



Transactions of the
Philadelphia
Academy of Surgery

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1965

NOTICE

The thirtieth volume of the TRANSACTIONS OF THE PHILADELPHIA ACADEMY OF SURGERY covers the 7 years from 1957 to 1963, inclusive.

H. TAYLOR CASWELL
Recorder

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Amendments¹ to the Constitution and the By-Laws
of the Philadelphia Academy of Surgery

*To be presented by the Council at the December 7th
meeting for possible action.*

Constitution

ARTICLE I

The name of the Society shall be "THE PHILADELPHIA ACADEMY OF SURGERY."

ARTICLE II

The objects of the Academy shall be the Cultivation and Improvement of the Science and Art of Surgery, the Elevation of the Medical Profession, the Promotion of the Public Health, and such other matters as may come legitimately within its sphere.

ARTICLE III

Section 1. The Society shall consist of Active, Senior, Nonresident, Government Service, and Honorary and Inactive Fellows.

Section 2. The Active Membership shall be limited to one hundred (100) Fellows.

Section 3. Active Fellows shall automatically become Senior Fellows of the Academy after they have been members for twenty (20) years or have reached the age of sixty (60). Senior Members shall have all the privileges of Active Fellows.

Section 4. Upon request, any Fellow in good standing, who may remove from the City of Philadelphia, to reside at a distance exceeding thirty (30) miles from the City Hall, may be made a Nonresident Fellow of the Academy, by recommendation of the Council and a two-thirds vote of the Fellows present at any regular meeting of the Academy. Nonresident Fellows shall have all the privileges of Active Fellows.

Section 5. Officers of the Government Services stationed in Philadelphia may be elected as Government Fellows of the Philadelphia Academy of Surgery for the period of their stay in Philadelphia. Such Fellows shall have all the rights and privileges of Active Fellows but shall be ineligible to vote or hold office.

Section 6. Honorary Fellows, to the number of thirty (30), may from time to time be elected. They shall not be eligible for election as Officers.

Section 7. Inactive Fellows. This consists of Active Fellows or Senior Fellows no longer in active practice of Surgery but who wish to participate in the activities of the Philadelphia Academy of Surgery. These Fellows will be subject to reduced dues and will not be subject to assessments.

ARTICLE IV

The Officers of the Academy shall consist of the President, the First Vice-President, the Second Vice-President, the Secretary, the Treasurer, the Recorder, and the Chairman of the Committee on Scientific Business.

ARTICLE V

These Officers shall be elected by a ballot each year and shall be eligible for re-election. A Fellow may serve as President for only two (2) terms.

ARTICLE VI

There shall be a standing Committee on Scientific Business.

The Committee on Scientific Business shall consist of a Chairman, who is an elected Officer of the Society, the Recorder, and one (1) Fellow appointed by the President. The duties of this Committee shall be to organize the Scientific Programs of the Society.

ARTICLE VII

A Council shall be established consisting of the President, the Vice-Presidents, the Secretary, the Treasurer, the Chairman of the Business Committee, and two (2) Fellows-at-large elected by the Society annually, one (1) of whom will whenever possible be a previous President. The President of the Academy shall act as Chairman of the Council. The duties of the Council shall be three:

1. To act as an Executive Committee for the Academy between meetings,
2. To receive all nominations for Fellowship and to report names for election to the Academy after due investigation,
3. To act as a Board of Censors as required by the Academy.

ARTICLE VIII

At the stated meeting in February every fifth year, three (3) Fellows shall be appointed by the President to serve for five (5) years, or until their successors are appointed, as Trustees of the S. D. Gross Prize Fund and Library. It shall be the duty of the Trustees to keep charge of the Fund, to attend to its safe investment, and to submit a report to each annual meeting of the Academy of their work during the year, which shall be entered upon the minutes of the Academy. The Trustees shall have, on behalf of the

Academy, charge of the S. D. Gross Library, which is, in accordance with the will of the Testator, in the custody of the College of Physicians of Philadelphia. They shall each year make such additions to the collection of Surgical Books in the Library as may be deemed advisable, and as the funds contributed to the care and support of the Library may permit. They shall have charge of the distribution of the S. D. Gross Prize. It shall be their duty to publish in the medical journals the conditions on which the Prize is offered, to receive all essays submitted for competition, and upon approval of their decision by the Academy, to make award of the Prize to the successful competitor.

ARTICLE IX

To become a Fellow of the Academy, a physician must be a Doctor of Medicine who has graduated from a reputable School of Medicine at least ten (10) years before he is proposed. He must be proposed by at least three (3) Fellows of the Academy, who shall write letters to the secretary in support of the proposal. The candidate for Fellowship must receive the approval of the Council before his name may be presented to the Academy as a candidate for election. He must meet such other requirements as are from time to time stipulated in the By-Laws and must be elected by the Fellows in accordance with the By-Laws.

ARTICLE X

Any Fellow having complied with the requirements of the Constitution and By-Laws may resign his Fellowship by presenting at a stated meeting a communication to that effect, with the Treasurer's certificate that he is not indebted to the Academy, and such resignation shall become valid on acceptance by the Academy.

Any violation of the regulations of the Academy, and of the Code of Medical Ethics adopted by it, shall be punished by reprimand, suspension, or expulsion after a full hearing by the Council of the Academy or upon the request of the Fellow in question by the Academy itself.

ARTICLE XI

This Constitution may be amended by a two-thirds vote of the Fellows, after such amendment has been presented in writing to the Secretary and read at the two previous meetings of the Academy, and circulated with the call to the meeting at which action is to be taken.

By-Laws

SECTION I

MEETINGS

The stated meetings of the Academy shall be held at eight-fifteen o'clock P.M., on the first Monday of each month, except June, July, August and September. The date of any stated meeting may be changed at the discretion of the Council by giving notice to the Fellows at least two (2) weeks before the meeting.

SECTION II

SPECIAL MEETINGS

A special meeting may be called at any time by the President, and it shall be his duty to do so upon the requisition, in writing, of any ten (10) Fellows.

SECTION III

QUORUM

For the transaction of ordinary business any number of Fellows shall, at any meeting, constitute a quorum. For all elections, for changes in the Constitution and By-Laws, for ordering assessments, or for the appropriation or expenditure of any sum of money exceeding one hundred dollars (\$100.00), or for any other business affecting the interests of the Academy, or of its individual Fellows, fifteen (15) shall be required to be present.

SECTION IV

DUTIES OF OFFICERS—PRESIDENT AND VICE-PRESIDENTS

The President shall preside at the meetings, regulate debates, sign Certificates of Fellowship, appoint committees not otherwise provided for, announce the results of elections, and perform all other duties pertaining to his office. The Vice-Presidents shall assist the President in the discharge of his functions, and in his absence preside in the order of seniority.

SECTION V

SECRETARY

The Secretary shall keep the minutes of the meetings of the Academy, one copy of which he shall send to the Recorder. He shall notify the Fellows of the meetings, announcing on the notices the business to be transacted, with the names of candidates for Fellowship to be balloted upon by the Academy, attest all official acts requiring certificates in connection with, or independently of, the President, notify the Officers and Fellows of their election, acquaint newly elected Fellows with the requirements of the By-Laws concerning admission, receive the signatures of newly elected

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Fellows, take charge of papers not otherwise provided for, shall keep in his custody the seal of the Academy, and affix it to any documents or papers that the Academy may direct.

SECTION VI

TREASURER

It shall be the duty of the Treasurer to receive all moneys and funds belonging to the Academy, unless otherwise provided for; he shall pay bills for all expenses properly incurred by the Academy; collect all dues and assessments as promptly as possible, and present an annual account for audit. Two auditors shall be appointed by the President at the Annual Meeting to audit these accounts.

At the December meeting, the Treasurer shall propose suitable honoraria for the secretaries of the following officers: the Secretary, the Treasurer, the Recorder, the Chairman of the Committee on Scientific Business, and upon affirmative vote of the Fellows shall send such honoraria before Christmas.

SECTION VII

RECORDER

The Recorder shall serve as a Member of the Committee on Scientific Business. He shall receive copies of the Annual Oration. He shall maintain the archives of the Academy, including copies of the minutes, and he shall consult with Fellows who present Annual Orations and Memoirs before the Academy in regard to publication. He shall maintain the material required for publication of the *Transactions of the Philadelphia Academy of Surgery*, and shall act as Editor for the *Transactions*, arranging for their publication at intervals of approximately four (4) years as required by the Academy.

SECTION VIII

COUNCIL

The Council of the Academy shall hold meetings for the transaction of routine business upon notice from the Secretary and special meetings shall be held on call of the President or on the call of any two (2) of its own number. A quorum shall consist of not less than four (4) of its members, and notice of any unusual business or any routine business having unusual significance for the Academy shall be sent to members at least five (5) days prior to a meeting.

SECTION IX

THE COMMITTEE ON SCIENTIFIC BUSINESS

The Committee on Scientific Business shall consist of three (3) Fellows, a Chairman elected by the Academy, the Recorder, and one (1) additional Fellow appointed by the President. It shall have charge of the scientific

business of the meetings, it shall be its duty to provide for the presentation of papers and discussions of subjects for each meeting, it shall arrange, at such times as may deem proper, for the discussion of scientific subjects by the Fellows of the Academy, and it shall, when authorized by the Academy, invite members of the profession, resident or nonresident, to read papers before the Academy, or to present topics for discussion. It shall act as a committee on publication, and shall present at the annual meeting a report of the work done during the year, which shall be entered upon the minutes of the Academy.

SECTION X
ANNUAL ORATION

There shall be appointed by the President at the stated meeting in February of each year, a Fellow whose duty it shall be to deliver at a stated meeting, usually December, of that year, an address in Surgery. This address shall be delivered to the Recorder in writing at the time of its presentation, and it shall be published in the *Transactions* of the Academy. After consultation with the Recorder, it may be published in any other reputable scientific journal so long as it is identified as the Annual Oration of the Philadelphia Academy of Surgery, and so long as permission is obtained for its subsequent publication in the *Transactions* of the Academy.

SECTION XI
ELECTION OF OFFICERS

At the November meeting of the Academy, the President shall nominate three (3) Fellows to act as a Nominating Committee. Insofar as possible, these shall be previous Presidents of the Academy. This Committee shall report at the December meeting of each year. Additional Fellows may be nominated for any office from the floor. The Officers of the Academy shall be elected at the January meeting. The election shall be by ballot whenever more than one (1) candidate has been nominated for any office, and a majority of all those present shall be necessary to a choice. Where there is no contest, election may be by acclamation.

SECTION XII
PROPOSALS FOR FELLOWSHIP

Proposals for Fellowship shall be in writing signed by three (3) Fellows with a letter from each vouching for the character of the candidate. Completed nominations shall be considered by the Council at its next meeting. In the event action is deferred for more than three (3) meetings of Council, the President shall communicate with one or more of the candidate's sponsors.

No candidate may be proposed for Fellowship who has not made at least one (1) presentation before the Academy. The names of candidates

who are to be recommended by the Council shall be published with the notices of the meeting immediately preceding consideration by the Fellows. Certification by the candidate's specialty board is not a requirement, but the case for an individual who is not certified must be especially strong to justify his election. It is expected that a candidate proposed for Fellowship will have attained some reputation in surgical practice, research and/or teaching.

SECTION XIII
ELECTION OF FELLOWS

The names of candidates proposed for Fellowship, who are approved by Council, shall be read with supporting letters from each of the three (3) proposers at a stated meeting of the Academy. Their names shall be read at a second meeting, and sent out with a call to the following meeting at which the election shall be held. Election of candidates for Fellowship who have been reported upon by the Council may take place at any stated meeting and shall be by ballot. A two-thirds vote of those present shall be necessary to elect the candidate to Fellowship.

A candidate for Fellowship failing to obtain the requisite number of votes in his favor may not again be nominated before the expiration of two (2) years.

SECTION XIV
SIGNING THE CONSTITUTION

Every person elected to be a Fellow shall pay the initiation fee and shall sign the Constitution and By-Laws. No person shall acquire the rights of Fellowship unless he makes payment of the initiation fee and signs the Constitution and By-Laws by the third meeting following his election.

SECTION XV
INITIATION FEE

Every Fellow shall, on admission, pay an initiation fee of twenty-five dollars (\$25.00).

SECTION XVI
ANNUAL DUES

There shall be an annual assessment of fifteen dollars (\$15.00), to be paid within four (4) months after the meeting in January. Fellows elected in November or December shall not be subject to the annual assessment for that year. The annual assessment for Nonresident Fellows shall be five dollars (\$5.00). The dues for Senior Fellows who have retired from practice may be reduced or permanently remitted by a two-thirds vote of Council. Government Fellows shall be assessed annual dues of \$15.00. Inactive Fellows will be subject to reduced dues and will not be subject to assessments. Dues of Active Fellows who go on active duty with the government may be remitted temporarily by action of Council.

Any Fellow who requests relief from the payment of dues and assessments may, at the discretion of the Council, be relieved of such dues and assessments, without loss of his Fellowship or other rights.

SECTION XVII

Any Fellow in arrears for one (1) year, being notified of the fact by the Treasurer, in writing, and not paying his dues within two (2) months thereafter, shall forfeit his Fellowship; and it shall be the duty of the Treasurer to notify the Academy of such forfeiture, which shall be entered on the minutes, and the name stricken from the list of Fellows. The notice aforesaid shall contain a copy of this section.

Any Active Fellow not attending at least two (2) of the Stated Meetings in any one (1) year (October through May) shall state in writing to the Secretary the reasons for this failure. The names of such Active Fellows shall then be read to the members of Council by the Secretary. The members of Council may then take whatever action they deem necessary as follows: excuse, reprimand, or expel the offending Fellow.

SECTION XVIII

GUESTS

The Scientific Programs of the Society shall be open to any members of the medical profession and individuals in ancillary fields, including medical students and graduate students in the medical sciences, unless attendance is specifically restricted by vote of the Academy. Any Fellow may invite any medical man in good standing to a meeting of the Academy as an official guest. Such an official guest shall be introduced to the President, and to the Academy by the President, and his name entered upon the minutes. The President may invite any such person to participate in the discussion.

Business meetings shall be limited to Fellows of the Academy, except when a non-Fellow shall be invited to attend some portion of a business meeting for a particular purpose at the request of the President, who shall make known the presence of such an individual at the beginning of the meeting.

SECTION XIX

SEAL AND CERTIFICATE OF FELLOWSHIP

The Academy shall have a distinct seal, as well as a Certificate of Fellowship, to a copy of which, signed by the President and Secretary, every Fellow shall be entitled.

SECTION XX
ORDER OF BUSINESS

The order of business shall be as follows unless modified by the President:

- I. Scientific Proceedings:
 1. Call to order.
 2. Introduction of guests.
 3. Introduction of new Fellows.
 4. Reading of scientific papers, including the discussion of each.
- II. Business Session:
 1. Reading of the minutes of the last meeting.
 2. Reports of committees.
 3. Unfinished business.
 4. New business.
 5. Election of officers.
 6. Election of Fellows.
 7. Adjournment.

SECTION XXI

RULES OF ORDER

The proceedings of the Academy shall be conducted according to *Robert's Rules of Order*.

SECTION XXII

ALTERATIONS OF THE BY-LAWS

Amendments to the By-Laws may be made at any stated meeting at which a quorum is present, providing that notice of the proposed amendment shall have been sent to the members with the call to the meeting at least five (5) days in advance. A majority vote shall suffice for amendment to the By-Laws.

Founders

Founded April 21, 1879

Incorporated December 27, 1879

*SAMUEL D. GROSS, M.D., LL.D., D.C.L., Oxon

*D. HAYES AGNEW, M.D., LL.D.

*ADDINELL HEWSON, M.D.

*RICHARD J. LEVIS, M.D.

*THOMAS G. MORTON, M.D.

*JOHN H. PACKARD, M.D.

*JOHN H. BRINTON, M.D.

*WILLIAM H. PANCOAST, M.D.

*J. EWING MEARS, M.D.

*SAMUEL W. GROSS, M.D., LL.D.

* Deceased.

List of Officers, 1965

President

DR. JONATHAN E. RHOADS

First Vice-President

DR. GEORGE J. WILLAUER

Second Vice-President

DR. GEORGE P. ROSEMOND

Secretary

DR. THOMAS F. NEALON, JR.

