2,021 readers and 105 guests from 14 states and 15 foreign countries during the year. Diagnostic examinations totaling 48,536 were made by the Diagnostic Laboratory, while the Pathology Laboratory reports that a total of 416 specimens were prepared for microscopic study. The Department of Pupillography, under the direction of Dr. Otto Lowenstein, Department of Ophthalmology, again performed diagnostic pupillographic studies also on patients referred from other sections of the Hospital. In addition, the new electronic pupillograph used by this department has been improved and is now in active clinical use. The work performed by the Photography Department and the X-Ray Department has once more proved to be of inestimable value in the diagnosis and treatment of ocular as well as systemic diseases.

### ***Benefactions***

We are greatly indebted to our many friends for their generous support. Several of the larger donations are made anonymously and we



express our deep gratitude to those donors and to the Gleich Foundation, Mary W. Harriman Fund, Jack Kriendler Memorial Foundation, Mortimer and Harriet M. Marcus Foundation, Dunlevy Milbank Foundation, New York Foundation, Inc., Snyder Ophthalmic Foundation and Whitehall Foundation. Without these funds, our activities would by necessity have been severely curtailed.

On this occasion I wish to express my profound appreciation to the entire staff, both professional and non-professional, for their loyal support and sympathetic understanding during my tenure of office. I shall always be grateful to each and every one of them.

# Orthopedic Surgery

FRANK E. STINCHFIELD, M.D., *Director*

The plans and organization established by the New York Orthopedic Hospital last year have been continued during the year 1958.

The ward and clinic occupancy has remained at capacity, and there has been sufficient teaching material in the elective orthopedic procedures. There still exists, however, a great need for patients for the teaching of trauma. It has become increasingly evident that our teaching and training programs are in need of the trauma patients made available by an ambulance service. At the present time, the trauma patients cared for on our service are those who are ambulatory patients with upper extremity trauma, those with minor lower extremity injuries, and those requiring late salvage procedures. This eliminates the severe lower extremity injuries, as well as others with which the residents and students must deal when they go into practice. It is hoped that some solution may be found in the near future whereby the seriously injured patient may be cared for on our teaching service.

For the first time in many years, it is obvious that there has been a real decrease in the number of poliomyelitis cases. It is evident that the vaccination program has shown its effectiveness. There is, however, a feeling of uncertainty as to whether or not a new strain of poliomyelitis virus might appear.

The orthopedic research laboratories have continued to expand during the last year, and now employ the services of eight full-time and four part-time persons. Two new research grants, from the Easter Seal Foundation and the Squibb Institute for Medical Research, have been added to the United States Public Health Service grant.

## ***Research Activities***

Laboratory research projects have resulted in the following observations:

Adult skeletal muscle cells growing in tissue culture have been found to produce cartilage and preosseous tissue.

A better understanding of the role of alkaline phosphatase in osteogenesis is emerging. Osteoblasts and certain other cells demonstrate large quantities of alkaline phosphatase in their cytoplasm. It now appears that

this enzyme is more important to the production of bone matrix than to the deposition of bone mineral.

Water soluble substances isolated from bovine bone are demonstrating an ability to increase the migratory and proliferative capacities of bone cells in tissue culture. Chemical characterization of these substances indicates that they are mucoprotein and mucopolysaccharide in nature.

New insight has been gained into one of the mechanisms of abnormal calcification in the body. Mucin clot positive material has been isolated from calcified bursae. Similar material obtained in a case of calcinosis universalis has revealed the presence of a hitherto unidentified mucopolysaccharide, which may have a preferential affinity for calcium. This substance is probably elaborated by fibroblasts with a deranged metabolism.

#### ATTENDING STAFF MEMBERS

Dr. C. Andrew Bassett has continued his work in the Bone Bank. The technique for cathode ray sterilization of cadaver bone grafts, developed in conjunction with the Massachusetts Institute of Technology, is currently being used by more than forty orthopedic centers in this country and abroad. A large portion of the interest manifested in the work by other groups stems from the exhibit presented at the annual meeting of the American Academy of Orthopedic Surgeons last year. At the Medical Center we continue to use 1,000 to 1,200 pieces of preserved bone among approximately 400 patients per year.

The joint project with Dr. James B. Campbell, Service of Neurological Surgery, and Dr. Charles R. Noback, Department of Anatomy, on neural regeneration in the central and peripheral nervous systems has progressed well during the past year. A method has been developed to obtain axon bridging of long gaps in the adult feline spinal cord. In the peripheral nerve study, the sequence of anatomical events during regeneration has been identified. Surprisingly, it has been discovered that axons are capable of migrating in the absence of accompanying Schwann cells. In addition, return of function has been analyzed electronically and has been found to be 90 per cent complete nine months after the removal of up to 2.5 cm. of a peripheral nerve. Broad clinical application of the Millipore tubulation technique in the repair of irreducible gaps in large calibre peripheral nerves awaits the development of a rigid-walled porous support for the Millipore tube.

Plans have been completed to add a biochemist to our research group. Dr. Irwin Clark, who has done extensive investigation of the effects of steroids, hormones and vitamins on calcium and phosphate metabolism in the experimental animal, will leave his position at the Merck Institute for Medical Research to join our staff on January 1, 1959. Dr. Clark,

well-known for his contributions to basic research in the field of calcium and bone metabolism, will take an important part in our research program.

Dr. Lloyd A. Hurley — in collaboration with Dr. Frank E. Stinchfield; Dr. Francis G. Zeier of Welbourn Clinic and Hospital, Evansville, Ind.; and Dr. William Lyon, of the Naval Medical Research Institute, Bethesda, Md. — is investigating the use of ethylenediamine-treated bone in cross-species grafting. With Dr. J. Lawrence Pool and Dr. Hubert L. Rosomoff of the Service of Neurological Surgery, Dr. Hurley is studying the clinical use of ethylenediamine-treated bone in neurological surgery. Dr. Hurley is collaborating with Dr. Emanuel B. Kaplan, of the Department of Anatomy, on studies of the normal variation of the macrocanalicular system in bone; and, with Dr. C. Zent Garber, of the Service of Pathology, is studying pathological variations in the architecture of macrocanalicular system in bone. Dr. Garber is investigating the rate of circulation in bone, and completed a morphological study of typhoid osteomyelitis during the past year.

During the first half of the year, Dr. Gabriel C. Godman, Department of Microbiology, continued his investigations in the research laboratory on the ultra-structure of cartilage and the histochemistry of chondrogenesis, biochemical and cytological studies of putative osteoblasts, cytochemical studies of nucleoproteins in cell differentiation and tumor growth, and the development of adenovirus infections in cell nuclei. In July, 1958, Dr. Godman, who had been with the Department of Orthopedic Surgery for five years, transferred to the Department of Microbiology.

Drs. Alexander Garcia, George B. Ambrose and Charles S. Neer, II, have continued their combined study on fractures of the hip.

Dr. Neer is investigating the effects of trauma upon the epiphyses.

Dr. Ambrose, with Dr. Barraud J. Watson, is reviewing infections following surgery performed during the year. In April, Dr. Ambrose participated in a radio program sponsored by the New York County Medical Society. Dr. Ambrose, with Dr. Milton Singer, of the Service of Pediatrics, and Dr. William B. Snow, of the Service of Physical Medicine and Rehabilitation, is planning an evaluation of gastrocnemius neurectomy (conventional procedure modified by Millipore capping of nerve end). Dr. Ambrose and Dr. Harrison L. McLaughlin have continued their studies on slipped upper femoral epiphyses.

Dr. Joseph W. Fielding is conducting research on cineradiography of normal and abnormal joint motion, and clinical research as a follow-up on ambulatory jackets and their effect of curvature in scoliosis.

Dr. Everett C. Bragg has continued his follow-up study on spine fusions for unstable lumbosacral joint and herniated disc. He is also

studying X-rays of normal adults under thirty years of age to discover the criteria for judging diameter of the fourth and fifth lumbar discs. A follow-up study on the treatment of club foot has been continued by Dr. Bragg and Dr. Frederick S. Craig.

Dr. Robert E. Carroll is studying the utilization of complete muscle transplantations in upper extremity surgery, the formation of sheaths and gliding surfaces by means of silicone prostheses, and the growth of transplanted epiphyses. Dr. Carroll has continued his work in the Orthopedic Hand Clinic where 3,156 patients were seen during the year, 267 of whom received corrective surgery.

Attendance in the Orthopedic Tumor Clinic, which was established last year under the direction of Dr. Kenneth C. Francis, has continued to increase. During the year, 518 patients were seen, including 160 new patients.

Dr. Francis continued his studies on scanograms, and investigated the use of prophylactic internal fixation in the treatment of impending metastatic fractures. He also carried forward a study on osteogenic sarcoma.

Dr. D. Keith McElroy has continued his studies on surgery in cerebral palsy. He reports a high failure rate in gastrocnemius neurectomy in cerebral palsy. His interest continues in drug therapy of bone and joint tuberculosis, as well as in the study of early ambulation in spinal fusions and the development of the bilateral lateral technique in spinal fusions.

Dr. McLaughlin is studying the end results obtained following repair of dislocating shoulders. He is also doing a study on the circulation of the femoral head *in vivo*.

On a recent trip to Athens, Greece, Dr. Alexander D. Papas lectured on the clinical evaluation of the self-adjusting nail for fractured hips before the orthopedic staff of the Boula Hospital. He also presented a paper at the Laikon Hospital School of Physical Therapy on rehabilitation of the amputee. During the year Dr. Papas continued his studies on the use of the self-adjusting nail for intracapsular and intertrochanteric fractures of the hip.

Dr. Charles T. Ryder has continued his studies on congenital dislocation of the hip, particularly the value of arthrography and of the growth stimulating effects of osteotomy. Dr. John D. LeBouvier and Dr. Ryder, under the auspices of the Bureau for Handicapped Children, are continuing their investigation of the effects of treatment on the end shape of the femoral head in coxa plana.

Dr. Alan DeForest Smith, former Director of the Service, has continued his participation in both undergraduate and postgraduate instruction.

Dr. Melvin B. Watkins continues his studies on spondylolisthesis and on the further application of posterolateral spinal fusion.

## RESIDENTS AND FELLOWS

A number of other research projects are being carried on by our residents and fellows:

Dr. Raymond L. Cunneff, Jr. (and Dr. Stinchfield) — Resorption of the femoral head following steroid therapy in rheumatoid arthritis.

Dr. S. Ashby Grantham (and Dr. Garcia) — Review of pyogenic vertebral osteomyelitis.

Dr. J. Kenda Jones — Evaluation of a method (intraosseous venography) for predicting viability of femoral heads at time of initial injury (continuation of a previously published project).

Dr. John C. Williams (and Dr. Ambrose) — Infections following surgery for hip fractures, 1945-1947.

Dr. Gardner F. Fay (Dr. Williams and Dr. Halford Hallock) — Relationship of time of weight bearing to union in triple arthrodeses.

Dr. Marvin L. Gordon — Bilateral degenerative hip disease treated by arthrodesis or arthroplasty; and fractures of the femur after hip arthrodesis.

Dr. James N. Worcester, Jr. (and Dr. Bassett) — Bone response to autogenous and homogenous periosteal transplants.

The interest in basic orthopedic research shown by our resident staff has been a great satisfaction and, because of this interest, rotation of each resident through the research department will be initiated in 1959.

### *Teaching Activities*

An intensive two-month basic science course, given twice yearly, was again offered in 1958. The course is under the direction of Dr. Carroll and is open to a limited number of residents from other hospitals as well as to our own orthopedic residents.

During the year, another postgraduate course in orthopedic surgery was given by the Service. Thirty-eight students from seventeen states attended this course. Eighteen of these students were Board qualified. This course has turned out to be most popular and several of the students have expressed their appreciation and approval in writing at the completion of the course.

Dr. Fielding has done considerable work in organizing our new photographic laboratory. This year a full-time photographer, Mr. George Tanis, was employed. It is hoped that a film library can be established utilizing the large volume of clinical material observed on our service. Financial support for the Department of Photography is obtained through earnings from the postgraduate courses given yearly.

Grand Rounds on Thursday afternoons remain one of the most inter-

esting teaching sessions of the week. The number of visitors in attendance at these rounds is always a great satisfaction and pleasure to the staff.

### *Alumni*

The *Bulletin of the New York Orthopaedic Hospital* was published three times during the year, keeping the alumni in touch with the advancement and progress of the service. The alumni of the New York Orthopedic Hospital have raised \$4,070 to be used for research. This has been most gratifying and sincerely appreciated. It is tangible evidence of the fact that our own graduates place great emphasis upon progress in orthopedic research.

### *Staff Changes*

During the past year, Dr. Frederick M. Smith moved to Falmouth, Mass., where he is now busily engaged in private practice. His wise counseling and excellent teaching are sorely missed by the department but will, no doubt, be as valued by all his colleagues in his new location.

Dr. William H. von Lackum, who has been associated with the New York Orthopedic Hospital for twenty-eight years, retired as of June 30, 1958. Everyone associated with the New York Orthopedic Hospital at the present time, as well as those connected in past years, regrets his retirement. However, typical of Dr. von Lackum and fortunately for us, we have the benefit of his intense interest in teaching, as he continues to attend daily rounds on the Orthopedic Service.

Dr. Francis has, as of January 1, 1959, been appointed Acting Chief of the Bone Service at Memorial Center for Cancer and Allied Diseases. It is with great regret that we lose Dr. Francis, but we all share in the feeling of pride that he has received such recognition.

During the year, Dr. Rosamond Kane was appointed to our clinic staff, and Dr. Alfonso DellaPietra joined our staff as an Instructor in the Department of Orthopedic Surgery. Dr. DellaPietra teaches anatomy as part of our biannual basic science course.

During 1958 many of our staff members have been elected to honorary offices:

Dr. McLaughlin was elected Vice-President of the American Association for the Surgery of Trauma.

Dr. Garber served as President of the New York Society of Tropical Medicine during 1958.

Dr. Watkins holds the appointment of Chairman of the Orthopedic Section of the New York Academy of Medicine for 1958-1959.

Dr. Stinchfield was elected Chairman of the United States Section of

the National Committee of the International Society of Orthopedic Surgery and Traumatology.

### *Service Activities*

Early in the year, a one-day program for forty members of the Orthopedic Society of Mexico was presented, and in May a group of sixty-five British Traveling Fellows was entertained. At the Alumni Meeting, held in April, the Second Alan DeForest Smith Lecture was given by Dr. Robert W. Johnson, Jr., Emeritus Professor of Orthopedic Surgery at Johns Hopkins University School of Medicine. Dr. Johnson spoke on "The Teaching of Orthopedic Surgery in the Future." In December a program was arranged for the orthopedic members of the Brooklyn and Long Island Chapter of the American College of Surgeons, and the remaining members of the Chapter were entertained by the Service of Surgery.

The interest in presentations at national meetings has continued. Three exhibits are in preparation for the meeting of the American Academy of Orthopedic Surgeons in Chicago in January, 1959: "The Infant's Hip — Normal or 'Dysplastic'?" by Dr. Ryder, Dr. John Caffey, of the Service of Radiology, and Dr. Gilbert W. Mellin, of the Service of Pediatrics; "Differential Diagnosis Aided by Vertebral Body Biopsy," by Dr. Craig; and "Cineradiography," by Dr. Fielding and Robert W. Carlin, B.S., of New York City.

### *Acknowledgment*

Again, we are extremely grateful for the financial support given our Service which permits us to continue with our research activities. Many individual donors, who wish to remain anonymous, as well as the Easter Seal Foundation, the American Otological Society, the Squibb's Institute, and the Office of Naval Research have all contributed generously. Without this aid it would be impossible to carry out the program in which we are now engaged.

I should like to express my deep appreciation to all who have assisted in the successful functioning of the New York Orthopedic Hospital during the past year.



# Otolaryngology

EDMUND P. FOWLER, JR., M.D., *Director*

## *Service Activities*

In 1958 the teaching and research activities of the Service of Otolaryngology were coordinated under the direction of a full-time attending staff member. Dr. Stanley Whitfield, a former resident, was appointed to the position. Under a National Institutes of Health training grant, he revised the residency training program so as to provide better training, research and an introduction to teaching for the ear, nose and throat residents. In the new program each resident is to be given additional time in some of the areas not previously emphasized; notably, basic and clinical research, audiology, allergy, pathology and facio-maxillary surgery. A Public Health Service grant, providing salaries for an extra trainee and a supervisor, plus funds for research equipment and supplies, has made possible these new activities. This same grant will provide for sending our residents for a few months to affiliated hospitals, if necessary, to increase their opportunities to perform a greater amount and variety of surgery.

A National Institutes of Health field grant for the study of communications disorders in children, in collaboration with the St. Joseph's School for the Deaf, was also received this year. This project will include long term follow-up of the children seen in our Hofheimer Speech and Hearing Clinic. It is already beginning to unearth important diagnostic criteria and, in addition, new methods for educating children who seem deaf but actually have something wrong with their central nervous systems with or without a true peripheral hearing loss. These children are being followed with great interest by the Services of Psychiatry and Neurology, as well as the Service of Otolaryngology, and their troubles are related to what is being found in the study of premature infants in the Babies Hospital by Dr. William A. Silverman and his group.

Another interesting project is being undertaken by Mr. Richard A. Chase, again made possible by a United States Public Health Service grant to the Department of Otolaryngology. He has taken a year off from his regular medical school courses at the College of Physicians and Surgeons to work on delayed auditory feedback, with Dr. Samuel Sutton, Department of Psychiatry. After initial studies on improvement in the

speech of stutterers, Mr. Chase and his group are going on to basic studies of the whole mechanism of auditory feedback. It is believed that this has important connotations in the understanding of the central controls for speech and hearing and may be a useful analogue to the understanding of functionings of the nervous system in general.

Meanwhile, the operative treatment of various types of middle ear deafness has been the subject of intensive investigation by several members of the Service. Improvement of hearing by exenteration of the middle ear with micro-manipulations under the sterile operating microscope has become commonplace. A welcome innovation has been the installation of a side arm on one of the oculars of the microscope, which permits residents, students, and visiting doctors to observe exactly what the operator is doing. Greater and greater success has been achieved with mobilization of the stapes in otosclerosis and less and less post-operative reaction occurs with fenestration.

The Service, as in previous years, received many distinguished otologists and audiologists, visiting from all parts of the world.

### *Staff Activities*

At the end of August, Dr. Franz Altmann participated in the meeting of the Collegium Oto-Rhino-Laryngologicum in Dublin, Ireland. From there he went to Scandinavia and Germany to study recent developments in functional surgery of the ear, to visit various ear, nose and throat departments and to inspect their research facilities. He visited Helsinki and Turku, Finland; Stockholm and Goteborg, Sweden; and Essen, Freiburg and Hamburg, Germany. In Helsinki he read a paper before the Finnish Otolaryngological Society on "Experimental Fractures of the Stapes" and the "Application of the Results to Otosclerosis Surgery." In Hamburg, Dr. Altmann demonstrated the technique used by the Presbyterian group in stapes mobilization and ultrasonic radiation of the labyrinth was demonstrated on patients.

With the help of Dr. Milos Basek and Dr. Jules Waltner, Dr. Altmann continues his investigation of ultrasonic destruction of the labyrinth in Ménière's disease. This work seems to be very promising as it is possible to destroy the vestibular labyrinth, which causes the vertigo, and yet salvage the auditory labyrinth. All previous operations for this disease have destroyed the hearing.

Dr. Basek, with the assistance of Dr. Milos J. Lota, of the Department of Physical Medicine and Rehabilitation, is developing a machine for the production of ultrasonics. Unfortunately, the Italian machine now being employed is somewhat irregular in its performance and is difficult to have serviced.

Dr. Daniel C. Baker, Jr., has continued his activities on the Accreditation Board for Approved Residencies in Otolaryngology and also the American Board of Otolaryngology. He has given several papers on clinical subjects in this city and throughout the nation.

Dr. John G. Conley has done some very interesting and unusual repairs of the face following injuries to the facial nerve. His research activities concern carcinoma of the ear and temporal bone, as well as the physiology of swallowing. Dr. Thomas H. Fay, Jr., Department of Otolaryngology has collaborated on the research projects concerned with differential study of communication disorders, and on delayed auditory feedback. He also completed an experimental study of the intelligibility of alphabet letters.

Dr. Edmund P. Fowler, Jr., with the assistance of Dr. Joseph Moldaver, of the Service of Neurology, who has worked out a technique for prognosis, has had increasing success with both medical and operative treatment of Bell's palsy.

Dr. Fowler was also abroad this summer and presented a film, entitled "Précis of Stapes Mobilization Techniques," in Sweden, Norway, England and at the Collegium meetings in Ireland. This film, made in collaboration with Dr. Basek and Dr. Vladimir N. Epanchin, Department of Otolaryngology, was also shown at the American Academy of Ophthalmology and Otolaryngology and is now in great demand for showings here and abroad.

Dr. Fowler has obtained preliminary results in a control study on the complications of the common cold. The experiment is not yet statistically valid but seems promising. He has been active in municipal, state, national and international committees. He is Secretary of the Section on Otolaryngology of the New York Academy of Medicine, and serves as chairman of one, and member of three, committees for the standardization of audiometers and hearing tests. He is also Chairman of the National Microcirculatory Conference, and has continued his experiments on the microcirculation in several afflictions of the ear, nose and throat.

Dr. Herbert Friedman has worked out a simple method for improving the concha which cosmetically is much superior to the old method used in reconstruction of the auricle.

Mrs. Shulamith Kastein, Director of the Speech and Hearing Clinic, has continued her activities at the city, state and national levels on the problems of children with communication disorders, particularly those with central auditory imperception and brain injuries, and with emphasis on those with multiple handicaps and emotional disturbances.

Drs. Robin Rankow and Alvin J. Novack have developed a new operative approach through the ear canal for diseases of the tempo-

mandibular joint. Dr. Rankow has been studying the merits of constant suctioning as a drainage procedure following major surgery of the head and neck. In conjunction with Dr. Raffaele Lattes, Service of Surgery, and Dr. Morton Kligerman, Service of Radiology, he reported three cases of late carcinoma of the maxillary sinus following instillation of thorotrast.

Dr. Waltner has been studying stapes surgery in Paget's disease and the long range results of tympanoplasty.

#### RESIDENT STAFF

Members of the resident staff are working on the following projects: Dr. Bruce Marshall, on hearing loss found in mastoidectomy; Dr. William Novick, on calcification of the auricular cartilage; Dr. Louis P. Charbonneau, on review of the treatments of Bell's palsy; Dr. Peter D. Westerhoff, Jr., on capillary circulation of the large blood vessels; Dr. Laurence Savetsky, on ototoxicity of kanamycin.

#### *Service Statistics*

During the past year 2,913 new patients were treated in Vanderbilt Clinic. There were 1,681 admissions to the Presbyterian Hospital and 175 to Harkness Pavilion with a total of 2,175 operations. There were 1,473 admissions to the Babies Hospital with 1,029 operations. There were 535 consultations on the other services of the Presbyterian Hospital.

# Pathology

HARRY P. SMITH, M.D., *Director*

In the spring of 1957, two departments agreed that their laboratories of clinical chemistry should be merged and transferred to another part of the Center to be operated as a single unit. This was done, and subsequently a third department agreed to transfer its clinical chemistry laboratory to the new unit. The Department of Pathology provided the necessary space on the fourteenth floor for operation of the central unit for clinical chemistry, and recommended that, whenever possible, the principle of automation be employed in the analysis of specimens from patients. The Hospital then purchased several automatic machines. These machines have been utilized not only for work normally coming from the three separate patient areas already mentioned, but also for some of the work which comes from areas still being served by separate laboratories of clinical chemistry. It is estimated that approximately 30 per cent of the labor involved in clinical chemistry is now performed by automatic methods. It is believed that the degree of automation will increase considerably when new equipment and new methods of collection and reporting have been developed and put into operation.

The Service of Pathology volunteered its assistance partly because of a real interest in these problems of research and development in the field of clinical chemistry, and partly to provide the residents in pathology with a complete four-year training program of the type specified by the American Board of Pathology. It is agreed that a broad training of this type is desirable, regardless of whether the resident plans to specialize later in a limited field, and regardless of whether he plans to enter upon an academic career or upon a career of laboratory practice outside of academic centers.

In order to activate the new program, Dr. Daniel W. Benninghoff has returned to New York and has been given full-time status in this field. He has been provided with a laboratory for research and development adjacent to the new service laboratory already mentioned. This will permit effective participation along these lines. These are activities in which the Pathology Service will endeavor to cooperate in every way with the various clinical services for the benefit of all.

The Department of Microbiology has kindly consented to provide training in microbiology to residents in pathology. The Council on Medi-

cal Education and Hospitals recently inspected the newly organized projects and, for the first time, has given approval for a complete four-year program of residency training, including two years in pathologic anatomy and two years in clinical pathology. It is hoped that this program, conducted under close professional supervision, will also be utilized by those residents on the clinical services who may have interests in certain aspects of the field. Finally, there can be no doubt that marked economies in operation and better coverage for service nights, weekends, and holidays will be realized by the new laboratory of clinical chemistry.

The activities of the Service of Pathology in the field of clinical chemistry provide for a broadening of the departmental base, thereby increasing opportunities available to men of diversified interests and talents. The medical profession of this country has every right to expect that the great teaching centers will provide leadership and guidance in this important phase of medical practice. Our new program is designed to supply this type of leadership. The success of the program will depend upon the wholehearted cooperation of the various services to provide facilities, clinical material, professional collaboration and administrative judgment.

The aforementioned projects represent, of course, only one segment of the activities of the Pathology Service. The operation of the autopsy service is of very great importance, not only to our own service but to the clinical services as well.

Percentage of necropsies for the year ending December 31, 1958:

Pediatrics . . . . .	81
Dermatology . . . . .	0
Private . . . . .	49
Medicine . . . . .	68
Neurology . . . . .	56
Neurological Surgery . . . . .	52
Obstetrics and Gynecology: Adults . . . . .	80
Neonatal . . . . .	85
Ophthalmology . . . . .	0
Orthopedic Surgery . . . . .	27
Otolaryngology . . . . .	57
Psychiatry . . . . .	0
Surgery . . . . .	64
Urology . . . . .	45
Vanderbilt Clinic . . . . .	0
Average . . . . .	<hr/> 64

# Pediatrics

RUSTIN McINTOSH, M.D., *Director*

The year 1958 witnessed notable peaks in hospital bed occupancy in the Pediatric Service. Pressure for admission of patients to pediatric hospital facilities continues to show appreciable seasonal fluctuations, with peaks in spring and early autumn. These variations recur year after year, despite improvements in the technology of food handling, and especially in milk hygiene, which have virtually eliminated "summer diarrhea," once the scourge of urban institutions caring for infants and children, and despite the continually growing armamentarium of antibiotic agents which have gone far to bring under control a majority of bacterial infections.

During peaks of bed occupancy the task of providing optimal nursing care and supervision for a patient population perhaps a quarter or even a third larger than the average to which the nursing staff is normally geared has presented a problem of impressive magnitude for Miss Marjorie Peto, R.N., Assistant Director of Nursing Service for Pediatrics, and her deputies. The task has been rendered even more difficult in the past year by reason of the cancellation of our affiliation with a number of schools of nursing in other parts of the country which had for years been sending us their students for periods of several weeks for training in pediatrics. Although undergraduate student nurses require a good deal of time from the local teaching and supervisory staff in the way of scheduling and instruction, they do at the same time help greatly in carrying the load of routine patient care in the course of their practical on-the-spot ward work under supervision. Miss Peto is to be warmly congratulated on the success with which she has surmounted these difficulties. At the same time, it is to be hoped that some means will be found, perhaps through use of a larger staff of nurses' aides, to augment the resources available for coping with unusual work loads in times of temporary stress.

Important measures have been taken to make the most efficient use of skilled personnel in situations requiring close observation of patients at every moment during both day and night. One of these measures is the setting up of a five-bed recovery room on the ninth floor for dealing with patients in the critical period following anesthesia and operation. Recovery rooms already have proved their worth in services for adults. Application of the same principles to the care of younger patients was a logical step, but one which in the particular situation in Babies Hospital required

a good deal of planning and rearrangement of facilities in order to conserve bed capacity. Now that the pediatric recovery room is in use, one cannot help wondering how the staff managed without it in previous years. The second important measure in conservation of resources of personnel is the institution of a special nursing unit of four beds, also on the ninth floor, to which patients needing around-the-clock observation may be assigned for as long as their condition requires. This unit virtually duplicates the special nursing unit on the fourth floor, organized earlier as an experimental venture and mentioned in last year's report. The success of the experiment is now clearly established.