Treasurer

DR. ORVILLE C. KING

Recorder

DR. H. TAYLOR CASWELL

Council

DR. DONALD R. COOPER

DR. J. MONTGOMERY DEAVER

*With the President, First and Second Vice-Presidents,
Secretary, Treasurer and Chairman of the Business Committee*

Business Committee

DR. BROOKE ROBERTS (Chairman)

With the Recorder

Gross Committee

DR. PAUL NEMIR (Fund Chairman)

Philadelphia Academy of Surgery

Founded April 21, 1879

Incorporated December 27, 1879

Officers

1879

Temporary Chairman ADDINELL HEWSON
 Temporary Secretary J. EWING MEARS
 Temporary Treasurer WILLIAM HUNT
 Temporary Recorder JOHN B. ROBERTS

PRESIDENT

ELECTED	ELECTED
1880 SAMUEL D. GROSS	1928 ASTLEY P. C. ASHHURST
1884 D. HAYES AGNEW	1930 GEORGE P. MULLER
1891 WILLIAM HUNT	1932 JOHN SPEESE
1895 THOMAS G. MORTON	1934 WALTER ESTELL LEE
1898 DEFOREST WILLARD	1936 DAMON B. PFEIFFER
1902 RICHARD H. HARTE	1938 J. STEWART RODMAN
1904 HENRY R. WHARTON	1940 ELDRIDGE L. ELIASON
1906 JOHN B. ROBERTS	1942 ROBERT H. IVY
1908 WILLIAM J. TAYLOR	1944 HUBLEY R. OWEN
1910 ROBERT G. LECONTE	1946 JOHN B. FLICK
1912 GWILYM G. DAVIS	1948 THOMAS A. SHALLOW
1914 JOHN H. GIBBON	1950 CALVIN M. SMYTH
1916 CHARLES H. FRAZIER	1952 I. S. RAVDIN
1918 EDWARD MARTIN	1954 L. K. FERGUSON
1920 GEORGE G. ROSS	1956 JOHN GIBBON, JR.
1922 JOHN H. JOPSON	1958 ADOLPH WALKLING
1924 EDWARD B. HODGE	1960 W. EMORY BURNETT
1926 CHARLES F. MITCHELL	1962 J. MONTGOMERY DEAVER

VICE-PRESIDENT

ELECTED	ELECTED
1880 D. HAYES AGNEW	1889 JOHN H. PACKARD
1880 R. J. LEVIS	1891 WILLIAM W. KEEN
1884 SAMUEL W. GROSS	1891 J. EWING MEARS

ELECTED	ELECTED
1898 JOHN ASHHURST, JR.	1926 GEORGE P. MULLER
1900 RICHARD H. HARTE	1928 JOHN SPEESE
1900 HENRY R. WHARTON	1930 WALTER ESTELL LEE
1902 JOHN B. DEAVER	1932 DAMON B. PFEIFFER
1904 JOHN B. ROBERTS	1934 J. STEWART RODMAN
1905 WILLIAM J. TAYLOR	1936 E. J. KLOPP
1906 ROBERT G. LECONTE	1938 ELDRIDGE L. ELIASON
1908 C. G. DAVIS	1938 ROBERT H. IVY
1910 JOHN H. GIBBON	1940 HUBLEY R. OWEN
1912 CHARLES H. FRAZIER	1942 JOHN B. FLICK
1914 EDWARD MARTIN	1943 THOMAS A. SHALLOW
1916 GEORGE G. ROSS	1945 CALVIN M. SMYTH
1918 JOHN H. JOPSON	1948 L. KRAEER FERGUSON
1919 H. C. DEAVER	1950 I. S. RAVDIN
1920 JOHN H. JOPSON	1952 L. K. FERGUSON
1920 EDWARD B. HODGE	1954 JOHN H. GIBBON, JR.
1922 CHARLES F. MITCHELL	1956 ADOLPH WALKLING
1924 ASTLEY P. C. ASHHURST	1958 W. EMORY BURNETT
1926 ASTLEY P. C. ASHHURST	1960 J. MONTGOMERY DEAVER
	1962 JONATHAN E. RHOADS

SECRETARY

ELECTED	ELECTED
1880 J. EWING MEARS	1930 DEFOREST P. WILLARD
1885 J. HENRY C. SIMES	1935 HENRY P. BROWN, JR.
1893 THOMAS R. NEILSON	1940 JOHN B. FLICK
1896 WILLIAM J. TAYLOR	1942 L. KRAEER FERGUSON
1905 JOHN H. GIBBON	1943 CALVIN M. SMYTH
1909 CHARLES F. MITCHELL	1945 L. KRAEER FERGUSON
1915 GEORGE P. MULLER	1948 J. MONTGOMERY DEAVER
1920 J. STEWART RODMAN	1958 WILLIAM B. FITTS
1922 HUBLEY R. OWEN	1960 HENRY P. ROYSTER

TREASURER

ELECTED	ELECTED
1880 WILLIAM HUNT	1922 WILLIAM B. SWARTLEY
1891 WILLIAM G. PORTER	1935 L. KRAEER FERGUSON
1904 JAMES P. HUTCHINSON	1938 HARRY E. KNOX
1911 EDWARD B. HODGE	1947 S. DANA WEEDEE
1920 DUNCAN L. DESPARD	1960 ORVILLE C. KING

RECORDER

ELECTED

1880 JOHN B. ROBERTS
 1881 DEFOREST WILLARD
 1884 C. B. G. DE NANCREDE
 1884 J. EWING MEARS
 1891 LEWIS W. STEINBACH
 1902 JOHN H. GIBBON
 1905 JOHN H. JOPSON
 1915 JOHN SPEESE

ELECTED

1920 HENRY P. BROWN, JR.
 1922 J. WILLIAM BRANSFIELD
 1926 CALVIN M. SMYTH, JR.
 1937 ADOLPH A. WALKLING
 1950 JONATHAN E. RHOADS
 1952 W. EMORY BURNETT
 1956 FREDERICK A. BOTHE
 1960 H. TAYLOR CASWELL

COUNCIL

ELECTED

1880 JOHN ASHHURST, JR.
 1880 JOHN H. BRINTON
 1894 WILLIAM B. HOPKINS
 1895 HENRY R. WHARTON
 1898 THOMAS R. NEILSON
 1900 W. JOSEPH HEARN
 1902 ROBERT G. LECONTE
 1906 THOMAS R. NEILSON
 1910 J. CHALMERS DACOSTA
 1920 CHARLES F. MITCHELL
 1922 GEORGE G. ROSS
 1922 JAMES H. BALDWIN
 1923 WILLIAM J. TAYLOR
 1924 JOHN H. JOPSON
 1924 JOHN SPEESE
 1925 EDWARD B. HODGE
 1926 DAMON B. PFEIFFER
 1927 CHARLES F. MITCHELL
 1930 ASTLEY P. C. ASHHURST
 1930 HUBLEY R. OWEN
 1932 GEORGE P. MULLER
 1935 DEFOREST P. WILLARD
 1936 WALTER ESTELL LEE

ELECTED

1936 ROBERT H. IVY
 1940 J. STEWART RODMAN
 1940 DAMON B. PFEIFFER
 1941 EDWARD B. HODGE
 1942 THOMAS A. SHALLOW
 1942 ELDRIDGE L. ELIASON
 1943 ROBERT H. IVY
 1946 HUBLEY R. OWEN
 1947 CHARLES F. MITCHELL
 1948 FRANCIS C. GRANT
 1950 THOMAS A. SHALLOW
 1952 ADOLPH WALKLING
 1952 CALVIN M. SMYTH
 1954 I. S. RAVDIN
 1954 FREDERICK A. BOTHE
 1956 FREDERICK ROBBINS
 1956 L. KRAEER FERGUSON
 1957 FREDERICK ROBBINS
 1958 JOHN H. GIBBON, JR.
 1959 ORVILLE C. KING
 1960 ADOLPH WALKLING
 1960 JONATHAN E. RHOADS
 1962 DONALD K. COOPER

1962 W. EMORY BURNETT

With President, Vice-President, Secretary and Treasurer

BUSINESS COMMITTEE

ELECTED

1895 WILLIAM J. TAYLOR
 1895 DEFOREST WILLARD
 1896 RICHARD H. HARTE
 1897 ROBERT G. LECONTE
 1900 G. G. DAVIS
 1902 JOHN H. JOPSON
 1905 GEORGE G. ROSS
 1908 FRANCIS T. STEWART
 1914 JOHN SPEESE
 1916 WALTER ESTELL LEE
 1916 MORRIS BOOTH MILLER
 1917 DAMON B. PFEIFFER
 1917 ASTLEY P. C. ASHHURST
 1919 A. BRUCE GILL
 1919 J. STEWART RODMAN
 1920 ARTHUR BILLINGS
 1922 DAMON B. PFEIFFER
 1924 DEFOREST P. WILLARD
 1928 WALTER ESTELL LEE

ELECTED

1930 EDWARD T. CROSSAN
 1930 JOHN B. FLICK
 1931 HENRY P. BROWN, JR.
 1932 EDWARD T. CROSSAN
 1935 B. FRANKLIN BUZBY
 1936 JOHN B. FLICK
 1938 L. KRAEER FERGUSON
 1940 J. MONTGOMERY DEAVER
 1942 CALVIN M. SMYTH
 1943 FREDERICK A. BOTHE
 1943 W. EMORY BURNETT
 1944 ADOLPH A. WALKLING
 1946 J. MONTGOMERY DEAVER
 1949 FREDERICK A. BOTHE
 1950 JOHN H. GIBBON, JR.
 1950 JONATHAN E. RHOADS
 1951 FRANK ALLBRITTEN, JR.
 1954 EDWIN W. SHEARBURN
 1960 JOHN Y. TEMPLETON, III

With the Recorder

TRUSTEES OF THE SAMUEL D. GROSS PRIZE
FUND AND LIBRARY

1894

J. EWING MEARS JOHN ASHHURST, JR. WILLIAM W. KEEN

With Samuel Ashhurst and William Hunt to serve with them on distribution of prize.

1895-1899

J. EWING MEARS
JOHN ASHHURST, JR.
WILLIAM W. KEEN

1900-1901

WILLIAM W. KEEN
J. EWING MEARS
J. CHALMERS DACOSTA

1902-1904

WILLIAM J. TAYLOR
WILLIAM L. RODMAN
JOHN B. ROBERTS

1905

WILLIAM J. TAYLOR
RICHARD H. HARTE
DEFOREST WILLARD

1910

WILLIAM J. TAYLOR
RICHARD H. HARTE
JOHN H. GIBBON

1915

WILLIAM J. TAYLOR
JOHN H. JOPSON
EDWARD B. HODGE

1920

WILLIAM J. TAYLOR
JOHN H. JOPSON
EDWARD B. HODGE

1925

WILLIAM J. TAYLOR
JOHN H. JOPSON
EDWARD B. HODGE

1930

WILLIAM J. TAYLOR
JOHN H. JOPSON
EDWARD B. HODGE

1935

EDWARD B. HODGE
CHARLES F. MITCHELL
CALVIN M. SMYTH, JR.

1940

EDWARD B. HODGE
CHARLES F. MITCHELL
CALVIN M. SMYTH, JR.

1945

DAMON B. PFEIFFER
CHARLES F. MITCHELL
CALVIN M. SMYTH, JR.

1950

JOHN H. GIBBON, JR.
FRANCIS C. GRANT
CALVIN M. SMYTH, JR.

1955

CALVIN M. SMYTH
JOHN M. GIBBON, JR.
GEORGE P. ROSEMOND

1957

CALVIN M. SMYTH
JOHN H. GIBBON, JR.
GEORGE P. ROSEMOND

1961

GEORGE P. ROSEMOND
S. DANA WEEDEE
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- 1947 PARKER, WILLIAM S., M.D., F.A.C.S., Bryn Mawr Medical Building, Bryn Mawr, Pennsylvania, 19010. Associate Professor, Surgery, Graduate School of Medicine, University of Pennsylvania; Attending Surgeon, Bryn Mawr Hospital, Bryn Mawr.
- 1912 *PFEIFFER, DAMON B., M.D., F.A.C.S., 1636 Valley Road, Meadowbrook, Pennsylvania. American Surgical Association; International Surgical Association; Associate Professor of Surgery, Graduate School, University of Pennsylvania, Emeritus.
- 1958 PILLING, GEORGE PLATT, M.D., F.A.C.S., 603 North 5th Street, Philadelphia, Pennsylvania. Assistant Attending Surgeon, St. Christopher's Hospital for Children; Assistant Professor of Surgery, Temple University School of Medicine; Consultant of Surgery, Philadelphia General Hospital; American Academy of Pediatrics, Affiliate in Surgery.
- 1960 PITT, LELDON P., M.D., F.A.C.S., 811 Spruce Street, Philadelphia, Pennsylvania, 19107. Instructor, University of Pennsylvania; Associate Surgeon, Pennsylvania Hospital.
- 1951 RANIERI, TITO A., M.D., 2320 South Broad Street, Philadelphia, Pennsylvania, 19145.
- 1962 RANDALL, PETER, M.D., F.A.C.S., Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, Pennsylvania, 19104. American Association of Plastic Surgeons; American Society of Plastic and Reconstructive Surgery; Halsted Society; Cleft Palate Association; Plastic Surgery Research Council; Society of Head and Neck Surgeons; Robert H. Ivy Society; Assistant Professor of Plastic Surgery, School of Medicine, University of Pennsylvania; Hospital of the University of Pennsylvania; Children's Hospital of Philadelphia; Magee Memorial Hospital; United States Veterans Administration Hospital.
- 1924 *RAVDIN, I. S., M.D., D.Sc. (Hon.), F.A.C.S., R.R.C.S. (Eng.), F.R.C.P. (Can.), R.R.C.S. (Edin.), F.R.C.S. (Ireland), L.H.D. (Hon.), L.L.D. (Hon.), 3400 Spruce Street, Philadelphia, Pennsylvania, 19104. Pan-Pacific Surgical Association; International Feder-

* Senior Fellow.

- ation of Surgical Colleges; American College of Surgeons; American Surgical Association; Southern Surgical Society; American Association for Surgery of the Trauma; Halstead Surgical Club; Society for Vascular Surgery; Vice-President for Medical Affairs, University of Pennsylvania; Professor of Surgery, 1945-1960 John Rhea Barton Professor of Surgery, and Director of the Harrison Department of Surgical Research of the School of Medicine.
- 1956 RAVDIN, ROBERT G., M.D., F.A.C.S., 3400 Spruce Street, Philadelphia, Pennsylvania, 19104. Associate Professor, Surgery, University of Pennsylvania.
- 1953 REAGAN, LINDLEY B., M.D., F.A.C.S., 166 Madison Avenue, Mount Holly, New Jersey. Chief, Department of Surgery, Burlington County Memorial Hospital; Adjunct Staff, Pennsylvania Hospital.
- 1943 *RHOADS, JONATHAN E., M.D., D.Sc. (Med.), LL.D. (Hon.), D.Sc. (Hon.), F.A.C.S., 3400 Spruce Street, Philadelphia, Pennsylvania, 19104. American Association for the Surgery of Trauma; American Surgical Association; Hawthorne Surgical Society; The International Society of Surgery; International Surgical Group; Pan-Pacific Surgical Association; Society of Clinical Surgery; Society of Graduate Surgeons, Los Angeles County; Society of University Surgeons; Southern Surgical Association; Surgeons Travel Club; John Rhea Barton Professor of Surgery and Director of the Harrison Department of Surgical Research, The University of Pennsylvania School of Medicine; Chief of the Department of General Surgery, The Hospital of the University of Pennsylvania.
- 1941 *RISTINE, EDWIN R., M.D., F.A.C.S., 300 Broadway, Camden, New Jersey. Emeritus Surgeon, Cooper Hospital, Camden, New Jersey.
- 1928 *ROBBINS, FREDERICK R., M.D., F.A.C.S., 317 Millbank Road, Bryn Mawr, Pennsylvania. Associate Professor of Surgery, Graduate School of Medicine, University of Pennsylvania; Assistant Professor of Surgery, Medical School, University of Pennsylvania; Consulting Surgeon, Pennsylvania Hospital, Bryn Mawr Hospital; Consultant, Valley Forge Army Hospital, Phoenixville.
- 1954 ROBERTS, BROOKE, M.D., F.A.C.S., 3400 Spruce Street, Philadelphia, Pennsylvania, 19104. Society of University Surgeons; American Association for the Surgery of Trauma; International Society of Blood Transfusions; North American Chapter International Cardiovascular Society; Physiological Society of Philadelphia; Society of Vascular Surgery; American Surgical Association; Professor of Surgery, University of Pennsylvania; Consultant in Surgery, Veterans Administration Hospital; Chief, Section on Peripheral Vascular Surgery, Hospital of the University of Pennsylvania.
- 1945 *ROSEMOND, GEORGE P., M.D., M.S.(Surg.), F.A.C.S., 3401 North Broad Street, Philadelphia, Pennsylvania, 19140. American Surgical

* Senior Fellow.

- Association; American Association for Thoracic Surgery; International Society of Surgery; Professor of Surgery, Chairman of the Department of Surgery, Temple University School of Medicine; Surgeon, Temple University Hospital; Visiting Surgeon, Philadelphia General Hospital; Associate Attending Surgeon St. Christopher's Hospital for Children.
- 1950 ROYSTER, HENRY PAGE, M.D., F.A.C.S., Room 1000, Ravdin Building, University Hospital, 3400 Spruce Street, Philadelphia, Pennsylvania, 19104. Society of University Surgeons; American College of Surgeons; Southern Surgical Association; American Society of Plastic and Reconstructive Surgery; American Surgical Association; American Cleft Palate Association; The Robert H. Ivy Society; The Society of Head and Neck Surgeons; American Association of University Professors; American Association of Plastic Surgeons; International Association of Plastic Surgeons; Eastern Surgical Society; Pan-Pacific Surgical Association; American Board of Plastic Surgery; International Surgical Society; Professor of Surgery, Schools of Medicine, University of Pennsylvania; Associate Surgeon, The Children's Hospital of Philadelphia; Consultant in Plastic Surgery, Veterans Administration Hospital; Consultant in Plastic Surgery, Naval Hospital; Consultant in Plastic Surgery, Army Hospital, Fort Dix; Chief of Plastic Surgery Service; Graduate Hospital of the University of Pennsylvania; Chief of Plastic Surgery Service, Hospital of the University of Pennsylvania; Director of the Cleft Palate Clinic; Children's Hospital, Philadelphia.
- 1960 SAIN, FLETCHER D., M.D., F.A.C.S., Professional Building, Highland and Woodland Roads, Abington, Pennsylvania, 19001. Visiting Lecturer, Temple University Medical School; Director Department of Surgery, Lower Bucks County Hospital; Visiting Surgeon, Abington Memorial Hospital.
- 1962 SCHUMANN, FRANCIS, M.D., F.A.C.S., 8815 Germantown Avenue, Philadelphia, Pennsylvania, 19118. Blockley Research Society; Clinical Associate Professor of Surgery, Woman's Medical College; Attending Surgeon, Chestnut Hill Hospital; Surgeon, Woman's Medical College Hospital; Chief of Surgery, Roxborough Memorial Hospital; Associate in Surgery, Philadelphia General Hospital; Attending Surgeon, Veterans Administration Hospital; General Surgical Consultant, Henry R. Landis Hospital.
- 1951 SCHWEGMAN, C. W., M.D., F.A.C.S., 3400 Spruce Street, Philadelphia, Pennsylvania, 19104. Society of Military Surgeons; American Surgical Association; International Society for Surgery; Secretary, American Board of Surgery; Associate Professor of Surgery, University of Pennsylvania; Associate Professor of Surgery, Graduate

- School of Medicine; Associate Surgeon, Hospital of the University of Pennsylvania; Attending Surgeon, VA Hospital; Director, Tumor Clinic, Hospital of the University of Pennsylvania.
- 1953 SCOTT, MICHAEL, M.D., F.A.C.S., 3401 North Broad Street, Philadelphia, Pennsylvania, 19140. Professor and Chairman, Department of Neurosurgery Temple University Hospital.
- 1953 SHANDS, ALFRED R., JR., M.D., F.A.C.S., Alfred I. duPont Institute, Post Office 269, Wilmington, Delaware, 19899. Southern Surgical Association; International Surgical Society; American College of Surgeons; American Orthopaedic Association; American Academy of Orthopaedic Surgeons; International Society of Orthopaedic Surgery and Traumatology; Visiting Professor of Orthopaedic Surgery, University of Pennsylvania Graduate and Undergraduate Schools of Medicine; Visiting Professor of Orthopaedic Surgery, Albert Einstein Medical Center; Medical Director of the Alfred I. duPont Institute, Wilmington, Delaware.
- 1947 SHEARBURN, EDWIN W., M.D., M.S., F.A.C.S., 306 Lankenau Medical Building, Philadelphia, Pennsylvania, 19151. Assistant Professor, Clinical Surgery, Jefferson Medical College; Associate Surgeon, Lankenau Hospital.
- 1957 SINGMASTER, LAWRENCE, M.D., F.A.C.S., Media Clinic, Media, Pennsylvania. American Thyroid Association; Associate Professor, Surgery, Graduate School, University of Pennsylvania and Jefferson Medical College; Riddle Memorial Hospital, Media, Pennsylvania.
- 1924 *SMYTH, CALVIN H., M.D., Abington Memorial Hospital, York and Woodland Roads, Abington, Pennsylvania.
- 1954 SPITZ, EUGENE B., M.D., F.A.C.S., 40-50 West Front Street, Media, Pennsylvania. Fellow of American Academy of Pediatrics; Professor of Biomedical Engineering, Pennsylvania Military College; Attending Pediatric Neurosurgeon, Crozer-Chester Medical Center, Chester, Pennsylvania.
- 1960 STAHLGREN, LEROY H., M.D., F.A.C.S., Star Floor Surgical Suite, Graduate Hospital, 19th and Lombard Streets, Philadelphia, Pennsylvania, 19145. Assistant Professor of Surgery, Graduate School of Medicine, University of Pennsylvania; Woman's Medical Hospital; Staff, Graduate Hospital, Woman's Medical College Hospital, Philadelphia General Hospital.
- 1957 STAINBACK, WILLIAM C., M.D., F.A.C.S., Bryn Mawr Medical Building, Bryn Mawr, Pennsylvania. Associate in Surgery, University of Pennsylvania School of Medicine; Instructor, Graduate School, University of Pennsylvania; Director, Department of Surgery, The Bryn Mawr Hospital; Associate in Surgery, University of Pennsylvania; Instructor in Surgery, Graduate Hospital, University of Pennsylvania.

* Senior Fellow.

- 1950 STAYMAN, JOSEPH W., JR., M.D., F.A.C.S., 8815 Germantown Avenue, Philadelphia, Pennsylvania, 19118. Thoracic Surgical Association; Assistant Professor of Clinical Surgery, Jefferson Medical College; Director of Surgery, Chestnut Hill Hospital.
- 1954 STERLING, JULIAN A., M.D., M.Med.Sc., Sc.D., F.A.C.S., 1351 W. Tabor Road, Philadelphia, Pennsylvania, 19141. Assistant Professor of Surgery, University of Pennsylvania, Graduate School of Medicine; Assistant Clinical Professor of Surgery, Temple University School of Medicine; Senior Attending Surgeon, Albert Einstein Medical Center; Chief Surgical Consultant, Philadelphia Psychiatric Center.
- 1948 STEVENS, LLOYD W., M.D., F.A.C.S., 133 South 36th Street, Philadelphia, Pennsylvania. Professor of Clinical Surgery, University of Pennsylvania; Director of Surgery, Presbyterian Hospital; Chief, University of Pennsylvania; Service, Philadelphia General Hospital.
- 1956 STRONG, GEORGE H., M.D., F.A.C.S., 255 South 17th Street, Philadelphia, Pennsylvania, 19103. American Urologic Association; Associate Professor, Urology, Jefferson Medical College; Assistant Attending Urologist, Jefferson Medical College Hospital; Associate, Department of Urology, Episcopal Hospital.
- 1957 SWARTLEY, ROBERT N., M.D., 8815 Germantown Avenue, Philadelphia, Pennsylvania, 19118.
- 1954 TEMPLETON, JOHN Y., III, M.D., F.A.C.S., 805 Spruce Street, Philadelphia, Pennsylvania, 19103. American Surgical Association; American Association for Thoracic Surgery; Professor of Surgery, University of Pennsylvania Medical School; Director Division of Surgery, Pennsylvania Hospital.
- 1958 TROPEA, FRANK, JR., M.D., 1422 Race Street, Philadelphia, Pennsylvania, 19102. Clinical Professor of Surgery, Hahnemann Medical College and Hospital; Director of Surgery, St. Agnes Hospital.
- 1954 TYSON, R. ROBERT, M.D., M.S., F.A.C.S., 3401 North Broad Street, Philadelphia, Pennsylvania, 19140. Temple University School of Medicine, Associate Professor of Surgery; Temple University Hospital, Surgeon; Philadelphia General Hospital, Assistant Visiting Surgeon; St. Christopher's Hospital, Assistant Attending Surgeon; Veterans Administration Hospital, Attending Surgeon; Veterans Administration Hospital, Wilkes-Barre, Consultant.
- 1955 ULIN, ALEX W., M.D., F.A.C.S., 1500 Vine Street, Philadelphia, Pennsylvania, 19102. Clinical Professor of Surgery, Hahnemann Medical College and Hospital; Co-Chairman, Division of Surgery, Albert Einstein Medical Center; Attending Surgeon, Hahnemann Medical College and Hospital.

- 1956 VON DEILEN, ARTHUR W., M.D., D.D.S., F.A.C.S., 501 White Horse Pike, W. Collingswood, New Jersey. Fellow, American College of Dentists; Fellow, American Society of Plastic and Reconstructive Surgery; Assistant Professor of Plastic and Reconstructive Surgery in the Medical Schools, University of Pennsylvania; Chief of Plastic and Reconstructive Surgery, Presbyterian Hospital; Cooper Hospital, Camden; West Jersey Hospital, Camden; Our Lady of Lourdes Hospital, Camden; Burlington County Hospital, Mount Holly; Lower Bucks County Hospital, Bristol; Underwood Hospital, Woodbury; Associate in Plastic Surgery, Graduate Hospital, University of Pennsylvania.
- 1952 WAGNER, FREDERICK B., JR., M.D., F.A.C.S., 255 S. 17th Street, Philadelphia, Pennsylvania, 19103. Fellow American College of Angiology; Clinical Professor of Surgery, Jefferson Medical College; Assistant Attending Surgeon, Jefferson Medical College Hospital; Consultant in Surgery, St. Mary's Franciscan Hospital; Attending Surgeon, William B. Kessler Memorial Hospital, Hammonton, New Jersey.
- 1928 *WALKLING, ADOLPH, M.D., F.A.C.S., 136 S. 16th Street, Philadelphia, Pennsylvania 19103. American Association for the Surgery of Trauma; International Society of Surgery; Clinical Professor of Surgery (Hon.), Jefferson Medical College; Assistant Attending Surgeon, Jefferson Medical College Hospital; Consulting Surgeon, Pennsylvania Hospital; Surgeon, Benjamin Franklin Clinic; Consulting Surgeon, Pottstown Hospital.
- 1928 *WEEDER, S. DANA, M.D., F.A.C.S., 5555 Wissahickon Avenue, Philadelphia, Pennsylvania, 19118. Emeritus Clinical Professor of Surgery, Jefferson Medical College; Senior Surgeon, Germantown Dispensary and Hospital; Consulting Surgeon, Chestnut Hill Hospital.
- 1960 WEST, CLIFTON F., JR., M.D., Lankenau Medical Building, Philadelphia, Pennsylvania, 19151.
- 1939 *WILLAUER, GEORGE, M.D., D.Sc., F.A.C.S., 1930 Chestnut Street, Philadelphia, Pennsylvania, 19103. American Association for Thoracic and Vascular Surgery; Founder, American Board of Thoracic Surgery; Pennsylvania Association for Thoracic Surgery; Clinical Professor of Surgery (Hon.), Jefferson Medical College; Director of Surgery, Eagleville Sanatorium, Eagleville, Pennsylvania.
- 1927 *WILLIAMSON, ERNEST G., M.D., F.A.C.S., F.R.C.S. (Edin.), 6353 Woodbine Avenue, Philadelphia, Pennsylvania, 19151. Surgeon, Presbyterian Hospital and Childrens Hospital.
- 1958 ZASLOW, JERRY, M.D., M.S., F.A.C.S., F.I.C.S., 1301 West Tabor Road, Philadelphia, Pennsylvania, 19141. Assistant Clinical Professor of Surgery, Temple University Hospital; Associate Surgeon, Albert Einstein Medical Center Northern Division.

* Senior Fellow.

NON-RESIDENT FELLOWS

- ALLBRITTEN, FRANK F., JR., University of Kansas Medical Center, Kansas City 3, Kansas. General and Thoracic Surgery.
- AUSTEN, GEORGE, University of Oregon Medical School, Portland 1, Oregon. Neurosurgery.
- BAILEY, CHARLES P., Flower Fifth Avenue Hospital, New York, New York. General and Thoracic Surgery.
- BATES, WILLIAM, A-34 Parkview Apartments, 2400 Market Street, Harrisburg, Pennsylvania. General Surgery.
- DASCH, FREDERICK W., Union and Avenue C, Schuylkill Haven, Pennsylvania. General Surgery.
- FLEMMING, BRUCE, 450 Sutter Street, San Francisco, California. General Surgery.
- IVERSON, PRESTON C., 737 Park Avenue, New York 21, New York. Plastic Surgery.
- MASON, JAMES, c/o American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois. General Surgery.
- MEADE, RICHARD H., JR., 750 San Jose Drive, SE, Grand Rapids, Michigan. General and Thoracic Surgery.
- NORTH, JOHN P., 999 Lake Shore Drive, Chicago 11, Illinois. General Surgery.
- SCHELL, JAMES F., 139 Maple Avenue, Langhorne, Pennsylvania. General Surgery.
- WEBER, EDGAR H., 123 SE Second Street, Evansville, Indiana. General Surgery.
- WELLS, J. RALSTON, Stone Island Est., Enterprise, Florida. General Surgery.

GOVERNMENT SERVICE FELLOWS

- WARDEN, HORACE D., CAPTAIN, MC, USN, U. S. Naval Hospital, 20th and Pattison Avenue, Philadelphia, Pennsylvania, 19145. Elected, 10-5-59.
- PULASKI, EDWIN J., COLONEL, MC, USA, Army Medical School, Walter Reed Army Medical Center, Washington 12, D. C. Elected, 10-5-59.
- SERLIN, OSCAR, Veterans Administration Hospital, University and Woodland Avenues, Philadelphia, Pennsylvania, 19104. Elected, 10-5-59.
- MAHIN, H. P., CAPTAIN, MC, USN, U. S. Naval Hospital, 20th and Pattison Avenue, Philadelphia, Pennsylvania, 19145. Elected, 12-4-61.
- ESSEX, HENRY A., LIEUTENANT COLONEL, MC, USA, Valley Forge Army Hospital, Phoenixville, Pennsylvania. Elected, 12-2-63.

NEW FELLOWS

1957

DR. WILLIAM S. BLAKEMORE
DR. WILLIAM C. STAINBACK
DR. JOHN B. FLICK, JR.
DR. THOMAS F. NEALON, JR.
DR. WARD D. O'SULLIVAN
DR. HENRY T. NICHOLS
DR. ROBERT N. SWARTLEY
DR. LAWRENCE SINGMASTER
DR. JAMES B. CARTY

1958

DR. FRANK TROPEA, JR.
DR. GEORGE PLATT PILLING, IV
DR. ROBERT S. MORRIS
DR. HARRY VAN GORDER ARMITAGE
DR. JOHN J. MURPHY
DR. JERRY A. ZASLOW
DR. OCTAVUS P. LARGE

1959

DR. GEORGE J. HAUPT
DR. OSCAR SERLIN
DR. WALTER F. BALLINGER, II
DR. PAUL MECRAY, JR.
DR. JOHN M. HOWARD
DR. CHARLES FINEBERG

1960

DR. THEODORE R. FETTER
DR. CLIFTON F. WEST, JR.

DR. ELMER L. GRIMES
DR. LEROY H. STAHLGREN
DR. FLETCHER D. SAIN
DR. LEDON P. PITT
DR. JOHN V. BLADY

1961

DR. JOHN J. MCKEOWN
DR. THOMAS H. AINSWORTH, JR.
DR. ROBERT T. BOYD, III
DR. W. BOSLEY MANGES
CAPT. H. P. MAHIN, MC, USN
DR. JAMES G. BASSETT
DR. ROBERT G. JOHNSON
DR. JAMES C. THOMPSON

1962

DR. PETER RANDALL
DR. FRANCIS SCHUMANN
DR. VINCENT W. LAUBY
DR. EUGENE P. HUGHES
DR. JOHN HANDY HALL
DR. HARRY L. FARRELL
DR. ALAN L. DORIAN
DR. ALFRED S. AYELLA, JR.

1963

DR. ROBERT B. LAUCKS
DR. HERBERT LIPSHUTZ
DR. DRYDEN P. MORSE
DR. EDWARD W. ERLICH

Honorary Fellows

ELECTED

DIED

- 1881 SIR JAMES PAGET, London, England December 30, 1899
- 1881 THEODORE BILLROTH, Vienna, Austria January 5, 1894
- 1881 BERNHARD, VON LANGENBECK, Berlin, Germany. September 30, 1887
- 1881 WILLARD PARKER, New York, N. Y. April 25, 1884
- 1881 LEWIS A. SAYRE, New York, N. Y. September 21, 1900
- 1881 MOSES GUNN, Chicago, Ill. November 4, 1887
- 1881 JOHN T. HODGEN, St. Louis, Mo. April 28, 1882
- 1881 W. W. DAWSON, Cincinnati, Ohio February 16, 1893
- 1881 T. G. RICHARDSON, New Orleans, La. May 26, 1892
- 1881 J. COLLINS WARREN, Boston, Mass. 1927
- 1881 W. T. BRIGGS, Nashville, Tenn. June 13, 1894
- 1881 CHRISTOPHER JOHNSTON, Baltimore, Md. October 11, 1891
- 1881 D. W. YANDELL, Louisville, Ky. May 2, 1898
- 1898 MAURICE H. RICHARDSON, Boston, Mass. July 31, 1912
- 1898 GEORGE M. STERNBERG, Washington, D. C. November 3, 1915
- 1898 CHARLES W. MCBURNEY, New York, N. Y. November 7, 1913
- 1898 NICHOLAS SENN, Chicago, Ill. January 2, 1908
- 1898 THEODORE F. PREWITT, St. Louis, Mo. October 17, 1904
- 1898 L. MCLANE TIFFANY, Baltimore, Md. October 23, 1916
- 1898 NATHANIEL P. DANDRIDGE, Cincinnati, Ohio 1910
- 1898 ROSWELL PARK, Buffalo, N. Y. February 15, 1914
- 1898 ROBERT F. WEIR, New York, N. Y. 1927
- 1898 FREDERICK S. DENNIS, New York, N. Y. March 8, 1934
- 1900 W. H. A. JACOBSON, London, England July 27, 1917
- 1900 THEODORE KOCHER, Berne, Switzerland October 3, 1916
- 1900 VINCENZ CZERNY, Heidelberg, Germany October 3, 1916
- 1906 DUDLEY P. ALLEN, Cleveland, Ohio January 6, 1915
- 1906 WILLIAM J. MAYO, Rochester, Minn. July 28, 1939
- 1906 ROBERT ABBE, New York, N. Y. March 7, 1928
- 1906 C. B. G. DE NANCREDE, Ann Arbor, Mich. May 6, 1921
- 1907 JOHN C. MUNRO, Boston, Mass. December 6, 1910
- 1908 J. EWING MEARS, Philadelphia, Pa. May 28, 1919
- 1909 LEWIS STEPHEN PILCHER, Brooklyn, N. Y. December 24, 1934
- 1916 W. W. KEEN, Philadelphia, Pa. June 7, 1932
- 1920 HENRY R. WHARTON, Philadelphia, Pa. December 3, 1925

ELECTED

DIED

1927	JOHN CHALMERS DaCOSTA, Philadelphia, Pa.	May 16, 1933
1929	D'ARCY POWER, London, England	May 18, 1941
1929	ALBIN LAMBOTTE, Esneux, Belgium	
1929	HENRI HARTMANN, Paris, France	
1929	TH. TUFFIER, Paris, France	October 27, 1929
1929	JOSEPH GUYOT, Bordeaux, France	
1929	GEORGES JEANNENEY, Bordeaux, France	
1929	F. DEQUERVAIN, Berne, Switzerland	January 23, 1940
1929	BERKELEY MOYNIHAN, Leeds, England	September 7, 1936
1929	HARVEY CUSHING, Boston, Mass.	October 7, 1939
1929	EDWARD W. ARCHIBALD, Montreal, Canada	1945
1929	JOHN M. T. FINNEY, Baltimore, Md.	May 30, 1942
1929	EVARTS GRAHAM, St. Louis, Mo.	March 4, 1957
1929	ELLISWORTH ELIOT, JR., NEW YORK, N. Y.	November 2, 1945
1929	RUDOLPH MATAS, New Orleans, La.	September 23, 1957
1929	DEAN D. LEWIS, Baltimore, Md.	1941
1929	EUGENE H. POOL, New York, N. Y.	1949
1929	GEORGE W. CRILE, Cleveland, Ohio	January 7, 1943
1929	EDWARD STARR JUDD, Rochester, Minn.	November 30, 1935
1929	DALLAS B. PHEMISTER, Chicago, Ill.	1951
1933	JOHN H. JOPSON, Mills, N. C.	December 4, 1954
1954	HAROLD FOSS, Danville, Pa.	
1954	DIGBY CHAMBERLAIN, Leeds, England	
1954	FREDERICK COLLIER, Ann Arbor, Mich.	November 5, 1964
1954	HOWARD NAFZIGER, San Francisco, Cal.	1961
1954	ARTHUR ALLEN, Boston, Mass.	March 18, 1958
1954	ERIK HUSFELDT, Copenhagen, Denmark	
1954	ALLEN WHIPPLE, New York, N. Y.	April 16, 1963
1954	SIR JAMES PATTERSON ROSS, London, England	

Fellows Deceased

1957-1963

YEAR	NAME	ELECTED	SPAN OF LIFE
1957	WAGONER, GEORGE	1928	1896-1957
1958	RODMAN, J. STEWART	1913	1883-1958
1959	REESE, JOHN D.	1949	1893-1959
1959	RYAN, THOMAS J.	1930	1896-1959
1959	*KEATING, PETER	1925	
1959	WOOD, ALFRED C.	1896	1863-1959
1960	DOWNES, T. MCKEAN	1928	1894-1960
1960	LIPSHUTZ, BERNARD	1926	1889-1960
1960	BOWER, JOHN O.	1932	1885-1960
1960	HATFIELD, C. ALEXANDER	1950	1906-1960
1960	GOLDSMITH, RALPH	1932	1892-1960
1961	GLOVER, ROBERT P.	1954	1913-1961
1961	*HOWELL, JOHN C.	1934	
1962	MITCHELL, CHARLES F.	1904	1875-1962
1962	LEHMAN, JAMES A.	1938	1904-1962
1963	BOTHE, FREDERICK A.	1928	1897-1963

* Nonresident.