One of the perplexing phenomena of the present age of chemotherapy is the frequency with which a particular antibacterial agent, after having for some months or years shown itself overwhelmingly powerful in coping with infections caused by a species or type of bacterium, is found to have lost its effect. Either through adaptation or through genetic mutation with selective survival of resistant strains, or through some combination of both processes, the organisms become resistant to the agent in question. If success is to be regained, the usual solution has been to discover a new antibacterial agent. This process of continuous "education" of bacteria usually begins in hospitals and first becomes troublesome in the treatment of patients who have been under incomplete or only partially successful treatment for some weeks or months; it is in them that the transformation of susceptible to resistant strains seems to take place. Gradually the resistant organisms make their way out into the community, with the result that an increasing proportion of infections in patients newly admitted from their homes are found to be caused by resistant strains. The problem affects certain organisms more dramatically than others. For example, penicillin-resistant strains of *Pneumococcus* are rarely if ever encountered. On the other hand, the entire hospital world of medically sophisticated communities is voicing increasing concern over the progressive emergence of strains of *Staphylococcus* which have developed the capacity to resist one antibiotic after another. In some hospitals of excellent reputation in other parts of the country the spread of infections has got so far out of hand as to require temporary closing of operating rooms, nurseries, or other clinical units. Careful studies have revealed that in most such situations an outbreak of dangerous proportions has as a rule been preceded by a clearly perceptible increase in the number of minor staphylococcal infections — pimples, pustules, infected nail beds, and the like — and this in turn has been heralded by an increasing prevalence of resistant and so-called "epidemic" strains of staphylococci among both patients and attendants constituting the hospital population. For some months our



own nurseries for newborn infants have been under investigation. On the basis of simple inspection and inquiry, accurate score has been kept of readily identifiable lesions in representative samples of the infant population and their mothers during the first two months after delivery, at home as well as in hospital. A watch has been kept also for staphylococcal lesions among nurses, doctors and other attendant personnel. In a supplemental laboratory study, cultures have been taken from both staff and patients, and selected colonies of staphylococci studied for specific antibiotic resistance and strain identification by phage type. For reasons not yet clear, our patients have been relatively free from significant staphylococcal infections, as compared with the experience of many other hospitals. Nevertheless, in view of the mounting seriousness of the problem in the country as a whole, our local situation requires and will receive continuing study.

### ***Pediatric Cardiology Team***

A strong pediatric cardiology team has been organized under Dr. Sidney Blumenthal, with the participation of Dr. Sylvia P. Griffiths, Dr. Beverly C. Morgan and a number of trainees and fellows. This group not only operates the cardiac clinic for children in Vanderbilt Clinic, but sees all cardiac inpatients in the Pediatric Service on a consultative basis, carries out an increasing number and variety of special diagnostic procedures, and collaborates closely with the Services of Anesthesiology, Radiology, and Surgery in pre- and postoperative management. Through the offices of this team, patients are receiving increasingly thorough and objective assessment and skillful care. The competence of the group has won recognition in the form of important grants for the training of pediatric cardiologists. Dr. Blumenthal's decision to confine his professional work to the Columbia-Presbyterian Medical Center on a geographic full-time basis, made during the course of the year, has notably increased the efficiency and stature of the pediatric cardiology team.

### ***Staff Changes***

In the course of the year Drs. Frederick H. von Hofe and W. Russell Smith reached retirement age. Both had worked many years effectively in the service of the Hospital, and both deserve the gratitude, as they have won the respect, of the entire staff. Leave was granted to Dr. Oscar L. Frick to pursue fundamental studies of immunology and allergy in Canada, and leave for Dr. Ruth C. Harris was continued.

### *Staff Activities*

Many distinguished visitors from other centers gave talks before the staff of the Pediatric Service during the year.

The Borden Award of the American Academy of Pediatrics was conferred on Dr. Charles D. May in recognition of his studies in nutrition, and the E. Mead Johnson Award was won by Dr. William A. Silverman on the basis of his investigations in the physiology of prematurity. Dr. Hattie E. Alexander was appointed to the consultant staff of the New York Infirmity, the North Country Community Hospital, and the North Shore Hospital; she was also made a member of the Pediatric Advisory Committee of the New York City Department of Health. Dr. Gilbert W. Mellin was appointed to the Special Committee on Infant Mortality of the Medical Society of the County of New York. Dr. Isabel M. Mountain, Department of Microbiology, was among the small number of investigators whose portraits were installed in the Polio Hall of Fame at Warm Springs, Ga.

### *Research Activities*

The research program of the Department of Pediatrics of the College of Physicians and Surgeons was supported by a number of organizations and individuals, among whom special thanks are due to the Dunlevy Milbank Foundation, the Dysautonomia Association, Mr. and Mrs. Richard Hunnewell, the Kidney Disease Foundation of New York, Mr. and Mrs. Arnold Kossoff, the Loyal League Philanthropies, the National Institutes of Health of the United States Public Health Service, the S. H. and Helen R. Scheuer Family Foundation, Inc., and the Sidney J. Weinberg Foundation.

Research in microbiology, under the general direction of Dr. Alexander, continues to explore intensively two well-defined areas: the relationship of the ribonucleic acid contained in viruses to the properties of the individual virus, and the participation of desoxyribonucleic acid in determining the genetic characteristics of bacteria. Using tissue culture methods which cause appropriate experimental cells to grow in sheets or plaques only one cell thick, and which thus permit one to tell by simple inspection whether a cell mass has been infected by a virus, Dr. Alexander — together with Dr. Gebhard Koch, Department of Pediatrics, Dr. Mountain, and Miss Olga Van Damme, Department of Pediatrics — has greatly extended the experiments referred to in preliminary form in last year's report. These studies have demonstrated the successful transmission of poliomyelitis infection by exposing susceptible cells to purified preparations of ribonucleic acid obtained from cell-free virus material. Experi-

ments of this kind, which are of impressive technical complexity, probe the thin boundary area between inert chemical substances and living matter having the property of self-propagation. Dr. Katherine Sprunt has used comparable technics to produce strains of virus with properties which combine some of the properties of the parent strains. In collaboration with Miss Grace Leidy, Department of Pediatrics, new studies have been launched in which the role of desoxyribonucleic acid in determining hereditary traits will be explored in mammalian as well as in bacterial cells. Drs. Douglas S. Damrosch and Saul Blatman have continued their investigation of factors which influence host reaction to tubercle bacilli during and following specific antibacterial therapy. Dr. Paul A. di Sant'Agnese collaborated with Dr. Calderon Howe and Miss Louise Goode, of the Department of Microbiology, in a study of the bacteriophage types and antibiotic sensitivity patterns of 175 strains of *Staphylococcus hemolyticus* isolated from the respiratory tracts of patients with cystic fibrosis of the pancreas, showing that initially these organisms fall into no special group, but that in time as individual patients are exposed to repeated courses of antibacterial treatment and admissions to hospital resistant strains predominate.

In the biochemical field a number of studies have been carried out. Dr. di Sant'Agnese and Dr. Alfredo Vidaurreta have collaborated with Drs. John A. Wood and George A. Perera, of the Medical Service, in measurements of salt metabolism in patients with cystic fibrosis and related conditions. When patients with fully manifested cystic fibrosis are subjected to a salt-poor diet, they are unable to conserve sodium chloride by reducing its concentration in their sweat. On the other hand, relatives of such patients who ordinarily have a moderately elevated concentration of sodium and chloride in their sweat have been shown capable of conserving salt by reducing its concentration in sweat when they are put on a low-salt diet. Patients with incompletely manifested cystic fibrosis behave in a comparable way. In collaboration with Dr. Wood and Dr. Alfred P. Fishman, of the Medical Service, a number of patients with generalized obstructive emphysema have been studied and approximately one-fifth of them found to have an increased concentration of electrolytes in their sweat. These studies may have an important bearing on the genetics of cystic fibrosis of the pancreas. Dr. di Sant'Agnese has continued his collaboration with Dr. Zacharias Dische, Professor of Biochemistry, Department of Ophthalmology, in analyses of the peculiarities of mucoproteins and mucopolysaccharides obtained from duodenal secretions of cystic fibrosis patients. In association with Drs. Keith Reemtsma, James R. Malm and Harold G. Barker, of the Surgical Service, Dr. di Sant'Agnese has measured the absorption of dietary fat by patients with

cystic fibrosis, using isotopic labeling with radioactive iodine, obtaining results which confirm by this more elegant method the defect in fat absorption previously demonstrated by cumbersome balance technics.

Drs. Melvin M. Grumbach and Jacques R. Ducharme have administered purified human growth hormone to premature infants and have shown such subjects to be relatively unresponsive to either the growth-promoting or the metabolic effects of this substance even in high dosage. These observations demonstrate that the rapid growth rate of the thriving premature infant depends little if at all on pituitary hormonal control. With Dr. Karl Meyer, Service of Medicine, and his associates in the Department of Biochemistry, Dr. Grumbach has demonstrated that patients with Hurler's syndrome accumulate in their liver large quantities of sulfated mucopolysaccharides and excrete corresponding breakdown products in their urine. Dr. Grumbach's long-term observations of the changing pattern of distribution, utilization and excretion of adrenocortical steroids at different age levels have been continued with the participation of Dr. Ducharme and Dr. Akira Morishima. In collaboration with Dr. Ralph E. Moloshok, Dr. Grumbach has studied the effect on the fetus and newborn infant of administration of inorganic iodides to the pregnant mother; examples of both hypothyroidism and hyperthyroidism have been encountered. In the treatment of patients with the salt-losing form of congenital adrenal hyperplasia, promising results have been obtained with oral administration of a relatively new synthetic compound, 9-alpha-chlorohydrocortisone acetate.

Dr. Conrad M. Riley has analyzed once again, as he did a few years ago, the pooled results reported by a group of nephrosis clinics throughout the country which have employed comparable policies and technics in the treatment of patients. The results, when contrasted with those obtainable prior to the time when adrenocortical steroids became readily available, show clearly the improvement attributable to the use of these drugs; both morbidity and mortality have been appreciably reduced, and the period of hospitalization shortened. No single hormonal analog or no particular regimen of administration has yet emerged as superior to all others.

In cooperation with Dr. Jerome Nadelhaft, Radiology Service, Dr. William A. Bauman carried out a clinical and radiological study of newborn infants with the respiratory distress syndrome, as a result of which the identification during life of the accumulation of hyaline membrane in the finer ramifications of the bronchopulmonary tree has been rendered more accurate. Dr. Gilbert W. Mellin has continued to direct the Fetal Life Study, one of the important aspects of which has been the accurate scoring and tabulation of congenital anomalies encountered in a repre-

sentative sample of the infant population. He is also in charge of the pediatric aspects of the combined study of the pathogenesis of cerebral palsy in which representatives of several services — Anesthesiology, Neurology, Obstetrics and Gynecology, as well as Pediatrics — work in close collaboration. In the Premature Unit, Dr. William A. Silverman has demonstrated a lower mortality rate in the first five days of life when the incubators are set to maintain a temperature of 89° F., than when a lower environmental temperature is used. Administration of a single dose of an iron preparation injected intramuscularly before the premature infant is sent home from the hospital has reduced the frequency with which the anemia of prematurity has been encountered, as compared with the experience of comparable patients for whom other iron preparations, given by mouth, had been prescribed. The frequency with which pulmonary hyaline membrane is encountered in young infants was found in general to be inversely proportional to the individual infant's degree of prematurity. Additional studies have been planned with the objective of defining in ever more specific terms the most favorable environment for the rearing of premature infants.

### ***Acknowledgment***

In closing this report special acknowledgment must be made of the skill and tact with which Miss Elizabeth Callahan, Unit Manager of Babies Hospital, and others of the administrative staff have dealt with the numerous problems incidental to providing accommodation for patients when the requests for admission to hospital outnumber the available beds and when every clinical situation seems to take on all the attributes of an emergency.

# Physical Medicine and Rehabilitation

ROBERT C. DARLING, M.D., *Director*

The Service performs two major functions: rendering physical medical services as indicated and planning long-term rehabilitation when requested. The problem of giving rehabilitation services to outpatients following hospitalization has been handled either in Vanderbilt Clinic, if the services required are principally medical, or at the Institute for the Crippled and Disabled, if vocational needs are important. However, nation-wide statistics indicate that of all patients requiring major rehabilitation services, only fifteen to twenty per cent have significant vocational problems. Many of the most significant and illustrative rehabilitation problems require predominantly medical services which cannot be carried on satisfactorily on an outpatient basis. The need for at least a small number of beds assigned for rehabilitation use is crucial because of the high proportion of patients requiring medically-oriented rehabilitation. Plans to fill this need are underway. The beds, when available, will serve as an important demonstration unit for several categories of students as well as fill an important gap in the hospital services for our patients.

Although formal affiliation with the Institute for the Crippled and Disabled has been terminated, many phases of collaboration continue; one of the most important of these is the continuing of the office of the Institute's limb and brace shop in the Hospital. In addition, the Service has retained the privilege of utilizing Institute space for several continuing teaching activities.

## ***Teaching Program***

The residency-fellowship training program has undergone no major changes. The applications for such positions thus far have been sufficient to keep a small complement of trainees constantly at hand. Undergraduate third-year students who take their elective quarter here, under the support of the National Foundation, receive intensive clinical experience. On an informal basis, further contributions have been made by the physical therapy staff to the training of undergraduate nurses in those

physical therapy techniques which are of importance in nursing. On a more formal basis, graduate nurses from Columbia Teachers College will be given a similar orientation during the next academic semester.

Both physical and occupational therapy areas in the Hospital continue to be clinical affiliation centers for students from the Columbia University training courses in these subjects, as well as for students from training courses of other universities.

### *Staff Activities*

Drs. John A. Downey and Robert C. Darling are studying the elevation in temperature regularly produced by physical exercise. It is apparent that this elevation of temperature is not produced by the same mechanism which produces the fever of infection nor is it a failure of heat elimination. It appears to be essentially unaffected by antipyretic drugs or by the changes in the carbon-dioxide content of the breathing mixture. In the same experiments, it was discovered that large doses of salicylates have only minor effect on the metabolism during exercise; however, the slight elevation of basal metabolic rate produced by the drugs has been confirmed. Allowances for training costs in the traineeship grant from the Office of Vocational Rehabilitation of the Department of Health, Education and Welfare, have defrayed the incidental costs of this research.

Dr. Shyh-Jong Yue is completing his studies of vocational predictions on the basis of medical examination of cerebral palsy patients. These studies are carried on at the Institute for the Crippled and Disabled. Dr. Yue, who was this year appointed Assistant Attending Physician, is also conducting a clinical study at the Hospital on the effects of ultrasonic therapy.

Dr. Lucille Tsu Pai will continue on the staff of the Pediatric Cerebral Palsy Clinic, although, beginning January 1, she will spend the majority of time at the Manhattan Veterans Administration Hospital.

Dr. William Benham Snow, in addition to directing the Service's clinical activities in the Hospital, continues his many advisory activities with community and national organizations, including especially the New York City Department of Health and the Board of Education project for education of handicapped children, the United Cerebral Palsy Association, and the American Registry of Physical Therapists.

Dr. Morton Hoberman was elected a member of the Board of Governors of the American Academy of Physical Medicine and Rehabilitation and received an award from the Gotham Chapter of the National Foundation of Muscular Dystrophy for work with the handicapped.

Dr. A. David Gurewitsch made a second extensive trip to Russia to

visit medical and other installations, and has reported his observations and experiences before a number of organizations.

Activities with both the United Cerebral Palsy Associations and the National Foundation were carried out during the year. The Department was host to professional physical therapists from the New York area for a demonstration and lecture by Dr. and Mrs. Kenneth Bobath, of the Western Cerebral Palsy Centre, London, England.

### *Service Statistics*

During 1958, 55,268 patient visits were made to the Service and a total of 93,360 treatments given. Of this latter total, 11,581 were for occupational therapy and 81,779, physical therapy. Forty-five per cent of the treatments were given to clinic patients, 13 per cent to private outpatients and the remaining 42 per cent to inpatients of all categories (private, semi-private and ward).



# Psychiatry

LAWRENCE C. KOLB, M.D., *Director*

In the last annual report of the Service of Psychiatry it was pointed out that in the face of the great changes brought about by the successes of modern medicine, more than ever the development of effective outpatient services was needed to provide the best diagnostic care and also make available a continuous and comprehensive treatment program for our patients. A major key to the development of a strong outpatient department is the regular availability of a portion of the staff, much in the line of the concept of the full-time system needed to maintain leadership among inpatient services in teaching centers. In recognition of this fact, various governmental agencies have made available over the past several years funds to support the establishment and expansion of psychiatric and mental health facilities in various communities. It is a pleasure to report that our negotiations with the New York City Community Mental Health Board have led to the arrangement of a contract for the expansion of the Vanderbilt Psychiatric Clinic. This contract will stabilize clinic staff by providing for a full-time clinic director, aided by several part-time salaried psychiatrists, an additional social worker and clerical assistance.

Last year we reported the establishment of the Columbia Washington Heights Mental Health Project, under a grant from the National Institute of Mental Health to the Department of Psychiatry. The collection of data on known disturbances of mental health in the Washington Heights Health Area, which is to serve as a background for future planning of service, has gone forward during the year. The data collection process has indicated the need for review of the system by which patients are admitted for care by the Psychiatric Service, staffing procedures in the Psychiatric Distributing Clinic, and the handling of emotionally disturbed patients for whom admission to the Medical Center is not feasible. However, the major problem area, on the basis of the findings thus far, is the preparation of a program for the care of the psychotic patient in this community. Plans are now under way to outline a program of treatment for the psychotically ill in Washington Heights. The project staff is continuing the collection of additional information on the mentally ill in this area as a basis for projecting programs of service, teaching and

research. The consequences of these studies may well have far-reaching effects on the future organization and activities of the Psychiatric Service.

### *Staff Changes*

Dr. Robert B. McGraw, former Chief of the Psychiatric Clinic in Vanderbilt Clinic, has returned from a leave of absence. Dr. Hugh Mullan was granted a leave of absence. Resignations were submitted during the year by Drs. Alan B. Adam, A. Louise Brush, Roy D. Craig, Bernard C. Holland, Robert J. Mearin, Fred U. Tate and Edward S. Tauber. Additions to the staff were Drs. James P. Cattell, Martin Barad, Lloyd A. Hamilton, Daniel Justman, Stuart Keill, Leon Lefer, Samuel Lowy, Alvin M. Mesnikoff, Bernard Schoenberg and Donald H. Schultz. Dr. Benjamin H. Balser returned to his activities in the clinic after an illness last year. Dr. Shervert Frazier, recently Consultant in Psychiatry at the Mayo Clinic, also joined the staff.

### *Services to Patients*

The need for hospital beds for Psychiatric Service patients within the Medical Center has been amply demonstrated over the past four years. With the close relationship now existing between the Psychiatric Service and the New York State Psychiatric Institute, made possible through the many conjoint appointments in the two institutions, the number of admissions to the Psychiatric Institute from the Presbyterian Hospital has risen from 2 per cent four years ago to approximately 30 per cent of all new admissions made in the past year. A high proportion of these patients admitted to the Psychiatric Institute now comes from the Washington Heights area. The need for facilities for inpatient treatment of private and semi-private patients with emotional disturbances has been under study. Plans are now underway for the remodeling of the twelfth floor of Neurological Institute for the care of these patients, as well as out-of-state residents, who are not eligible for admission to the Psychiatric Institute except under unusual circumstances.

During the year the Department of Psychiatry arranged for private-office space in the Neurological Institute for six members of its staff who constitute the nucleus of the geographic full-time psychiatric teaching staff in the Presbyterian Hospital. The psychiatrists occupying these offices are Drs. Lothar Gidro-Frank, Alvin M. Mesnikoff, John F. O'Connor, Robert A. Senescu, David E. Sobel and Robert J. Weiss.

On the premise that a great deal of useful information might become available from the Vanderbilt Psychiatric Clinic, Dr. Cattell devoted much time to developing procedures for eliciting information from

patients and recording data in a manner suitable for clinical research appraisal. It is anticipated that the regular and special records will soon be suitable for a pilot study of 100 consecutive patients. The initial questions for which answers are sought are relatively simple and fundamental: What kind of person with what kinds of complaints comes to the clinic? What care and treatment are made available to him? What changes occur in his illness and functioning? Are these changes beneficial to him? How are these changes related to the treatment facilities of the clinic? Are the treatment facilities used to the best advantage of the patient, and are the teaching facilities used to the best advantage of the medical student and resident? From this initial study, methodology may be improved, broader surveys of these issues may be undertaken and possibilities of psychodynamic investigations could become apparent.

In association with this study, Dr. Cattell initiated an investigation of limited-goal therapy. Selected patients, following diagnostic evaluation, are seen by residents in twenty-minute sessions for psychotherapy in frequency varying from once a week to once a month. Appropriate medication is prescribed as indicated. Each resident is given weekly supervision of all patients' treatment by an attending psychiatrist. The relative effectiveness of this approach will be compared with that of methods which involve longer sessions and more frequent visits.

In the *outpatient service*, daily sessions of the Psychiatric Distributing Clinic continued to be held each afternoon. Patients in whom a primary psychiatric disorder was diagnosed by the admitting physician are referred to a senior psychiatric resident assigned to the clinic. There, the patient is seen immediately in an effort to ascertain his motivation and eligibility for psychiatric treatment, and, if indicated, an appointment is made for the patient to be seen in the Psychiatric Clinic. The assignment of psychiatric residents to the Distributing Clinic has made it possible to reduce the number of broken appointments, to maintain a flow of new patients for the third-year medical students and residents in training, and to provide better clinical service. For patients with acute difficulties, a resident continues on emergency call twenty-four hours per day.

During 1958 the residents evaluated a total of 410 new patients. Treatment hours for both old and new patients totaled approximately 3,713 hours. There were 383 patients seen in Emergency Room consultations.

The teaching and service functions of the clinic were greatly improved with the addition of Dr. Elizabeth B. Davis to the staff. Dr. Davis serves as supervising psychiatrist to the social workers assigned to the clinic, as well as consultant to social service workers in other areas. She

also works with both the medical students and residents on cases involving major social service and psychiatric problems. Dr. Davis has special responsibility for coordination and integration of social service and clinical efforts.

In the *inpatient consultation service* of the hospital, patients throughout the Medical Center continued to be seen by the psychiatric residents, with supervision by the attending staff. Consultation requests totaled 637 for the year.

In July the inpatient consultation service was reorganized and the responsibility was delegated, on a rotating bi-monthly basis, among the geographic full-time staff. Drs. Lawrence C. Kolb and Joseph Schachter and Dr. Senescu served as Senior Attending Psychiatrist in successive periods from July through December, 1958. They conducted regular rounds three to four afternoons each week, often with participation of the interested staff members from other services. The attending staff provided regular supervision of the diagnostic and therapeutic activities in the inpatient consultation service.

The *psychoanalytic service*, a function of the Columbia Psychoanalytic Clinic, has provided treatment for a total of 1,457 patients since its establishment in 1944. During 1958, a total of 232 patients were under treatment. At the close of 1958, the four services of the Psychoanalytic Clinic are caring for a total of 135 patients. Of this group of 135 patients, 65 are receiving reconstructive analytic therapy in the Reconstructive Therapy Service, 26 are being treated by psychoanalytically oriented brief psychotherapy in the Reparative Therapy Service, 35 have been seen in the Service for Medical Patients, and 9 are being treated in the Children's Service.

The Columbia Washington Heights Community Mental Health Project recently completed a survey of the local population seeking psychiatric help during the years 1955, 1956 and 1957. From this population a total of 173 individuals applied to the Psychoanalytic Clinic for help. We are, thus, glad to report that the Psychoanalytic Clinic, in addition to training of psychiatrists in psychoanalytic medicine, research and other activities at the Medical Center, is also realizing one of its original objectives, service to the community at large.

Dr. George E. Daniels, Director of the Psychoanalytic Clinic, has appointed a committee to work out details with Dr. Senescu for closer liaison in the two-way referral of patients between the two service groups.

### **Teaching**

Beginning in July, 1958, neurology residents were assigned regularly to the Service of Psychiatry as part of their educational experience

in the diagnosis, evaluation and management of the patient with emotional disorders. Two second-year medical students elected study on the Service and four third-year students, who received stipends for research electives in psychiatry under the new program of the National Institute of Mental Health, were assigned project activity on the Service.

The program for instruction of the third-year medical students, initiated last year, has continued. Each student is required individually to carry out diagnostic studies on a series of patients during his trimester of assignment to the Vanderbilt Clinic.

In August, Dr. Arnold M. Cooper replaced Dr. Holland in charge of the instruction of fourth-year medical students of the Psychiatric Service in the Group Clinic. The attempt has been made, wherever possible, to include the students as direct observers and participants in the psychiatric consultations. Drs. Cooper and Weiss have conducted weekly clinical conferences, including presentation of patients, to help students to increase their understanding of the psychiatric problems arising in general medical clinics.

A selected group of residents from the New York State hospitals evaluated and treated patients as part of a graduate training program in psychiatry.

During the first five months of the year, Drs. Senescu and Weiss conducted regular seminars for the nursing faculty on mental health issues. A series of eight nursing care conferences, led by Dr. Senescu, Dr. William R. Watson and Dr. Schoenberg, were conducted four times during the year for the nursing instructors and first-year nursing students. A 30-hour lecture course, "Development and Organization of Human Behavior," was given by Dr. Senescu for the first-year nursing class.

### ***Pediatric Psychiatry***

The Pediatric Psychiatric Clinic has maintained its close working relationship with the Children's Psychiatric Services of the Psychiatric Institute. The conjoined activities, which began in July, 1956, have resulted in the emergence of an operationally unified Children's Psychiatric Service for the Medical Center. These developments have been facilitated through joint staff appointments in child psychiatry in the Presbyterian Hospital Psychiatric Service and on the visiting staff of the Psychiatric Institute. The child-psychiatry staff has teaching, supervisory, and patient care responsibilities in both the Pediatric Psychiatric Clinic and at the Psychiatric Institute. Referrals for psychiatric consultation, diagnosis or treatment of children are considered by the Child Psychiatry Distributing Committee. In all cases this committee makes the decision of where and to whom to refer a child and his family for

treatment. Children are referred from the Pediatric Service, other Hospital services caring for children, and also by community casework agencies, schools, physicians, hospitals or other psychiatric services.

During the year, 510 children were considered by the Child Psychiatry Distributing Committee. Seventy-four were referred directly from various community sources, 378 were referred from the Pediatric Service and other Medical Center services, and 49 of the requests were for ward patient consultations. The Psychiatric Service provides consultation or care whenever requested for any child patient hospitalized at the Medical Center. If the child needs continued treatment that cannot be given in the Medical Center, he is referred whenever possible to some other resource in the community.

Psychiatric treatment work in the Pediatric Psychiatric Clinic and on the Children's Psychiatric Service of the Psychiatric Institute is carried out by the residents assigned to Child Psychiatry and by some members of the attending staff. By and large, a patient is assigned to the Pediatric Psychiatric Clinic when he is concomitantly receiving medical care elsewhere in the Center, thus affording valuable communication between the psychiatrist and other physicians who are active in his care. Children whose problems are more or less exclusively psychiatric in nature are usually assigned for care at the Psychiatric Institute.

The treatment resources have been augmented during the year by the assignment, part time, to Child Psychiatry of six second-year residents in psychiatry from the Bronx Veterans Administration Hospital while in training at the Psychiatric Institute. The children who are treated in the Children's Service of the Psychoanalytic Clinic, are selected from those referred to the children's services of the Service of Psychiatry. The resources also have been increased by the addition of a psychiatric case worker to the Children's Services of Psychiatric Institute.