Memoirs

April 29, 1957	Dr. Frederick R. Robbins on Dr. George Wagoner
October 7, 1958	Dr. Robert H. Ivy on Dr. John Davis Reese
April 4, 1959	Dr. Donald C. Geist on Dr. Thomas J. Ryan
October 2, 1959	Dr. Calvin Smyth on Dr. Alfred C. Wood
April 26, 1958	Dr. Calvin Smyth on Dr. John S. Rodman
January 29, 1960	Dr. Frederick R. Robbins on Dr. Thomas M. Downs
October 9, 1960	Dr. Adolph A. Walkling on Dr. Benjamin Lipshutz
February 1, 1961	Dr. Julian Johnson on Dr. Robert P. Glover
November 26, 1960	Dr. Julian A. Sterling on Dr. Ralph Goldsmith
July 4, 1962	Dr. Frederick A. Robbins on Dr. Charles F. Mitchell
March 21, 1963	Dr. Orville C. King on Dr. Frederick A. Bothe, Jr.

George Wagoner

1896-1957

DR. GEORGE WAGONER was born in Johnstown, Pennsylvania on January 16, 1896. His parents were Dr. George W. Wagoner and Gertrude Suppes Wagoner. His father was a prominent practitioner in Johnstown, founding one of the hospitals, and was Mayor of the town. As a boy he was closely associated with his father and his future life was influenced by this association.

He was graduated from Johnstown High School in 1913; attended the University of Pennsylvania where he played varsity football and was graduated in 1917. He resigned from the Medical School to join the United States Army Ambulance Corps in 1917. He was graduated from the University of Pennsylvania School of Medicine in 1922. He interned at the Philadelphia General Hospital from 1922 to 1924. From 1924 to 1926 he was on a Surgical Fellowship at the University of Pennsylvania. Other graduate work included the University of Innsbruck in 1929 and again in 1934. He was in the United States Naval Reserve during World War II and was one of the organizers of the Bryn Mawr Hospital unit which was one of the first units called into active service.

He joined the staff of the Bryn Mawr Hospital in 1926 and at the time of his death he was orthopedic surgeon in charge of that service. He was

Secretary-Treasurer of the Staff from 1947 to 1950 and was President of the Staff in 1950 to 1951. He was Attending Orthopedic Surgeon at the Graduate Hospital of the University of Pennsylvania and was Professor of Orthopedic Pathology and Director of research in the Graduate School of Medicine of the University. He was Consulting Orthopedic Surgeon at Bryn Mawr College, Pottstown Hospital, and the Women's Hospital of Philadelphia. He was Director of the Medical and Health Division of Montgomery County Civil Defense and co-chairman of the Eastern District of Pennsylvania Civil Defense and chairman of the National Advisory Committee of the Selective Service system of Montgomery County. He had many interesting hobbies and in each of these he was very enthusiastic. He was particularly interested in photography, the history of the Civil War and Naval History. He enjoyed hunting and fishing; in each of which he was very proficient. He devoted a considerable amount of time to research under the guidance of Dr. A. N. Richards and Dr. Joshua E. Sweet and published a paper with Dr. Sweet entitled, "Work on Cholesterol Embodied in the Gall-Bladder." While in medical school he developed a method of measuring blood flow through application of the Venturi Meter principle.

He did considerable research for the National Polio Foundation and in 1938 he received a merit award from the American Roentgen Ray Society with Dr. Eugene Pendergrass for their paper on x-ray shadows of vertebrae of infants.

He was married on August 9, 1924 to Dr. Marjorie S. Jefferies who was attending physician at Bryn Mawr College. She died in 1934. Dr. Wagoner is survived by two children, Dr. Frieda Wagoner Woodruff of Bryn Mawr and Ann Wagoner of Washington, D. C., and by his mother and sister Gertrude Wagoner and a brother John Wagoner.

He had returned to his home in Johnstown, and had gone fishing at Rolling Rock Club in Ligonier, Pa. on April 29, 1957. In the afternoon he was fishing alone with his dog and when he failed to return a search was made and his body was found in the stream in a deep pool. The dog's body was found further down stream. It

was first thought that his death was caused by drowning, but later an autopsy revealed that his death was due to an occlusion of the right main stem coronary artery.

Dr. Wagoner was a member of many distinguished societies and his writings consisted of one book and more than 60 scientific articles published in journals. In his death we have lost a true friend, a good orthopedic surgeon and a good citizen. Beneath his brusque manner one found a kind, sensitive and gentle character. He was honest, ethical, capable, unafraid, always ready to fight the good fight as he saw it and issues were clearly delineated. They were right or wrong, black or white, there was never any gray. Uncompromising with the equivocal, he was a bulwark in adversity and a wise counsellor at all times. As a surgeon, teacher and visionary, he has left the world his debtor.

John Davies Reese

1893-1958

JOHN DAVIES REESE was born on August 20, 1893, at Scranton, Pa., and attended the public schools there. He received an A.B. degree from Haverford College in 1920. He then entered Jefferson Medical College, graduating in 1925. After internship at St. Agnes' Hospital, Philadelphia, he became associated in practice with Dr. Warren B. Davis for five years, and was active in the department of surgery at the Jefferson Medical College and Hospital from 1926 until the time of his death. On the death of Dr. Warren B. Davis in 1946, Dr. Reese succeeded him as Clinical Professor of Plastic and Reconstructive Surgery in the Jefferson Medical College and assistant surgeon to the Hospital. Dr. Reese was also Plastic Surgeon to the Philadelphia General Hospital, the Pennsylvania State Department of Health; Consultant in Plastic Surgery, Veterans Hospital, Philadelphia, Montgomery Hospital, Norristown and the Quakertown Hospital. He was a diplomate of the American Board of Plastic Surgery (Founders' Group), Member of the American Medical Association, the American Association of Plastic Surgeons, the American Society of Plastic and Reconstructive Surgery, the Philadelphia Academy of Surgery, and the Robert H. Ivy Society. Dr. Reese died at Jefferson Hospital on October 7, 1958, after a brief illness. He was

unmarried, and is survived by two brothers and four sisters.

Dr. Reese made a notable contribution to surgery in the field of skin grafting. His first publication on the subject was in the *Journal of Plastic and Reconstructive Surgery*, Vol. 1: 98-105, 1946, entitled "Dermatope: A New Method for the Management of Split Skin Grafts," and he appeared on several occasions on the programs of this Academy. Dr. Reese was a fine mechanic, and in 1946 he brought out his Dermatome, considered in the opinion of many to be far superior to the original Dermatome. The Number 1 example of this Dermatome, which Dr. Reese presented to me and which I used with great satisfaction for several years, was returned to Dr. Reese on my retirement from practice in 1955, and it is now the property of the Jefferson Medical College Museum. At the International Congress of Plastic Surgeons held at Stockholm, Sweden, in 1955, Dr. Reese expounded his views in a paper entitled "Basic Principles Underlying a Successful Skin Graft," published in the *Transactions of the Congress*. Up to the time of his death he was engaged in studies of the skin in relation to transfer for coverage of raw surfaces, with particular reference to preservation of the original color. He was a perfectionist, and urgent pleas to him to offer his work for publication, were put off

with the statement that he was not quite satisfied with a small detail, and the material would not be ready until some point were settled. As a consequence, a large amount of important material relating to skin grafting has never appeared in print, and it is hoped that someone will be found to

make the result of these researches available to the profession.

John Reese enjoyed the professional respect and personal affection of his colleagues in plastic and general surgery, both locally and nationally. His untimely death at the age of 65 leaves a distinct hiatus in our ranks.—ROBERT H. IVY, M.D.

Thomas J. Ryan

1895-1959

THOMAS J. RYAN, the son of Mary and Thomas Ryan was born in Gilberton, Pennsylvania, December 5, 1895. Here, he spent his boyhood days obtaining his early education in the schools of Shenandoah, Pennsylvania. He came to Philadelphia to complete his preliminary education at the Villa Nova Preparatory School. It is said that his first intention was to engage in the study of chemistry, but associations with young friends caused him to change his mind and choose a medical career.

Dr. Ryan began his premedical training at the University of Pennsylvania in 1913. His education continued there until the reception of his medical degree from the Medical School of that University in 1919. During the last year of medical school, he served as a junior intern at the Misericordia Hospital, newly opened in West Philadelphia. It was not surprising, therefore, that he remained at that institution for his regular internship from 1919 to 1920.

Upon completion of his internship, his interests were directed to surgery. He began training in this specialty under the preceptorship of the late Dr. George P. Muller, in the capacity of his assistant. His progress was rapid and in a few years he started the private practice of surgery. In 1927, Dr. Ryan became chief of a surgical service in the Misericordia Hos-

pital and retained this position until his voluntary retirement to a position as consultant in surgery in 1956. Fellowship in the American College of Surgeons was conferred upon him in 1927 and he became a Fellow of this Academy in 1930. He was a member of the Founders' Group of the American Board of Surgery. When the Fitzgerald-Mercy Hospital opened in Darby, Pennsylvania in 1933, Dr. Ryan accepted a surgical service in that institution. He continued his efforts here until 1954 when he became Director and Head of the Department of Surgery, holding this appointment until his death.

His interests embraced other matters than surgery itself. In 1951, he became President of the Staff of Fitzgerald-Mercy Hospital and in 1953, he assumed the position of Medical Director of the Misericordia Hospital, serving in the latter position until he died. Both institutions and their staffs profited from his efforts and enthusiasm in these positions. Other opportunities for service came to him as a past president of the Delaware County Medical Society, a member of the Board of Directors of the Medical Club of Delaware County and a member of the Board of the Associated Hospital Service. For a number of years, he actively participated in the Delaware County Branch of the American Cancer Society. All of these pur-

suits were undertaken by him with enthusiasm and a desire to help others.

In 1918, Dr. Ryan married Grace Shannon. They became the parents of a daughter Marie and a son Thomas, J., Jr. and were a happy family devoted to one another. The death of Mrs. Ryan in 1954 brought them much sorrow and was a trying loss for the doctor.

Dr. Ryan was a friendly and likable person with excellent character and sincere concern for the welfare of his patients. He was a capable, accomplished surgeon. Most of his activity lay in the practice of clinical surgery. His contributions to the surgical liter-

ature, while few in number, were well-conceived and presented. Friendly interest, advice and help were his gifts to his interns and associates at the various hospitals in which he practiced.

His death occurred on April 4, 1959 at the Misericordia Hospital, a few days after a difficult and trying operation. He is survived by one brother, a daughter Mrs. Marie Carr, a son Thomas J. Ryan, Jr., six granddaughters and one grandson Thomas, III. Besides those whom he loved dearly, he will be missed by his many patients and all who shared his friendship and aid.—DONALD C. GEIST, M.D.

Alfred C. Wood

1863-1959

ALFRED C. WOOD was elected to Fellowship in this Academy in 1898. He was born June 14, 1863. After graduating in Pharmacy he immediately entered the Medical School of the University of Pennsylvania where he graduated in Medicine in 1888. He was fortunate in securing an internship at the University Hospital, and upon its completion he began a period of service in that institution which was to last until his retirement upon reaching the statutory age limit of 65 in 1928.

During these years, he also enjoyed a large surgical practice in other hospitals in the Philadelphia area including the Howard, St. Timothy's (now the Memorial Hospital in Roxborough), and St. Agnes. He also was one of the last surgeons in Philadelphia who did much operating in private homes. On these occasions he usually took along a younger man who acted as anesthetist, using the referring doctor as the assistant. Dr. Wood's procedure on these occasions was invariably to give the referring physician a hemostat to hold in one hand and a sponge in the other, and usually at the end of the operation neither the sponge nor the hemostat had been used once during the entire proceeding. When Dr. Wood was asked why he always did this he replied that while the other man who gave the

ether would have been a much better assistant, the method he used succeeded in keeping the referring doctor always in sight and with both hands full, incapable of doing any harm. May I say that he also frequently employed the same technic when saddled with a green intern at the University Hospital. I never saw the method fail, and the assistant always was sure that he had taken an important part in the procedure.

While Dr. Wood carried on a large and lucrative practice in other hospitals he was all of his professional life most active at the University. As a younger man, he was closely associated with Dr. J. William White who was then John Rhea Barton Professor of Surgery. During this period, many of Dr. White's papers were written by Wood; although his name never appeared when the paper was published. At this time, unfortunately, this was by no means confined to Wood.

For many years he gave a lecture course in minor surgery which is remembered vividly by his former students. In this course he was frequently heard to remark that minor surgery was too often regarded as the kind of surgery practiced by minor surgeons. During his final years of teaching, he conducted an operative clinic for the fourth year students.

Upon retiring from the active practice of surgery in 1928 at the statutory age of 65, Dr. Wood spent two years traveling around the world. In 1922 he married Dr. Dorothy Donnelly in Paris. She and a son, Dr. Alfred C. Wood, Jr., survive him.

While there are not many members of this Academy who remember him, may the younger men be assured that here was a great surgeon. He was a magnificent operator in all of the fields of surgery. He was a man of very even disposition, and only on rare occasions when the going got

very tough would he lapse into the Quaker speech and say "Oh fie—Oh fiddle de-dee—Doctor thee pulls too hard."

Dr. Wood, in addition to the Academy of Surgery, was a member of the College of Physicians of Philadelphia, The American Surgical Association, and the American College of Surgeons. He died October 2, 1959.

Those of us who were privileged to have worked with him will always regard him as a great surgeon.—CALVIN SMYTH, M.D.

John Stewart Rodman

1883-1958

JOHN STEWART RODMAN was born July 21, 1883 in Abilene, Texas, and died at his home in Radnor, Pa. on April 26, 1958. His parents, William L. Rodman and Bettie Stewart Rodman, at the time of his birth, were stationed there during a period of duty in the Army. Much of his early life was spent in Louisville, Kentucky, where his father was Professor of Surgery in one of the five schools of medicine which flourished there at that time. The family moved to Philadelphia when the elder Dr. Rodman was appointed to the Chair of Surgery at the old Medico-Chirurgical College. After graduating from the William Penn Charter School, he entered the college department of the University of Pennsylvania and, after completing his pre-medical studies there, received his M.D. degree at Medico-Chirurgical College, in 1906. An internship at the Pennsylvania Hospital was followed by a fellowship at the Mayo Clinic.

He married the former Eunice B. Hinman. They had two children, William L. Rodman and Mrs. Eunice Rodman Packer, who with his widow, survive him.

Dr. Rodman had an unusual career in surgery. His father was the actual originator of the idea that there should be one examining body whose certificate would admit successful candidates to practice anywhere in the United States. He became firmly con-

vinced of this when he was required to take the examinations of the Pennsylvania State Board when he came to Philadelphia as a Professor. Through his efforts the National Board of Medical Examiners was constituted. When the elder Rodman died in 1915 his vision had not become much of a reality. Stewart Rodman, as an act of unusual filial devotion, dedicated himself to the accomplishment of his father's dream. This was a long and uphill fight. For a young surgeon in the course of attempting to develop a surgical practice in a place like Philadelphia this was a very real sacrifice. He became the National Board's first Secretary and Treasurer, a position which he filled for many years. This took a tremendous amount of time and called for repeated and sometimes prolonged absences from the city; unquestionably interfering with any clinical career in surgery. He did, however, manage to place the National Board in the secure position which it presently occupies, although its original objectives have been only partially attained.

In 1924 he was appointed to the Professorship of Surgery in the Woman's Medical College of Pennsylvania which position he filled with distinction until he reached academic retirement age. He was an excellent teacher, meticulous in the preparation and delivery of his lectures.

Dr. Rodman's outstanding contribution to American Surgery was his setting up and conducting the administration of the American Board of Surgery. He became the first Secretary of the Board, and continued in that position from the founding of the Board in 1937 until his retirement in 1953. Only those who were closely associated with him in the organizational period and early years of the Board can appreciate the work that this entailed. Extensive travel for the holding of the final part of the examination was required. Much work went into the setting up of the examination. In later years this amounted to as many as 11 trips a year, covering the country from coast to coast, and often requiring absences of a week at a time. The conduct of the office of the Board was something which required infinite patience, and an appalling amount of correspondence. The position inevitably made for hard feeling on the part of candidates for examination who could not understand why their training did not meet the Board's requirements. The candidate who failed the examinations not infrequently made a personal issue out of his failure. Despite the many headaches connected with the position, I know that Dr. Rodman considered this the most rewarding experience of his entire professional life. The profession recognized his accomplishments by election to the American Surgical Association as a Fellow and later as Vice President. He served as Secre-

tary and President of the Philadelphia Academy of Surgery. He was a Fellow of the American College of Surgeons and of the Philadelphia College of Physicians. In addition to his Professorship at the Woman's Medical College, he was at one time Surgeon-in-Chief to the Bryn Mawr Hospital, and had been on the Staff of the Presbyterian and the Philadelphia General Hospitals. He was a member of the Philadelphia Club, the St. Anthony Club, and the Fraternity of Delta Psi. His principle contributions to the literature were a number of papers on cancer and other surgical conditions of the breast.