### ***Clinical Psychology***

The Training Program for Clinical Psychologists was initiated on September 1, 1958, with the appointment of two trainees supported by stipends provided under the grant to the College from the National Institute of Mental Health. These positions and one other traineeship provided by the New York State Department of Mental Hygiene are filled by Mrs. Bert Holland, Mrs. Carol W. Galligan and Miss Frances Kesselman. Each trainee is assigned for clinical experience in rotation within the Medical Center to the Vanderbilt Adult Psychiatric Clinic, Neurological Institute, and the Pediatric Psychiatric Clinic of the Medical Center and the Psychiatric Institute. Each trainee spends from two to

three months in each of the services, depending upon the length of time considered appropriate to his level of understanding and skill.

### **Research**

During the year Dr. Joseph Schachter, working in the Department of Obstetrics and Gynecology, has designed and initiated a laboratory investigation of the psychophysiological responsiveness of newborn infants. Dr. Schachter received Honorable Mention by the Hofheimer Committee of the American Psychiatric Association for his recently published work on hypertension.

Dr. Hilde Bruch continued the study of obesity in childhood. She has begun a study on how former fat children who are now parents influence the eating patterns and other developmental phases of their own children. Another study underway is concerned with the long-range development of diabetic children. In a study conducted fifteen years ago it was observed that the control of diabetes was closely related to emotional interaction in the family. The follow-up observations not only confirmed the early observations but brought into greater prominence the significance of emotional attitudes for the medical control of diabetes. The follow-up study on diabetes had been prompted by an invitation to report on diabetic children before the Third International Congress of Diabetes in Dusseldorf, Germany.

Dr. Daniels, Dr. Aaron Karush, Dr. Leon Moses, Dr. John O'Connor, Dr. Senescu and Dr. Weiss pursue their follow-up study of patients with ulcerative colitis who received psychotherapy.

Dr. Arthur C. Carr, and Drs. Schoenberg and Weiss are evaluating the effectiveness and indications for a brief psychotherapy for patients with neurodermatitis.

Drs. Carr and Schoenberg and Dr. William N. Thetford, Department of Psychiatry, and Dr. Morris Zelditch, Jr., Columbia University, are engaged in preliminary work on a research project concerning the character of resistance in group psychotherapy. The project is designed as a long-range evaluative study of group processes in therapeutic groups and will attempt to clarify the concepts of group resistance.

Drs. Carr, Mesnikoff and Kolb and Dr. John D. Rainer, Department of Psychiatry, have continued their biological, psychological and psychoanalytic studies of sets of identical twins with divergent sexual development; one of each set being overtly homosexual and the other heterosexual. The differential factors in the sexual behavior now appears to be related to the early parental attitudes toward the twins, determined both by the parents' capacity to discriminate one from the other because certain individual bodily characteristics, and parental fantasies and wishes

for the unborn or newborn children and the influences of these parental fantasies and attitudes on the growing twins' concepts of their body.

Dr. Mesnikoff made a study of patients with Gilles de la Tourette's syndrome treated by psychotherapy and chlorpromazine. With Dr. Bruch, he has been examining the development of anorexia nervosa in the male. Dr. Cattell has continued his long term observations of that group of patients classified as pseudo-neurotic schizophrenia. He also is engaged on a study of patients with idiopathic oral lesions, in collaboration with Drs. Carlos J. Dalmau and Edward V. Zegarelli, of the School of Dental and Oral Surgery.

Dr. Sidney Malitz and his associates have under evaluation a number of new drugs presumed to be effective in the treatment of anxious, hyperactive and depressed patients. Several new phenothiazine derivatives show promise for quantitatively reducing anxiety and motor hyperactivity, while one drug, imipramine, seems to be effective against depression.

In addition to experiments in patients and normal volunteers with the hallucinogen, LSD-25, Dr. Malitz has found that two congeners of LSD-25, MLD and ALD, also have hallucinogenic properties. However, they have less psychotomimetic effect than LSD-25. Several of the drugs tested for their therapeutic effectiveness also have been tried as blocking agents against the "model psychoses," as the effectiveness of a drug as an antidote for an experimentally induced psychosis may provide a rapid indication of its effectiveness as a tranquilizing agent in spontaneously occurring psychotic disorders.

Dr. Murray Glusman, in collaboration with Dr. Joseph Ransohoff, of the Service of Neurological Surgery, is investigating the effects of drugs on the direct excitability of the hypothalamus in cats as shown by behavioral responses. Considerable progress has been made in eliciting regularly behavioral responses of rage by direct hypothalamic stimulation through implanted electrodes. The possibility of using this technique as a screening device for the potential effectiveness of tranquilizing drugs in humans remains strong.

The effect of LSD-25 on enzyme system activity is under examination by Dr. Magdalena Berger, Research Associate in Biochemistry, Department of Psychiatry. She also is attempting to determine the location and concentration of chlorpromazine in tissues, in collaboration with Dr. Leon Roizin, of the Department of Pathology. Only slight traces of chlorpromazine have been found to accumulate in the various organs of animals receiving the drugs for many months. In animals sacrificed after receiving a single large dose of the drug, the highest concentration of chlorpromazine was found in the lung, liver, kidney, spleen and gastro-



intestinal tract, and smaller amounts in the brain, testes and heart.

The follow-up studies of former patients treated by psychosurgery, mentioned in earlier reports, continues through the work of Dr. Malitz, Dr. Glusman, Dr. Bernard Wilkens and Dr. Cattell. Patients operated on as long as ten years ago are seen periodically in conference and an evaluation is made of their present functioning in comparison with their previous degree of disability. The use of the tranquilizing agents has brought the psychosurgical program to a halt; there have been no psychosurgical procedures performed since 1957. The number of referrals has greatly diminished, and both patients and their relatives are understandably reluctant to agree to an irreversible surgical procedure as long as some hope remains that the patient will receive relief through psychopharmacologic means. It has been observed, however, that a considerable number of patients, previously benefitted by drugs, appear to develop a tolerance and do not respond to increasingly higher dosages of the medication, thus relapsing to their former psychotic state. In addition, there still remain a number of patients refractory to treatment by the new pharmacologic agents, whose hyperactivity and anxiety continue. The impression persists that these groups of patients might benefit from psychosurgery. It is anticipated that within the next several years, unless more rapid strides are made than are at present in the development of effective drugs, the use of psychosurgery will increase.

Dr. Moses is continuing his long-range comparative psychoanalytic and psychotherapeutic studies of cases of essential hypertension, peptic ulcer, migraine, ulcerative colitis and obesity.

Dr. Sheldon G. Gaylin has initiated a team study at the Psychoanalytic Clinic concerned with the treatment of homosexuals.

The Division of Clinical Psychology, under Dr. Thetford, has initiated a number of research projects at the Medical Center. Some are concerned with the "body-image" problem. The concept of "body image" as an important construct in both theory and clinical practices has been the focus of a number of current and projected studies. Among these investigations is a study of the relationship between physiological reactions occurring during adrenalin infusion and induced modifications of response to various psychological tests, as well as the associated subjective feelings about the subject's body parts. A current area of investigation is the degree of familiarity which individuals have with their own bodies, and the positive or negative values they attach to these various bodily parts.

Dr. Schoenberg has completed work on a year and a half's study on the treatment by group psychotherapy of patients with multiple somatic complaints. The group of patients treated by this method showed

a significant decrease in complaints and clinic visits and an increased ability to deal with interpersonal problems.

### ***Staff Activities and Honors***

Throughout the year the members of the Service have delivered numerous professional and educational addresses, and have participated in a variety of community activities in the greater New York area concerned with mental health problems and organizations devoted to treatment of the mentally ill. A few of the most recent activities are listed below.

Dr. Holland was appointed Professor and Chairman, Department of Psychiatry, Emory University, Georgia. Dr. Senescu has accepted the post of Professor and Chairman, Department of Psychiatry, Medical College of Virginia, Richmond, effective in the spring of 1959.

Dr. Bruch was invited to report on her work by the Medical School of the University of Jerusalem and by the International Congress of Psychotherapy in Barcelona, Spain.

Dr. Viola W. Bernard served as Chairman of the Organization Committee of the Symposium, and Chairman of the Symposium, "Science, Health Programs and Group Opposition," at a meeting of the Group for the Advancement of Psychiatry. She was appointed Chairman of a Committee of the National Conference on Mental Health Teaching in Schools of Public Health, Nyack, New York, and accepted membership on the Subcommittee on Education and Training, of the Program Area Committee on Mental Health of the American Public Health Association.

Dr. Barad was appointed as a medical investigator for the Department of Mental Hygiene (Office of the Consultant on Services for the Aged) and as a consulting psychiatrist at the Home for Aged and Infirm Hebrews. Dr. Barad has recently been awarded a fellowship for study on "Dreams in the Aged."

Dr. Robert J. Campbell was appointed director of psychiatric residency training program at St. Vincent's Hospital and was visiting lecturer in psychiatry at Fordham University.

Drs. Cattell, Malitz and Kolb were elected Fellows of the American Association for the Advancement of Science.

Dr. Carr has continued as Eastern Regional Representative for the Society for Projective Techniques and the Rorschach Institute.

Dr. Davis served as psychiatric director of the James Weldon Johnson Mental Health Clinic (for child guidance).

Dr. Kolb served as visiting professor at both the University of Oklahoma and the University of Kansas. He delivered the Alpha Omega

Alpha Lecture at the former and the Gibson Lecture at the latter. Also, he was elected a Councillor of the American Psychiatric Association, a Trustee of the Foundations' Fund for Research in Psychiatry, and Vice-President of the Medical Board during the year.

Dr. William Langford continued to serve as President of the American Academy of Child Psychiatry and as Chairman of the Policy and Planning Committee of the American Orthopsychiatric Association. He was appointed to the Child Psychiatry Advisory Group of the American Board of Psychiatry and Neurology, concerned with preliminary activities directed toward certification in the sub-specialty of child psychiatry.

Dr. Leonard Scheinman served as Consulting Psychiatrist to the Board of Education of the City of New York, in connection with a comprehensive project of "talent detection," in the public schools. This project involves sociological, anthropological, pedagogical, psychological and psychiatric disciplines. Also Dr. Scheinman acted as senior consultant in charge of the residency training program of the Veterans Administration Hospital in Lyons, N. J.

Dr. William F. Weber served as psychiatric consultant to the Education Clinic of the City College of New York.

### *Acknowledgments*

The Service continues to benefit from and is grateful for the various teaching and research grants made to the Department of Psychiatry of the College of Physicians and Surgeons and the Research Foundation for Mental Hygiene of New York State Psychiatric Institute. We are indebted again to the Hazel Hopkins Ford Fund for support of psychosomatic studies.

The work of the Psychiatric Drug Clinic is supported by grants from the National Institute of Mental Health and the Schering Corporation.

# Radiology

WILLIAM B. SEAMAN, M.D., *Director*

The major efforts during the past year have been directed towards reducing the amount of radiation delivered during diagnostic examinations. Much has been accomplished in this regard by improved equipment, improved techniques and better methods of protection. A new X-ray exposure system has been devised, measurements of integral doses in diagnostic procedures are being carried out and image intensifiers are being installed. Much attention has also been given to the improvement of over-all efficiency. The number of patients requiring supervoltage radiotherapy has increased, re-emphasizing the need for additional equipment of this type.

## ***Staff Changes***

Dr. Morton M. Kligerman resigned to accept the position of Professor and Chairman of the Department of Radiology at Yale University School of Medicine. The department is keenly aware of the loss of Dr. Kligerman, but proud of this recognition. During 1958 Dr. Joseph M. Moynahan left to become the radiologist at the Knickerbocker Hospital. Dr. Leonard C. Doubleday resigned to enter private practice in Houston, Texas.

Dr. William J. Esposito joined the attending staff in July, 1958. The following assistant residents were appointed: Drs. Stanley S. Dunkelman, Jeanette H. Frenster, William D. Horrigan and George L. Ricketts, Jr. Dr. Preston Lee Leslie was given an appointment as a Visiting Fellow. Drs. Norman E. Chase, Arthur I. Hutner and Albert F. Keegan, Jr., completed their residency training.

## ***New Equipment***

The film processing area on the third floor of Presbyterian Hospital was completely redesigned and remodeled to permit installation of the new X-Omat rapid film processor. This machine requires only six minutes to develop, fix, wash and dry an X-ray film and can handle a peak load of 250 large films per hour. This has made it possible to check films and order re-examinations or additional views without unduly prolonging the patient's stay in the department. The constancy of the developing process has greatly diminished film wastage and has resulted in an over-all im-

provement in technique. Adoption of an improved film sorting system and the assignment of a radiologist to the processing area has greatly expedited reports of emergency examinations. Several studies have revealed that the emergency report has usually been telephoned and dictated thirty minutes after the patient had presented himself at the registration desk. Similar equipment has been ordered for the Harkness Pavilion.

Construction has begun on the new catheterization-angiocardigraphic suite on the third floor of Presbyterian Hospital. The equipment in this area will consist of a biplane film changer capable of exposing six films per second in two planes simultaneously, with exposures as fast as 1/1,000 second. An eight-inch image intensifier with cine-camera attachment will also be available for cine-roentgenography.

In the Neurological Institute a new fluoroscopic room for myelography has been installed, as well as biplane equipment for cerebral arteriography, utilizing two Fairchild cameras. This equipment not only speeds up the examination but reduces the risk to the patient by reducing the number of injections of contrast material required.

An X-ray generator and table were replaced in one of the general radiographic rooms in Presbyterian Hospital and a phototimer and moving grid was installed in the third fluoroscopic room in Harkness Pavilion. A laminagraphic attachment was added to one of the machines in the Urology Service to facilitate nephrotomographic studies.

New radium storage facilities, designed by Dr. Harald H. Rossi, Department of Radiology, and Mr. Francis de Friess, were constructed, and the radium storage area moved into the betatron building. The new facility makes it possible to store radium needles while threaded and permits threading and loading of applicators with less radiation exposure.

### **Research and Clinical Activities**

A review and analysis of all the cancers of the tonsillar region was conducted by Dr. Harold W. Jacox, Dr. Kligerman, Dr. Norah duV. Tapley and Dr. Robert A. Evans, and the findings were presented at the meeting of the American Roentgen Ray Society in Washington, D. C. At the same meeting, papers were also presented by Drs. J. Luther Jarvis and William B. Seaman, and Dr. Juan M. Taveras. Dr. Tapley presented a paper at the Sixth Inter-American Congress of Radiology in Lima, Peru. A clinical and experimental study of the effects of high oxygen tensions on the response of tissue to radiation was initiated by Drs. Jacox, Tapley and Seaman, and Dr. Cyril Sanger of the Anesthesiology Service. Dr. Jacox continues as Associate Editor of the *Journal of Radiology*, as abstractor for *Excerpta Medica* and as Co-Editor, with Dr. Kligerman, of the Radiation Therapy Section of the *Year Book of Radiology*. He was

reappointed representative of the Radiological Society of North America on the American Standards Association. Dr. Seaman represents the American Roentgen Ray Society on the same committee. Dr. Jacox became a founding member of the American Club of Radiotherapists. He is collaborating with Drs. Henry Clay Frick, II, James A. Corscaden and Howard C. Taylor, Jr., of the Service of Obstetrics and Gynecology, on a comparative clinical study of the surgical and radiological treatment of cancer of the cervix.

Dr. Josephine Wells, in collaboration with Dr. Charles M. Steer, Service of Obstetrics and Gynecology, and Mr. Robert A. Israel, Department of Public Health and Administrative Medicine, has completed a survey of the relationship of maternal pelvimetry to childhood leukemia. It was found that the percentage of mothers who had had pelvimetries was just as high in the control group as among mothers of leukemic children.

Dr. Taveras participated in numerous postgraduate courses, presented scientific papers at several national medical meetings, and was guest of honor at the annual meeting of the Medical Association of Puerto Rico. He continues his research with Dr. Edward B. Schlesinger of the Service of Neurological Surgery on use of the radioactive isotope technique for the localization of brain tumors. Dr. Seaman was guest speaker at the meeting of the Southern California Radiological Society in San Diego, Calif., and at the meeting of the Louisiana State Medical Society in Shreveport, La.

Dr. Gerhart S. Schwarz has studied the relationship between kilovoltage and radiographic effect which has resulted in the development of a unit system of radiography. This system is now being tested under working conditions and appears very promising.

Dr. Kent Ellis is investigating the effects of alternating positive and negative endotracheal pressure on the caliber of the bronchi with Drs. Seamus Lynch and Albert Levy, of the Service of Anesthesiology. Dr. Ellis and Dr. Alexander D. Crosett, Jr., are reviewing the techniques and clinical indications for bronchography.

Dr. Ralph Schlaeger is conducting a study of the abnormal gastric antrum and is also evaluating new agents for oral cholecystography. Dr. Meyer Alpert has begun an arteriographic study of bone and soft tissue tumors of the extremities.

Dr. Crosett has initiated a study of contrast materials, using radioiodinated agents. He has also established a resident training program in the clinical use of hepatic and renal function isotope tests and blood volume determinations.

Dr. Henry J. Powsner is working with Dr. Rossi and Dr. James B. Campbell, Neurological Surgery Service, to develop the radiographic

localization technique for the stereotaxic placement of beta ray emitting seeds in patients with Parkinson's disease.

Mr. George K. Nixon, chief technician, presented a scientific paper at the Mid-Eastern Conference of X-Ray Technicians and was appointed to the executive committee of the X-Ray Technological Association of New York City.

### *Hospital Physics Section*

The Hospital physics group (Dr. Rossi, Mr. de Friess, Mr. Richard Leibowitz and Miss Jane Heslin) has continued to provide assistance in treatment planning and consultation. A second survey of all X-ray installations was begun to ensure that all safety recommendations have been carried out and to determine changes in radiation output. A grant was obtained from the Damon Runyon Memorial Fund to conduct a systematic determination of integral doses received in diagnostic roentgenography. As a part of the study designed to reduce patient radiation exposure, a scintillation counter spectrometer has been constructed which may be operated in the region from 30 to 135 Kev. It is planned to study the spectral distribution of the radiation transmitted through phantoms to evaluate optimum combinations of kilovoltage and filtration.

The radioisotope laboratory, under the direction of Dr. Edith H. Quimby, Department of Radiology, continues to receive and standardize all radioactive isotopes and to dispense them to clinical and research departments.

Dr. Gioacchino Failla, Department of Radiology, is chairman, and Dr. Quimby, a member, of the Center's Joint Radioisotope Committee, which last year received seventy applications for use of radioisotopes.

Dr. Quimby presented a paper at the Sixth Inter-American Congress of Radiology in Lima, Peru, and also gave two series of lectures on radiation dosimetry at the Universities of Rio de Janeiro and Sao Paulo, Brazil.

Dr. Failla has continued to be active in work with the Atomic Energy Commission and other government agencies, both civilian and military, on problems related to atomic energy. He is consultant to several of the Atomic Energy Commission installations and is a member of the Review Committee of the Division of Radiological Physics and the Division of Biological and Medical Research of the Argonne National Laboratory. He is Chairman of the Radiation Instrument Panel of the Armed Forces Special Weapons Project, Vice-Chairman of the International Commission on Radiological Protection, and a member of the International Commission on Radiological Units. He also serves as a member of the Genetics Committee of the National Academy of Sciences, the Advisory

Panel on Medical Sciences of the Department of Defense, the Scientific Advisory Board of the Walter Reed Army Medical Center, and the Committee on Units, Standards and Protection of the American College of Radiology.

The International Commission on Radiological Protection met in the Radiological Research Laboratory in March, 1958. At that time the 1958 Publication Committee of the International Commission on Radiological Protection was organized, with Dr. Failla as Chairman and Dr. Rossi as a member. This Committee has now completed the preparation of new "Recommendations on Radiation Protection by the International Commission on Radiological Protection," which will be published in the near future.

Dr. Quimby is a member of the Advisory Committee on Isotope Distribution of the Atomic Energy Commission, the National Committee on Radiation Protection, the Committee on Handling and Disposal of Radioactive Isotopes of the International Commission on Radiological Protection, and of the Commissions on Education and on Radiological Units, Standards and Protection of the American College of Radiology. She is an examiner for the American Board of Radiology, a consultant for various medical groups, and on the editorial advisory boards of *Radiology* and *Cancer*. She is Chairman of the Subcommittee of the National Committee on Radiation Protection, which has completed a revision of the *Handbook on Safe Handling of Bodies Containing Radioactive Isotopes*. This has now appeared as *NBS Handbook 65*. She is also a member of Subcommittee M-1 (Standards and Measurements of Radioactivity for Radiological Use) of the National Committee on Radiation Protection.

Dr. Rossi is a member of the National Committee on Radiation Protection and is Chairman of Subcommittee 4 of this organization. He attended a meeting of the International Commission on Radiological Units in Geneva, Switzerland, in September, 1958. He is Chairman of the newly formed Committee III-c (Radiobiological Dosimetry) of the International Commission on Radiological Units and Measurement. In addition, he is a member of a new committee set up by this group to consider formulation of new radiation units. He is also a member of the Committee on Ionizing Radiation of the Mayor of the City of New York and serves on the Isotope Committee of St. Luke's Hospital.

Dr. Roberts Rugh, Department of Radiology, is a member of Subcommittee M-1 of the National Committee on Radiation Protection. He has just completed a chapter on "Effects of Irradiation of Gametes and Embryos" for a book entitled *Mechanisms in Radiobiology*, by Forsberg and Errera, to be published in 1959 by Academic Press.



*Statistics of Patient Care*

The statistics for radiotherapy and diagnostic roentgenography and comparison with the previous year are presented in the tables below. The figures for Presbyterian Hospital and Harkness Pavilion include 229 patients who were given 4,238 treatments with the Betatron; an increase of 50 patients and 678 treatments from 1957. Of the total of 1,272 radiotherapy patients, 327 were treated for benign conditions, while 945 were patients with a diagnosis of neoplastic disease. The differences in the number of examinations done in Babies Hospital and Urology do not reflect a change in the patient load or the amount of work performed but a change in the statistical method.

## RADIOTHERAPY DIVISION:

	1958		1957	
	<i>Treatments</i>	<i>Patients</i>	<i>Treatments</i>	<i>Patients</i>
Presbyterian Hospital . . .	5,290	406	5,245	348
Harkness Pavilion . . . . .	7,624	526	7,081	531
Neurological Institute . . .	3,485	195	4,538	221
Ophthalmology . . . . .	518	63	616	66
Radium . . . . .	48	48	69	67
Isotopes . . . . .	34	34	89	89
	<u>16,999</u>	<u>1,272</u>	<u>17,638</u>	<u>1,322</u>

## DIAGNOSTIC DIVISION:

	1958		1957	
	<i>Patient Visits</i>	<i>Examinations</i>	<i>Patient Visits</i>	<i>Examinations</i>
Presbyterian Hospital . . .	53,610	61,868	54,385	61,858
Harkness Pavilion . . . . .	25,936	31,229	26,972	31,475
Babies Hospital . . . . .	10,384	14,436	9,592	9,592
Neurological Institute . . .	7,722	11,946	6,291	12,568
Urology . . . . .	5,017	5,336	4,772	8,385
Ophthalmology . . . . .	715	1,164	705	705
Chest Survey . . . . .	13,629	13,629	16,603	16,603
	<u>117,013</u>	<u>139,608</u>	<u>119,320</u>	<u>141,186</u>

# Surgery

GEORGE H. HUMPHREYS, II, M.D., *Director*

The contribution which a hospital makes toward the quality of medical service rendered in the community is dependent upon a number of important factors. Every hospital, whether university affiliated or not, must consider first of all the medical education of its house staff. This will itself be dependent upon the ability and teaching interest of the members of the attending staff. Other hospital obligations and responsibilities are not easily balanced against this one, important as it is. There are many problems of income, rising costs, plant maintenance, wages, medico-legal risks and countless other details of administration which must be managed wisely. Yet in providing competent and constantly improving medical care, the hospital in the very nature of things has to be an extension of the medical school. This is particularly true today when so much basic knowledge is being "discovered" that a medical school of the not distant future may well be concerned principally with dissemination of this knowledge, leaving teaching of the applications to medical problems more and more to well-informed staffs on hospital services. During the transition already there is recognition of the need for earlier integration of clinical manifestations of disease with basic knowledge about its causes and mechanisms. Continuation of this relationship throughout the entire period of medical training is envisaged as a means of establishing a rationale for diagnosis and treatment rather than dependence on memorized signs and symptoms, laboratory values and, in surgery, purely apprenticeship learning of technical skills.

In teaching surgery today, the contribution which the hospital must make is greater than ever in the past. In last year's report, the increasing complexity of surgical procedures was pointed out, as well as the increase in the number of these procedures. Space, equipment, trained ancillary personnel at all levels must be provided or the knowledge which has been gained cannot be utilized to treat patients. Obviously, it is not solely apprenticeship training which student surgeons require to become competent in their fields. Hospital facilities, equipment, supplies, nursing and technical assistance are all implicit in an adequate training program. Surgeons themselves hope that the acquisition of new knowledge will lead to the ultimate total absence of need for surgery. Already many surgical procedures have been rendered obsolete or less frequently needed as a

result of development of more nearly physiological non-operative methods and agents for preventing, forestalling and treating surgical disease. Fortunately, the possibilities of curing hitherto incurable disease processes by surgery have risen out of these very efforts. These possibilities have created the need for the more complex procedures with which our hospital, like others, has been becoming familiar and which threaten to increase specialization as well as to destroy it.

In evaluating the contribution which a hospital can make and is making today toward the education of surgeons it is particularly noteworthy that in the past few years a larger proportion of resident surgeons trained on our surgical service have been appointed subsequently to responsible academic posts in other institutions than at any other period in the history of the Hospital. From this relatively small group of recent residents, appointments have been made to advanced teaching, research, administrative and clinical posts at Tulane, Albany, Oregon and Miami, not to mention similar appointments in other large medical centers such as Memorial in New York City and the Cleveland Clinic in Ohio. Other former residents occupy similar positions in institutions affiliated with the College of Physicians and Surgeons: St. Luke's Hospital, Bellevue Hospital, Roosevelt Hospital, and the Mary Imogene Bassett Hospital in Cooperstown, New York. Still others, of course, are to be found on the staff of the Service of Surgery at the Medical Center.

During the past year, Dr. Daniel S. Martin resigned as Assistant Attending Surgeon to accept an appointment as Associate Professor of Surgery at the University of Miami and director of the surgical research program at that institution. This involved the transfer of his experimental laboratory to Florida where the investigation of combined chemotherapy for cancer, begun here, is being pursued further. Clinical toxicity and therapeutic effects are being investigated at the Delafield Hospital under the supervision of Dr. Frederic P. Herter, as well as at other institutions. Dr. Don Otto Gore returned to his home in Jamaica in the British West Indies to accept an appointment as lecturer at the University of the West Indies Medical School. Dr. Sanford Weissman was appointed Assistant in Surgery and is helping in the teaching and training program at the Delafield Hospital. Dr. Norman B. Thomson, appointed Assistant in Surgery in February, resigned several months later in order to accept a full-time position in charge of the cardiac surgery program at the Children's Hospital of Buffalo.

One sees in these events an example of the expanding influence of a thoroughly hospital-backed educational residency program extending and improving the quality of surgical service rendered to the community. If analysed, the quality of this service is found to be dependent more upon

the vision of those who administer hospital policy in regard to the education of its professional staff than upon probably any other single factor. When the vision is broad and the understanding has depth and is sympathetic, the results will be these. Narrow vision in regard to the role of the professional trainees' relation to the hospital economy can only result in deterioration of standards of surgical practice regardless of the qualifications of the trainee or his chief or the wealth of the institution.

### *Staff Changes*

During the year, the Surgical Service lost four of its members, two by resignation, one by retirement and one by death. The resignations of Drs. Martin and Thomson have already been recorded.

Dr. Robert Stone Grinnell retired in 1958, after an association of thirty-seven years with the Presbyterian Hospital, as a member first of the house staff and then of the surgical attending staff. During four years as a student in the College of Physicians and Surgeons, he became well acquainted with the Hospital and the people who were to become his chiefs and associates after graduation in 1921. He has been associated with the Surgical Service since that time, except for a short period of training in Boston and a medical internship at the Hospital. From 1930 to 1937 he was Assistant Chief and Chief of the Surgical Clinic in Vanderbilt Clinic. He was quickly promoted to Associate Professor of Clinical Surgery and Associate Attending Surgeon.

He served in World War I as a Captain in the Infantry and as a Major in the Medical Corps during World War II for almost four years on the surgical service of the Presbyterian Hospital Unit (2nd General Hospital) in this country, England and France.

At Presbyterian, Dr. Grinnell was first associated with the Second Surgical Division, of which Dr. Hugh Auchincloss was Chief. During this period, infections of the hand became a field of particular interest to him, as it was of his Chief. Later his interests centered on problems of the colon, and in this field his studies in the laboratory and in the clinic have brought him world-wide recognition. His more recent contributions have been concerned with the relationship between cancer and benign adenomatous polyps and papillary adenomas of the rectum and sigmoid. His collaborator in this investigation has been Dr. Nathan Lane, of the Laboratory of Surgical Pathology.

Dr. Grinnell's association with the Service of Surgery has been so long and faithful that it is difficult to think that he is no longer one of its active members. Indeed, the latter is not altogether true because he still pursues his investigative work in our midst. The Surgical Service and

the University owe him much gratitude and thanks for the very real part he has played in the training of almost every member of its present attending staff. His ever ready willingness to help the house staff has been appreciated by all those who have trained at the Presbyterian Hospital since the present director himself was an intern. Steady, dependable, conscientious teachers, without whom no teaching service could function, men like Dr. Grinnell, get all too little recognition in their daily work.

The death of Dr. Thomas William Stevenson, Jr., which occurred February 22, 1958, is sorrowfully recorded. At the time of his death he was Chief of the Plastic Surgery Division of the Surgical Service, Attending Surgeon, and Professor of Clinical Surgery. He was born in Salt Lake City, Utah, March 27, 1904, the son of a physician and the eldest child in a family of four boys, three of whom became physicians. He had many interests in addition to medicine, most of them outdoor activities. He was an excellent fisherman and loved hiking and camping. Later, he became interested in gardening and horticulture, particularly the culture of trees and shrubs, in which he became expert. He was well-known in his locale for his interest in community planting. He grew and supplied the shrubs for several of the small villages in the vicinity of his home in Mount Kisco. He did things meticulously, beautifully. He was skillful at shop work, leatherwork and in other handicrafts. In choosing a medical field of special interest, these various aptitudes made plastic surgery a natural choice. While still a student at Harvard Medical School, he first became interested, however, in orthopedic surgery, through an association and friendship with Dr. E. A. Codman. Helping Dr. Codman prepare a book on the structure and function of the shoulder joint, he became thoroughly familiar with that subject and, incidentally, learned much about other skeletal structures. Later, when he specialized in plastic surgery, this experience seemed to have shaped his point of view in regard to the functional aim that plastic surgery sought to achieve, at a time when plastic surgery was struggling to pull itself away from its association in the public's mind with the beautician's trade. Restoration of function was always his conception of the primary objective of plastic surgery. He would tackle the problems of some of the most hopeless-looking hand, arm or lower extremity injuries and continue doggedly until he restored at least some useful function, usually achieving a beautiful cosmetic result as well. It is no wonder that his patients were devoted to him. He became a surgical intern under Dr. Auchincloss, whose knowledge of the anatomy and the function of the hand was extraordinary and his surgery of the hand was the most deft, meticulous, and beautifully executed exercise in anatomy and tech-

nique that one was likely to see. Dr. Stevenson learned a great deal during this association, as well as during a later association with Dean William Darrach as resident on the fracture service. Later, he was a founding member and president of the American Society for Surgery of the Hand. He finished his general surgical training as a fellow under Dr. Allen O. Whipple. In 1934 he was appointed the first resident on the Plastic Surgery Service, under Dr. Jerome P. Webster, and three years later received certification from the newly-formed American Board of Plastic Surgery in the first group to be certified. Twenty years after becoming the first resident on the Service, he succeeded Dr. Webster as Chief. He remained in that post until his death four years later, although a large part of that time was spent trying to make his way back from an illness he knew would be fatal, trying meanwhile to achieve the high aims he had set for the development of the Service as a full-fledged partner in a University Department of Surgery, devoted to teaching, fostering research and giving the best possible care to its patients. He seemed to be winning out and had actually begun operating again when suddenly his life was threatened and an emergency operation to save it put an end to his activities. But death did not supervene for another year — a tragic, hopeless year for his family, through which his devoted wife was constantly and encouragingly by his side.

Dr. Stevenson was a magnificent technician but always human and sympathetic. He had no patience with red tape, which irked him to the point of stubborn, quiet rebellion on occasion when it interfered with what he considered the best interests of his patients, staff, or service. He gave the best he had and by his example made it clear, gently but firmly, that he expected the same from others. He was never capricious in his judgments or decisions, but when he was convinced that something was right or wrong, he could not be swerved. There was no such thing as expediency or compromise in dealing with a situation. Yet he was thoughtful, considerate, gentle and loyal. He was devoted to his family and associates, albeit he spoke his mind when occasion demanded. Because he was so honest in his views, he was held in the highest esteem, even by those with whom he differed. No one who really knew Dr. Stevenson will be likely to forget him.

Dr. J. William Littler was appointed Attending Surgeon and Clinical Professor of Surgery on September 1, 1958. Besides bringing a broad experience in plastic and reconstructive surgery to the Medical Center, he is unusually qualified in the reconstruction of impaired and disabled hands. It seems logical that with his appointment there will develop an interservice team approach toward the care and management of these very important and demanding disabilities.

In August Dr. Edward B. Self was appointed Surgical Chief of Clinic to succeed Dr. Robert B. Hiatt.

### *Service Changes*

In November, the Hospital was the recipient of a grant from the John A. Hartford Foundation to be used for the clinical study of congenital and acquired heart disease. The grant will be used in part for the key staff of the new diagnostic unit being built by the Hospital in the Department of Radiology. The remainder of the grant will be used to staff and provide with technical equipment the new special recovery room which the Hospital is now constructing and providing with equipment, adjacent to the general recovery room. During the past year, experience with heart surgery here and elsewhere has made very clear the importance of expert detailed observation of the physiological changes occurring during the critical postoperative period following heart surgery, particularly, surgical procedures employing extra-corporeal methods of blood circulation and hypothermia.

An essential counterpart of these clinical developments has been the intensive study in the Experimental Surgery Laboratory of the physiological changes which take place during and after the employment of extra-corporeal circulation. A special laboratory has been set up in which trained investigators conduct these studies which play such an important role in following the clinical progress of patients who undergo open-heart surgery. This contribution is outstanding in the development of this most recent advance in the surgical treatment of otherwise crippling or fatal disease.

During the past year a unit for supplying sterile goods and equipment to the twelfth and fourteenth floors was installed on the twelfth floor. The unit facilitates greatly the care of surgical patients. Its usefulness, time and labor-saving features and special type of construction to prevent cross-contamination, are much appreciated by the surgical staff. Plans are under way for re-equipping the operating sterilizing unit on the eighteenth floor. This will require bringing the two operating rooms and the Emergency Unit on the third floor of Vanderbilt Clinic into use for some of the less serious operations.

The programs and arrangements for surgical staff conferences have been placed in the hands of a small committee headed by Dr. Milton R. Porter. As with the teaching program, closer integration is being achieved through conferences between the clinical surgery, surgical pathology and surgical experimental laboratory groups. Where the subject matter under consideration encompasses a segment of a broader

field, those interested in the other aspects of it are asked to contribute. So far, the programs have been outstanding and of great interest.

The rehabilitation of social service through the efforts of the Social Service Committee of the Medical Board has brought revived hope for re-establishing at its former high level that important phase of patient care concerned with the personal, family and employment problems of patients. The Surgical Service has always had the greatest admiration for the devoted effective workers assigned to surgery and is grateful for the high degree of cooperation with which they have assisted the members of the surgical staff. We are delighted at the prospect of a perpetuation of this relationship.

The changes made last year in surgical teaching for the second-, third- and fourth-year medical students have produced few, if any, hospital rearrangements but have proven to be of the greatest importance in the surgeon-student relationship, which in turn is reflected in the student's attitude toward the hospital and to the Surgical Service in particular. Actually, it is a major concern of both the Service and the College, for the well-planned development of the present idea as it is evolving is highly desirable.

### ***Patient Care Statistics***

	1951	1957	1958
TOTAL OPERATIONS			
Surgical Service.....	4,105	5,318	5,928
Per Cent Ward Operations.....	53%	38%	43%
CLASSIFICATION			
A. "Standard"			
Thyroid .....	364	326	310
Gastro-Intestinal .....	530	641	620
Appendix .....	203	189	164
Gall Bladder, Pancreas.....	341	469	432
Hernia .....	320	500	526
Other Abdominal .....	309	462	461
Rectal .....	307	335	338
TOTAL.....	2,374	2,922	2,851
B. "Complex"			
Thorax, Cardiovascular .....	164	359	322
Breast .....	328	640	542
Superficial and Plastic.....	675	1,064	1,288
TOTAL.....	1,167	2,064	2,152
C. Babies Hospital .....	564	422	683
Transfusions (Blood Bank total).....	13,537	12,934	12,626
Recovery Room (general and specialty surgical patients)....	7,771	10,326	10,525



The operative work load has not changed appreciably since the last report when it was pointed out that the "standard" operative procedures, which are the basis of surgical training, have not increased in number as much as the "complex" procedures that require greater experience and judgment for their performance and usually a greater amount of time, as well. During the past year there has been very little significant change in either the number or in the actual type of surgical procedures. It seems possible that the proportion of ward operations has reached a level at which it may remain for some time, now that hospital and surgical insurance have been so generally acquired, and some understanding now exists of the economic problems associated with providing competently trained surgeons for the community.

## **Research**

### **SURGICAL PATHOLOGY LABORATORY**

It is notable that during the past ten years the purely routine tissue diagnostic load of the Surgical Pathology Laboratory has more than doubled although the staff is the same size it was ten years ago. Despite this, not only has the quality of their contribution to patient care never been higher, but, in addition, the members of the staff contributed more than one-third of the scientific publications of the entire Surgical Service during the past year. Moreover, they have assumed an even greater load in the integration of hospital-medical student teaching of surgery than ever before, particularly in the third year. They are participating more closely and more frequently with the surgeons in projects having common objectives. In short, even though the purely scientific output of the laboratory continues to grow in volume and quality, there is lively and growing interest in cooperative projects involving studies of patients undergoing treatment, in the wards, the operating rooms, and surgical clinics. The natural evolution of this pattern of bringing basic disciplines into contact with clinical experience would seem likely to become a characteristic of the future medical-school-hospital relationship in clinical instruction at every level. In this fashion continuing cancer research studies are being made by laboratory scientists in collaboration with clinicians which directly affect the care of patients. Experimental investigation of the milk factor associated with the production of cancer of the breast in mice illustrates well this combined approach. At the present time the particular phase of the work, in which Dr. Cushman D. Haagensen was an investigator and continues to be a participant, is concerned with the virus-like characteristics of the substance. These are being investigated (1) under the electron-microscope, by Dr. Daniel

Moore in order to measure, if possible, the sizes of the particles; (2) for immunological characteristics of the milk factor, by Dr. Arthur Plescia and Dr. Michael Heidelberger, Professor Emeritus in Immunochemistry, Department of Biochemistry, using an anti-serum from rabbits immunized with the factor contained in mouse milk, and (3) by actually growing the milk factor in tissue cultures in the Laboratory for Cell Physiology, by Dr. Margaret R. Murray, Associate Professor of Anatomy, Department of Surgery, and Dr. Etienne Y. Lasfargues, Department of Microbiology. In addition to these investigations, also utilizing the laboratories of the basic sciences, research is to be carried out on the relationship between the hypophysis and breast cancer in mice, based on the well-known clinical observations on the altered behavior of mammary cancer in humans after hypophysectomy.

In like manner, studies made on the effects of combined therapeutic agents in causing arrests of growth and even regression of malignancies in animals in the laboratory of Dr. Martin are being translated into studies of the responses of human malignant growths to these agents. Tolerance to these drugs and toxic effects in humans are being evaluated under the supervision of Dr. Herter. A nicotin antagonist, 6-amino nicotinamide, which has demonstrated marked anti-cancer activity against a number of experimental tumors is the agent which has been studied and is now being used in the therapeutic trials. Tolerance and toxicity studies were formally reported at the April meeting of the National Cancer Institute. Combining various carcinostatic chemicals and using them in conjunction with radiotherapy are logical next steps in the development of this approach to the treatment of cancer.

#### SURGICAL BACTERIOLOGY LABORATORY

Dr. Herter and Dr. Thomas V. Santulli, with the assistance of Dr. Robert Beals of the house staff, have had the cooperation and assistance of the Surgical Bacteriology Laboratory in the investigation of suture line recurrences in cancer of the large bowel. Sterilization of the bowel by antibiotics has been suggested as a possible predisposing factor in the seeding and growth of these malignant recurrences. The assumption has been that the normal intestinal flora is a deterrent to this aggressive behavior. Attempts were made to sterilize the intestines of rabbits and then to perform anastomoses in the presence of viable cancer cells. The attempts have not yet succeeded in producing cancer growth along suture lines. This work illustrates again, however, the close cooperation which exists between clinical and laboratory services for what is hoped to be the ultimate benefit of patients.

The Laboratory of Surgical Bacteriology, under the supervision of Miss Balbina Johnson, has collaborated in a greater variety of clinical and experimental projects than have any of the other laboratories. The great concern over operative wound infections caused by resistant staphylococci in hospitals throughout the country resulted in the concentration of effort to forestall the occurrences of such a situation on our surgical services. This required extensive bacteriological sampling of environment and personnel in operating rooms, wards, clinical laboratories and chance contacts. Bacteriophage typing was made available through the typing laboratories of the Department of Microbiology and of the Institute of Ophthalmology. The data so collected then had to be analyzed, procedural directives prepared and made effective. To date the incidence of serious wound infection is fortunately low, but complacency in such a potentially dangerous situation simply renders it more hazardous. An awareness of the great risk of infection, and attention to the principles of surgical asepsis are probably the greatest deterrents to its occurrence. It is the subject of frequent discussion in meetings and conferences.

The bacteriological aspects of the association between ammonia intoxication seen in severe nutritional complications of cirrhosis of the liver and the bacterial flora of the gastrointestinal tract has been the concern of the Surgical Bacteriology Laboratory in a study with Drs. Arthur H. Blakemore and Arthur B. Voorhees, Jr., of the occurrence of hepatic coma in some patients following portacaval shunt. The services of the laboratory also were utilized by Dr. Hiatt in determining that the enzyme lysozyme does not enhance the virulence of enteric staphylococci or their production of toxin. Acute ulcerative colitis was found to persist even though the fecal stream was rendered sterile by the use of antibiotics. These and other studies involving use of histamine and acetylcholine to produce responses resembling clinical ulcerative colitis in animals are to be extended in a physiological and biological laboratory being set up by Dr. Hiatt. The further study is planned of intestinal diseases, including regional enteritis, the differential diagnosis of congenital megacolon (megarectum type versus genic constipation) and the evaluation of Chlorpactin on the large intestinal flora.

Evaluation of the role of staphylococci in the production of serious post-operative colitis is being analyzed by Dr. Charles W. Findlay, Jr., and Miss Johnson, following three years of study of the bacterial flora of the gastrointestinal tract of surgical patients who did not develop this complication, as well as of those who did. No positive conclusions have yet been drawn from this study as to the factors determining the degree of severity or the cause of death in these cases. It is an extremely difficult

problem to solve. On the basis of preliminary analysis it seems unlikely that the presence or absence of staphylococci in the stool is either a very good guide to management or an index of prognosis.

All of the above clinical and experimental work was undertaken and carried out by the Laboratory of Surgical Bacteriology in addition to fulfilling the large demand made upon it for the routine examination of bacteriological specimens for general surgery and the surgical specialties — an impressive record of accomplishment.

#### EXPERIMENTAL SURGERY LABORATORY

The Experimental Surgery Laboratory is another focal point for the investigation of problems which have direct bearing upon patient care. The laboratory is under the general direction of Dr. Ralph A. Deterling Jr., and the immediate supervision of Miss Sue Montgomery, the nurse in charge, who during the past year succeeded Miss Sally Miller. Research has been continued on extracorporeal circulation, with the participation of Drs. Shivaji B. Bhonslay, Dr. Yousif Al-Naamen, Department of Surgery, Dr. Ottheinrich Hase and members of the technical staff. Valuable physiological data have been accumulated during cardiopulmonary bypass, with the aid of Dr. Duncan A. Holaday, Service of Anesthesiology, and Mr. Wallace Luke, Department of Surgery. Studies of cardiac arrest by anoxia and chemical agents were reported at the Congress of the International Society of Angiology. Other studies concerned evaluation of oxygenators and methods of implanting artificial mitral valves, the latter with the assistance of Dr. Ferdinand F. McAllister.

Research on arterial grafts has continued with the aid of Drs. Bhonslay and Al-Naamen. Dogs with homografts in the aorta for over eight years have been studied. Evaluation of grafts preserved for over five years by several methods are being readied for presentation in June in collaboration with Dr. Bhonslay. In coordination with Dr. Orman Julian, of the University of Illinois, a woven dacron arterial prosthesis has been developed and has been further improved during the past year.

With Dr. Hase, an evaluation study of contrast media was conducted by coronary visualization. A special apparatus was developed with the help of Dr. Holaday for accurately timed injection and X-ray exposure. Dr. Kent Ellis and Dr. Gerhart S. Schwarz, both of the Service of Radiology, were very helpful in this project.

The further development of equipment for direct phonocardiography was pursued with Dr. William M. Rogers, of the Department of Anatomy, with the assistance of Dr. James R. Malm. Studies of specific areas

of the heart and great vessels of dogs and cardiac surgical patients have added to basic knowledge regarding valve sounds and murmurs.

It is clear that much research relating to the clinical aspects of heart and blood vessel surgery are carried out in this experimental laboratory. Here, new ideas are tested, preliminary steps are taken, technical difficulties worked out, anatomical and physiological problems investigated and long series of experiments performed before any of the procedures reach the clinical level.

Dr. McAllister has conducted various investigations into problems of peripheral disturbances of the circulation, such as the comparison of the effect on collateral circulation of end-to-end as contrasted with bypass grafting in arterial occlusion; study of the rate of deposition of cholesterol in the arteries of exercised as contrasted with non-exercised dogs; the effect of portacaval shunt on experimental atherogenesis; studies of the effect of adrenalectomy on accelerated atherogenesis seen in exercised dogs; and experimental studies on mitral and aortic valve replacement.

Dr. Aaron Himmelstein continued his experimental work on pulmonary hypertension in animals. Dr. Paul Gerst, working with Dr. Holaday, investigated experimentally the results of acute hemorrhage on pulmonary circulation.

#### SURGICAL METABOLISM UNIT

Research activities in the Surgical Metabolism Unit have continued along a variety of lines under the supervision of Dr. Harold G. Barker. There has been a continuing desire on the part of the house staff to acquire training in this type of research, and the policy of encouraging residents to spend a six to twelve-month period in full-time research fellowship has continued. During 1958, Dr. Beals completed his year in this capacity and arrangements were made for Dr. Arnold Mittleman to spend the second year, starting in January 1959. Dr. Frank Gump, who has been working with Dr. John F. Prudden, has spent a portion of his time on projects in the Surgical Metabolism Unit. Dr. Robert Shaw's work in the hemodynamics of blood flow in vessels has been sponsored by Dr. Barker, although the present phase of the work is being carried on at the National Heart Institute.

#### RESEARCH PROJECTS

During 1958 the project receiving the most attention has been the evaluation of fat digestion and absorption in various disease states and work is also under way to clarify the normal processes of fat absorption.

In these studies materials tagged with radioactive isotopes are used. The basic investigations are being aided greatly by the addition of Dr. Robert P. Noble, of the Service of Medicine, to the team. He has brought new techniques to bear on the problem including paper electrophoresis of lipids and ultracentrifugation. Others working on the fat absorption project are Drs. Malm, Beals and Gump and Dr. Paul di Sant'Agnesse, Service of Pediatrics, Dr. Michael Lepore and Dr. John Wood, both of the Service of Medicine.

The study of adrenal steroid physiology has progressed with Drs. Mittleman and Beals playing important parts. The changes found during open-heart surgery have been studied with the cooperation of Drs. Deterling and Bhonslay. A detailed study of aldosterone physiology pre- and postoperatively has been carried out in patients with cirrhosis of the liver and ascites who have undergone portacaval shunting.

A study of the role of intestinal bacteria in the production of ammonia intoxication in patients with portacaval shunts is continuing. In this work it has been found that antibiotics seem to be useful in enabling the patient to take a relatively high protein diet without the danger of hepatic coma. Dr. Voorhees has participated in this project.

A long-term investigation of electrolyte and steroid physiology and the clinical aspects of cirrhosis of the liver with ascites has been continued. A growing series of such patients has been studied before and after portacaval shunting and it becomes clearer every year that the operation can be expected to relieve more patients of their ascites. Dr. Blakemore has participated in the clinical aspects of this work.

Dr. Edward L. Howes is continuing research on the identification of the mucoproteins of tumors in which the relationship of anti-enzyme activity to tumor growth has been studied. Two or three new substances have been found with unsuspected capacities to stop tumor growth in laboratory experiments. The clinical application of enzymes of *Cl. histolyticum* in the treatment of third degree burns is the subject of a paper at present being completed. It has been shown that collagenase used with appropriate antibiotics will reduce the number of bacteria present, whereas the use of antibiotics alone will not do so, particularly in the presence of heavy bacterial contamination. Collagenase is now being produced on a commercial scale and will become available for clinical use next year. This work is a product of extensive experimentation carried out during the past few years that has been aimed at the elucidation of the roles played by enzymes and mucoproteins in the homotransplantation of tissues.

Dr. Edmund N. Goodman, with Dr. Henry Colcher and Mr. George

Katz, Department of Surgery, has extended the use of the electro-gastrogram to include the study of postgastrectomy states, in collaboration with the Department of Radiology, using an image intensifier. By these combined methods, various phases of the motor functions of the esophagus, stomach and small intestine can be coordinated with electrical phenomena observed at these sites in normal and postoperative states, as well as in diseased states. It is proposed that an interdepartmental program in gastrointestinal research be organized, utilizing the laboratory for the study of the medical and surgical clinical conditions.

A considerable variety of purely clinical studies have been carried out during the past year by members of both the house staff and the attending staff. Drs. Blakemore and Voorhees received a generous grant from Mrs. Thora Ronald McElroy for the purpose of supporting clinical research in liver disease. It is anticipated that this will be used in studying the function of aldosterone in the individuals with cirrhosis complicated by ascites. Dr. Joseph W. Jailer, of the Medical Service, is associated with this project. Under the auspices of the Rockefeller Foundation, Dr. Jan Slowikowski, Department of Surgery, will conduct preliminary studies on the experimental transplantation of liver in animals.

Dr. Himmelstein pursued his experimental work in the cardiopulmonary laboratory with Dr. Alfred P. Fishman and his group, Service of Medicine, studying the effect of occlusion of one pulmonary artery by a balloon catheter on bronchial flow. Cardiac catheterizations were carried out with Dr. Sidney Blumenthal, Service of Pediatrics. The work on blood flow to one lung was presented with Dr. André F. Cournand's group, of the Department of Medicine, at the meeting of the American Association for Thoracic Surgery in May.

Dr. Carl Feind reports that the study of the postoperative treatment of head and neck cancer by chemotherapy combined with radiotherapy will probably be undertaken during the coming year. Tumors of this region lend themselves ideally to such a study, since both incompletely excised primary and metastatic disease are noticed here sooner and with greater certainty than at less conspicuous or hidden anatomical sites. Hormonal influence on various types of goiters continues to be studied. The homotransplantation of very young fetal parathyroid and thyroid tissue is being undertaken in efforts to meet serious chronic deficiencies in gland hormones incidental to extensive surgical removal of malignant disease. Experimental work suggests that if viable tissue is obtained from a fetus under ten weeks of age a successful functional homologous transplant will probably result. Attempts to accomplish this are being made

with the cooperation of members of the Service of Obstetrics and Gynecology, Surgical Pathology Laboratory, and Dr. Kermit L. Pines, Medical Service.

An idea originated by Dr. William Healey, recently a member of the surgical house staff, has resulted in the construction and evaluation of an experimental solid, flexible gastrointestinal bougie, somewhat like a Miller-Abbott Tube, fitted with Geiger counters designed to facilitate the location of obscure bleeding sites in the gastrointestinal tract. Work of the development of this piece of apparatus is being further aided by Dr. David V. Habif, Dr. Richard White, a surgical resident, Dr. Wellington Stewart, Service of Pathology, and Mr. Robert C. K. Riggins, a medical student. The technical details of construction are being worked out and the identifying radioactive isotope is being selected. Dr. Habif is continuing the investigation of the causes of lymphedema of the arm following radical mastectomy.

Long-term clinical studies on the natural courses and characteristics of certain disease states are being made on breast cancer by Dr. Grant Sanger, and on various types of goiters by Dr. Lawrence W. Sloan.

### *Visitors and Meetings*

Dr. Philip Sandblom, Professor of Surgery and President of the University of Lund, Sweden, was invited to become Professor *pro tempore* of the Department of Surgery during a week's visit in October. Professor Sandblom participated in the activities of the Surgical Service and became acquainted with the various phases of clinical and investigative work, as well as with the methods used at the Hospital and College for the training of medical students and surgeons. He addressed the combined medical and surgical staff group on "Venous Thrombosis in Experimental and Clinical Surgery."

Mr. Rodney Smith, M.S., F.R.C.S., Chief of Surgery at St. George's Hospital in London, was a visitor to the Department in November. At one of the Service conferences during his visit, he addressed the members of the staff on "Surgery Before and After John Hunter," a delightful dissertation reflecting painstaking study of a congenial subject.

In December a program was given for the Brooklyn and Long Island Chapter of the American College of Surgeons. A large group of surgeons attended an operative clinic, had luncheon, and in the afternoon attended a presentation of the work going on in clinical and experimental research by members of the staff.

In January the Allen O. Whipple Surgical Society met in Philadelphia at the University of Pennsylvania Medical School as the guest of Profes-



sor I. S. Ravdin and his staff. A stimulating program was presented, dealing with concepts of undergraduates and graduate training in surgery and with the methods by which this is implemented in today's teaching, including the role of contemporary visual aids.

In April the Service of Surgery presented an operative and clinical program for its own former members who returned for a visit on Surgical Alumni Day. In October, at the time of the American College of Surgery meetings in Chicago, arrangements were made for a cocktail party for present and former members of the Surgical Service staff in attendance at the meetings.

Once again in October, the staff of the Mary Imogene Bassett Hospital in Cooperstown extended its warm hospitality to the members of the Service and their wives. Besides renewing friendships and enjoying the exquisite show of fall foliage in that area which is unmatched at that time of the year, the group at Cooperstown had prepared a medical program of unusual interest. It centered principally around the factors influencing the homotransplantation of tissues, more specifically the homologous transplantation of bone marrow to a young leukemia patient following total body radiation, work which is attracting widespread interest. Dr. Alfred Jaretzki, III, a former surgical resident here, described the experimental adaptation of the Blakemore hemostatic esophageal tube to an operation for esophageal achalasia.

### *Honors, Elections and Publications*

Many members of the surgical staff were recipients of honors, were elected to distinguished offices and scientific and clinical societies, contributed sections to surgical texts and books of reference or produced outstanding medical films from their experience in special fields of surgery.

Dr. George H. Humphreys, II, was elected a member of the Board of Governors of the American College of Surgeons for 1958-1959, as a representative of the American Association for Thoracic Surgery. He was chosen Chairman of the Heart Association Symposium held in February. His medical film depicting the embryology of congenital heart defects won the motion picture award of the American College of Surgeons.

Dr. Virginia Kneeland Frantz received the Elizabeth Blackwell Citation of the New York Infirmary; she was elected First Vice-President of the American Goiter Association, and in her honor a research laboratory was donated to Bryn Mawr College at the Fortieth Reunion of her class (1918) by her classmates as part of their reunion gift. The book

*Introduction to Surgery*, written by Dr. Frantz and Dr. Harold D. Harvey, was completely revised by them in preparation for publication of its fourth edition. Dr. Frantz also completed a manuscript on "Tumors of the Pancreas" for the *Atlas on Tumor Pathology*, to be published by the Armed Forces Institute of Pathology, Washington, D. C.

The degree of D.Sc. (*hon. causa*) was conferred upon Dr. Haagen-sen by the University of North Dakota.