Throughout the last 20 years of his life, Dr. Rodman was plagued by ill health. For many years he periodically suffered intensely from a duodenal ulcer for which he eventually underwent subtotal resection with a most happy result. His freedom from gastric distress, however, was shortly followed by prostatic difficulties and then a coronary occlusion. He died as a result of another coronary attack, his third. Throughout these years his life was made richer by the loyal devotion of his wife, and their marriage was one of the happiest possible.

Stewart Rodman's death leaves an empty place in the surgical scene in America and in the hearts of his friends. He was a great gentleman, a loyal friend, and a good companion. May he rest in peace.—CALVIN M. SMYTH, M.D.

Thomas McKean Downs

1894-1960

THOMAS MCKEAN DOWNS, the son of Dr. Norton Downs and Phebe Warren McKean Downs, was born in Philadelphia on January 5, 1894. He was a direct descendant of Thomas McKean, Chief Justice of Pennsylvania (1777-1799), Governor of Pennsylvania from 1799-1808, and a signer of the Declaration of Independence. He attended St. Paul's School and was graduated from the University of Pennsylvania in 1915, and from the Medical School of the University of Pennsylvania in 1922. He served his internship at the Pennsylvania Hospital and was on the Surgical Staff of the Pennsylvania Hospital, Germantown Hospital, Bryn Mawr Hospital, and for a short time, the Graduate Hospital of the University of Pennsylvania. He was associated with the late Dr. W. Estelle Lee, who was a former president of this Academy. Dr. Downs was elected to membership in the Academy of Surgery in 1928, and he attended the combined meetings of the Academy of Surgery and the New York Surgical Society in New York City in 1959. He was also a member of the Philadelphia College of Physicians.

Dr. Downs had a most distinguished war record. He was a member of the First Troop of Philadelphia City Cavalry and served on the Mexican border against Villa in 1916. In World War I, he was an officer in the 108th Field

Artillery, 28th Division and won four battle stars. This military duty interrupted, for a time, his medical education.

In the spring of 1941, he went on active duty voluntarily in the Medical Corps of the United States Naval Reserve. He was on duty at Pearl Harbor on December 7, 1941, and he rendered valuable surgical assistance during that tragic period. Later, he took part in the Battle of Midway which was the turning point, in the opinion of many, of the war in the Pacific. He also participated in the Battle of the Aleutians and when the war was over, he served for a time on active duty within the United States. He was retired as a Captain. Dr. Downs should be especially commended for his Naval services for he had been troubled with intermittent claudication and impaired circulation of his lower extremities and was one of the early people to have a bilateral lumbar-sympathectomy, which was performed by Dr. Norman E. Freeman, previously of Philadelphia.

Dr. Downs had a retiring personality but the people who really knew him could appreciate his wide interests. He owned and flew his own airplane when aviation was in its infancy. Once his plane crashed in a haystack and, although he had a fractured spine, he walked away, recovered, and was ready to fly again. He

kept racing pigeons and entered many of them in races. Because of ill health, he retired from the active practice of surgery after the war and raised Muscovy ducks and won numerous blue ribbons at the Madison Square Garden Poultry Show. He was a falconer and trained hawks. He was skillful with his hands and had a workshop in his cellar where he made two sailboats which he would sail in Maine during the summers. In addition to several medical articles, he wrote delightful articles for the *Atlantic Monthly*, entitled, "Birds of Midway," and "Pigeons and People" which won much acclaim. He also raised orchids and won many prizes. He was an insatiable reader and was well in-

formed on a wide variety of subjects.

He was first married to Anne Merrick, to whom a son, Dr. T. McKean Downs, Jr., was born. His second marriage was to Catherine Drinker Bowen in 1939. She is an internationally known biographer and is a recipient of the Bok Award. He is survived by his son, wife, mother and two sisters; Mrs. Rowland Evans of Bryn Mawr and Mrs. Sarah Atlee Fisher of Tuscon, Arizona.

Dr. Downs died suddenly at his home on January 29, 1960, at the age of 66. Services were held at the Church of the Messiah, Gwynedd and his ashes were buried at Arlington National Cemetery.—FREDERICK R. ROBBINS, M.D.

Benjamin Lipshutz

1888-1960

DR. BENJAMIN LIPSHUTZ was born in Kovno, Russia in 1888. He received his preliminary education in the public schools of Philadelphia. He graduated from Central High School in the class of 1908 and from Jefferson Medical College in 1912. Immediately following his graduation he spent six months interning in St. Mark's Hospital in New York, returning to Philadelphia in 1913 and early 1914 for his regular internship at what was then the Mt. Sinai Hospital. This was followed by three months at the New York Lying-In Hospital. He entered practice in Philadelphia in 1914 and immediately associated himself with Professor J. Parson Schaeffer, as an instructor in Neuro-anatomy at Jefferson Medical College. He maintained this intense interest in anatomy throughout his entire professional life. He was awarded the Corinna Borden Keen Research Fellowship for 1916 and 1917 and from this came his first published work; "A Composite Study of the Femoral Artery," published in the *Anatomical Record* and "A Composite Study of the Hypogastric Artery," published in the *Annals of Surgery*.

Dr. Lipshutz was a member of the Philadelphia Academy of Surgery, the American Association of Anatomists, the American College of Surgeons; and was a member of the founders' group of the American Board of Sur-

gery. He was also a member of the American Medical Association, the Pennsylvania Medical and Philadelphia County Medical Societies. He became a member of the Philadelphia Academy of Surgery in 1926 and actively participated in its scientific and business discussions.

He entered the Medical Corps Reserve of the Navy, as a lieutenant, Junior Grade in May, 1918, and was assigned to the Newport Naval Base. After much correspondence with the Surgeon General of the U. S. Navy, Rear Admiral W. C. Braisted, Professor Schaeffer had him transferred to active duty at the Philadelphia Naval Base in September of that year. Dr. Schaeffer then arranged with the Commandant of the Naval Base that Dr. Lipshutz be relieved two days each week to organize and teach the course in Neuro-anatomy at Jefferson Medical College. He was discharged from the Navy in May, 1919.

He revised Herwitz "Compend of Surgery for Physicians and Students" in 1919. This brought him recognition from Dr. J. Chalmers DaCosta, Professor of Surgery at Jefferson Medical College. He was one of the many who would visit Dr. DaCosta after he became bedfast. He said he often took his young son, Herbert, now a plastic surgeon in Philadelphia with him on these visits when Dr. DaCosta would discuss Napoleon and Dickens

as well as Baron Larrey and the great John Abernathy. Dr. DaCosta greatly admired Dr. Lipshutz for his fundamental research, his clarity of expression and the quality of his published papers. This led him to suggest to the publishers that Dr. Lipshutz revise his textbook in surgery which had gone through its 9th Edition and at that time was probably the most widely read one volume textbook in surgery in America. He revised the 10th Edition in 1931.

Dr. Lipshutz operated at Jefferson Hospital and Mt. Sinai Hospital later to become the Einstein Medical Center Southern Division. He was made attending surgeon at the Mt. Sinai in 1926. He remained at both hospitals until his death. He suffered a heart attack in 1947, from which he recovered sufficiently to continue the private practice of surgery and the teaching of anatomy until September, 1960, when he had a second attack. He died October 9, 1960 at the age of 72.

He is survived by his wife, the former Hattie Levine, and two sons, Dr.

Herbert Lipshutz who graduated from Jefferson Medical College, in 1944, and Morton Lipshutz.

Dr. Lipshutz was not only interested in the art and science of medicine, but also in the humanities as related to the practice of medicine. As an older and more experienced man, he never forgot his obligations to the younger generation. He was well liked and admired by all his associates. He taught medical students for 46 years as well as internes and nurses. Those of us who knew him were impressed by his attitude toward his fellow man, his kindness and consideration regardless of station in life. He was an excellent physician, a profound anatomist, a skillful surgeon, a wonderful teacher and a true friend. His many friends and students will sorely miss him, but they will always be grateful for his influence on them. He leaves a heritage of an honorable and distinguished career—one in which his family and multitude of friends may take a deep and justifiable pride.—ADOLPH A. WALKLING, M.D.

Robert P. Glover

1913-1961

DR. ROBERT P. GLOVER was born on July 12, 1913 in Nyack, New York. He was the son of Dr. and Mrs. Robert H. Glover who were medical missionaries in China during much of Bob's early childhood. Bob returned to this country to attend the Stony Brook School and later Wheaton College in Illinois. The income of a medical missionary being somewhat limited, Bob did a good bit of outside work to help finance his college and professional education. He graduated from the Medical School of the University of Pennsylvania in 1939 and served his internship at the Germantown Hospital in Philadelphia. He was married to Margaret Steele of Philadelphia in 1941 and went to the Mayo Clinic to obtain his surgical training. During his stay at the Mayo Clinic he came down with tuberculosis and lost time from his training on two separate occasions and spent considerable time in a sanatorium at Cannon Falls, Minnesota. He completed his general and thoracic training, however, in 1946 and came to Philadelphia to establish a practice of thoracic surgery.

For a brief period he worked at the Jefferson Medical College but was soon appointed Chief of the Thoracic Surgical Service at the Episcopal Hospital and Thoracic Surgeon at the St. Christopher's Hospital for Children. In 1947 Dr. Glover joined Dr. Charles Bailey and Dr. Thomas O'Neill in a

partnership in thoracic surgery which continued until 1952. This was a productive period for Dr. Glover since it was in 1948 that this group revived the interest in the surgical correction of mitral stenosis.

Dr. Glover was appointed Associate Professor of Surgery at Hahnemann Medical College in 1948 and was certified by the American Board of Surgery in 1949 and became a Diplomate of the Board of Thoracic Surgery in 1950. During this period many advances were being made in cardiac surgery and Dr. Glover and the group with which he was associated made many of these contributions.

When his partnership with Drs. Bailey and O'Neill was dissolved in 1952, Dr. Glover moved to the Presbyterian Hospital in Philadelphia where he organized the Department of Thoracic and Cardiovascular Surgery. He was largely responsible for the founding of a Cardiovascular Research Laboratory at this institution and organized the Cardiovascular Research Foundation, a private non-profit foundation dedicated to the furtherance of research and education in this field. At about this time he founded the Glover Clinic in association with Dr. Davila and Dr. Trout. This group has been extraordinarily productive over the last nine years, both in the clinical practice of cardiac surgery and in original investigation

in this field, utilizing the laboratory facilities which were developed at the Presbyterian Hospital largely at their instigation.

Dr. Glover was active in numerous professional organizations, including the American Association for Thoracic Surgery, American College of Surgeons, American College of Chest Physicians, American College of Cardiology of which he was a past president, Pan-Pacific Surgical Association, American Heart Association, American Thoracic Society, as well as the various local societies including the Philadelphia Academy of Surgery. He was also an Honorary member of various foreign medical societies and was very active in giving lectures, not only in this country but abroad.

His numerous scientific publications appeared in most of the major professional journals in this country as well as some foreign publications and he has contributed chapters to various textbooks dealing with cardiac surgery. He was editor of a recent book entitled "The Practical Diagnosis of Surgical Heart Disease" and was senior author of a monograph on "The Surgery of Mitral Stenosis." His total contributions, along with his associates, in various journals and textbooks number almost a hundred.

At the time of his premature death Dr. Glover was Chairman of the Surgical Division and Chief of the Department of Thoracic and Cardiovascular Surgery and Director of the Car-

diovascular Research Laboratory at the Presbyterian Hospital. He was Assistant Professor of Clinical Surgery at the University of Pennsylvania School of Medicine. He was Chief of the thoracic surgical service at Fitzgerald Mercy Hospital and St. Christopher's Hospital for Children and was Consultant in Thoracic and Cardiovascular Surgery at the Coatesville Veterans Hospital and at the Valley Forge Army Hospital.

Dr. Glover lived through a period of rapid advancement in the field of cardiac surgery, the field of his chief interest. He deplored unnecessary experimentation in the practice of clinical surgery but, on the other hand, encouraged and fostered the development of ideas and technics which had been properly worked out and studied in the laboratory. He took a deep and sincere interest in his patients. He was loyal to his associates and collaborators and gave credit where credit was due. He was admired and respected for his professional integrity. He died at his home at 97 West Levering Mill Road, Cynwyd, Pennsylvania, February 1, 1961 following all efforts to be cured of a carcinoma of the recto-sigmoid. He is survived by his wife, by three children: Mary Elizabeth (18), Ellen Anne (16) and Robert Steele (12) and by two sisters, Mrs. John B. Morrison of Hobart, Indiana and Miss Marjorie Glover of Wheaton, Illinois.
—JULIAN JOHNSON, M.D.

N. Ralph Goldsmith

1892-1960

RALPH GOLDSMITH was born in Scranton, Pa., on March 20, 1892 and died in Philadelphia on November 26, 1960 following pelvic exenteration for carcinoma of the bladder. During his youth he enjoyed science, literature, music and baseball. For several years he played semi-professional baseball.

He enrolled at the University of Pennsylvania in the Premedical course and completed his requirements for entrance to medical school in two years. He was a good medical student, very well liked, and made staunch friends among classmates and faculty.

He served two years in the rotating internship at the University of Pennsylvania Hospital. During the last six months he alternated with two other men as Chief Resident Physician. He was still in that capacity when U. S. Base Hospital No. 20 was mobilized. In the organization of the Base Hospital, he was assigned to Medicine, much to his disappointment. However, soon after Base Hospital was established at Chatel Guyon, France, Ralph Goldsmith was made the third surgeon on the operating team consisting of George M. Laws and the late J. B. Carnett. He had a very active service at the front, often operating under bombardment. On one occasion he was forced to move patient and equipment into a dugout to continue the operation.

After his return to civilian life, he

practiced surgery at the Philadelphia Jewish Hospital, where he was appointed Senior Attending Surgeon in 1934. He was also Associate Surgeon at the University of Pennsylvania between 1919 and 1929 and he was Assistant Clinical Professor of Surgery at Temple University School of Medicine between 1945 and 1957. He was also Chairman of the Surgical Department of the Albert Einstein Medical Center from 1953 to 1957 and Chief of Staff of the Albert Einstein Medical Center from 1955 to 1957.

Ralph Goldsmith was a stalwart and active member, presenting many papers to the Philadelphia Academy of Surgery and the Philadelphia College of Physicians. He sponsored his associates to fellowship in these societies. Dr. Goldsmith was a founding member of the American Board of Surgery and was an enthusiastic, interested participant in the American College of Surgeons, particularly in the Regional Meetings on Trauma. During the several years since retirement as Senior Attending Surgeon of the Albert Einstein Medical Center, he was actively engaged, to within three months of his death, as an inspector of hospital services for the American College of Surgeons.

His contributions to literature included Reports of Industrial Health, Endometrial Cysts of the Ovary, Esophageal Varices, Pancreatitis, Abdominal Aortic Aneurysms, Inviscera-

tion, Leiomyosarcoma of the Jejunum and Studies on the Biliary Tract. Particularly outstanding were his contributions on Trauma including Fractures, for which latter subject he, Dr. E. L. Eliason and Dr. E. P. Pendergrass prepared a monograph (Appleton and Company, 1925).

For many years one of his greatest pleasures, in his capacity as Professor of Surgery at Temple University School of Medicine, was to discuss fractures and trauma with students.

Dr. Goldsmith was not selfish in his knowledge. Many physicians and surgeons of the Albert Einstein Medical Center and in other institutions throughout this country are indebted to his stimulus and guidance. Ralph Goldsmith was a brilliant kaleidoscope of science and medicine, of art and culture, and of courage with devotion.

Dr. Goldsmith's beloved wife, Ysabel, was a confidante and shared his work and travels. His children and grandchildren were a joy and a boon. He was devoted to his parents, mother-in-law and brothers.

The loss of his son, David, in combat during the Second World War, left Dr. Goldsmith with a scar that was partially softened by his devotion and love for those with whom he was associated. The hospital family was his family. He was paternalistic as he fought constantly for those principles which were in the best interest of the hospital, the patient and his colleagues.

We mourn the death of Ralph Goldsmith; yet we know that each day he is part of our work, our thoughts and our heritage.—JULIAN A. STERLING, M.D.

Charles Franklin Mitchell

1875-1962

DR. CHARLES FRANKLIN MITCHELL died at his home, 2003 Pine Street, Philadelphia, Pa., on July 4, 1962, at the age of 86. He was the oldest living member of the Philadelphia Academy of Surgery. He became a member in 1904 and was elected Secretary in 1909, Vice-President in 1922 and was elected President of the Academy of Surgery in 1926. His grandfather was Dr. Sam Mitchell of Glasgow, Scotland. His father, Alexander Mitchell of St. Johns, Nova Scotia, married Roxanna Brown of Bordentown. Dr. Charles Franklin Mitchell was one of twins, born in Wilkes-Barre, Pennsylvania on October 3, 1875. He attended the Harry Hillman Academy in Wilkes-Barre and graduated in 1894. He graduated from the University of Pennsylvania Medical School in 1898. He was an intern and later Chief Resident Physician of the Pennsylvania Hospital. He remained on the Staff of that hospital until his death at which time he was a Consultant in Surgery. He was also associated with the Bryn Mawr Hospital, Germantown Hospital, Chestnut Hill Hospital, St. Christophers Hospital and Mount Holly Hospital, being a Consulting Surgeon at each of the above hospitals.