An honorary citation and a plaque for distinguished contributions in the field of plastic surgery was given to Dr. Webster at a dinner in his honor given by the American Society of Plastic and Reconstructive Surgery. The citation was made by Dr. Samuel Milton Dupertuis, one of the first residents in plastic surgery under Dr. Webster at the Columbia-Presbyterian Medical Center. An inscribed silver salver was presented to Dr. Webster in November on the conclusion of his period of service as First Visiting Professor of Plastic Surgery at the University of Rochester School of Medicine and Dentistry.

Drs. Blakemore and Voorhees completed revision of the section on "Primary Liver Disease" for the seventh edition of the Davis-Christopher *Textbook of Surgery*, now in press. They also contributed the section of comments and discussion on the "Technic of Portacaval Anastomosis" in Dr. John Madden's book entitled *Atlas of Technics of Surgery*, published in 1958. Preparation of a monograph on portal hypertension, to be published by the Charles C. Thomas Company, embodying the data collected from over 300 cases of portacaval shunts is nearing completion. They also wrote a section on "Complications of the Portacaval Shunt Procedure" for a book by Dr. Curtis P. Artz entitled *Complications of Surgery and Their Management*.

Dr. Herbert Maier delivered the Second John Alexander Lecture at the University of Michigan on "The Role of Pulmonary Lymphatics in Certain Pulmonary Diseases." Dr. Habif was elected Chairman of the Pre- and Postoperative Care Course of the American College of Surgeons, the Secretary-Treasurer of the Halsted Society and a member of the New York Surgical Society Council. Dr. Habif is the author of a chapter on "The Prophylactic and Therapeutic Uses of Antibiotics in Trauma," in the book entitled *Trauma*, being edited by Dr. Harrison L. McLaughlin, of the Service of Orthopedic Surgery. Dr. Robert H. E. Elliott, Jr., was elected President of the Allen O. Whipple Surgical Society for the years 1958 and 1959. Dr. Elliott also wrote the chapter on "Thermal Injuries" in Dr. McLaughlin's book. Dr. Deterling was re-elected Treasurer-General of the International Cardiovascular Society. Dr. Findlay and Miss Johnson were co-authors of the chapter entitled

"The Use of Neomycin in Surgical and Wound Infections" in S. A. Waksman's *Neomycin*, and Dr. Robert H. Wiley contributed the chapter on "Injuries to the Thorax." Dr. Sloan contributed the chapter on "Injuries to the Abdomen" in Dr. McLaughlin's book and comments and discussion on "Thyroidectomy" in Dr. Madden's book. Dr. Santulli contributed the discussion and comments on operations for "Intussusception, Malrotation and Annular Pancreas" in Dr. Madden's book.

# Urology

JOHN K. LATTIMER, M.D., *Director*

The Squier Urological Clinic has continued its program of orderly expansion and increased efficiency during the year 1958. Remodeling and new construction work have made the physical facilities much more efficient and pleasant for both the patients and the staff. The increasing load of patient care, teaching and research has been taken care of smoothly and rapidly. Additional new members have stimulated the entire staff to increased effort and an expansion of their horizons. As evidence of this trend, the members of the Urology Service are submitting seventeen completed research projects for the annual competition of the New York Urological Society, in comparison with the one or two submitted in previous years.

## *Cooperative Projects*

Cooperative enterprises with the Services of Radiology and Obstetrics and Gynecology, in addition to our previous joint efforts with the Departments of Physiology, Biochemistry, Neurological Surgery, Plastic Surgery, Surgical Pathology, and Electrical Engineering, Columbia University, are bringing concrete rewards in additional patient material and new techniques, and, as always, new problems.

We are fortunate in having had distinguished visitors from many parts of the world. Several members of the Service have made extended trips to Europe and the Near East to give lectures and discuss research problems.

## *Staff and Service Organization*

Dr. George W. Fish has been re-appointed Senior Civilian Consultant in Urology to the United States Army. He has also been re-appointed Consultant in Urology to the United States Military Academy at West Point.

Additions to the ward and clinic staff have been made to handle the increasing number of patients, and our resident staff has been increased by the addition of two research fellows, one primarily concerned with our well-known study of genito-urinary tuberculosis. The training of the staff in general continues with an expanding schedule of evening lectures by eminent speakers not only from New York but from all over the world.

There has been additional emphasis on anatomy and vascular and intestinal surgery in residency training, which will make our staff better able to handle the unexpected problems that arise in connection with the more radical operative procedures now carried out on the Service.

### *Service Statistics*

There were 2,380 admissions to the Urology Service this year, making a grand total of 46,574 admissions since the inception of the clinic. During the year, 935 operations were performed.

### *Advances in Therapy*

Among the recent advances resulting from research are improvements in the diagnosis and treatment of prostatic carcinomas. Better methods of biopsy and anatomically precise methods of surgery are yielding increasing benefits to the patients, year by year. It is at this Center that improvements in methods may be recorded for perineal punch biopsy, radical retropubic prostatectomy and, eventually, we hope, transpubic prostatectomy.

In the field of reconstructive surgery of congenital anomalies which require repair early in life, new operative approaches have been introduced with gratifying results in restoration of function. Specific instances are improvements that have been accomplished in the correction of intersexes and the repair of exstrophy, penile deformities and of obstructions within the course of the urinary tract. The improvements have resulted both from use of new procedures and better understanding of the underlying defects. It is our aim to gain further understanding of the underlying causes of these defects in the coming years.

The causes of benign prostatic hypertrophy, a condition which afflicts so many male patients between the ages of forty-five and seventy, remains an enigma in spite of work on the problem here and in other institutions. In patients undergoing prostatectomy either by open operation or by cystoscopic approach, a more precise analysis of the pattern of blood loss and the causes of excessive bleeding has already led to important preventive and corrective measures. Not only can we predict with fair certainty those patients likely to undergo considerable bleeding at operation, but we now have specific methods for correcting these deficiencies.

In the complex problem of kidney stone formation, new preventive methods have proved their worth in the treatment of almost all of the known types of stones.

A specific remedy has been found for kidney stones of one type that are caused by infection with certain types of bacteria. A new drug, which

acts on an enzyme system of the bacteria, offers promise in the management of this type of calculous disease. More rigorous metabolic tests of stone-forming patients and new chemical analyses give us some assurance that we may be able to promise comfort to a large number of these patients.

In the field of antibiotics and infection, vigorous study by Dr. Harry Seneca of the resistant bacteria which are becoming a serious problem throughout the world has brought forward into clinical use five new agents of particular effectiveness. Continuing detailed studies of bacteria, primarily occupied with those invading the urinary tract, have given new perspective to the understanding of the classification and nutritional requirements of these bacteria. It is hoped that better insight into their diet will provide means for being able to "starve to death" the bacteria.

### *Advances in Research*

In the field of repair of congenital defects, preoperative hormonal treatment has been shown to be a feasible and safe means of advancing the age at which some defects of the male genitalia, such as hypospadias, can be corrected. The placing of plastic valves to substitute for both the uretero-vesical valve and the valve at the bladder outlet has been carried out by Mr. Tom Arouni, Department of Urology, and Drs. Clement A. Furey and Hans H. Zinsser. Continuing improvement of surgical repair procedures in patients with absence of the abdominal musculature has been achieved by Dr. Truman D. Boyes and Dr. Lattimer. A study of anomalies of the ureters has been carried out by Dr. J. Timothy Donovan, Dr. Aurelio C. Uson, of the Department of Urology, and Dr. Meyer M. Melicow. A further analysis of the results of treatment of children with undescended testicles has been carried on by Dr. Louis J. Dougherty and Dr. Furey. The condition of cystic disease of the kidney has been studied in considerable detail, and a new classification proposed by Drs. Donovan and Uson. Continuing studies in classification of sexual anomalies and gonadal neoplasms in pseudohermaphrodites have been carried out by Dr. Melicow, Dr. Uson and Dr. Philip B. Jensen. Dr. Furey is continuing his research in Peyronie's Disease. Dr. Mero R. Nocenti, of the Physiology Department, has served as consultant in a study of an experimental aspect of this condition, and it is hoped that shortly it will be possible to produce fibrous tissue in the rabbit. Once this has been accomplished, various substances will be tested to determine which is the best for the elimination of the scar tissue. Dr. James B. Campbell, Service of Neurological Surgery, has successfully treated neurogenic bladder disorders in a selected group of children by surgery releasing adhesions which caused traction on the spinal cord.

In the field of cancer, Dr. Perry B. Hudson and his group — with Dr. Otto M. Lilien, Department of Urology, continue working on principles of cell division; Dr. Thomas D. Price, Assistant Professor of Biochemistry, Department of Medicine, on the chemistry of the nucleic acids; and a steroid study group under Dr. Michael E. Lombardo, Associate in Biochemistry, Department of Medicine — have focused their attention primarily on cancers of the prostate gland and disorders of the adrenal gland. Drs. Melicow and Uson have launched a full scale attack on the problem of bladder tumor with the help of Dr. C. Andrew Bassett's tissue culture laboratory group. Increasing our chemical study along the lines originally propounded by Dr. Eric Boyland, England, with whom Drs. Melicow and Zinsser had the good fortune to consult, may yield useful results very soon. Further experience in the production of safe, intracavitary sources of radiation to be used for superficial radiation of the bladder in cases of bladder papilloma have been carried out with the help of the radiological research laboratories under Drs. Gioacchino Failla, Edith H. Quimby and Harald H. Rossi, and by Miss Joan Wolff, Department of Urology, and Dr. Zinsser. Dr. Frederick S. Marshall and Dr. Melicow have recently finished a study of the differential diagnosis and treatment of carcinoma of the urethra in women. Dr. Sam T. Knappenberger and Drs. Uson and Melicow have completed a study on diverticulum of the bladder and the very malignant tumors which they may occasionally contain.

In the study of the kidney stone problem, cooperative projects have been carried out with Dr. C. Andrew Bassett, Orthopedic Surgery Service; Dr. Zacharias Dische, Professor of Biochemistry, Department of Ophthalmology; and Dr. Joel A. Dain, Department of Urology, with the help of Dr. Igo Light, Mrs. Alida Winocour and other members of the Department of Urology staff. A study of the mucopolysaccharides in the urine of patients forming stones has been carried out. More rapid methods have been developed for use of automatic instruments for chemical analysis of some of routine substances, such as calcium. A new, non-irritating and non-toxic material has been utilized for the dissolution of stones within the kidney, and materials have been devised which may prevent the troublesome calcium incrustations which form on indwelling tubes, secondary to infection. The effect of fruit juices and beverages on the acidity of the urine has been studied by Dr. Morey Wosnitzer and Dr. Light. The final phases of an experiment on ultrasonic lithotresis in laboratory animals are being carried out by Dr. Lattimer, Dr. Harold Lamport, Yale University School of Medicine, and Dr. Stanley B. Braham, with the help of Prof. Cyril M. Harris, Electrical Engineering, Columbia University, and the Center's engineering staff.

A study of patients with hyperparathyroidism has been conducted by Dr. Ralph J. Veenema and Dr. Zinsser; refinements of metabolic tests permit more accurate study of these patients. With the help of Dr. Frank W. Longo, two new materials have been tested for inhibition of uric acid and calcium-containing stones, and were found to be useful.

In the field of infection, Dr. Seneca continues his study of the properties of *Trypanasoma cruzi* antigen for diagnosis and therapy, and has made a detailed study of *A. aerogenes* and other pathogenic genito-urinary organisms, and has evaluated their response to several new agents. A study of Madribon was carried out with Dr. Knappenberger, and with the help of Dr. Dougherty, the usefulness of the new antibiotic Kanamycin was investigated. Kanamycin has also been introduced for the treatment of selected cases of genito-urinary tuberculosis and in combination with Thiocarbanidin, an oral anti-tuberculosis agent, has proved effective in a number of patients to whom it has been given. It is hoped that in the near future the Service will have more extensive laboratories for the study of sensitivity of the organisms to various drugs, and that more rapid and effective methods will be available for the separation of bacteria from the large volumes of urine. Two new topical antibiotics and one long-acting sulfonamide have been tested clinically for their effectiveness in urological infections by Drs. Lattimer and Zinsser. Mr. Arouni, working with Dr. Seneca's group, has successfully produced experimental pyelonephritis in rats, using organisms of urological significance, and is continuing his study of the use of corticoids to prevent fatal scarring of the kidney from eventually occurring in these infections.

In the field of tuberculous infections of the kidney, Dr. Gil Vasquez, Urology Department, with Dr. Lattimer, has been investigating the danger of contagion from the urine of patients with tuberculous infections of the urinary tract. A large group of patients are being studied here at Presbyterian, and the Service is also cooperating with the study groups at the Bronx Veterans Administration Hospital and other government institutions. Dr. Boyes participated in a study of patients with massive destruction of the kidneys by tuberculosis who had been treated medically, and not surgically. The results were encouraging, indicating that surgery may well be avoided in most of this group of patients.

In the field of fertility investigation, with the aid of Mr. Thomas N. Chase and Mr. Robert K. Boese, both of the Urology Department, electronic methods were devised for estimating the motility capacity of large enough samples of spermatozoa to give them statistical significance. A small group of patients were significantly helped by somewhat more extensive hormonal study than heretofore has been practiced in the estimations of male potential.



### *Staff Activities*

Talks given by Dr. Lattimer in 1958 included those at national meetings of the Veterans Administration, the American College of Surgeons, the American Academy of Pediatrics, the American Association of Genito-Urinary Surgeons, Pediatric Urology Group, the American Urological Association, Pediatric and Urology Section of the New York State Medical Society, World Medical Association's Colloquium on Resistant Infections and the New York Academy of Medicine's Rudolf Virchow Medical Society.

During the year, Dr. Seneca gave talks before the American Society of Tropical Medicine, Miami, Fla., and at the Annual Antibiotic Symposium in Washington, D. C. Dr. Zinsser gave talks before the Huntington Postgraduate Medical Symposium in Huntington, West Va., and the Madrid University Medical School in Spain. With Mr. Chase's help, he presented the work on sperm motility simultaneously in Montreal, Canada, before the International Fertility Association, and in Paris, France, before the International Congress on Medical Electronics.

The Service was host to the Brooklyn and Long Island Chapters of the American College of Surgeons, and after a welcome by Dr. Lattimer, talks were given by Dr. Zinsser, Dr. Archie L. Dean, Jr., and Drs. Vasquez, Seneca, Melicow, and Lamport.

Dr. Melicow gave talks before the Fourth Congress of the Israel Urological Association, the Madrid University Medical School, the Tumor Clinic Staff of Roosevelt Hospital and the Alumni of City Hospital of New York City. He was named Honorary Professor of Urology by the Madrid University Medical School in October, 1958.

During 1958 Dr. Uson spoke before the College of Physicians and Surgeons of Huesca, Spain, and the Madrid University Medical School.

Dr. Dean completed a set of prostatic models depicting different types of prostate gland pathology as a teaching aid for medical students. This work is also being prepared as an exhibit to be presented at the meetings of the American Urological Association and the American Medical Association next spring. Funds for this were granted by the Van Ameringen Foundation, Inc.

### *Acknowledgment*

The basic research program within the Urology Department, hampered by lack of space and funds, will be expanded when additional research facilities within the College become available. The members of the Service wish to acknowledge the splendid cooperation received during the year from a variety of industrial laboratories, including the

National Lead Company, the Curtiss-Wright Engineering Corporation, the Airborne Instruments Laboratory, G. D. Searle & Company, Merck & Company, Hoffman La-Roche, Inc., the American Cystoscope Makers, and the Kelco Company. We gratefully acknowledge financial support from Hoffman La-Roche, Inc., Kelco Company, Schering Corporation, Schenlabs, Inc., the Upjohn Company, the National Tuberculosis Association, the American Cancer Society, the Urological Research Foundation, the Sidney Weinberg Foundation and numerous individual donors, including Messrs. A. L. van Ameringen, David Merson, C. A. Barker, Jr., Alex Ardrey, Sydney K. Schiff, Charles H. Revson, Spelman Prentice and Mrs. Ursula Squier Reimer.

*REPORTS OF VOLUNTARY ORGANIZATIONS*

# The Alumnae Association

## School of Nursing

MRS. ROBERT H. E. ELLIOTT, *President*

The Alumnae Association wishes to thank Dean Willard C. Rappleye, on his retirement this year, for his ever present support and interest in our activities during the tenure of his office. Dean Rappleye was elected to honorary membership in our Alumnae Association in 1942.

It is with great pleasure that we congratulate Mr. Cleo F. Craig on his election to the Presidency of the Presbyterian Hospital, Dr. H. Houston Merritt on his appointment as Acting Dean of the Faculty of Medicine, and our own alumnae on their respective appointments: Eleanor Lee, as Associate Dean (Nursing) of the Faculty of Medicine; Helen F. Pettit, Professor of Nursing, and Dorothy E. Reilly, Associate Professor of Nursing.

A resolution was passed in March in tribute to the late Dr. Thomas W. Stevenson, long a friend of all nursing personnel. It is with deep regret that we record also the deaths of 17 alumnae during the year.

Our alumnae participated in some important conferences and conventions during 1958. At the Sectional Meeting of the American College of Surgeons held in New York City, Ruth Guinter Jurji, '44, and Margaret Douglass Darrow, '48, served on the Program Committee. Delphine Wilde Wolcott, '26, of the orthopedic department, with the aid of Harriet Mantel Deleuran, '33, demonstrated at the Presbyterian Hospital the nursing care of a patient with a slipped disc. Cecile Covell, '26, on behalf of the Nursing Staff of Neurological Institute, wrote a play, "A Man is Hurt," originating from the actual experience of a patient. Miss Covell was ably assisted in her production by many of the staff of Neurological Institute, including Mary Holden Ericson, '35, as stage director, and Martha Haber, '49, Beverly Sprague Rodda, '57, Cecelia Graham, '49, and Estelle Guidice Hartmann, '49, as actresses. The play was presented before an audience of 1,700 in the ballroom of the Hotel Commodore as part of the program of a meeting of the American College of Surgeons. At the American Nurses Association Convention in Atlantic City in June, 28 alumnae from all parts of the United States and Hawaii gathered for a pleasant luncheon under the sponsorship of our Association.

The Distributing Fund, now in its 26th year, received \$2,029.09 in

royalties from two publications, "Quick Reference Book for Nurses" and "Essentials of Nursing," written by staff members of the Nursing Department. These royalties are used for scholarships only. Ten scholarships amounting to \$850 were awarded to students and \$900 in two scholarships to alumnae.

During 1958 the sum of \$10,650 was granted to alumnae members in pensions and \$4,060 in sick benefits.

The two program meetings under the Chairmanship of Alice Hamilton Davies, '42, were held in Maxwell Hall. At the February meeting Dr. Gerald Clemence spoke to us on the International Geophysical Year and Earth Satellites. Dr. Clemence is head astronomer of the U. S. Naval Observatory, Washington, D. C.; Director of the U. S. Nautical Almanac Office, and a member of the U. S. Committee for the International Geophysical Year and Panel on Satellites. We were indeed fortunate to hear such a timely and well informed speaker. Our November meeting was both most interesting and unique. The topic was Education for Nursing 1958. A panel, moderated by Professor Helen F. Pettit, consisted of Constance Cleary, Assistant Professor of Nursing Public Health; Rosalie Lombard, '51, Associate in Nursing; Professor Dorothy E. Reilly, and Bertha Unger, Instructor in Nursing in Mental Health. Each panelist spoke on her particular field, and those present who have not been active in the nursing field recently gained much interesting data. Our sincere thanks go to all panel members. The program ended with some delightful music furnished by the Student Glee Club, and the meeting was adjourned to the lobby where we wished Helen Young a happy birthday and enjoyed her birthday cake.

The Alumnae Quarterly Magazine edited by Dorothy Reilly and her excellent Editorial Board continues to carry news of alumnae, the Nursing School and the latest developments at the Medical Center to graduates all over the world. Especially interesting was the August issue, covering meetings, conventions, commencement activities and Alumnae Day, with excellent photographs by courtesy of Mrs. Elizabeth Wilcox.

On the evening of May 26 the Alumnae Association honored the graduating class with a dinner dance at the Hotel Pierre under the chairmanship of Miss Cecile Covell. The evening was a memorable occasion. Dr. Yale Kneeland, Jr., our genial toastmaster, introduced the speakers who briefly extended their best wishes and congratulations to the graduates. These included Associate Dean Aura E. Severinghaus of the Medical School, Mr. Henry C. Alexander of the Board of Trustees, Miss Helen Young, Miss Margaret Eliot, Miss Eleanor Lee, Miss Cecile Covell, Miss Sherry Burns, President of the Class 1958, and Mrs. Robert H. E. Elliott, President of the Alumnae Association.

On Alumnae Day, June 6, many alumnae were warmly greeted by their reunion chairman and old friends. After the traditional luncheon at which 214 were present, the Annual Meeting was held in Sturges Auditorium in Maxwell Hall, which was filled to capacity. The Class of 1958 was welcomed into membership, reports were given and the following officers elected: President, Mrs. Robert H. E. Elliott; Vice-President, Miss Margaret Hawthorne; Corresponding Secretary, Miss Dorothy E. M. Robinson; Recording Secretary, Miss Andree L. Powell; Treasurer, Miss Helen Young; Assistant Treasurer, Miss Margaret Wells.

In closing this report, we would like to express our deep appreciation to the Board of Trustees and the Hospital Administration for their continued interest and support of our Alumnae Association.

# Board of Women Managers of the Babies Hospital

MRS. CASIMIR DERHAM, *President*

The Babies Hospital received its first patients in June of 1888, 70 years ago. Articles which appeared in the December *Stethoscope* honored the Hospital for these years of devoted service to children.

Mr. Cleo F. Craig, President of the Hospital, expressed his wish to cooperate with the women's auxiliaries to the fullest extent. The Board of Women Managers appreciates the continuation of this splendid policy instituted by Mr. Frederick A. O. Schwarz, former Acting President.

An annual budget of \$13,350 was submitted and approved. One item on this budget, namely \$1,500 for the House Staff Loan Fund, was allocated for 1958 only.

In addition to this, the Recreational Therapy and Volunteer Departments, the Pediatric Psychiatric Clinic and the Emergency Nursing and Christmas Dolls funds were supported. Also a donation of \$400 was given toward the expenses of publication of the Christmas appeal booklet.

The Emergency Nursing Fund provided care for 54 patients in the amount of \$16,596.08. The number of bills approved this year was unprecedented, as was the need. Generous gifts to the Fund were given by Mrs. Frederic F. deRham, Mrs. Joseph V. McMullan, Mrs. John H. Reynolds, and Mrs. Carll Tucker.

## *Generous Gifts Acknowledged*

The Board is grateful to the following friends of the Hospital who have contributed during the year to the various hospital funds, the departments and the wards: Mrs. Munn Baker, Mr. and Mrs. Sidney Blum, Chase Manhattan Bank, Daitch Shopwell, Mrs. Casimir deRham, Mrs. Erik Eriksen, Girl Scouts of America, Mr. Edgar A. Newberry, New York Telephone Company Doll and Toy Committee and Directory Advertising Department, Mrs. Rufus L. Patterson, Miss Rose Pollack, Mr. Samuel Rogovin, Mrs. R. Peter Rose, Second Year Class, College of Physicians and Surgeons, Seraphic Secretaries of America, Mrs. Frank Y. Shasha, Mrs. Douglas Williams, Mr. I. Wolkowitz, WOR Childrens Christmas Fund.

Mrs. Douglas Williams, Chairman of the Nursing Committee, reported that, by assigning staff nurses to the Special Nursing and Recovery

units on the 4th and 9th floors, intensive nursing care to many more patients was provided.

Rearrangement of space on the 11th floor has increased the Hospital's bed capacity by four beds, to 196. This is important, as all child neurological patients are now admitted to the Babies Hospital.

There were no active poliomyelitis cases in the Hospital this summer.

There were seven new appointments as head nurses, six assistant head nurses and 18 new staff nurses. Three part-time nurses covered five evenings a week. All student nurses' training includes 12 weeks at Babies Hospital. New lighting has been installed at all the nurses' stations throughout the hospital.

The new Cardiology Laboratory, under the direction of Dr. Sidney Blumenthal, was established on the 4th floor.

### ***"Candy-Strippers" Invaluable***

Mrs. Munn Baker and Mrs. Thomas Santulli, Co-chairmen of the Board's Volunteer Committee, report that the "Candy-Strippers," the teen-age volunteers, who wear pink and white striped uniforms, and the Junior Red Cross Workers assigned to Babies Hospital have been invaluable and loyal assistants to the staff nurses. (There were 244 "Candy-Strippers" who gave 11,475 hours of service during the year.) They deserve the grateful thanks and admiration of all concerned for their wonderful work.

The "Tender Loving Care" (T.L.C.) program started three years ago now has 50 volunteers who cover five floors of the Hospital in the evening. Miss Ruth Vickers has been largely responsible for their training. It is a splendid program.

The President of the Board of Women Managers presided at the Annual Volunteers Tea on January 29. Several other members of the Board attended.

Mrs. Charles H. Thieriot, Jr., Chairman of the Membership Committee, reported that Mrs. William J. Broadhurst and Mrs. Benjamin Coates resigned as active members of the Board, but expressed their continued interest by becoming Associate Members.

The Board was pleased to elect Mrs. Charles Morgan Post, Jr., as an active member and extends Mrs. Post a welcome.

Mrs. John S. Tilney, Chairman of the United Hospital Fund Campaign, reported 429 gifts for a total of \$36,326.89. Her team captains were Miss Hope Kingsley, Miss Dorothy Mills, Mrs. Douglas Williams and Mrs. Arthur H. Christy. The Board thanks them for their splendid work. Its members gave 100 per cent to the Campaign. Due to the loss



of several large gifts, Mrs. Tilney obtained a reduction of the Babies Hospital quota from \$42,933 to \$40,003.

Miss Kingsley and Mrs. Tilney organized Box Week under unusual circumstances. They deserve the thanks of the entire Board for taking over this extra responsibility at the "eleventh hour," as do those members who rallied to help them.

Mrs. James McCosh Magie, the Board's representative on the Welfare Council, presented an excellent report on the annual Spring Meeting of the Community Council of Greater New York on May 7, 1958.

### ***Hospital Renovation Projected***

Two members of the Board visited the Hospital each month. Mrs. Henry C. Taylor reported that the administration hopes to renovate the Babies Hospital completely in approximately three years time. Mrs. Neville J. Booker, Babies Hospital representative on the House Committee, reports new purchases and an excellent standard of maintenance.

The monthly auxiliary luncheons of the Presbyterian Hospital were regularly attended by members of the Board. They found them instructive and valuable as a means of keeping informed on the activities of the Medical Center.

The Recreational Therapy Department is one of the happiest and most active in the Hospital. Under the inspired chairmanship of Mrs. R. Peter Rose, it has grown continuously in fine equipment and in charm.

The Valentine, Easter, Halloween and Christmas parties under the wonderful organization of Miss Vickers and her assistants were successful as always. The weekly movies have become an important feature of recreational therapy.

Mrs. Darwin Kingsley and the Lenten Sewing Class made and donated a large number of children's garments and toy bags which were appreciated by the nursing staff.

A wide screen television set was donated by Mrs. Rose, and \$250 was received from "anonymous giver," through Mrs. Rose, for a play house.

The Board is very proud of this Department.

The Board extends its thanks and best wishes to Mrs. Mabel Welte who resigned in March after 12 years of teaching the children, and to Miss Mary Shanley, her replacement, who was recently transferred to her previous position in the public school system. The Department welcomes Mrs. Jessie Meyer, the able teacher who has been on the Orthopedic floor since 1950. The Department is fortunate to have her. There has been an average of 12 children at the morning school sessions, and 38 a day all inclusive.

Speakers at the Board's monthly meetings this year gave highly informative talks. Dr. Rustin McIntosh, Director of Babies Hospital, spoke on tuberculous meningitis, and presented a small patient. Miss Eleanor Lee, Director of Nursing, said the Presbyterian Hospital's tuition scholarship fund and unique housing plan were important assets in filling the Hospital's complement of nurses. Dr. Gilbert W. Mellin, Assistant Professor of Pediatrics, gave a résumé of 10 years of study of the occurrence of congenital malformation of the newborn — "Fetal Life Study." This résumé was exceptionally interesting and well organized. Dr. Thomas V. Santulli, Assistant Attending Surgeon and Assistant Professor of Clinical Surgery, spoke on tumors in children and presented a little boy as his patient. Miss Laura M. Vossler, Director of the Volunteer Department, gave the Board an enlightened picture of the extent of the work of the Department and its volunteers.