Dr. Mitchell was formerly Associate Professor of Surgery at the University of Pennsylvania Graduate School of Medicine and Clinical Pro-

fessor of Surgery at Jefferson Medical College. He was also a member of the American Surgical Association, Philadelphia College of Physicians, American Medical Association, Philadelphia County Medical Society and the Medical Club of Philadelphia. He was also a member of the Racquet Club and the British Officers Club.

He was married to Alice Plunkett, formerly of San Francisco on June 9, 1915. They had one son, Charles Plunkett Mitchell, who died in infancy. Mrs. Mitchell died in 1959. They are survived by two daughters, Miss Anne F. Mitchell of Philadelphia, Mrs. Walter M. Richey of Bellefontaine, Ohio and one granddaughter.

Dr. Mitchell had a distinguished war record. In World War I, he served in France with other members of the Pennsylvania Hospital in 1915 with the American Ambulance Corps. He returned to the United States in 1916 and later joined the Army Medical Corps as a first lieutenant and returned to Le Treport, France, with Base Hospital No. 10. He advanced to the rank of Colonel and became commanding officer of the unit. He was overseas 22 months. He could never do enough for the members of his unit, whether they were enlisted men, nurses or his medical associates. Later, he organized Evacuation Hospital No. 52 which consisted of members of the Staff of the Pennsylvania

Hospital and was Personnel Director for the officers. Because of his age, he did not go on active duty with this unit which was the first Army Unit sent to the South Pacific in World War II. He was most patriotic and interested in the Military Service, especially the Army. He gave generously of his time and energy to this work. He received the University Distinguished Alumnus Award. In August, 1962, his daughter received a citation on behalf of a grateful Nation honoring the memory of Dr. Charles F. Mitchell for his services to the Armed Forces signed by President John F. Kennedy.

Because of ill health, he retired eight years ago and during the last few years, his health was poor necessitating several hospitalizations and operations.

Honesty and integrity were outstanding characteristics of Dr. Mitchell. He was never very successful financially in the practice of medicine. He preferred the esteem of his co-workers and the gratitude of his patients for work well done rather than

financial remuneration. He was kind and considerate, though gruff at times to people who were not familiar with his character. He was unselfish and was happy to see the progress and advancement of the people whom he sponsored. He was a conservative and critical of some of the new trends in surgery and hospital management. To him, honor was an essential attribute.

For years, Dr. Mitchell had an ulcer in the pretibial region and later this became malignant and because of a pathological fracture, a leg amputation was performed. He also had a malignant lesion of his forehead which necessitated wide excision and skin grafting. He had a summer home at Cape May, New Jersey and enjoyed his associations there.

His funeral services were held at Old St. Peters Church and he was buried at Wilkes-Barre, Pa., the city of his birth.

I consider it a privilege to have been closely associated with Dr. Mitchell from 1920 until the time of his death.—FREDERICK R. ROBBINS, M.D.

Frederick Augustus Bothe, Jr.

1897-1963

FREDERICK AUGUSTUS BOTHE, JR., aged 65, died March 21, 1963 at the Presbyterian Hospital of a brain tumor. Dr. Bothe was born in Camden, New Jersey, on September 18, 1897, the son of Alfred Bothe and Emma Van Buren Bothe. His early education was obtained in the schools of Camden. He later entered the University of Michigan where he received his B.S. degree and graduated from the Medical School of the University of Pennsylvania in 1921. Following his graduation he interned at the Presbyterian Hospital. At this time he was greatly influenced by the teachings and guidance of the late Dr. John Speese who encouraged him to continue his training, particularly in surgery. After his internship he then became a Fellow in Surgery at the Mayo Clinic, completing his Fellowship in 1926.

Upon his return to Philadelphia he was appointed as Assistant Surgeon to the Presbyterian Hospital, where he remained as a member of the staff until his death. His interest in this Hospital was maintained throughout his life, and on February 28, 1963, he was made a Consulting Surgeon to the Hospital. Other hospital appointments which Dr. Bothe held were Stetson Hospital, Children's Hospital, the American Oncologic Hospital, and Jeanes Hospital. At the latter he was Chief of Surgery; at the time of his death was associated with only the

Presbyterian and Jeanes Hospitals. He was a Consulting Surgeon to the Inglis House (Philadelphia Home for Incurables). Dr. Bothe was a diplomat of the National Board of Medical Examiners and was certified by the American Board of Surgery in 1938.

Dr. Bothe maintained an active interest in teaching and held the title of Assistant Professor of Surgery in the University of Pennsylvania Medical School. He was a Fellow of the American Surgical Association, the College of Physicians of Philadelphia, the American College of Surgeons, the Eastern Surgical Society, and the Philadelphia Academy of Surgery; to the latter he was elected in 1928.

Dr. Bothe took a very active part in the meetings of the Academy and presented a number of papers during his membership. In 1943, he delivered the Annual Oration, the subject being "Surgery in Metabolic Disease." His interest in the surgery of diabetes and thyroid disease resulted in a number of contributions toward the betterment of surgical therapy in persons with those clinical entities. While Dr. Bothe was not a prolific writer, he made contributions to the medical literature of over 50 papers on a wide variety of subjects pertaining to surgery.

On September 22, 1930, Dr. Bothe was married to Miss Margaret Elizabeth Edmunds. Of this union two sons, Frederick Augustus Bothe and

Alfred Perry Bothe were born, all of whom survive.

Dr. Bothe was a tireless worker. He was always ready to help those in need, whether they be patient, friend, or fellow worker. His interest in the residents and interns at the Presbyterian Hospital is well known. Annually he gave a picnic for the House Staff. Each one well remembers the pleasures he gave at these times.

Few were Dr. Bothe's interests outside of medicine. He was a golf enthusiast, being a member of the Physicians' Golf Association. Having spent many summers in Ocean City, New Jersey, he became an avid deep sea fisherman. He enjoyed other sports as

an observer, rarely participating in them.

Fred had an enthusiastic interest in all phases of medicine. Organized medicine received considerable of his attention. He was always defending the individual rights of doctors, and this concern led to his being elected the President of the Philadelphia County Medical Society.

We shall all miss Fred, as he was affectionately known, in our meetings. His participation and comments frequently invoked considerable discussion. He was well liked by his associates and enjoyed their companionship, as they did his.—ORVILLE C. KING, M.D.

Winners of the Samuel D. Gross Prize

- 1895 "Inquiry into the Difficulties Encountered in the Reduction of Dislocations of the Hip."—Dr. Oscar H. Allis, Philadelphia, Pa.
- 1902 "Treatment of Certain Malignant Growths by Excision of the External Carotids."—Dr. Robert H. W. Dawbarn, New York, N. Y.
- 1905 "The Biology of the Micro-organisms of Actinomycosis."—Dr. James Homer Wright, Boston, Mass.
- 1910 "An Anatomical and Surgical Study of Fractures of the Lower End of the Humerus."—Dr. Astley P. C. Ashhurst, Philadelphia, Pa.
- 1915 "Surgery in the Treatment of Hodgkin's Disease."—Dr. John Lawrence Yates, Milwaukee, Wis.*
- 1920 "Some Fundamental Considerations in the Treatment of Empyema Thoracis."—Dr. Evarts A. Graham, St. Louis, Mo.
- 1925 "The Surgery of Pulmonary Tuberculosis."—Dr. John Alexander, Saranac Lake, N. Y.
- 1930 "Abnormal Arteriovenous Communications."—Dr. Emile Holman, Stanford University, San Francisco, California.
- 1935 "The Therapeutic Problems in Bowel Obstruction."—Dr. Owen H. Wangenstein, Minneapolis, Minn.
- 1940 "The Role of the Liver in Surgery."—Dr. Frederick Fitzherbert Boyce, New Orleans, La.
- 1945 "Parenteral Alimentation in Surgery with Special Reference to Protein and Amino Acids."—Dr. Robert Elman, St. Louis, Mo.
- 1950 "Localization of Brain Tumors with Radio-Active Agents."—Dr. George E. Moore, Minneapolis, Minn.
- 1955 "Liquid Plasma—Its Safety and Usefulness in Shock and Hypoproteinemia."—Dr. J. Garrott Allen, Chicago, Ill.
- 1962 "The Pathogenesis of Gastric and Duodenal Ulcers."—Dr. Lester Dragstedt, Gainesville, Fla.

* This essay has never been published by the author as required under the terms of the award.

Fellows Who Have Delivered the Annual Oration

1881 S. D. Gross	1909 John H. Gibbon	1937 Henry P. Brown, Jr.
1882 D. Hayes Agnew	1910 Astley, P. C. Ashhurst	1938 Isidor S. Ravdin
1883 William Hunt	1911 John H. Jopson	1939 John B. Flick
1884 John H. Brinton	1912 George C. Ross	1940 Francis C. Grant
1885 John H. Packard	1913 William L. Rodman	1941 William Bates
1886 R. J. Levis	1914 Alfred C. Wood	1942 S. Dana Weeder
1887 J. Ewing Mears	1915 Frances T. Stewart	1943 Frederick A. Bothe
1888 C. B. G. deNancrede	1916 Edward B. Hodge	1944 Calvin M. Smyth
1889 John B. Roberts	1917 J. Edwin Sweet	1945 Adolph A. Walkling
1890 DeForest P. Willard	1918 None	1946 John H. Gibbon, Jr.
1891 William G. Porter	1919 None	1947 L. Kraer Ferguson
1892 T. G. Morton	1920 John G. Clark	1948 Jonathan E. Rhoads
1893 C. W. Dulles	1921 J. Torrance Rugh	1949 Francis C. Grant
1894 W. B. Hopkins	1922 George P. Muller	1950 W. Emory Burnett
1895 John B. Deaver	1923 Walter Estell Lee	1951 J. Montgomery Deaver
1896 James M. Barton	1924 Robert H. Ivy	1952 Herbert R. Hawthorne
1897 Thomas R. Neilson	1925 John Speese	1953 Julian Johnson
1898 O. H. Allis	1926 Damon B. Pfeiffer	1954 George Rosemond
1899 William J. Taylor	1927 Emory G. Alexander	1955 William H. Erb
1900 None	1928 Edward J. Klopp	1956 George Willauer
1901 H. R. Wharton	1929 Edward T. Crossan	1958 Irvin E. Deibert
1902 J. M. Spellissy	1930 J. Stewart Rodman	1958 Orville C. King
1903 R. G. LeConte	1931 Hubley R. Owen	1959 James R. Jaeger
1904 G. G. Davis	1932 Eldridge L. Eliason	1961 H. Taylor Caswell
1905 J. Chalmers DaCosta	1933 George M. Dorrance	1961 Donald R. Cooper
1906 Richard H. Harte	1934 DeForest P. Willard	1962 John Y. Templeton, III
1907 Edward Martin	1935 A. Bruce Gill	1963 Edwin W. Shearburn
1908 Charles H. Frazier	1936 Alexander Randall	

Annual Oration for 1957

Intestinal Obstruction:* A Critique

IRVIN E. DEIBERT,** M.D.

CAMDEN, NEW JERSEY

TO PREPARE AN ESSAY ON intestinal obstruction which may be of value in adding to the sum total of our knowledge is an exceedingly difficult task. A review of the literature discloses the fact that there is probably no other phase of surgery which has been subjected to such wide investigative and experimental study by so many distinguished surgeons and brilliant investigators. To these individuals, we are deeply grateful for our present knowledge of the subject. Much has been contributed by our own members of this Academy. To completely cover every aspect of intestinal obstruction certainly is not within the scope of this presentation. A volume or volumes could and have been written on every phase. This should probably be more properly termed a critique of intestinal obstruction. Some idea of the magnitude of the problem is gained after a careful study of the magnificent monograph by Wangenstein, and, more recently, another by Cantor and Reynolds and a review of the literature.

* Annual Oration in Surgery read before the Philadelphia Academy of Surgery, for 1957; presented April 7, 1958.

** From the Surgical Service of Irvin E. Deibert, Cooper Hospital, Camden, New Jersey.

The earliest reference to obstruction dates back to antiquity, and is in the Code of Hammurabi written approximately 2200 B.C. The quotation, translated by Johns, is as follows: "If a doctor has cured a diseased bowel, the patient shall give 5 shekels of silver."

Many references were made by the Egyptians, and ileus and its treatment was referred to by Hippocrates about 460 B.C. Praxagoras is believed to have performed the first recorded enterostomy for obstruction about 400 B.C. Through the following centuries there are, of course, many interesting references to this subject which time does not permit us to give in detail. I would, however, most heartily recommend their study to any student of this subject.

STATISTICS

There is no doubt that over the past 35 to 40 years there has been a marked decrease in both the mortality and morbidity of this condition. A study of the statistics reveals that it is almost impossible to arrive at an accurate figure as to mortality. The reasons for this are quite obvious: the numerous causes of obstruction and the great differences in their behavior.

Certain it is that the obstruction due to a strangulated hernia is entirely different than that due to a malignancy of the colon. Some figures include all types of obstruction; others may be separated into small and large bowel obstructions, and sub-divisions of these. In a study of our own cases, we were able to find a number of cases of malignancy of the large bowel in which obstruction existed; but probably due to the enthusiasm of the surgeon in his operation for carcinoma little mention was made of the obstruction, and it was not cross-indexed. This no doubt has happened in many other places. The reported death rate from hernia and bowel obstructions in this country in 1929 and 1936 was the same—10.5 deaths per 100,000 of population. For 1950, the figure was 5.8.

Reports of obstruction are fairly accurate insofar as the larger and teaching hospitals are concerned. It is common knowledge, however, that even in many of the so-called larger hospitals no attempt has been made to analyze this subject or make complete studies.

It must also be kept in mind that the total number of operations performed in that large group of smaller hospitals outnumbers the total performed in the teaching centers, and from the majority of these, we have no reports. These facts are extremely important when one considers that approximately ten per cent of all surgical admissions are intestinal obstructions.

It is conceivable today, that many common surgical procedures will be abandoned or become unnecessary. It is also conceivable that intestinal

obstructions will remain a problem for a much longer period of time, if for no other reason than those types due to adhesions or trauma.

A working knowledge of intestinal obstruction encompasses all the basic principles of surgery, including a complete understanding of normal physiology, anatomy and metabolic functions of the human body. The surgeon who has been a keen student of this subject will most certainly have an excellent foundation for the approach to any type of surgery which he may be required to perform. Those who are engaged in the sub-specialties, and including the internist and obstetrician, must be familiar with obstruction, as it may be a serious complicating factor in their patients.

There are few other conditions which respond so readily and give such satisfying results when the proper treatment and management are applied; conversely, disaster and disappointment most certainly follow, when delay and improper management is the order.

Important decisions must be made in many instances in a few hours. In addition, the patient must be properly prepared for extremely major surgery. This can be accomplished only by the very close teamwork of all individuals concerned.

The obstructed patient must be observed carefully and constantly from the very moment of his admission to the surgical wards. This, in many instances, is the duty of the junior surgeon, or residents and interns.

It has been my observation that in some instances these individuals may be attracted to or tempted to give more time to the recently developed

dramatic types of surgical procedure, probably because obstruction is a most common condition.

The improvement in the mortality rate of intestinal obstruction is due to many factors. Probably the most important was the development of continuous suction drainage by Wangenstein and others with the various types of tubes, each having a particular type of advantage, and some a considerable disadvantage.

Some require a considerable degree of skill and experience to use successfully. Certainly there is no one universal tube. The surgeon must be familiar with all, and select one which will be the most helpful for the particular case in hand. A discussion of each type, the advantages and disadvantages, is not permissible or necessary at this time.

The use of intubation of necessity requires a thorough understanding of fluid and electrolyte balance, which is probably the next most important factor. Much credit is due to the investigators who have been responsible for improving our knowledge along these lines. This also includes a better knowledge of sodium and potassium metabolism. Again, it should be pointed out that our knowledge of these factors is by no means complete, particularly fluid balance. However, by careful study of the patient these can be closely approximated.

The use of antibiotics has no doubt been helpful, but one must keep in mind this phase of treatment is far from settled, and considerable harm may result from their improper use, such as radical changes in intestinal flora and the creation of resistant strains of bacteria, with resultant en-

teritis or colitis, and other complicating factors. They should be carefully selected in an attempt to fit the given case. Their use should not be prolonged beyond the point of usefulness, which no doubt frequently happens. Routine use of a given type is to be deplored.

The improvement in anesthesia must be considered as an important factor in the improvement of the mortality rate. While we have generally favored the use of spinal anesthesia, and believe it to be one of the best and most satisfactory in most instances, its routine use should not be countenanced, as in many instances a carefully selected general anesthetic may give the patient a greater margin of safety.

While all the foregoing procedures have contributed greatly to the improvement in the mortality rate, they have also been responsible directly or indirectly for some fatalities, in that in the use of each one the surgeon may be lulled into a false sense of security.

The immediate administration of fluids and use of intubation many times is marked by a dramatic improvement in the condition of an obstructed patient, which may tempt the surgeon to delay an immediate life-saving procedure, particularly where there is a strangulating obstruction. This, in the past, has undoubtedly happened many times.

The fact that there has been a great improvement in anesthesia presents at least one disadvantage. I would term this the time factor. In almost any type of surgery, it is now possible to operate almost endlessly insofar as time is concerned. Prolonged oper-

ative procedures of eight to ten hours are not uncommon today. Insofar as obstruction is concerned, the younger or less mature surgeon may be tempted to spend too much time, or to undertake too much, particularly where the very young or aged patient is concerned. It must still be remembered that in any operative procedure beyond two-hour duration, considerable constitutional trauma results. We should ever be mindful and attempt to emulate that great master surgeon and teacher, the late John B. Deaver, who said "Stick to your surgery, but don't let it stick to you."

Upon the admission of a patient with obstruction, all forces must be immediately mobilized, and the patient constantly watched. The internist must be consulted as to the complicating medical features. The opinion of a cardiologist is important, and a roentgenologist who has a keen interest in obstruction, not to be content with the so-called flat plate study, but rather to do what is commonly known as an obstruction series.

These things, if properly coordinated, can be done in a few hours, in the meantime preparing the patient for major surgery in the event it is necessary. The most serious error at this time is failure to recognize strangulating obstruction. Surgical intervention is necessary at the earliest possible moment, and there is no condition which requires more gentleness of management, and, as Cantor stated, "Every unnecessary manipulation is a shove nearer the grave." Surgery is still the mainstay treatment.