The Board wishes to thank all these speakers for giving their time to address us on such interesting subjects.

The retiring President would like to express her heartfelt gratitude to all who helped her in her work of the past four years. It has been a rewarding and memorable experience.

The President thanks Dr. Rustin McIntosh, the Babies Hospital's wonderful Director and friend; Miss Marjorie Peto, Assistant Director of Nursing Service; Mrs. Loretto Molzahn, who carried such great added responsibilities with grace and efficiency during Miss Callahan's illness; Miss Grace Robles, R.N., and all the other loyal and devoted members of the staff — and Miss Elizabeth Callahan, the Babies Hospital's serene Unit Manager, whose recovery from a serious illness and surgery was the "high spot" of the year for the Members of her Board.

And last of all, may the President thank the Board of Women Managers for their tolerance, good humor and cooperation. To have served as your President has been a signal honor.

## CRIBSIDE SOCIAL SERVICE COMMITTEE

MRS. CONRAD M. RILEY, *Chairman*

As Babies Hospital celebrates its seventieth year, the Cribside Social Service Committee reports on its sixty-ninth year. Although the duties of the Committee have changed, it still raises money to help the Department. It still endeavors to try to keep Social Service close to those who support it and to spread understanding of the basic principles of social work.

The Bargain Box Thrift Shop netted \$7,332.10 this past year. The

able Chairman, Mrs. Herman L. Hoops, and her splendid assistants deserve great credit for all their work. The Committee is grateful to all members of the Cribside and the Board and the friends of Babies who have donated time and/or rummage.

The Lenten Sewing Group netted \$419.48 and, this last year, in addition to the knitted and handmade garments, made toy bags for patients. At one of these meetings a Babies Hospital physician spoke about the Hospital in general so that the new participants in the Sewing Class might become acquainted with various aspects of the Hospital.

At the March meeting of the Board of Trustees, Dr. Frederick R. Bailey, Chairman of the Social Service Committee of the Medical Board, spoke to the Trustees on the importance of Social Service. Mrs. Byron Stookey of the Neurological Auxiliary presented Social Service from the auxiliary point of view.

The Committee was fortunate to have two representatives from the Herald Tribune Fresh Air Fund come to its May meeting to describe their camping services and the camp's viewpoint of patients as campers.

Of the 157 children sent to camps or convalescent homes during the year, 18 were sent to the Fresh Air Fund camps. The total year's program cost approximately \$1,269 of which only 30 per cent was paid by parents.

Miss Elizabeth R. Prichard, Director of Social Service of the Medical Center, spoke to the Committee in the late spring about the new Social Service Educational Program. This program is now under way. Two students from the New York School of Social Work started their field work in Babies Hospital in September. Medical students from the School of Public Health and nursing students are also included in this new educational program in Babies Hospital.

On August 1, Babies Social Service took over the responsibility for the pediatric neurological patients who are seen in the clinic and those who are hospitalized.

In the fall the Social Service Department started a new system of covering patients in Babies Hospital. A social worker assigned to a "special" clinic now follows that specialty on whatever floor the patients are located. There is also a social worker assigned to general pediatrics on every floor.

Each social worker prepared a "diary" of one day in her work for the Committee. These reports were most informative and helped to give the Committee a better understanding of the actual duties of a social worker in the Hospital and her relation with the many outside agencies.

Twenty or more agencies were visited by members of the staff during the year. Reports on these were given at the monthly staff meetings as well as the usual agenda. Cribside members attended these meetings.

Reference books for the Department were purchased from the Fund for Staff Development established in 1957.

Figures on the use of the three Cribside Committee Endowed Beds were compiled. For the period January 1957 to September 1958, 17 patients with 11 different diseases used 484 days of patient care. The longest stay was 78 days, the shortest, 1 day, the average 28 days.

The Committee voted to give \$5,000 to the Emergency Nursing Fund of the Hospital.

The Chairman of Cribside was elected for one year to the United Hospital Fund Medical Social Service Committee.

The monthly Auxiliary luncheons were attended by members, and the Committee wants to thank Mr. Binkert for this opportunity to hear of the activities of the entire Medical Center.

For the donations which have come in to the Department from individuals and companies, the Committee expresses its gratitude.

To Miss Mildred Stilwell, Associate Director of Social Service, the Chairman and the Committee wish to extend their thanks for all she has done for the Department and for the Committee.

# The Mary Harkness Convalescent Home Auxiliary

MRS. ROBERT C. WHEELER, *Chairman*

The Mary Harkness Convalescent Home maintains the warm vital link between hospitalization and normal living under the dedicated direction of Miss Miriam Hubbard, R.N., Dr. John T. Beaty, Dr. William B. Snow, and Mark Glatzer, physical therapist, all of whom continue to benefit the Home with their services.

Miss Mildred Balmain, the full-time night nurse, retired and has been replaced by several part-time nurses from the neighboring communities. Miss Gladys Barrett replaced Miss Virginia Sorby as Miss Hubbard's assistant. Mrs. Jean Carey, the new secretary, has joined the live-in staff. The clergy and lay readers at Christ Church in Greenwich have substituted when the Rev. Charles W. Legge has been on vacation.

The Strong Memorial Wing for Children was closed in June. Advances in medical science and a general economic improvement had resulted in a low census in all children's convalescent units. The few patients from the Medical Center could be admitted to other convalescent facilities and thereby relieved the Medical Center of nearly half the operating deficit of the Mary Harkness Convalescent Home. We are all adjusting to the loss of the child patients, their staff, and especially Dr. William A. Bauman and Dr. Edward M. Wheeler.

The furniture went to Babies Hospital. The portrait of Martha Moulton Strong was hung in the Holt Room at Babies Hospital. The circus mural which was donated by Mr. Robert W. Carle, member of the Board of Trustees, is in the Doctors' Offices at Babies Hospital.

The Wing is not being used at this writing. Rooms in the female employees' corridor are being used as an overflow facility.

The beautiful picnic grounds were utilized during the year by eight Medical Center groups and two community organizations.

The Country Store, which supplies the patients' personal needs, is now supporting itself on a non-profit basis.

Each member of the auxiliary has been assigned a definite month when she is available to Miss Hubbard for any special help. She visits and observes the daily routine of the Home, and attends the monthly luncheon meetings at Presbyterian Hospital.

Twelve Greenwich Girl Scout Troops, several Greenwich YWCA

groups, the Gene Smith Trio, the Joan McGrath dancing group, the Greenwich Junior League Chorus, as well as weekly movies from the Women's Auxiliary of New York Orthopedic Hospital, have entertained the patients and benefited their convalescence.

The usual Christmas party, presents, and extensive decorations added to the many personal services which have prompted an ever-increasing number of appreciative letters from grateful patients.

# Neurological Institute Auxiliary

MRS. H. S. FENIMORE COOPER, *Chairman*

Our service to patients in the past year increased somewhat over 1957, with 200 more patients aided despite a reduced social service staff. Discharge planning for the seriously chronically ill patient has continued to be a challenge because of the lack of resources in the community, particularly for those whose homes are outside of New York City. Plans for these patients have been accomplished in many instances by considerable imagination and ingenuity. The use of patient care funds made available by our Auxiliary has enabled some of them to be moved more quickly out of the Hospital. The providing of wheel chairs, appliances and house-keeping services has made it possible for patients to stay within the family group when this has seemed desirable.

Again, many children were sent to camp (mostly from the Seizure Clinic), thus assisting the long-term treatment plan of helping these children with epilepsy to learn to make adjustments outside the home. Mrs. Hester Holland's work with this group throughout the years continues to be outstanding. Almost singlehandedly she has succeeded in bringing the Board of Education to recognize and accept such patients as normal children, permitting them to attend regular classes with the interested cooperation of their teachers.

In March Miss Priscilla Smith was transferred to the Psychiatric Clinic. In July it was decided that the Pediatric Neurology Service would be best served by a member of the Social Service staff at Babies Hospital, since the patients are treated there. This released Miss Carol Friedman to work with adults at Neurological Institute which had been quite short-staffed. There have been several other staff changes, including Miss Alice Pickard's resignation as assistant director, due to ill health. Miss Barbara Mintz and Mrs. Dagmar Ransdorf have continued their work in an outstanding manner. Mrs. Ransdorf attended a special course in rehabilitation at Fordham University's School of Social Service, made possible by the Staff Development Fund set up by our Auxiliary. Miss Elizabeth Prichard has again taken over the direction of our service, pending the appointment of a new assistant director to replace Miss Pickard.

There have also been changes in the Auxiliary. Miss Mabel Choate died December 11. Her unflinching interest and helpfulness will be greatly missed. Our new member is Mrs. H. McLeod Riggins, whose helpfulness

on the United Hospital Fund campaign and in the Thrift Shop is already making her invaluable to us.

Mrs. Henry A. Riley, our Benefit chairman, arranged a second successful rummage collection-Fashion Show lunch. Mrs. Royall G. Canaday's Thrift Shop group is as zealous as ever, but we must support them more liberally to get the financial return we so badly need for Auxiliary projects. Mrs. Bruce Brodie reports a satisfactory year for the volunteers and Milbank Library, with a great increase in the number of volunteers and hours served. Mrs. J. Lawrence Pool, who has succeeded our beloved Mrs. Willis D. Wood as House Committee chairman, is cooperating with Dr. H. Houston Merritt, Miss Cecile Covell and Miss Catherine Gallagher during the extensive alterations to Neurological Institute.

It is impossible in a necessarily brief report to cover all the activities of staff and auxiliary; but outstanding again has been the tireless effort of Mrs. Charles E. Adams and Mrs. Edith M. Achilles, co-chairmen of our United Hospital Fund Committee, once more placing us among the top money-raisers of the Women's Division. They deserve our cooperation and gratitude.

I am also indebted to our various auxiliary officers, most especially our vice-chairman, Mrs. Sidney J. Weinberg, who again stepped in with her usual efficiency during my long summer absence.

At the request of the Trustees, we have changed the date of our auxiliary's annual meeting from April to January, in order to conform with other Medical Center administrative procedure; and we have set up an ad hoc committee, headed by Mrs. John E. Scarff, to work with the Committee on the Fiftieth Anniversary of the Neurological Institute in 1959.

To all those whose generosity, whether of time, effort or money, has made possible our auxiliary's functioning, we give our warmest thanks and appreciation, hoping for its continuance in the months and years ahead.



# Women's Auxiliary of the New York Orthopedic Hospital

MRS. S. HAZARD GILLESPIE, JR., *Chairman*

The main function and interest of our committee has continued to be our babies' and children's ward of the Orthopedic Hospital. Our recreational worker, Mrs. Eva Hoffman, has continued her excellent job of providing the children with all the comfort and diversion that she can. We have been given a piano and a good record player, and much music has been added to the program, which the children seem to enjoy.

Our committee filled stockings for all the children who were in the Hospital over Christmas and gave small gifts to the adults and out-patients. We had several children's parties at the various holidays and the showing of movies to both children and adults continues. The Occupational Therapy Department, under Miss Elizabeth A. Scully, has cooperated in many of these ventures, making toys and helping out with supplies, running off the movies, and assisting in many other ways. Both Mrs. Hoffman and Miss Scully have been ably aided by volunteers. We are fortunate to have had more volunteers, giving more hours than ever before. They are doing excellent work.

Our wonderful twin team, Margaret and Helen Irwin, have again done a magnificent job in covering our Social Service work. They have the right combination of competence and efficiency, as well as deep understanding and sympathy, which makes them the excellent Social Service workers they are. Miss Helen Irwin reports to us monthly and thus we are familiar with some of our most interesting patients and can follow their cases from admission to discharge.

Our director of Nursing Service, Mrs. Delphine Wolcott, R.N., Assistant Director of Nursing, in charge of orthopedics, had a four-month sabbatical leave last spring, during which she did research on rehabilitation and other aspects of the curriculum. Her place was ably filled by Miss Hester Brown, R.N. Now Mrs. Wolcott has returned and either she or Miss Brown reports to us at each auxiliary meeting.

We had several interesting luncheon meetings with the Trustees' Committee on Auxiliaries. We feel these lunches are very valuable in keeping the Board and the auxiliaries in touch with each other and with the over-all projects of the Hospital.

We had an excellent fall meeting when Dr. C. Andrew Bassett talked

to us on his bone research. We plan to have more talks by staff members at future meetings.

The United Hospital Fund teams have done an outstanding job under Mrs. Edward H. Gerry and Mrs. William Cary. To everyone who worked and wrote letters, we extend our heartfelt thanks. Our total result was \$39,107.77. Out of our portion of this and our own Special Fund, we will once again contribute to the library and volunteer services, the nurses' scholarships, our Babies Hospital ward and various other expenses for which we are called upon during the year.

This report would not be complete without my mentioning the important part Mr. Binkert and the other members of the administration play in making our Hospital run as smoothly as it does. They are forward-looking in their plans, hard-working and unfailingly patient. We are most grateful to them and will try to contribute our share toward making the Hospital even better in 1959.

# Women's Auxiliary of the Presbyterian Hospital

MRS. JEROME P. WEBSTER, *Chairman*

The Auxiliary accepted this year an annual budget of \$18,000 to be used in supporting the Volunteer Service, the Milbank Library, and Occupational Therapy. During the year an additional \$2,000 was added to the Library donation to be used toward the salary of an assistant librarian.

The Milbank Library lost its former excellent librarian, Mrs. Dorothy Hood, in May, but her place is being very ably filled by Mrs. Selma Gale, who has continued to reorganize and improve the efficiency of the Library. A much needed full-time assistant, Miss Nancy DuBois, came in the spring. The Library has received many excellent donations of books and magazines, and such are always welcome. We would like to mention three outstanding gifts. Mrs. Jeremiah Milbank's generous grant made it possible to purchase many books needed to fill gaps in the collection of books; Alfred A. Knopf, Inc., publishers, gave several cartons of books; and Mrs. Charles Edison provided funds for a splendid new lightweight aluminum bookcart for use on the wards.

## ***Record Year for Volunteers***

This has been a banner year in the Volunteer Service. A monthly average of 412 volunteers worked a total of 102,251 hours, a 25 per cent increase over last year. In all but one month this year, our volunteers gave more hours than in any other hospital in New York. There have been two courses for Red Cross nurse's aides. A volunteer continues to give two Spanish courses a year for Hospital personnel. One new field of volunteer service has been filled by several Auxiliary members. They must come very early in the morning on the days of operation to act as hostesses to blood donors and families of patients having "open heart" surgery.

The director of volunteers, Miss Laura Vossler, and her two assistants have high standards for volunteer service, which shows in the quality of service given to the Hospital, and is one good reason for the constant demand to enlarge the program. The Auxiliary paid the tuition for Mrs. Eve R. Dyrssen, one of Miss Vossler's assistants, for an Institute for Directors of Volunteer services. At the tea for volunteers, 186 volunteers received Hospital pins for having given more than 100 hours, and

93 others have served for five or more years of continuous service. The United Hospital Fund honored 178 of our volunteers, nine of whom have given over 4,000 hours.

### ***Social Service Work***

The Auxiliary has continued the Anna Ball Kneeland Fund to Social Service. This is the only fund the director, Miss Elizabeth Prichard, has to assist her staff in taking special courses and institutes in social work. Nine staff members took courses in the New York and Fordham Schools of Social Work, and seventeen attended institutes and conferences. Miss Prichard feels that the use of this fund has been stimulating to her staff, and it is also attractive in recruiting new workers. Miss Prichard is happy over the developments in her service, and her new teaching staff, who are carrying a tremendous load of teaching hours. Salary raises for next year are encouraging. During the year approximately 14,000 patients were served, and 49,000 interviews were made. \$27,000 was spent from their special funds, which is also an increase over other years. This is particularly true in Sloane Hospital, where more mothers were in the lower income brackets, and there was more need for baby clothes, etc.

Through our members, Mrs. Samuel W. Lambert, Jr., and Mrs. Ralph H. Boots, who are Almoners of the Havens Fund, the Social Service received \$1,300 for specially selected cases. The Social Service and the Auxiliary gave a tea in the spring in honor of Miss Frances Evans who retired after twenty-eight years of devoted service in the Hospital.

### ***Fund-Raising Activities***

Under the stimulating leadership of Mrs. Charles Garside our United Hospital Fund Committee has raised \$30,360.84. Our quota was \$23,710. We appreciate having the "Direct Benefit" money paid through the Auxiliary to the Hospital this year. That quota is the first goal of those soliciting funds, and it is gratifying to see that amount on our books, though already allocated.

The Auxiliary received the sum of \$913 as a Mrs. Nancy Trowbridge Lloyd memorial fund, which we gave to the House Staff Loan Fund. The Auxiliary also gave \$600 to the Student Nurses Scholarship Fund.

In 1958 our net earnings in the Stuyvesant Square Thrift Shop were \$6,272, an increase of 47 per cent over last year. A very successful benefit was largely responsible, with the tickets paid for in mountains of thrift. We are very grateful to President Millicent McIntosh of Barnard College for her generous services, and for her interesting talk on "Our Doubling College Population, a Concern for Parents and Grandparents." The

branch furniture shop is not large enough to take some large pieces of furniture which have been offered to us; with adequate space we could do much better. We hope that larger quarters may be a realized dream in the next few years. Mrs. Paul B. Sheldon and her splendid Thrift Shop Committee have done a very fine job, and the Auxiliary is proud of their accomplishments.

Mrs. Frederic F. deRham asked for a member of our Auxiliary to be on her House Committee, and Mrs. Hamilton Southworth was appointed.

In the spring the Auxiliary helped the Medical Center Nursery School sponsors so that they could carry through to the autumn when they produced a most successful benefit party, which not only netted them a good sum to cover extra school expenses through the winter, but was a very delightful occasion.

### ***Apartment Project Aided***

Last year Dr. Algernon B. Reese obtained funds to rent and furnish a small apartment for the use, free of charge, by families of patients with the diagnosis of retinoblastoma who have come from out of town for treatment in the Service of Ophthalmology. He asked our Auxiliary to relieve his secretaries of the burden of this venture, by seeing to the equipment of this apartment, giving it some supervision, and bringing some cheer into the lives of these unfortunate children and their parents while they are in the city. Lately, a four-bedroom apartment has been acquired, which at times houses as many as four families. Our Committee under Mrs. Samuel W. Lambert, Jr., has been getting very much needed furnishings, and is supervising painting, etc. At Christmas one of our Committee took them a Christmas tree for the living room, and another member took those who could go on a tour of New York. The appreciation of these attentions by both parents and children was very rewarding.

We have met several times with the Committee on Auxiliaries from the Board of Trustees. It is interesting and stimulating to discuss problems with them which are common to us all, and we appreciate their taking time out of their busy lives to meet with us.

### ***Membership***

The Auxiliary has welcomed seven new members this year: Mrs. George E. Daniels, Mrs. H. Daniel DeWitt, Mrs. Wells Drorbaugh, Mrs. Robert B. McGraw, Mrs. Otto B. Reimer, Mrs. Howard C. Taylor, Jr., and Mrs. Herbert B. Wilcox, Jr. We are sorry to report the resignation of one of our Associate Members due to illness, Mrs. Linsly R.

Williams, and the death of two more of our Associate Members, Mrs. Nancy Trowbridge Lloyd and Mrs. E. Victor Loew.

Cold facts and figures do not tell the story of the hours of service given by Auxiliary members to the Hospital, in all our various activities. Our Committee Chairmen have done outstanding work, and thanks are due them for carrying their loads way past the call of duty. Thanks also should go to Mr. Binkert for his readiness at all times to suggest how the Auxiliary may further help the Hospital.

**TRUSTEES AND COMMITTEES - 1959 - 60**

# Trustees - 1959 - 60

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Allison, Miss Claire  
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Cadvan O. Griffiths, M.D.  
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Howard D. Dorfman, M.D.  
William H. Loery, M.D.

Thomas J. Sullivan, M.D.  
Ralph J. Veenema, M.D.  
Hans H. Zinsser, M.D.

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Harry Seneca, M.D.  
Ralph C. Yeaw, M.D.

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Frederick S. Dick, M.D.  
Clement A. Furey, M.D.  
Philip B. Jensen, M.D.  
Murray B. Pincus, M.D.  
Michael James Pirozzi, M.D.  
Stanford Pulrang, M.D.  
Arthur T. Willetts, M.D.

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John B. Lawlor, M.D.  
Frank W. Longo, M.D.  
Frederick S. Marshall, M.D.  
Myron S. Roberts, M.D.  
Morey Wosnitzer, M.D.

VISITING FELLOW

Donn E. Lauzinger, M.D.

**Urology**

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ATTENDING UROLOGIST

George W. Fish, M.D.

ASSISTANT ATTENDING UROLOGISTS

Charles T. Hazzard, M.D.  
\*John N. Robinson, M.D.

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Dr. J. Lowry Miller .....	Dermatology
Dr. Albert R. Lamb, Jr. ....	Medicine (Group Clinic)
Dr. John E. Scarff .....	Neurological Surgery
Dr. Daniel Sciarra .....	Neurology
Dr. C. Paul O'Connell .....	Obstetrics and Gynecology
Dr. Maynard C. Wheeler .....	Ophthalmology
Dr. Halford Hallock .....	Orthopedic Surgery
Dr. Franz Altmann .....	Otolaryngology
Dr. William A. Bauman .....	Pediatrics
Dr. Morton Hoberman .....	Physical Medicine
Dr. Robert A. Senescu .....	Psychiatry
Dr. Edward B. Self .....	Surgery
Dr. Ralph J. Veenema .....	Urology

\* Leave of Absence

# 1958 Publications of Members of the Professional Staff\*

## *Anesthesiology*

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\* Many of the studies reported in these publications were supported by grants to Columbia University's College of Physicians and Surgeons, with which The Presbyterian Hospital is allied as the Columbia-Presbyterian Medical Center. In general, basic research is done in the laboratories of the College and clinical research in the clinics and wards of the Hospital. A number of studies are joint enterprises between Hospital and College.

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*APPENDIX*

# Appendix

## STATISTICS

December 31, 1958

### BED COMPLEMENT

PRIVATE:	<i>No. Beds</i>	
Presbyterian Hospital (Harkness Pavilion) .....	203	
Babies Hospital .....	3	
Institute of Ophthalmology .....	19	
Neurological Institute .....	48	
Sloane Hospital .....	23	
Total Private .....	296	296
SEMI-PRIVATE:		
Presbyterian Hospital and Sloane Hospital:		
All Services (Harkness Pavilion) .....	97	
Medicine .....	9	
Surgery .....	14	
Urology .....	31	
Orthopedic .....	55	
Otolaryngology .....	21	
Gynecology .....	13	
Obstetrics .....	29	
Babies Hospital .....	41	
Institute of Ophthalmology .....	36	
Neurological Institute .....	49	
Total Semi-Private .....	395	395
WARD:		
Presbyterian Hospital and Sloane Hospital:		
Medicine .....	102	
Dermatology .....	8	
Metabolism .....	10	
Surgery .....	114	
Urology .....	36	
Orthopedic .....	67	
Otolaryngology .....	12	
Admitting .....	14	
Gynecology .....	35	
Obstetrics .....	81	
Babies Hospital (including premature nursery of 23 incubators) .....	152	
Institute of Ophthalmology .....	37	
Neurological Institute .....	104	
Total Ward .....	772	772
MARY HARKNESS CONVALESCENT HOME .....	35	1,463
NEWBORNS (Sloane Hospital) .....	113	1,498
Total .....	1,611	1,611

## HOSPITAL ADMISSIONS

	<i>Admissions</i>	
	1958	1957
<b>PRIVATE:</b>		
Presbyterian Hospital (Harkness Pavilion).....	5,428	5,532
Babies Hospital .....	298	362
Institute of Ophthalmology.....	604	601
Neurological Institute .....	885	896
Sloane Hospital .....	810	772
Total Private .....	8,025	8,163
<b>SEMI-PRIVATE:</b>		
Presbyterian Hospital and Sloane Hospital:		
All Services (Harkness Pavilion).....	2,942	3,006
Medicine .....	164	182
Surgery .....	326	298
Urology .....	687	611
Orthopedic .....	990	1,111
Otolaryngology .....	1,260	1,153
Gynecology .....	608	586
Obstetrics .....	1,001	1,051
Babies Hospital .....	1,850	1,767
Institute of Ophthalmology.....	1,485	1,419
Neurological Institute .....	1,150	1,012
Total Semi-Private.....	12,463	12,196
<b>WARD:</b>		
Presbyterian Hospital and Sloane Hospital:		
Medicine .....	1,543	1,522
Dermatology .....	111	104
Metabolism .....	106	120
Surgery .....	1,828	1,908
Urology .....	690	776
Orthopedic .....	1,099	995
Otolaryngology .....	421	427
Admitting .....	1,231	1,230
Gynecology .....	915	896
Obstetrics .....	4,674	4,131
Babies Hospital .....	2,941	2,950
Institute of Ophthalmology.....	887	989
Neurological Institute .....	1,182	1,250
Total Ward .....	17,628	17,298
MARY HARKNESS CONVALESCENT HOME.....	692	721
Total .....	38,808	38,378
<b>INFANTS BORN IN SLOANE HOSPITAL:</b>		
Private beds .....	584	584
Semi-private and Ward beds.....	3,868	3,590
Total .....	4,452	4,174

## HOSPITAL OCCUPANCY

	Patient Days Care		Percentage of Occupancy	
	1958	1957	1958	1957
<b>PRIVATE:</b>				
Presbyterian Hospital (Harkness Pavilion) .....	70,839	71,759	95.6	96.8
Babies Hospital .....	1,235	1,712	53.6	46.9
Institute of Ophthalmology.....	5,723	5,760	82.5	83.1
Neurological Institute .....	15,259	15,292	87.1	87.3
Sloane Hospital .....	5,845	5,933	69.6	70.7
Total Private .....	<u>98,901</u>	<u>100,456</u>	<u>90.5</u>	<u>90.8</u>
<b>SEMI-PRIVATE:</b>				
Presbyterian Hospital and Sloane Hospital:				
All Services (Harkness Pavilion)...	29,653	29,793	83.8	84.1
Medicine .....	3,165	3,119	96.3	94.9
Surgery .....	4,959	4,928	97.0	96.4
Urology .....	8,103	7,445	71.6	65.8
Orthopedic .....	15,923	16,077	79.3	80.1
Otolaryngology .....	5,470	5,644	71.4	73.6
Gynecology .....	5,536	5,024	116.7	105.9
Obstetrics .....	6,471	7,214	61.1	68.2
Babies Hospital .....	13,337	12,718	102.1	116.1
Institute of Ophthalmology.....	12,268	12,026	93.4	91.5
Neurological Institute .....	16,381	15,084	101.8	96.1
Total Semi-Private .....	<u>121,266</u>	<u>119,072</u>	<u>86.3</u>	<u>86.3</u>
<b>WARD:</b>				
Presbyterian Hospital and Sloane Hospital:				
Medicine .....	32,788	32,661	88.1	87.7
Dermatology .....	2,666	2,622	91.3	89.8
Metabolism .....	2,300	2,516	63.0	68.9
Surgery .....	34,409	34,910	82.7	83.9
Urology .....	11,193	11,368	85.2	86.5
Orthopedic .....	20,600	20,132	84.2	82.3
Otolaryngology .....	2,840	3,176	64.8	72.5
Admitting .....	2,774	2,430	54.3	47.6
Gynecology .....	11,706	12,113	91.6	94.8
Obstetrics .....	27,945	26,765	94.5	90.5
Babies Hospital .....	43,426	41,812	78.6	75.4
Institute of Ophthalmology.....	8,103	7,938	60.0	58.8
Neurological Institute.....	27,889	29,960	70.2	74.6
Total Ward .....	<u>228,639</u>	<u>228,403</u>	<u>80.7</u>	<u>80.4</u>
MARY HARKNESS CONVALESCENT HOME.....	13,112	14,425	80.1	69.3
Total .....	<u>461,918</u>	<u>462,356</u>	<u>84.1</u>	<u>83.6</u>
<b>INFANTS BORN IN SLOANE HOSPITAL:</b>				
Private beds .....	4,418	4,531	52.6	54.0
Semi-private and Ward beds.....	23,348	22,283	71.1	67.8
Total .....	<u>27,766</u>	<u>26,814</u>	<u>67.3</u>	<u>65.0</u>



## OUTPATIENT DEPARTMENT STATISTICS

Summary of Patients Treated:	1958	1957
Number of patients treated.....	<u>59,571</u>	<u>61,293</u>
Number of visits:		
Free .....	112,454	121,504
Pay .....	<u>290,907</u>	<u>287,503</u>
Total .....	<u>403,361</u>	<u>409,007</u>
Average visits per working day.....	<u>1,588</u>	<u>1,617</u>
Attendance Statistics:	<i>New to Clinics</i>	<i>Total Visits</i>
Dermatology .....	5,903	27,174
Emergency and Admitting Wards.....	20,502	4,743
Group Clinic .....	3,717	21,901
Medicine .....	4,188	37,518
Neurology .....	3,035	15,878
Obstetrics and Gynecology.....	6,154	38,103
Occupational Therapy .....	65	624
Ophthalmology .....	4,407	23,893
Orthopedic .....	12,622	28,863
Otolaryngology .....	2,913	14,276
Pediatrics .....	7,056	37,312
Physical Therapy .....	1,379	15,608
Psychiatry .....	891	4,459
Surgery .....	22,984	27,930
Urology .....	<u>1,260</u>	<u>8,003</u>
Total .....	<u>97,076</u>	<u>306,285</u>
		<u>403,361</u>

## PERSONNEL STATISTICS

	<i>On Duty December 31</i>	
	1958	1957
Administration .....	13	13
Assistant Secretary-Treasurer.....	49	44
Comptroller .....	91	90
Public Interest .....	14	13
Convalescent Home .....	31	42
Non-professional services:		
Buildings and Grounds.....	595	583
Food Service .....	375	375
Personnel and Protective.....	75	74
Other non-professional services.....	176	173
Professional services:		
Nursing .....	1,243	1,232
Professional Staff, Doctors' Offices & Research.....	394	386
Special Services .....	451	450
Vanderbilt Clinic and other.....	247	256
Total .....	<u>3,754</u>	<u>3,731</u>
Student Nurses .....	449	453
Volunteer Workers .....	412	388

**REPORTS OF THE TREASURERS**  
**THE ALUMNAE ASSOCIATION OF THE**  
**SCHOOL OF NURSING OF THE PRESBYTERIAN HOSPITAL**  
**IN THE CITY OF NEW YORK, INC.**

**BALANCE SHEET**

December 31, 1958 and 1957

**ASSETS**

	1958	1957
Capital Funds — securities and cash.....	\$742,752.31	\$716,349.84
Operating Funds — securities, cash, etc.....	12,262.59	10,506.14
Total Assets .....	\$755,014.90	\$726,855.98

**LIABILITIES**

<b>Capital Fund Reserves:</b>		
General fund .....	\$ 14,146.81	\$ 12,996.55
Benefit fund .....	154,566.96	149,988.03
Pension fund .....	510,435.81	493,089.84
Emma B. Kennedy Scholarship fund.....	25,610.46	25,545.84
Memorial Scholarship fund, '20.....	2,411.90	2,405.75
Helen Young Scholarship fund.....	31,557.87	28,909.93
Richard William Walsh Scholarship fund.....	1,822.94	1,618.87
Ruth C. Williams Scholarship fund.....	2,199.56	1,795.03
Total capital fund reserves.....	\$742,752.31	\$716,349.84
Operating Funds Reserve.....	\$ 12,262.59	\$ 10,506.14
Total Liabilities .....	\$755,014.90	\$726,855.98

**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**

Cash on hand January 1.....	\$ 7,023.78	\$ 9,729.87
<b>Receipts:</b>		
Sale of securities.....	\$124,897.48	\$ 25,045.33
Investment income .....	39,024.37	36,804.20
Donations .....	9,248.72	10,548.16
Dues and initiation fees.....	10,392.66	10,440.32
Dinner to graduating class.....	243.00	389.00
Loans repaid, etc.....	1,195.78	1,106.49
Total Receipts .....	\$185,002.01	\$ 84,333.50
<b>Disbursements:</b>		
Purchase of securities.....	\$147,648.87	\$ 52,143.37
Clerical expense and fees.....	5,529.30	5,058.50
Pensions and benefits paid.....	14,710.00	15,610.00
Scholarships granted .....	2,250.00	2,725.00
Loans granted .....	300.00	100.00
Donations .....	100.00	1,094.93
Printing, stationery and postage.....	7,209.41	6,179.06
Entertainment of graduating class.....	1,956.92	2,342.76
Miscellaneous .....	1,999.95	1,785.97
Total Disbursements .....	\$181,704.45	\$ 87,039.59
Cash on hand December 31.....	\$ 10,321.34	\$ 7,023.78

HELEN YOUNG, *Treasurer*

BOARD OF WOMEN MANAGERS OF THE BABIES HOSPITAL  
**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**  
 FOR THE AUXILIARY  
 For the Years 1958 and 1957

	1958	1957
Balance, January 1 .....	\$ 19.27	\$ 104.03
Receipts:		
Membership dues .....	\$ 470.00	\$ 510.00
Donations .....	6,384.38	
United Hospital Fund:		
Free Care Distribution .....	5,088.74	5,689.05
Direct Benefit .....	4,157.00	
Greater New York Fund .....	5,803.89	7,201.76
Total Receipts .....	<u>\$21,904.01</u>	<u>\$13,400.81</u>
	<u>\$21,923.28</u>	<u>\$13,504.84</u>
Disbursements:		
To Babies Hospital for:		
Care of Ward and Clinic Patients .....	\$ 4,157.00	
Emergency Nursing .....	5,000.00	\$ 6,000.00
Pediatric Psychiatric Clinic .....	1,500.00	1,500.00
Recreational Therapy .....	4,500.00	4,500.00
Volunteer service .....	500.00	500.00
House Staff Loan Fund .....	1,500.00	250.00
Hospital Appeal Booklet .....	200.00	
Decorations, furniture and equipment, etc..	250.00	410.00
Miscellaneous .....	28.10	325.57
Total Disbursements .....	<u>\$17,635.10</u>	<u>\$13,485.57</u>
Balance, December 31 .....	<u>\$ 4,288.18</u>	<u>\$ 19.27</u>

MARY S. B. BRAGA,  
*Treasurer*

BOARD OF WOMEN MANAGERS OF THE BABIES HOSPITAL  
**SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS**

FOR THE CRIBSIDE SOCIAL SERVICE COMMITTEE

For the Years 1958 and 1957

	1958	1957
Balance, January 1.....	<u>\$18,674.31</u>	<u>\$12,108.84</u>
<b>Receipts:</b>		
Membership dues .....	\$ 235.00	\$ 255.00
Donations .....	41.00	110.00
United Hospital Fund.....	7,130.58	7,083.65
Greater New York Fund.....	8,132.69	8,967.17
Investment income .....	661.58	730.13
Bargain Box Thrift Shop.....	7,332.10	7,631.73
Sewing Class dues and receipts.....	419.48	353.00
Repayments by patients of advances and loans..	390.50	81.00
Total Receipts .....	<u>\$24,342.93</u>	<u>\$25,211.68</u>
	<u>\$43,017.24</u>	<u>\$37,320.52</u>
<b>Disbursements:</b>		
Social service salaries.....	\$21,702.97	\$10,596.77
Travel of social service staff.....	110.12	67.29
Conference expenses, dues, subscriptions and meetings .....	226.08	259.65
Convalescent care .....	888.13	643.40
Advances to patients for convalescent care and miscellaneous loans .....	390.50	81.00
Relief assistance and extra for patients:		
Clothing .....	1,106.61	891.01
Milk and food.....	74.00	226.80
Christmas and Thanksgiving.....	397.52	229.00
Other .....	145.81	85.90
To Babies Hospital for:		
Emergency Nursing .....	5,000.00	5,000.00
Social Service Staff Development Fund....		500.00
Hospital Appeal Booklet.....	200.00	
Miscellaneous .....	112.55	65.39
Total Disbursements .....	<u>\$30,354.29</u>	<u>\$18,646.21</u>
Balance, December 31.....	<u>\$12,662.95</u>	<u>\$18,674.31</u>

JANET M. RILEY,  
*Chairman*

## NEUROLOGICAL INSTITUTE AUXILIARY

## SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS

For the Years 1958 and 1957

	1958	1957
Balance, January 1 . . . . .	<u>\$19,847.99</u>	<u>\$25,689.31</u>
Receipts:		
Membership dues . . . . .	\$ 345.00	\$ 380.00
Donations . . . . .	1,110.00	1,360.00
United Hospital Fund:		
Free Care Distribution . . . . .	10,963.89	10,964.90
Direct Benefit . . . . .	4,448.00	
Greater New York Fund . . . . .	12,504.71	13,880.43
Everybody's Thrift Shop . . . . .	9,442.76	12,337.07
Repayments by patients of advances and loans . .	525.75	559.30
Total Receipts . . . . .	<u>\$39,340.11</u>	<u>\$39,481.70</u>
	<u>\$59,188.10</u>	<u>\$65,171.01</u>
Disbursements:		
Social service salaries . . . . .	\$21,860.83	\$23,379.29
To Neurological Institute for:		
Care of Ward and Clinic Patients . . . . .	4,448.00	
House Staff Loan Fund . . . . .		5,000.00
Library . . . . .	2,095.79	1,200.00
Scholarship Aid to Graduate Nurses . . . . .		1,000.00
Social Service Staff Development Fund . . . . .		500.00
Special Nursing Fund . . . . .	5,000.00	2,000.00
Hospital Appeal Booklet . . . . .	100.00	
Volunteer service . . . . .	1,900.00	1,900.00
Fiftieth Anniversary . . . . .	1,000.00	
Advances to patients for summer therapeutic care and miscellaneous . . . . .	525.75	559.30
Summer therapeutic care . . . . .	2,620.00	3,503.93
Chronic care . . . . .	1,980.86	1,942.05
Convalescent care . . . . .	568.40	459.30
Medical relief . . . . .	3,880.03	2,784.27
Staff travel, field and conference . . . . .	33.78	273.39
Miscellaneous, postage, telephone and publications . . . . .	832.24	821.49
Total Disbursements . . . . .	<u>\$46,845.68</u>	<u>\$45,323.02</u>
Balance, December 31 . . . . .	<u>\$12,342.42</u>	<u>\$19,847.99</u>

KATHERINE G. FENIMORE COOPER,  
Chairman

## WOMEN'S AUXILIARY OF THE NEW YORK ORTHOPEDIC HOSPITAL

## SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS

For the Years 1958 and 1957

	<i>1958</i>	<i>1957</i>
Balance, January 1.....	<u>\$16,802.71</u>	<u>\$11,246.99</u>
Receipts:		
Donations .....	\$ 2,513.42	\$ 8,718.81
United Hospital Fund Direct Benefit.....	7,945.00	
Allocation from United Hospital Fund and Greater New York Fund Distribution.....	<u>4,000.00</u>	<u>4,000.00</u>
Total Receipts .....	<u>\$14,458.42</u>	<u>\$12,718.81</u>
	<u>\$31,261.13</u>	<u>\$23,965.80</u>
Disbursements:		
Recreational therapist salary.....	\$ 3,734.69	\$ 3,225.49
Other recreational therapy expenses.....	1,481.12	1,137.60
To Presbyterian Hospital for:		
Care of Ward and Clinic Patients.....	7,945.00	
House Staff Loan Fund.....		1,000.00
Library .....	998.60	700.00
Volunteer service .....	1,100.00	1,100.00
Hospital Appeal Booklet.....	<u>100.00</u>	
Total Disbursements .....	<u>\$15,359.41</u>	<u>\$ 7,163.09</u>
Balance, December 31 .....	<u>\$15,901.72</u>	<u>\$16,802.71</u>

VIRGINIA C. HUTTON,  
*Treasurer*

## WOMEN'S AUXILIARY OF THE PRESBYTERIAN HOSPITAL

## SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS

For the Years 1958 and 1957

	1958	1957
Balance, January 1.....	<u>\$ 4,830.18</u>	<u>\$ 6,482.21</u>
Receipts:		
Membership dues .....	\$ 670.00	\$ 592.50
United Hospital Fund:		
Free Care Distribution.....	6,890.78	7,330.84
Direct Benefit .....	6,580.00	
Greater New York Fund.....	7,859.18	9,280.08
Donations .....	966.00	69.00
Other (Card Party Benefit).....		907.98
Stuyvesant Square Thrift Shop.....	<u>6,272.22</u>	<u>4,260.59</u>
Total Receipts .....	<u>\$29,238.18</u>	<u>\$22,440.99</u>
	<u>\$34,068.36</u>	<u>\$28,923.20</u>
Disbursements:		
To Presbyterian Hospital for:		
Care of Ward and Clinic Patients.....	\$ 6,580.00	
Occupational Therapy .....	6,000.00	\$ 6,000.00
House Staff Loan Fund.....	913.50	2,000.00
Library .....	6,518.99	4,900.00
Social Service Staff Development Fund...	900.00	
Scholarship Aid to Graduate Nurses.....		1,000.00
Scholarship Aid to Student Nurses.....	600.00	
Special Nursing Fund.....		1,000.00
Hospital Appeal Booklet.....	100.00	
Volunteer service .....	7,240.00	7,267.39
Miscellaneous .....	<u>1,149.66</u>	<u>1,925.63</u>
Total Disbursements .....	<u>\$30,065.15</u>	<u>\$24,093.02</u>
Balance, December 31.....	<u>\$ 4,003.21</u>	<u>\$ 4,830.18</u>

NANCY V. BARRETT,  
*Treasurer*

# Endowed Beds

(1) A gift of \$10,000 shall entitle the donor to nominate a patient to use and occupy one bed in the common wards of the Hospital free of charge (except for special service) for not more than ninety days in any one year.

The donor may at the time of making the gift appoint to another in his stead such right to nominate, provided the appointee is acceptable to the Hospital.

Such right to nominate may be exercised only: —

(a) During the life of the person having the right to nominate, if such right is in an individual.

(b) For a period of fifteen years, if such right is in a Corporation, Society or Association.

(2) Endowed Bed privileges are subject to all rules and regulations governing the admission, treatment, and discharge of patients.

(3) The Board of Trustees may in their discretion under special circumstances accept gifts for the endowment of beds on such other terms and conditions as they may deem best calculated to promote the objects for which the Hospital was established and is maintained.

(4) Periodic gifts may be made until endowment of a bed is completed, at which time the right to nominate shall commence.

## MEMORIAL ENDOWED BEDS FOR RESEARCH PURPOSES

A gift of \$10,000 shall entitle the donor to establish as a permanent memorial one memorial endowed bed for research purposes in a ward of the Hospital to be used and occupied by patients free of charge, except for special service.

The President of the Medical Board shall, subject to the approval of the Executive Vice-President of the Hospital, have the privilege of nominating patients to use and occupy a Memorial Endowed Bed for Research Purposes for not more than 90 days in any one year for a period of 15 years, subject to all rules and regulations governing the admission, treatment and discharge of patients. This privilege shall be assigned to the persons occupying these respective offices (President of the Medical Board and Executive Vice President of the Hospital) at the time the nomination is made.

## *Endowed Beds and Rooms*

### *Presbyterian Hospital*

- 1868 Mary J. Gelston  
1870 Henrietta A. Lenox (2 Beds)  
Washington R. Vermilyea  
A. R. Wetmore  
1871 John Laurie  
Mary Ann Parish  
1872 William Earl Dodge  
John T. Johnston  
Otis D. Swan  
Henry Young (2 Beds)  
1873 James Brown (2 Beds)  
John R. Ford  
Jonathan Sturges



- 1878 James G. and Henry G. deForest, in memory of  
Lockwood deForest Woodruff, M.D.
- 1880 William C. Rhinelander
- 1881 Jennet L. and Robert L. Belknap, in memory of Aaron B. Belknap  
Fifth Avenue Presbyterian Church  
Henry B. Hyde, in memory of his son, Henry B. Hyde, Jr.  
John Stewart Kennedy  
Frederick and Henry G. Marquand  
Edwin D. Morgan (3 Beds)  
Mary L. Sheafe  
John L. Proudfit
- 1882 Heber R. Bishop (3 Beds)  
Mrs. Robert L. Stuart, in memory of her father, Robert McCrea  
Edwin D. Morgan  
Mrs. Moses Taylor
- 1883 Frederick Billings  
Reformed Protestant Dutch Church of the City of New York
- 1884 Nathaniel W. Conkling  
West Presbyterian Church, to be known as "Faith Presbyterian Church Bed"  
Madison Square Presbyterian Church, in memory of George W. Lane
- 1885 Brick Presbyterian Church, in memory of Dr. John G. Adams  
Richard Irvin
- 1886 Frederick Baker, in memory of Sarah Pyewell Baker  
Edward L. Beadle  
Brick Presbyterian Church, in memory of Miss Ann Adams  
Fourth Avenue Presbyterian Church Bed by Peter Cumming, in memory of  
Francis P. Schoals  
George E. Dodge  
Horace F. Hutchinson, in memory of Ellen B. Schoals  
Mr. and Mrs. William D. Sloane, in memory of their son,  
William D. Sloane, Jr.  
Henry S. Wilson, in memory of his son, Harry H. Wilson
- 1887 Fifth Avenue Presbyterian Church
- 1888 Broadway Tabernacle Society  
Samuel Inslee, in memory of Kate J. Inslee
- 1889 John Sloane, in memory of his mother, Euphemia Sloane
- 1890 Isaac V. Brokaw, in memory of Ernest B. Brokaw  
Sidney Dillon, in memory of Hannah Dillon  
Ambrose K. Ely  
Josiah M. Fiske  
O. B. Jennings  
Mrs. John Stewart Kennedy  
Amelia Kerr  
Robert Marshall  
Elizabeth S. and Emily M. Wheeler, in memory of James Boorman  
"The Davenport Bed"
- 1891 Sarah A. Havemeyer, in memory of her son, Hector C. Havemeyer  
Thomas Hope  
John E. Parsons, in memory of his children, E. L. P., K. M. P., and R. M. P.  
Mrs. A. R. Van Nest, in memory of her husband, Abram R. Van Nest
- 1892 John Stewart Kennedy, in memory of his niece, Emma Stewart Baker  
Alexander Maitland, in memory of his mother, Mary C. Maitland
- 1893 Maria S. Auchincloss, in memory of her husband, Edgar S. Auchincloss  
Frances T. Lord, in memory of her husband, George deForest Lord  
Presbyterian Church on University Place

- Presbyterian Home for Aged Women  
 Margaret A. Sinclair, in memory of Mr. and Mrs. James Sinclair  
 West-Park Presbyterian Church  
 Young Men's Christian Association
- 1895 Mary Harrison  
 Mrs. Clarence M. Hyde, in memory of her mother, Rebecca Babbitt  
 John Stewart Kennedy, in memory of Mrs. Robert L. Stewart  
 Mrs. James T. Murray, in memory of her husband, James T. Murray
- 1896 Anthony Dey, in memory of Joseph G. and Eliza D. Scott  
 Jane Hope  
 Esther J. Jennings, in memory of her husband, Oliver B. Jennings
- 1897 Mrs. Francis E. Baker, in memory of her father, James Rich Steers  
 William S. Brown  
 Helen Miller Gould, in memory of her parents, Mr. and Mrs. Jay Gould  
 Margarette E. and Susan D. Griffith, in memory of their father, Griffith W.  
 Griffith  
 Mary J. Griffith, in memory of her husband, Griffith W. Griffith  
 Rachel L. Kennedy, in memory of her mother, Mrs. Rachel C. Kennedy  
 Annie S. Paton, in memory of her husband, William Paton  
 Charlotte H. Skidmore, to be known as "The William L. Skidmore Bed"
- 1898 Brick Presbyterian Church  
 Matilda A. Brown, in memory of her son, H. Auchincloss Brown  
 First Presbyterian Church  
 Mrs. Stephen V. Harkness, in memory of her daughter, Florence Harkness  
 Jane Hope, in memory of her mother, Grace Corrie Hope  
 John Stewart Kennedy, in memory of Rev. William G. Schauffler, D.D., LL.D.  
 Mrs. Elliott F. Shepard, in memory of her daughter, Florence Vanderbilt  
 Shepard  
 Mrs. Elliott F. Shepard, in memory of her daughter, Marguerite Shepard
- 1899 William W. Cole, in memory of his mother, Mary A. Cole  
 William Whitewright, in memory of his father, William Whitewright, "The  
 Whitewright Beds" (10 Beds)
- 1900 Emily B. Hopkins, in memory of her husband, Moses Hopkins, "Moses  
 Hopkins Memorial"  
 Donald MacKay, in memory of his children, Edith Winslow and Walter Wise  
 MacKay  
 Caroline L. Macy, in memory of her daughter, Mary M. K. Willets  
 Laura Roome, in memory of her sons, Harry and Alfred Roome  
 Martha L. St. John, in memory of her mother, Sarah Ward  
 Nathaniel Whitman
- 1901 Julia Billings, in memory of her husband, Frederick Billings  
 Camilla L. Edwards, in memory of her husband, Walter Edwards  
 Andrew J. Garvey, in memory of his mother, Elizabeth Jeffries Garvey  
 (2 Beds)  
 George Lauder  
 Charles H. Marshall  
 Justine Adele Stafford, in memory of her father, Justin A. Bliss
- 1902 Robert Graham Dun  
 Margaret J. Plant, in memory of her brother, Simon Loughman
- 1903 Heber R. Bishop  
 Lura Currier  
 Mrs. Francis B. Harrison  
 Julia J. MacCartee, in memory of her husband, Robert MacCartee  
 Madison Avenue Reformed Church  
 Adele Berry Sloane, in memory of her father, Abraham J. Berry, M.D.

- Justine Adele Stafford, in memory of her mother, Eveline C. Bliss  
 John T. Terry
- 1904 Virginia E. Fowler, in memory of Clarence E. Fowler  
 Susan Bevier  
 Mrs. William Starr Miller  
 Josephine Penford, in memory of Dr. Edward Livingston Trudeau, Jr.  
 Peter Reid, in memory of his wife, Jane Watson Reid  
 Francis A. Palmer
- 1905 Frederick G. Bourne  
 Helen C. Inslee, in memory of her husband, Samuel Inslee  
 Titus B. Meigs, in memory of his son, Titus B. Meigs, Jr.  
 Mrs. James T. Murray, in memory of Rev. John Hall, D.D., LL.D.  
 Sarah J. Parsons, in memory of her husband, Charles Parsons  
 Presbyterian Church on University Place
- 1906 Maria L. Campbell, in memory of Henry Pearsall Campbell  
 Susan W. Duncan, in memory of her husband, John P. Duncan  
 Samuel Keyser (3 Beds)  
 Sara Pyle McAlpin and James Tolman Pyle, in memory of their father,  
 William Scott Pyle  
 Reformed Protestant Dutch Church of Garden Street  
 John Sloane, in memory of his brother, Thomas Chalmers Sloane  
 John Sloane, in memory of his father, William Sloane
- 1908 William R. Craig, in memory of his sister, Florence Faxon Craig  
 George B. Goldschmidt, in memory of his mother, Celestine Goldschmidt  
 Samuel Anthony Goldschmidt, in memory of his mother, Celestine  
 Goldschmidt  
 Mrs. Stephen V. Harkness, in memory of her husband, Stephen V. Harkness  
 Charles H. Marshall, Jr.
- 1909 Rev. and Mrs. Robert Russell Booth, in memory of "Minnie and Willie"  
 Canadian Society of New York  
 Edward West Currier, in memory of his stepmother, Laura Currier  
 Edward West Currier, in memory of his stepbrother, Walter B. Currier  
 Edward West Currier, in memory of Edward W. Currier  
 Mary Jane Johnson, in memory of her husband, William H. Johnson  
 J. Theresa Keyser, in memory of her husband, Samuel Keyser  
 Julia Hannon Lyle  
 Winfield Tucker, in memory of Joseph, Isabelle and Adeline (3 Beds)  
 J. Spencer Turner, in memory of his first wife, Cornelia J. Turner
- 1910 Jane A. Townsend, in memory of her son, Randolph W. Townsend, Jr.  
 Jane A. Townsend, in memory of her son, Harmon W. Norton  
 Jane A. Townsend, in memory of her daughter, Emma L. Norton  
 Amelia Mott Graham, in memory of Malcolm Graham  
 Adeline Ives Latham, in memory of her husband, John Howard Latham  
 Josephine G. Lord, in memory of her husband, Franklin B. Lord
- 1911 Brearley School Girls and others interested, in memory of Madam Bertha  
 Beck, "Madam Beck Memorial Teacher's Bed"  
 Harriet Coles, in memory of her sisters, Susan and Anna Codman  
 Caroline Thorn Kissel, in memory of her husband, Gustav Edward Kissel  
 Katherine Spencer Leavitt, in memory of her husband, Rev. William Leavitt  
 (2 Beds)  
 Reformed Low Dutch Church of Harlem  
 Frederick Sturges, in memory of his father, Jonathan Sturges  
 William Stuart Tod, in memory of his brother, George Tod
- 1912 Melville de Wolf, in Children's Ward, "Emma de Wolf Bed"  
 Gustavia A. Senff, in memory of her husband, Charles A. Senff

- 1912 Mrs. Christopher M. Bell, "The Dennistoun Bed"  
Cornelia Eaton, to be known as "The Dr. Reuben S. Carpentier Memorial"  
(3 Beds)  
Mrs. Jeremiah V. Meserole, in memory of her son, Abraham Meserole  
Josephine Penfold  
Jane G. Phelps, in memory of her husband, Anson G. Phelps, Jr. (2 Beds)
- 1914 Hugh D. Auchincloss, in memory of his mother, Elizabeth Auchincloss  
Jane Elizabeth Grannis, in memory of her mother, "Charlotte Williams Platt  
Bed"  
William H. Penfold, in memory of Josephine Penfold  
Louise Tillinghast, in memory of her sister, Amelia C. Babcock  
Minnie Hackett Trowbridge (6 Beds)
- 1915 A Friend, in memory of Sophia Kellogg Stebbins and Mary Tompkins  
Kimball  
A Friend  
Mrs. Jeremiah V. Meserole, in memory of her father-in-law, Abraham  
Meserole  
Mrs. Jeremiah V. Meserole, in memory of her husband, Jeremiah Vanderbilt  
Meserole  
Mrs. Jeremiah V. Meserole, in memory of her brother, Adolphus Clock  
Mrs. Jeremiah V. Meserole, in memory of her parents, Alfred and  
Anna Maria Clock
- 1916 Emil C. Bondy, in memory of Margaret Carson Cowan  
Central Presbyterian Church  
Mr. and Mrs. James Petrie Chalmers, in memory of James Petrie  
Chalmers, Jr., "Chalmers Memorial Bed"  
Robert A. Chambers, in memory of his father, Robert Chambers  
Dunlevy Milbank, in memory of his mother, Ella Dunlevy Milbank  
William D. Sloane (3 Beds)
- 1917 Emeline Y. Danforth, in memory of Mrs. William B. Jenkins  
Harris Brisbane Dick, to be known as the "Harris Brisbane Dick Free Bed"  
Sarah C. Miller  
Albert Winter, in memory of Adaline Benson Winter
- 1918 Ida Leora Olmstead, to be known as "Leora McCammon Bed"
- 1919 Samuel Elliott  
Elizabeth Keys, in memory of her daughter, Edith Keys  
Rutgers Presbyterian Church  
James R. Steers, in memory of his former wife, Rebecca E. Steers  
John W. Sterling
- 1920 William C. Boschen, to be known as the "Boschen Bed"  
Rosa Franklin (4 Beds)  
Francis P. Furnald  
Mrs. Francis P. Furnald  
Mary A. Harriot, to be known as the "Margaret Harriot Alms"  
Mary A. Harriot, to be known as the "James Harriot Alms"  
Mrs. Henry O. Havemeyer, in memory of her parents, George William and  
Matilda Adelaide Elder  
Margaret J. Orr, in memory of her mother, Ann Boyd Orr  
Anna St. John, in memory of her brother, Milton St. John
- 1921 Mrs. Peter B. Wyckoff, to be known as the "Sidney Dillon Bed"  
Henry M. Gescheidt  
Ralph E. Prime, in memory of his daughter, Ruth Havens Prime  
Joseph K. Gwynn  
Charles S. Ward, in memory of his friend, Sophie L. Kinman  
Charles S. Ward