The main objectives of the surgical approach of intestinal obstruction are: 1) Removal of the intestinal contents

proximal to the point of obstruction; 2) Relief of the distention which is paralyzing the intestinal musculature and producing great physiological disturbances; and 3) The restoration of continuity of the intestinal tract.

Wangensteen stated, in 1939, that the employment of suction as a test procedure to determine whether operation will be necessary leads only to the deferment of proper treatment, and procrastination leads only to disaster.

Aside from hemorrhage or a perforated viscus, there is no condition which requires more emergent study and care than intestinal obstruction. In any well-organized surgical service, we would strongly recommend a team be organized for the management of this condition. Presently, we have all types of teams for the management of various conditions. There is no good reason why such an important condition as intestinal obstruction should not be controlled by such a team.

Very few of the early cases, and only some of the late ones, will present all of the classical signs and symptoms. Cantor has stated that these cases in which all the characteristic signs and symptoms have appeared have been referred to as presenting the signs of lost opportunity. In the management of intestinal obstruction, suspicion alone should be sufficient to justify a presumptive diagnosis. Pain is a very variable factor. However, the more sudden the onset of a strangulating obstruction, usually the greater the degree of pain. Nausea and vomiting, of course, is always more severe in strangulating obstructions, but this symptom may be misleading. Disten-

tion is an extremely variable factor, dependent largely upon the site and location of obstruction. Leukocytosis develops rapidly, and is usually much higher in the strangulating types of obstruction. In some cases, none of the so-called characteristic signs of strangulating obstruction are to be found. The most serious error at this time is probably failure to recognize that any obstruction exists. There is no single sign which could be termed pathognomonic.

When a vascular obstruction is close to the origin of the principle mesenteric vessels, the area of bowel involved is large, and a single thrombus obstructing the superior mesenteric vessels will cause an infarction of the entire small bowel, including the right half of the colon. A single thrombus in one of the lesser radicals may cause no perceptible change. Between these two, numerous variations present themselves. A complete understanding of the anatomy and function of the ileocecal valve is extremely important. This is not a true valve. Autopsy reports have shown that one of the so-called valves is deficient in a high percentage of cases. This condition, of course, has a direct bearing on the interpretation of x-ray findings.

We are particularly proud of the staff of our Department of Roentgenology, who have shown a keen interest in obstruction and have been most helpful and cooperative at all times, and have undoubtedly contributed greatly to whatever small success we may have had. But, as they have so many times stated, their reports are not to be interpreted as all-conclusive. A study of the literature insofar as the x-ray diagnosis of intestinal obstruc-

tion is concerned is interesting, and in some instances confusing. Some observers flatly state that x-ray studies are of little or no value to them. I was able to find one observer who stated he could readily determine whether the obstruction was in the small bowel or large, and from the pattern of distention, determine the urgency of the situation.

This, of course, is an obvious misstatement, and I do not believe many roentgenologists would substantiate it. Too many times, we have all seen x-ray studies, even of the serial type, which were typical of small bowel obstruction, only to find at operation that we were dealing with obstruction due to a carcinoma of the colon. This, of course, is not too important in this type of case, as operative intervention was the only procedure to be considered. Like many other diagnostic procedures, roentgenological findings are not all-conclusive, but certainly are most helpful, particularly those studies of the serial type.

In further study of the literature, we find in many instances, it has been customary to speak of obstruction of the small bowel as "simple" or "strangulating." There are still many who believe that the so-called "simple" type may at times be treated by intubation alone. Many cases of obstruction due to adhesions have been grouped under the heading of "simple" obstruction. It is in this group that prolonged intubation and delays may be encountered, with obvious disastrous results. It is our confirmed opinion that even the most experienced surgeon cannot in all cases differentiate between the so-called "simple" and "strangulating" type of obstruc-

tion. All cases of obstruction are particularly dangerous, and the term "simple obstruction" should be deleted from the literature and this classification abandoned.

Careful and constant observation of the patient and the correlation of all the diagnostic procedures should lead to a reasonably accurate diagnosis. A careful and detailed history is most important, and in many instances may be the most important factor in determining the type of treatment.

In the group studied, no cases of obstruction due to Meckel's diverticulum were found. This was probably due to an error in classification and indexing, as we have seen this condition on numerous occasions. Johann Friedrich Meckel described this condition in 1809; his first reports were concerned chiefly with obstructions of the small bowel type. Halstead, in reporting 991 instances of intestinal obstruction, stated that six per cent were due to Meckel's diverticulum.

Diverticula of the jejunum have been known to cause obstruction, but are rare. There were no cases in our series. Gordinier and Sampson, in 1906, first reported obstruction due to jejunal diverticula. About 300 cases have been reported to date.

Allergy must be kept in mind as a possible cause of intestinal obstruction. Gallison has reported one proved case. Poliomyelitis is also a causative factor in obstruction.

The use of methonium compounds have been reported as causing functional obstruction and death, this because of their sympathetic and parasympathetic blocking ability. The use of the sympathetic blocking compounds is greatly increasing day-by-

day. The possibility of intestinal obstruction and death due to their use must ever be kept in mind. No doubt further cases will occur as the more powerful and selective compounds are developed.

Patients with acute pancreatic necrosis occasionally may be admitted to the hospital with a diagnosis of intestinal obstruction. An aged patient suffering from a perforated appendix and generalized peritonitis also occasionally may be admitted with intestinal obstruction.

This study is based upon the review of approximately 600 cases of intestinal obstruction covering a five-year period, 1950 to 1955, from the surgical service of the author at Cooper Hospital, Camden, New Jersey. The purpose of the study was three-fold in character: 1) A critical analysis of management, diagnostic and operative procedures; 2) An effort to determine, if possible, the most rapid method of diagnosing a strangulating obstruction; and 3) To further emphasize these facts in our teaching program. This study is confined basically to small bowel obstruction, as from a diagnostic and emergent standpoint this is the most important type of obstruction.

Differential diagnosis, detailed laboratory studies, transfusions and infusions and comparative values of various operative techniques will not be referred to in detail for the sake of brevity and because they are too well known. These, however, are an absolute necessity to be included in any teaching program.

We would like to emphasize, however, the importance of proper x-ray studies as further improvement in this

diagnostic aid may help to improve the overall mortality rate.

A recent report at a meeting of the Society of University Surgeons from the University of Washington Medical School described a test called the serum lactic dehydrogenase level. The report states this test can be performed in the emergency room in ten minutes or less. An elevated dehydrogenase level is said to be absolutely indicative of intestinal necrosis, and there have been no false positives for ordinary distention, inflammation, trauma, or ileus. If this is true, it would seem many of our problems are solved and it could be one factor which would markedly improve the mortality rate.

Obstructions due to malignancies of the large bowel have been omitted, as they have been reported elsewhere as a separate group. Only those cases which have come to operation or autopsy have been considered. The cases of partial obstruction, volvulus or intussusception which improved rapidly after a period of 24 to 36 hours, which did not require operation, have been excluded because of the possibility of error in diagnosis in the unproved case. An attempt to arrive at as near as possible a true mortality rate has been made. The reported cases include obstruction due to adhesions, volvulus, intussusception, gallstone, foreign body, tumors of the small bowel, and disturbances of circulation.

The operations in this series have been performed by mature surgeons as well as juniors, and third- and fourth-year surgical residents, numbering about 12 individuals in all. I am happy to say that the end results of each group of individuals has been

about the same. Our third- and fourth-year residents are always supervised by mature surgeons, but I do not believe this has influenced the end results.

Strangely enough, postoperative wound dehiscence occurred most frequently in those cases which were operated by one of our mature surgeons. I was able to find only one case of wound dehiscence in a patient who was operated upon by a resident. This, of course, is interesting, proves nothing, and is probably coincidental.

As stated, 600 cases have been reviewed. There were 476 operative procedures, of which 268 were emergencies; 128 emergency operations were performed for obstruction due to carcinoma of the colon in which the distention could not be relieved otherwise. Of the 140 cases of small bowel obstruction, by far the largest group were due to adhesions. There were 60 cases in this group, 34 having had previous operating procedures in the nature of abdominal surgery. There were 26 males and 34 females. We believe this is a consistent finding—the higher incidence in females probably because of pelvic surgery. The age incidence was four months to 82 years; 41 patients were subjected to immediate operation. Nine were delayed as long as three days. One patient (with old tuberculous peritonitis) was delayed one week. Nine remaining patients were delayed 10, 12, 18, or 24 hours. There were four deaths in this group, all of which occurred in patients who were operated upon immediately. There were no deaths in the delayed group. The four fatalities were all due to strangulating types of obstruction in which

there was interference with circulation, or thrombosis, or both. In each of these instances, x-ray studies indicated small bowel obstruction, but again it could not be said to be all-conclusive.

Obstruction due to hernia was the next most common in the series. Of this group, 24 patients were studied as these represented both incarceration and strangulation with circulatory disturbances to the point of gangrene and resection. Their ages ranged from 39 to 98 years, equally divided between men and women. There were two deaths in this group. Strangulated hernia with partial or incomplete obstruction was not included.

As probably the most important factor in this group, our attention should be directed to strangulated femoral hernia with obstruction occurring in the female, in which there are few or no external signs of hernia. A patient not directly in this group might be worthy of brief comment. A woman, age 48 years, admitted to the hospital with signs of obstruction; sudden onset of abdominal pain, vomiting, no evacuation, no external evidence of hernia whatsoever. After careful examination, we believed we could eliminate all other causes except femoral hernia. In giving her history she stated she previously had distress or aching in the right femoral region. Consequently, this area was explored on what might be termed suspicion. An incarcerated gangrenous omental tag was found in the femoral canal. Two years later, the patient was again admitted with the same signs and symptoms. The previous operative site appeared to be all right. Again there was no external evidence of her-

nia on the opposite side. This was explored, and the same condition found to exist on the left side. In this instance, of course, the benefit of previous experience was of great value. The patient is living and well.

Eighteen cases of intussusception were studied. Age range was four months to 77 years, 14 male, four female; there were two deaths. Once again, only the patients operated upon were studied. The deaths in both instances were due to intussusception at the ileocecal junction, carcinoma of the colon being the main factor. In this group, serial x-ray studies were most helpful. The high incidence of males in this series we do not believe to be of any particular significance. In previous studies made by us on intussusception in children, the incidence in females was greater.

Fifteen cases of volvulus were studied, again including only those operated upon or autopsied. There were nine male and six female. Two deaths occurred in this group. One patient, admitted moribund, with a diagnosis of large bowel obstruction, died within two hours. Autopsy showed volvulus and gangrene.

In addition to this group of 15, 11 additional patients were operated upon after the diagnosis of volvulus had been made, but could not be substantiated at operation. The possibility of unkinking must be considered.

Two points which may be helpful in the diagnosis of this condition are that volvulus usually carries an extremely high white blood cell count. Also, in many instances, the obstruction may not be complete.

Eight cases of gallstone obstruction are presented, one man and seven

woman; their age range was 57 to 79 years. There were two deaths in this group. One patient, in whom operation was delayed 36 hours, died. Another died, 34 days postoperative, of unrecognized fistulas at the operative site. In this group, the history, of course, is of utmost importance, and roentgenologic studies are extremely helpful. The history of previous attacks of biliary colic, the finding of typical opaque shadows or gas in the biliary tree is diagnostic.

Intubation in cases of obstruction due to gallstone usually is followed by marked improvement in the condition of the patient. Delay in the institution of proper treatment may be encountered by virtue of this fact. At operation, the stone should always be removed at a point distal to its lodgement, the bowel being opened in the long axis and closed in a transverse manner. I do not believe this procedure was followed in the patient who died 34 days postoperative of unrecognized fistulas. This might have been responsible for the death, aside from the fact that it should have been possible to recognize the occurrence of a fistula much earlier.

No patients with postoperative ileus were operated upon. However, five patients with ileus were operated upon, with four deaths. In all, it was finally determined that these were various types of far-advanced cardio-renal disease, the one survivor being a long-time alcoholic. Recognizing it is very easy to become extremely critical in the study of any group of cases, particularly several months or a year or more after the patient has been operated upon, it is still my belief that there is very little excuse for

operating upon this type of ileus. A careful study of the history and of the patient should reveal the presence of a severe constitutional disease. The use of spinal anesthesia as an aid in the differential diagnosis is invaluable. Many times I have administered a small dose of spinal anesthesia, and have had this followed with a copious evacuation with marked improvement in the patient. It is a procedure which should not be forgotten.

One particular group of patients, we believe, deserves special emphasis, and this is the group who develop obstruction after or during the convalescence from severe bodily trauma. Ileus by virtue of trauma or a dis- was made. He was operated upon, turbance to be the sympathetic nervous system does occur in many instances. Also, true obstruction does develop and easily may be overlooked because of the trauma. We present two patients included in this study:

Case 1. A man, age 24 years, injured in an automobile accident, sustained a fractured femur, fractured skull and fractured ribs; 25 days post-trauma he was doing well; suddenly he developed severe colicky abdominal pain associated with vomiting. A diagnosis of small bowel obstruction releasing strangulating adhesions. He made an excellent recovery, and is now living and well.

Case 2. A woman, age 69, fell down stairs suffering a simple Colle's fracture, associated with moderately severe general body contusions. Her general condition was good. Ten days post-trauma she developed severe abdominal pain, colicky in character, associated with vomiting. The possi-

bility of some internal abdominal injury was considered. However, diagnosis of small bowel obstruction made by serial x-ray study. Release of adhesions was accomplished by operation, recovery.

The possibility of post-traumatic small bowel obstruction due to causes other than trauma must ever be kept in mind. These easily can be overlooked because of the interest in trauma.

In this series, we have studied two instances of obstruction, due to argentaffinoma, which were successfully operated. One patient is still living; one case recurred after three years. Recurrence was at the site of operation. Death occurred two years later due to widespread metastatic lesions. There also was one case of endometriosis. We have, of course, seen many others not in this series, and our department of gynecology has encountered a fair number. There was one case of obstruction due to prolonged radiation therapy for carcinoma of the cervix. At operation, scar contractions and adhesions were found. Small bowel obstruction was encountered in one patient with old tuberculous peritonitis. In our early days, this condition was fairly common; fortunately, now it is almost a rarity. A four-year-old colored child had a complete obstruction, due to hair Bezoar, which necessitated removal of about five feet of gangrenous bowel, with recovery.

Six cases of malignancy of the small bowel, with resection and no deaths were studied. Complete obstruction due to diverticulitis is comparatively uncommon. However, occasionally the

small bowel may become adherent to the inflammatory mass, thus causing obstruction. Obstruction due to anomalies of the intestinal tract of infants and children have not been included, and have been reported elsewhere.

I do not believe one can state to any reasonable degree the exact amount of small bowel which can be safely removed and have the patient survive. My personal experience has been small and limited. When I have had occasion to remove much more than five feet, the results usually have been disastrous. There are, of course, numerous reports in the literature in which almost all of the small bowel has been removed with survival of the patient. If possible, I believe one should first consider by-passing the obstruction, rather than resort to the removal of an extremely large amount of small bowel. It would seem, therefore, that this will remain a highly individual problem.

In the experimental animal, it is almost impossible to duplicate the condition which would necessitate the removal of practically all the small bowel in humans.

There is little to be found in the literature as to the types of incision. This is important, as the selection of the proper type of incision may, in many instances, save considerable time. Certainly, one should use the incision through which he can do the best work and get adequate exposure. Many times, in obstruction due to adhesions where there has been a previous operation, an entirely new incision will provide an easier approach to the obstructed area. Needless to state, in obstruction due to umbilical hernia

or any type of incisional hernia, the incision should not be carried through or across an old scarred, thin-walled area.

It has been stated many times that results are in direct proportion to the amount of contamination. While gross contamination should be avoided, I do not believe one need fear a small amount of spillage, if proper toilet is made and antibiotics carefully used.

We favor the open type of operation, with end-to-end anastomosis wherever possible, avoiding the use of crushing clamps at all times, using 3-0 cotton sutures throughout all procedures. A loose, noncrushing rubber-covered clamp may occasionally be permissible. Rarely does leakage occur because of poor suturing. The break is usually due to necrosis in the suture line because of poor blood supply. It is probably needless to state that anastomosis should not be performed in the presence of marked distention.

We do not favor the so-called aseptic type of anastomosis. Even though this procedure may be meticulously performed, contamination cannot be avoided. It is impossible to have a suture hold unless it goes through to the sub-mucosa which has been repeatedly shown to be infected.

Pre- and postoperative treatment has not been within the scope of this presentation, and purposely has not been discussed. I do, however, believe we should stress the importance of immediate postoperative care from the standpoint of a well-staffed and equipped recovery ward. We believe this has contributed greatly to the safety and the comfort of the patient, and has eased the burden of care of

wards and private floors, and has been responsible for improvement in our mortality rate, which for this series, as nearly as we can determine, is approximately 8.5 per cent.

In conclusion, a critique of intestinal obstruction of the small bowel type is presented, including a brief study of some of our own cases, in which, as was stated, we believe the mortality rate to be approximately 8.5 per cent. An attempt has been made to emphasize the points we believe to be of importance in surgical teaching programs, particularly as applies to surgical residents and interns. Probably the most important is the early recognition of strangulating types of obstruction, and the institution of proper management and treatment.

Wherever possible, a definite assigned team is desirable, to facilitate early diagnosis and direct the proper pre- and postoperative care.

A well-equipped recovery ward is an absolute necessity in every hospital, as today the immediate postoperative care of any major surgical procedure requires a high degree of special skill and experience.

Attention is again called to the close cooperation between the surgical staff and the roentgenologist. The use of serial studies is to be recommended in all instances.

The advantages and disadvantages of intubation, anesthesia, and antibiotics have been discussed, and should be still further stressed.

A revision of statistical study and classification might be desirable in order to determine a more accurate mortality rate.

The term "simple obstruction" should not be used. There is no such

thing as simple obstruction. Every obstruction is potentially dangerous.