- 1922 Minetta C. Howenstine (8 Beds)  
Christina C. Munro, in memory of her husband, John Munro  
Anna M. Romaine, in memory of Dr. William I. Detmold  
Arnold Thayer (2 Beds)  
Hamilton B. Tompkins, in memory of his wife and himself
- 1923 Lydia Augusta Brown  
Josephine Newman Hall
- 1924 Bohemian Society "Lidumil"  
Cordelia F. Turrell  
Nannie Gyles Johnson (Children's Ward), in memory of her son,  
Shirley Everton Johnson  
Mrs. William John Fitzgerald
- 1925 Christina Bond  
In memory of Julia C. Skidmore  
George Clarke  
Elizabeth J. Hofer (2 Beds)  
In memory of Catherine Parke and Horatio C. Kretchmar  
Edward M. Morgan Memorial Association (4 Beds)  
In memory of Edward M. Morgan  
Jennette Robertson, to be known as "Helen C. Inslee Endowed Bed"
- 1926 Elizabeth Ellen Auchincloss, to be known as "E. E. Auchincloss, Jr. Bed"  
Members of the New York Stock Exchange, to be known as the  
"Seymour LeGrande Cromwell Memorial" (2 beds)  
Edmund Penfold (2 Beds), in memory of Josephine Penfold and  
William Hall Penfold  
Dr. M. Allen Starr, in memory of Allen Egbert Starr  
John B. Trevor, in memory of Emily N. Trevor  
West End Collegiate Church  
George D. Widener
- 1927 Second Presbyterian Church in the City of New York  
Ellen Mills Borne, in the Children's Ward, two beds to be known as  
"John E. Borne Bed" and "Nellie M. Borne Bed"  
Virginia Marquand Monroe, in the name of the Young Men's Christian  
Association  
Mrs. Charles H. Senff, to be known as "Dr. George A. Tuttle Bed"  
W. Frazer Gibson, in memory of his mother, Jeanette Frazer Gibson, to be  
known as "Jeanette Frazer Gibson Bed"  
Augustus C. Gurnee, two beds in memory of his mother, Mary M. Gurnee  
Eliza V. Nicholson  
Mrs. Murray W. Dodge and Mrs. Franklin Lord, in memory of their mother,  
Mrs. Fordyce D. Barker (Single Ward Room)  
Dunlevy Milbank (Single Ward Room)  
F. Ethel Wickham, in memory of her father, William Hull Wickham, to be  
known as "William Hull Wickham Bed" (Single Ward Room)  
Anna A. Johnston, in memory of her parents, William G. and  
Adriana C. Gardner  
Anna A. Johnston, in memory of Lewis, Anna, Edward and Mary Johnston  
(Single Ward Room)  
Broadway Presbyterian Church, to be known as the "Walter Duncan  
Buchanan Bed"
- 1928 North Presbyterian Church  
In memory of McKevers Bayard Brown (Single Ward Room)  
Caroline B. Sellew (4 Beds)  
Red Cross Rooms for Nurses (3 Single Ward Rooms)  
Robert W. deForest (Single Ward Room)

- Henry W. deForest (Single Ward Room)  
 James R. Steers  
 Jane Livingston Armour, in memory of John A. Livingston  
 Jane Livingston Armour, in memory of Herman O. Armour  
 In memory of Meredith Howland Pyne  
 Stella C. and Roi C. Megrue (Single Ward Room)  
 Mrs. E. C. Wills, in memory of her mother, Mrs. J. F. Ackerman, and her  
 sister, Mrs. W. Clarence Reed
- 1929 Caroline White, in memory of her sister, Eliza W. White  
 Elizabeth A. Hays, in memory of William and Charlotta Hays
- 1930 Mr. and Mrs. Ernest Trow Carter  
 The Presbyterian Church in the Town of Rye, N. Y.  
 Mrs. Arthur E. Lauderbach, in memory of her mother and father,  
 Esther Hull Jackson and Peter A. H. Jackson  
 Mary L. Walker Peters, to be known as "The Charles Grenville Peters and  
 Mary Walker Peters Free Bed"  
 Marie F. Coddington, to be known as "The Emilie Coddington Bed"
- 1931 Mrs. Clara Beales Obrig, in memory of Adolph Obrig and Clara Beales Obrig  
 (Single Ward Room)  
 Alfred V. Meserole, in memory of his mother, Evelina A. Meserole
- 1932 In loving memory of Justine Adele Stafford (Mrs. W. F. Stafford)  
 by her sister, Ida Evelina Bliss
- 1933 Mrs. John A. Hance and Mrs. Irene Louise Hance, in memory of  
 James R. Jesup
- 1934 Ida Adams, in memory of her sister, Sadie E. and her brother,  
 Robert F. Adams (Single Ward Room)  
 Josephine Leypoldt, in memory of her brothers, Louis and Frederick  
 Leypoldt (2 Beds)
- 1935 Walter J. M. Donovan, in memory of his father, Timothy Donovan
- 1936 Elizabeth P. Hewes, to be known as "The Elizabeth P. Hewes Bed"  
 Dunlevy Milbank, in memory of his mother, Ella Dunlevy Milbank  
 Mary S. Thayer, to be known as "The Orlando Thayer Bed"
- 1937 Margaretta J. Gamble, to be known as "The Gamble Bed," in memory of her  
 father and mother  
 Jeremiah Milbank, in memory of his father, the late Joseph Milbank
- 1938 Susetta L. Goss, to be known as "The Goss Bed," in memory of her parents,  
 Rev. C. C. Goss and Theodosia C. Goss  
 Annie Miller, to be known as "The Mrs. Alexander Miller Memorial Bed,"  
 in memory of her mother, Mrs. Alexander Miller  
 Bertha H. Minturn, in memory of her most faithful and beloved nurse,  
 Mary Humphries  
 Henry T. Sloane, to be known as "The Euphemia Sloane Coffin Bed,"  
 in memory of his sister Euphemia Sloane Coffin
- 1939 "In Memoriam"  
 Dunlevy Milbank, in memory of his mother, Ella Dunlevy Milbank
- 1940 George Gibbs, to be known as "The George Gibbs Bed"
- 1942 Mrs. Huntington McLane, to be known as the "Therese K. Thorne Bed,"  
 in memory of her mother  
 Cornelia Livingston Pell, in memory of Alfred Duane Pell  
 Frank Wallach, in memory of Ida May Wallach
- 1943 Stuart Duncan, to be known as "The Stuart Duncan Bed"
- 1944 Anonymous, to be known as "The Dr. William Darrach Bed"  
 John Fraser, in memory of his parents, Alexander and Elizabeth Fraser
- 1945 Robert W. Carle, in memory of his mother, to be known as the "Cornelia

Willetts Carle Bed" for general hospital use including harelip and cleft palate cases

- 1947 W. and J. Sloane  
 Frederick Sturges, Jr., Mrs. Mary Armit Sturges, Mrs. Catharine Armit Chapman and Frederick Sturges, III, in memory of Frederick Sturges Walter S. Gifford, in memory of his son, Walter Sherman Gifford, Jr.  
 Ida L. Darling, known as the "Richards Memorial Bed"  
 John Sloane, in memory of his wife, Elsie Nicoll Sloane, to be known as the "Elsie Nicoll Sloane Bed"  
 Elisa Smith Mabon, in memory of her husband, James Brown Mabon
- 1948 Otto M. Eidlitz, to be known as the "Eidlitz Bed"
- 1949 Effie B. Shearman
- 1950 Isabel Shields Kemp, to be known as "Mary M. Shields and the Dr. Robert Coleman Kemp Free Bed"
- 1951 Gerrish Hill Milliken
- 1952 William Dzus, to be known as the "Ukrainian Institute of America, Inc. Bed"
- 1953 Estate of Charlotte C. Garretson, to be known as the "Charlotte Higbee Kelsey Bed"  
 W. Alton Jones Foundation, Inc., to be known as the "Nettie Marie Jones Bed"
- 1954 Estate of M. Samuel Stern to be known as the "M. Samuel Stern Memorial"
- 1955 Estate of Robert J. Eidlitz to be known as the "Marc Eidlitz Bed"  
 Mrs. John S. Holbrook, in memory of her parents John Johnston and Mary Sloane Sinclair
- 1956 Estate of Aurie Dell Black to be known as the "Aurie Dell Black Bed"  
 Robert W. Carle to be known as the "Adele Skiddy Carle Bed"  
 Estate of Adolph Riesenbergl to be known as "The Adolph and Anna A. Riesenbergl Bed"
- 1957 George F. Cahill, M.D., to be known as the "Endowed Bed for Personnel of the Squier Urological Clinic"  
 Edward H. Carle, in memory of his father, to be known as the "John J. Carle Bed"  
 Mrs. William J. Demorest, in memory of her parents, Wealthy H. Lewis and Richard James Lewis  
 Chancellor Kent Lodge 870, Free and Accepted Masons, in memory of George J. Weissman  
 Morris Morgenstern Foundation, to be known as the "Sadie B. Morgenstern Bed"  
 Estate of Mary Ross Potter, to be known as the "Georgianna Morley Bed"  
 Estate of Mathilde S. Sterne, to be known as the "Simon Sterne Beds"  
 (3 Beds)  
 Board of Trustees of The Presbyterian Hospital in honor of and to be known as the "Charles P. Cooper Endowed Bed"
- 1958 Mrs. Robert W. Carle, to be known as the "Robert W. Carle Bed"

MEMORIAL ENDOWED BEDS FOR RESEARCH PURPOSES

- 1948 Mrs. William Barclay Parsons, in memory of her husband,  
 William Barclay Parsons  
 Muriel Jane Rudinger Foundation, Inc., to be known as the "Muriel Jane Rudinger Bed"
- 1950 Charles E. Culpeper Foundation, Inc. (2 Beds)
- 1952 John F. Bush Memorial Bed  
 Estate of Selma Boyd, two beds each to be known as a "Boyd Bed"  
 Bruce Barton, in memory of his wife, to be known as the "Esther Randall Barton Memorial Bed"

- 1953 Herman Goldman Foundation, Inc., in memory of Theresa and Frank Goldman  
W. Alton Jones Foundation, Inc., in memory of Mamie W. Marvin
- 1954 Mr. and Mrs. Charles P. Cooper, in memory of Mrs. Cooper's father,  
Doctor Charles Lathrop Parsons  
John Shepard Parke Memorial Bed  
Mr. and Mrs. Sidney J. Weinberg, in memory of their parents
- 1955 Bruce Barton, in memory of Clyde Scott and Helen Barton Stilwell, to be known as the "Clyde Scott and Helen Barton Stilwell Memorial Bed"  
George F. Cahill, M.D., Research bed in the Department of Urology  
Mr. and Mrs. Charles P. Cooper, in memory of Mrs. Cooper's mother,  
Mrs. Charles Lathrop Parsons  
Herman Goldman Foundation, Inc., in memory of Theresa and Frank Goldman  
Williams-Adler Foundation Bed

## ENDOWED ROOMS

- 1903 Henry H. Rogers
- 1905 Mrs. Morris K. Jesup, to be known as the "Eliza De Witt Memorial Room"
- 1910 Mrs. John Stewart Kennedy, in memory of her husband, to be known as the "J. S. K. Memorial Room"
- 1912 Peter Cumming, to be known as "Peter Cumming Memorial Room"
- 1926 Alumnae Association of the School of Nursing of The Presbyterian Hospital, to be known as the "Amabel G. Roberts Memorial Room"
- 1928 Mrs. William Sloane, to be known as "The William Sloane Room for Graduate Nurses"
- 1930 The Sarah A. Hard Taylor Memorial Fund, to be known as "The Sarah A. Hard Taylor Room"
- 1935 Mrs. Herbert Neal, in memory of her husband, James Norman Hill, deceased
- 1937 S. Augusta Mora, in memory of her husband, Frank Mora, and mother, Sarah Robson Van De Water

*Babies Hospital*

- 1892 The Cribside Committee, known as "Cradyl-Nyst"
- 1894 Miss Ellen James Evans  
Mrs. Henry G. Trevor
- 1895 Mrs. Evan T. Walker  
Mrs. Richard Arnold, in memory of Georgiana Arnold
- 1897 Mr. and Mrs. Charles M. Fry, known as the "Mr. and Mrs. Charles M. Fry Bed"  
Mrs. George Kemp, "For the use and purposes of the Hospital"
- 1898 Mrs. Oliver G. Jennings, known as the "Brewster Bed"
- 1899 Mr. and Mrs. John Sherman Hoyt, in memory of John Sherman Hoyt, Jr.
- 1900 Mrs. Elizabeth Chamberlin Lockwood, in memory of Emily Beaver Chamberlin
- 1902 Mr. and Mrs. W. E. Dodge, in memory of Grace Osborn  
Henry P. Wertheim, in memory of Clara W. Wertheim
- 1904 Mr. and Mrs. George Arents, in memory of George Arents Brown  
Estate of Mrs. Charles Harvey Hartman
- 1905 Mrs. J. Henry Lane  
Mrs. Danicl S. Lamont, known as the "Julia Lamont Bed"
- 1907 The Cribside Committee
- 1908 Arthur W. Butler, in memory of Elizabeth Marshall Butler



- 1910 Dr. and Mrs. L. Emmett Holt, in memory of Kenneth M. Holt  
Edwin Clarence Moller, in memory of Peter Moller
- 1911 Emily A. Watson, in memory of Whceler Watson  
Mrs. Bradley Martin, in memory of David Bradley Martin
- 1912 In loving memory of J. Bradley Cumings, endowed by his friends. "Greater love hath no man than this, that a man lay down his life for his friends."—  
*St. John 15:13*
- 1914 Mrs. Andrew Carnegie, in memory of Archibald Fraser Barrow  
Mrs. Robert W. Todd, known as the "Mabel Todd Bed"
- 1916 Mr. and Mrs. John Chandler Moore, in memory of Edward de Bébian Moore  
Mrs. John Hubbard, in memory of Margaret Fahnestock  
Mrs. Clarence M. Hyde, known as the "Clara Mathewson Hyde Bed"
- 1917 Harris Brisbane Dick, known as the "Harris Brisbane Dick Free Bed"  
Mrs. Edward S. Harkness, known as the "Thomas Stillman Taylor Bed"  
Mr. and Mrs. Walter A. Hirsch, in memory of John Walter Hirsch
- 1919 Mr. and Mrs. Daniel Schnakenberg, in memory of their daughter,  
Anna Kate Bartlett  
Mrs. John Jay Knox, in memory of John Jay Knox  
Mrs. John Jay Knox, in memory of Dr. Reuel B. Kimball
- 1920 Mrs. Andrew Carnegie, "A thanks offering for Louise Carnegie Miller"
- 1921 The Estate of Jacob H. Schiff
- 1922 The Cribside Committee, in memory of Sarah Elizabeth Williams  
Mr. and Mrs. Simon Guggenheim, in memory of their son,  
John S. Guggenhcim
- 1923 Mr. and Mrs. Herman Armour Nichols, "In loving memory of  
Marie Louise Nichols"
- 1929 The Estate of Julia M. Stout
- 1930 Edith C. Thompson, in memory of her mother, Mrs. Grace H. Thompson
- 1934 West End Collegiate Church
- 1935 The Estate of Daniel Schnakenberg, in memory of his children,  
Daniel Schnakenberg, Jr., and Marie Schnakenberg
- 1936 The Estate of Carrie Guggenheim
- 1938 The Estate of Emily S. Hornblower, in memory of her stepdaughter,  
Susie Sanford Hornblower
- 1949 Dr. Frederic H. Bartlett, "Endowed in loving memory of Frederic H. Bartlett, M.D., 1872-1948, by his patients and other friends to commemorate his many years of faithful service in Babies Hospital"
- 1950 The Estate of Emelyn L. Coolidge, in memory of Marianna Wheeler and Emelyn L. Coolidge, M.D., to be known as "The Wheeler-Coolidge Bed"
- 1957 Estate of Martha S. Reynolds, in memory of her mother,  
Ernestine Schaffner

### ***Neurological Institute***

- 1929 Red Cross Endowed Bed for Nurses  
Rivington-Dwyer Endowed Room for Nurses
- 1943 Alice Dunning Starr, in memory of her husband, Allen Starr

#### MEMORIAL ENDOWED BEDS FOR RESEARCH PURPOSES

- 1952 Estate of John Bahrenburg, in memory of John H. Bahrenburg and Elizabeth Bahrenburg (Sixteen Beds)

### ***New York Orthopedic Hospital***

- 1883 Miss C. B. Hicks, continued in perpetuity by Buchanan Winthrop
- 1886 Mrs. Elizabeth Milbank Anderson, four beds, in memory of  
J. Milbank Anderson

- 1891 Alfred Corning Clark, three beds  
Edward Severin Clark, two beds, to be known as the "Edward Severin Clark Beds"  
Mrs. Henry S. Winthrop
- 1893 Mrs. William D. Sloane, in memory of William Douglas Sloane, Jr.  
James K. Gracie, in memory of Anna Bulloch Gracie  
Miss Sarah B. Gibbs
- 1894 Mrs. Richard Tylden Auchmuty, two beds, in memory of  
Richard Tylden Auchmuty  
James H. Jones
- 1896 Mrs. William Astor, in memory of Helen Roosevelt  
Mrs. Evan T. Walker, in memory of John J. Walker
- 1897 Mrs. William D. Sloane, two beds, one bed in memory of Maria Louise Vanderbilt and one in memory of Emilie Vanderbilt Burden
- 1898 Mrs. Charles B. Alexander, for her daughter, named the  
"Harriet Alexander Bed"
- 1901 Mrs. N. A. Baldwin, in memory of Louise Suydam Duer  
Mrs. Benjamin Brewster, in memory of Benjamin Brewster  
Henry T. Sloane, Jessie and Emily Sloane, bed endowed by their father  
Mrs. Marion Story, in memory of M. Furman Hunt
- 1902 James Henry Smith, two beds, in memory of George Smith  
Miss Emily A. Watson, in memory of Mrs. Mary J. Walker
- 1904 Miss Cornelia Prime, in memory of her brother, Temple Prime  
Miss Helen Phipps  
James K. Gracie, in memory of Esther Gracie Ogden
- 1906 Miss Caroline White  
Mrs. M. Dwight Collier, in memory of Maurice Dwight Collier
- 1908 Mrs. H. N. Munn, Mrs. Augusta Munn Tilney and Orson D. Munn,  
in memory of Henry Norcross Munn
- 1911 Estate of Everetta C. Whitney  
Miss Josephine C. Smith, in memory of her father, Dr. Edward A. Smith,  
and her mother, Rebecca Miller Smith
- 1913 Estate of Marion de Forest Clark, in memory of Julian Bouton Clark  
An anonymous donor, to be known as "Mary Townsend Cuyler Bed"  
Carolina F. Butterfield, in memory of Frederick Falconer Butterfield
- 1915 Miss Emily Trevor  
Mrs. Frederick W. Vanderbilt, to be known as "The Louise Bed"  
George Grant Mason, two beds, in memory of his uncle, James Henry Smith
- 1916 Henry M. Tilford, in memory of Catharine Hunt Tilford  
Estate of Miss Clementine Furniss, to be known as the  
"Clementine Furniss Bed"  
An anonymous donor
- 1917 Mrs. Charles H. Senff, in memory of her little son, Henry Senff  
Mrs. A. Murray Young, in memory of her great uncle, Wilson G. Hunt
- 1919 R. Fulton Cutting, to be known as the "Helen Suydam Cutting Bed"  
Mrs. Frederick Delano Hitch  
Levi P. Morton, in memory of Anna Livingston Morton  
Miss Georgiana G. R. Wendel, two beds, "In Memory of My Sister,  
Augusta A. S. Wendel"  
Various donors, in memory of Theodore Roosevelt
- 1920 Mrs. John Hobart Warren
- 1921 Mrs. Winthrop W. Aldrich, in memory of her little son,  
Winthrop Williams Aldrich, Jr.  
F. Ambrose Clark, to be known as "The Florence L. Clark Bed"
- 1922 Mrs. David T. Dana, in memory of her mother, Mrs. M. Dwight Collier

- 1924 Estate of Charlotte Bruce Bickmore, in memory of  
Albert Smith Bickmore, Jr.  
Mrs. Louise Ward McAlister Lewis, in memory of her mother
- 1925 Miss Elizabeth J. Hofer, two beds, in memory of Horatio C. Kretchmar  
Percy Chubb, in memory of his wife  
Junior Red Cross of the Public Schools of New York  
Mrs. Douglas Robinson, in memory of her friend, Charles Allen Munn
- 1926 Junior Red Cross of the Public Schools of New York
- 1927 Darrach Home for Crippled Children, in memory of Dr. May Darrach
- 1928 Mrs. Mary L. Schoonmaker, ten beds, in memory of Sylvanus Lothrop  
Schoonmaker and Frank Layng Schoonmaker  
Estate of Henry D. Dickinson, in memory of Hathaway M. Dickinson
- 1930 James T. and Sarah Bancroft Leavitt, to be known as the  
"Mrs. James T. Leavitt Bed"
- 1934 Henry C. deRham, Frederic F. deRham and Clarisse deRham Rutherford,  
in memory of their parents, Charles and Emily Howe deRham
- 1935 Mrs. Percy R. Pyne and family, in memory of Meredith Howland Pyne
- 1936 Miss Elizabeth Stewart Hamilton, in memory of Mrs. John Hobart Warren,  
to be known as the "Harriette Mott Warren Bed"  
Mrs. Edward S. Harkness, to be known as "Dorcas House Bed"  
in dear memory of Wilma Gideon
- 1938 Miss Grace Howard Potter, to be known as the "Howard and Mary Louisa  
Potter Bed," in memory of her father and mother
- 1955 General and Mrs. E. F. Maude, in memory of Mrs. Maude's father,  
Robert I. Brewster  
Estate of Carrie Rosenshine, to be known as "The Lillie Rosenshine—  
Marjorie L. Kaufman Bed"
- 1956 Estate of Adolph Riesenbergs, to be known as "The Adolph and  
Anna A. Riesenbergs Bed"

## ENDOWED ROOMS

- 1922 Glenn Ford McKinney, a ward room in the country branch, in memory of  
his wife, Jean Webster McKinney
- 1929 400 of his friends and associates, a room in the private pavilion, in memory  
of H. Le Roy von Lackum, M.D., surgeon in this hospital, 1916-1928

*Institute of Ophthalmology*

(Including Herman Knapp Memorial Eye Hospital)

- 1883 Mrs. Oswald Ottendorfer
- 1884 Miss Henrietta A. Lenox
- 1895 Miss Mary Morris van den Heuval
- 1897 Mrs. Giovanni Ceccarini
- 1913 Miss Catherine A. Bliss  
Miss D. Willis James
- 1918 Truman Peck Stone
- 1921 Miss Rosie Bernheimer (In memory of her parents)
- 1923 Miss Mary Wiley (In memory of her brother, George Wiley)
- 1928 Mrs. Matilda Townsend Palmer
- 1931 Leo Doblin
- 1936 Charles M. Brooks
- 1957 Mortimer and Harriet M. Marcus Foundation, Inc., to be known as  
"The Mortimer and Harriet M. Marcus Endowed Bed"



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# Gifts and Bequests

The activities of Presbyterian Hospital and its various constituent hospitals and divisions at the Medical Center are supported to a substantial extent by the income from bequests of friends who desire to insure the continuation of their help to the sick of New York.

Bequests may be made in the following form:

**Form of Bequest**    *I give and bequeath to The Presbyterian Hospital in the City of New York the sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) to be applied to the use and benefit of the said Hospital, under the direction of the Trustees thereof.*

In case it is desired to specify the particular use to which the bequest is to be put, such use may be specified in place of the words "*to be applied to the use and benefit of the said Hospital, under the direction of the Trustees thereof.*" in the form of bequest given above.

In case it is desired to make the bequest to the Hospital as a memorial "*In memory of \_\_\_\_\_*" may be added to the Form of Bequest.

In all instances the gift should be to "The Presbyterian Hospital in the City of New York" in its full corporate name even when specifying the particular use to which the gift is to be put.

The Presbyterian Hospital in the City of New York, by reason of the consolidation of its constituent hospitals at the Medical Center, will receive gifts made to The Presbyterian Hospital in the City of New York, to the Babies Hospital of the City of New York, to Neurological Institute of New York and to New York Orthopaedic Dispensary and Hospital. It is, therefore, not necessary to change the provision of any will naming any of the foregoing constituent hospitals as a beneficiary.

THATCHER M. BROWN, JR.,  
*Treasurer*



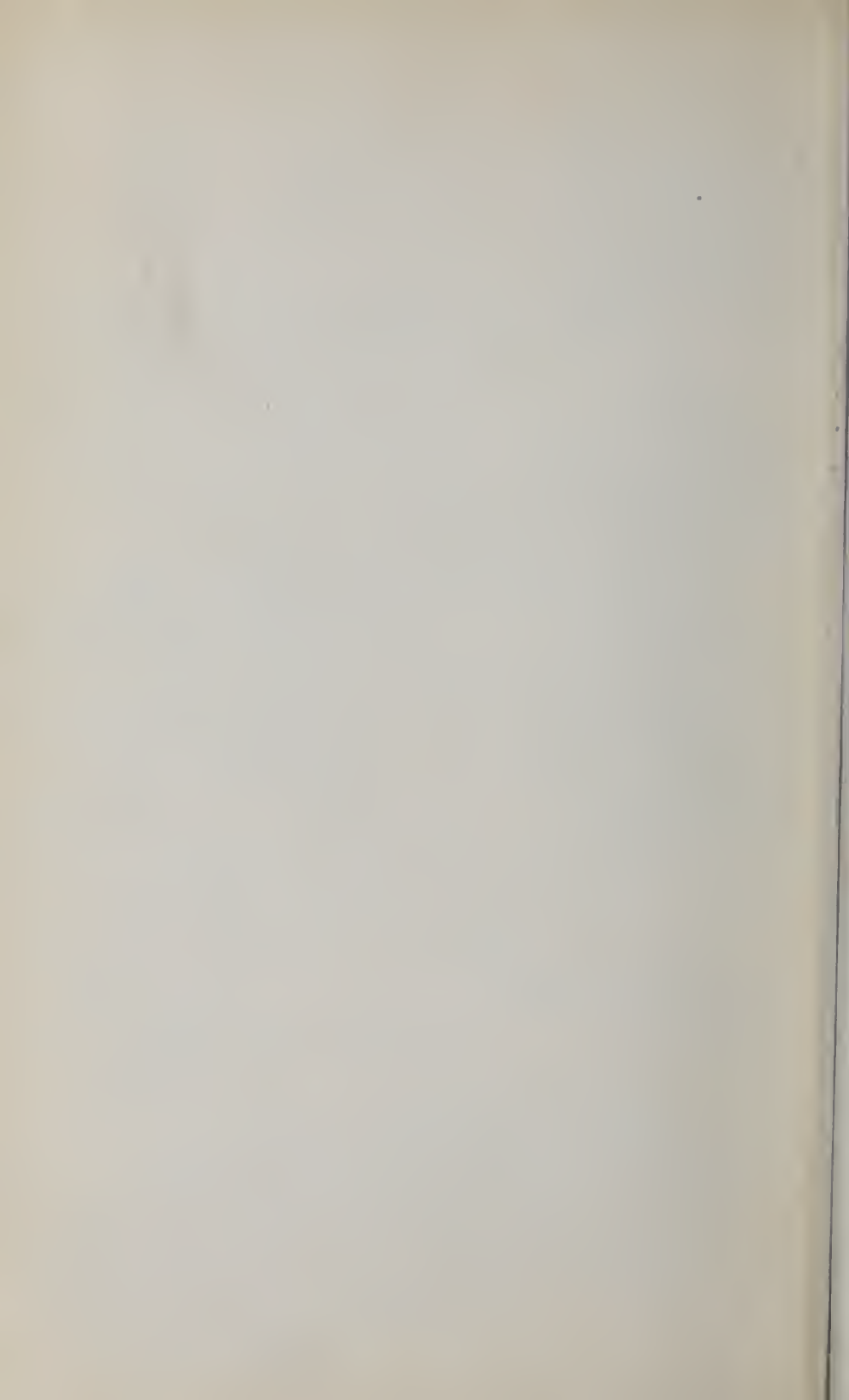




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