A further improvement in the mortality rate of this condition would only seem possible through the continuous emphasis of the subject in our teaching programs and improvement in our diagnostic aids.

Surgery is still the mainstay of treatment. Procrastination and delay lead only to disaster and disappointment.

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Annual Oration for 1958

Surgery of the Aged*

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DURING the past several years, I have been impressed by the number of persons operated upon who were 65 years of age or older. I am sure that most of you have been struck by this fact. When one realizes that the life expectancy has increased in the last five decades from 48 to 68.27 years, one can understand this increase and that there are 20 million people 60 years of age or older in these United States which number is estimated to increase each year by more than 400,000,¹ I thought it merited study.

As many advances have been made in surgery during the past 20 years, I selected the patients operated upon during 1936 and 1937 and compared the results of patients similarly treated in 1956 and 1957. These patients were operated upon on the general surgical service of the Pennsylvania Hospital. Here only the surgeons have changed. No changes have occurred in bed capacity nor in the structural environment. Our statistics did not include the Orthopedic, Urological nor the

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Nose and Throat services. These two series are not strictly comparative in that several of the patients admitted to the hospital and operated upon might not even have reached the hospital in the earlier period.

It is not necessary to state that the magnitude of surgical operations has increased during this 20-year interval. Electrolytes, blood replacement and modern anesthetic methods were employed but little during the late 1930's. The surgeon attacked only the pathological states each patient presented. The physiological surgical approach was just beginning. The older patient was given practically the same consideration as the younger. It was appreciated that on both extremes of the age scale, surgery was undertaken with great risks. Many of the patients considered inoperable in 1936 could be carried through a surgical procedure successfully today. This is well exemplified by the old man with an inguinal hernia. He was told to get a truss which often failed to contain his hernia, usually aiding in complicating it rather than maintaining its contents within the abdominal cavity. When strangulation did occur, which was often, emergency surgery was

attempted, frequently ending in death or a recurrence shortly thereafter.

Tables 1 through 4 illustrate these points.

We observe the following: 1) The marked increase in the number of patients over 65 years of age—2.9 to 13.9 per cent; 2) A considerable reduction in the over-all mortality—20.8 to 10.55 per cent; 3) Equally appreciated is the reduction in the mortality following emergency surgery from 30.7 to 22.2 per cent; and 4) A reduction in the complications from 27 to 19.65 per cent. The type of such complications in the relation to their frequency remains about the same, the pulmonary and cardiovascular being the most common. This is to be expected in the older group of patients.

What has been done or what can we do as surgeons to continue to improve the care of those patients in and beyond the sixth decade who need surgery? It is my belief, as well as others interested in this problem, that measures which will aid us in giving

TABLE 1. 1936-1937

	No.	%
Total Operations	2,443	
65 years or older (oldest, 85)	72	2.94
Complications:	20	27
Mortalities:	15	20.8
Emergencies:	13	
Mortality	4	30.7
Complications:		
Pulmonary	5	
Cardiac	4	
Peritonitis	2	
Vascular-emboli	1	
Wound infection	6	
Shock	1	
	20	

TABLE 2. 1956-1957

	No.	%
Total operations:	2,174	
	1,435	
	3,609	100
Operations—65 years, plus (oldest, 100)	288	
	216	
	504	13.9
Complications	57	19.8
	36	18.5
	93	
	Average	19.65
Mortality	26	9.08
	26	12.03
	Average	10.55
Mortality emergencies	25	24.1
	24	20.3
		22.2
Complications:		
Pulmonary	21	
Cardiac	14	
Infection	20	
Vascular	12	
Hemorrhage	6	
Others	20	
	93	

better care to the older patient include, 1) Preoperative care; 2) Carefully planned and executed anesthesia; 3) Operative planning and technic; 4) Replacement therapy; and 5) Post-operative care.

PREOPERATIVE CARE

For practical purposes such a discussion must be separated into the preparation for emergency surgical patients and a similar phase for the elective surgical patients.

The mortality in emergency surgery upon the aged is exceptionally high. Our own series demonstrates this especially during the years 1936 and 1937. During the 1956 and 1957 period, some improvement is shown.

TABLE 3. Operations, 1936-1937

	No.
Amputations	6
Lower extremity	5
Upper extremity	1
Colostomy	6
Cholecystectomy	1
Cholecystotomy	1
Gastrectomy	2
Total	1
Subtotal	1
Gastro-enterostomy	1
Debridement	3
Intestinal resection	2
Cecostomy	1
Laparotomy	3
Thorocotomy	1
Mastectomy	4
Simple	3
Radical	1
Vascular, veins only	2
Herniorrhaphy	2
Emergency, incarcerated	2
Others	37
Total	72

Estes,³ Haugh and Dale⁴ and Bosch⁵ show that the mortality in this age group is 17 per cent. What has been done to lower this finding. From the the viewpoint of preparation, several means have been utilized. These are 1) correcting dehydration and electrolyte deficiencies; 2) correcting blood volume; and 3) preparing the gastro-intestinal tract for anesthesia.

Older patients, because of both food deficiencies and inactivity, tend to have evidence of dehydration and nutritional anemia. The time spent in correcting these deficiencies may well be a factor in a successful operation. While the elders are said to withstand intravenous fluids poorly, they nevertheless withstand surgery poorly, if such imbalances are not corrected.

These patients must be given such fluids slowly under constant supervision and in the correct amounts so that circulatory embarrassment will not occur.

If there is an anemia of 9.0 Gm. of hemoglobin and a corresponding hematocrit, this must be corrected before surgery is undertaken. Hemocentration through dehydration may result in a severe anemia not shown by the fundamental studies. However, blood volume determinations will demonstrate such a deficiency. Beling⁶ and others have emphasized that decreased blood volume in the aged patient may be present even when normal hydration is present.

While the correction of the electrolytes and blood volume are most necessary, the period intervening for such a correction in emergency surgery must not be carried out indefinitely. This has been exemplified in the reports of Thompson and Leffel.⁷ These investigators found that the mortality rate for persons of this age group with massive gastro-intestinal hemorrhages was as high as 40 per cent. They were able to reduce this high mortality rate by two means. The first consideration was to build up the blood volume. This was estimated by weight loss. Those showing such a loss were given transfusions of whole blood on the basis of 40 ml./pound, of weight loss. The second recommendation was for earlier surgery. Older patients tolerate blood loss poorly. They found that if blood replacement was made immediately followed by surgery within 48 hours, when possible, they were able to reduce their mortality in this group to

TABLE 4. Operations, 1956-1957

	No.
Herniorrhaphy	62
Cholecystectomy	44
Amputation	44
Lower	44
Upper	0
Plastic procedures	31
Intestinal resection	32
Colostomy	19
Laparotomy	12
Abdominal-perineal resection	11
Sympathectomy	5
Other operations upon nerves	7
Appendectomy	9
Hemorrhoidectomy	9
Gastric operations	42
Total resection	1
Subtotal resection	25
Plication of perforation	4
Gastrostomy	12
Mastectomy	11
Simple	3
Radical	8
Thyroidectomy	5
Thoracotomy	11
Vascular (including aortic graft)	3
Vascular veins	11
Radical neck dissection	7
Cholecysto-jejunostomy	2
Esophageal resection	1
Heller operation	1
Cholodoch-jejunostomy	4
Chorodotomy	1
Others	110

27.8 per cent. We likewise have demonstrated, to our satisfaction, that such a plan is advantageous.

The next step that we have found of value in the reduction of the mortality among this group in emergency surgery has been directed toward the preparation of the upper gastro-intestinal tract. Frequently these patients had been given fluids by mouth. They have demanded water and other fluids to combat their thirst brought about by their dehydration. Therefore, preparatory to the induction of anesthesia, we have made a practice of intubating them. Even though we have been assured that they have "had nothing to eat" before they are hospitalized. A Levine tube has been introduced into the stomach usually with the gratifying result of dislodging a liter or more of gastric contents. This is important, we believe, in the prevention of aspiration of such stomach contents into the pulmonary tree which results in atelectasis and pneumonitis, the second most frequent complication.

Anesthesia and operative technic we shall discuss in detail when we speak of elective surgery. Suffice it to say that in an emergency with these patients beyond the sixth decade, the least, to accomplish the most should be the plan of the surgeon. While dexterity and speed are not the most important attributes of a surgeon, in the emergency surgical procedure the surgeon should carry out, by necessity, such a plan.

In elective surgery in the aged patient, a plan for the procedures is necessary. In general, the physician should attempt to have the patient in the best possible physiological status

to withstand the contemplated surgery. This is important, especially in these patients, as they present us with 1) more physiological deficiencies; and 2) they tolerate complications less readily than the younger patient. Hence it is necessary through thorough examination to determine these deficiencies and to correct them.

In addition to the history, physical examination, routine blood count and urinalysis, chemical determinations

should be made. The examiner should know the non-protein-nitrogen, blood serum proteins, chlorides, potassium, sodium and the magnesium.⁸

When liver or biliary tract disease has been found or suspected, liver function tests should be made. When liver deficiencies exist, operability decreases. Such deficiencies can usually be corrected by the proper attention to intake, oral or intravenous, and/or by transfusions.

The importance of the oral methods for correcting malnutrition should not be forgotten. This is the normal physiological method for this means. Appetizing food, interval feedings of materials high in proteins and vitamins will correct such deficiency more rapidly than will any solution given by the intravenous route. In those who refuse food by mouth, tube feedings can be practiced. This will often stimulate the desire for oral feedings subsequently.

For the patient, and this is particularly true in the aged group, that has a low blood volume, there is no substitute for blood. As mentioned, the elderly patient is usually deficient in blood volume. At times the hemoglobin and hematocrit estimation will fail to show this.⁶ Hemoconcentration through dehydration may result in severe anemia not shown by the forementioned studies. Beling⁶ and his co-workers have pointed out that a decreased blood volume may be present in older patients even when normal hydration is present.

Elderly people frequently suffer from cardiovascular disease. These conditions are often responsible for operative and postoperative deaths. Hence the cardiac status should be

known. The cardiac reserve, a most important determination for evaluating the survival of surgery, can be ascertained by certain inquiries. The patient should be questioned as to his or her ability of their walking limitations, dyspnea, orthopnea, stair climbing, exercise tolerance and ankle swelling. The adage that, "if a patient can walk, he can be operated upon," bears a direct relationship to this important evaluation. The electrocardiogram is of value only in determining the presence of an old or recent myocardial infarction. It is widely known that these patients tolerate major surgery very satisfactorily, providing at least three months have elapsed since the attack.

Chronic pulmonary disease is common in the elderly. On this account, knowledge of the pulmonary reserve is necessary. The determination of the vital capacity is helpful here. While this determination is most often performed on those to undergo chest surgery, it is not utilized as frequently as it should be in the aged patient previous to surgery in pathology located elsewhere.

Recently, the use of certain hormones has been utilized in preparing the older patients for surgery. In the elder male, because of the climacteric, Testosterone can be helpful. This agent aids in the conservation of nitrogen. Thyroid will correct mild hypotension frequently observed in the aged.

As many of this group are malnourished and depressed, recent studies have revealed that the pre-operative use of ACTH and Cortisone will be helpful.⁹ Following their use there is a gain in weight due to increased ap-

petite, fever is eliminated, euphoria exists and the patient is stimulated to be up and about. With ambulation, muscle tonicity increases, the blood flow in the vascular tree becomes positive. While these steroids are of value in improving operability, it must be remembered, that if continued for a long period of time, adrenal atrophy can be produced. Atrophy of the adrenals can result in an irreversible shock postoperatively. To improve operability, ACTH may be given no longer than five to six days, using 100 mg., daily.

Elderly patients withstand infection poorly, while antibiotics can be helpful, infections occur despite them. In our series, infections caused death in over 35 per cent, Cole² stated that 71 per cent of all postoperative complications were due to infections.

ANESTHESIA

The choice of the anesthetic agent is not as important as the presence of a good anesthetist. The importance of a well trained anesthesiologist to the surgical team cannot be overemphasized. He should have an opportunity to study the patient during the preoperative period in order to evaluate them properly for the subsequent operation and for the selection of the anesthetic agent and its method of induction. While in many instances the preference may be a local or regional anesthesia, it must be remembered that the latter method where hypotension may be produced, hypoxia can result. Elderly people tolerate hypoxia poorly. The agent which allows for maximum oxygenation most often is the better choice. Preopera-

tive drugs are best given in small doses.

OPERATION

During the operation, mention of a few general principles are necessary. Ordinarily the operative time is of little consequence. This is not true in the older patient. Poor technic and the rough handling of tissues is not well tolerated. Tourniquets applied to the extremities are to be condoned. Such pressure applied to sclerotic vessels, frequently leads to damage of their walls, resulting in phlebothrombosis. Due to a narrow margin of safety, the elderly patient, as well as the infant, needs constant observation during the operative period. Changing conditions in the patient should ready the surgeon for changes in both his technic and his time consumption. Blood replacement is as necessary in this group as in any other.

POSTOPERATIVE PERIOD

Although adequate blood replacement must be made, care must be exercised in the use of intravenous fluids. The surgeon must be cognizant of the possibility of circulatory embarrassment in the immediate postoperative period, resulting in pulmonary edema. This is true especially if the fluid intake is too great or too rapid. The kidneys in the elderly patient cannot concentrate urine satisfactorily. They show a tendency to oliguria. Intravenous fluid should not contain salt during the first postoperative day for obvious reasons.

Pulmonary complications are more frequent in the older patient. Immediately following surgery, it is mandatory that means be taken to activate

the exchange of air in the lungs. Frequent turning of the patient, the encouragement of deep breathing and frequent movement of the extremities will be helpful in preventing atelectasis. If there is evidence that atelectasis is present, it is necessary to "cough" the patient. When there is air distal to the blocking agent, this obstruction can be dislodged by this means. Often these patients are unable to cough. When such is evident, aspiration of the trachea and the bronchus must be carried out. When this fails, bronchoscopy should be performed. If the secretions continue to accumulate, tracheostomy should not be delayed. Cyanosis is an indication for intranasal oxygen.

Sedation during the postoperative period should be limited. Small doses of the drugs earlier mentioned are quite effective in the older patient. No sedation should be given to this group of patients until they return to consciousness. During the immediate postoperative period, the patient should be placed flat in bed with his head turned to the side. Constant attendance must be maintained until the patient is conscious. The attendants must be fully alert to the possibility of respiratory interference so that they can appreciate it and cope with it immediately. Remember, the aged patient tolerates anoxia very poorly.

Early ambulation should not be carried out indiscriminately. Though it is helpful in preventing vascular stasis and increasing respiratory exchange, it is contra-indicated in extreme weakness, high fever, peritonitis, hemorrhage and cardiac decompensation. Recent phlebitis, as well, limits its application.

It is advantageous to introduce oral feedings early. It has been our practice to return to the oral route as soon as peristalsis returns. We push oral intake as rapidly as the patient tolerates it, trying to establish normal food intake within a few days following the operation.

Intranasal tubes should be removed early. Older persons do not tolerate them but for a short period. They not only may cause nasopharyngeal irritation, but too frequently interfere with the elimination of mucus from the bronchial tree.

SUMMARY

There is evidence in the recent literature that surgery can be "safe" for those persons beyond 65 years of age. This likewise has been our experience. The mortality among these patients in our hospital is 8.5 per cent. This, approximately, is the overall rate in most institutions where thought is given to the care of the elderly. We are of the belief that this can be further reduced.

Reduction of mortality in the older patient can be made by better preoperative, operative and postoperative care. An appreciation of malnutrition and inadequate blood volume, so frequently encountered in the geriatric patient, has been stressed. Emphasis has been placed upon the correction of those deficiencies before surgery is undertaken. Other inadequacies of the aged are outlined and their evaluation as surgical risks is pointed out.

During the operating period, the selection of the anesthesiologist is important. The operating time should be as short as possible and tissue han-

dling must be of the gentlest. Constant observation of the patient's reactions must be maintained during this period.

Postoperatively, constant attendance is necessary. A knowledge of the possible complications and the methods for their prevention has been given considerable attention. Intravenous feedings should be limited in amounts. An early return to the oral route, whenever possible, should be the surgeon's aim.

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Annual Oration for 1959

Hot Water Injection Into Nerve Structures As a Method for Relieving Intractable Pains*

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THE FUNDAMENTAL PRINCIPLE related to the destructive action of hot water on living human tissues, to be sure, has been observed ever since the origin of man. The first degree burn or blistering effect of scalding water when it is splashed onto the skin in droplets or very small quantities—usually less than 1 cc.—has long been a problem to physicians and laymen alike. Larger amounts of boiling or subboiling water applied over a longer period of time and spreading over a larger area, produces a massive destruction of living tissue. The extent of damage is determined by the area of the living part that is emersed, the time of exposure to the heat and the temperature of the water.

During and before the 1920's, boiling water was injected into toxic goiters to gradually destroy and shrink the pathological thyroid gland thereby reducing its toxemia to a state where radical resection could be performed more safely. I could find no reference in the American medical literature regarding the origin of this method al-

though I have seen it used a number of times with apparent success. There is a brief article on this technic in the 1917 Review of the Medical Association of Argentina by Caballos and Bucigalupo, but as yet I have been unable to find other references to the method. As has always happened in scientific achievements, the technical successes of today are rendered antiquated by subsequent new discoveries and improvements. In the words of Lord Tennyson: "The old order changeth, yielding place to new and God fulfills himself in many ways, Lest one good custom should corrupt the world."

Hot water applied as medical therapy to many disorders has been in vogue for centuries. Most of its effect has been largely suggestive mental therapy without any specific curative properties that could be discerned. Nevertheless, hot springs, spas, public baths and the like have been popular and useful places for the treatment of those suffering from aches and pains, either real or imaginary. Immersion of the entire body—with exception of the mouth and nose—in a tub of hot water for the purpose of quieting the

mentally disturbed was a universally accepted technic in psychopathic institutions until recent years when the tranquilizing, or more appropriately referred to as "the stupifying" drugs (barbiturates and rawolfia compounds—in infinitesimal varieties) pushed this technic aside. This method was attended with considerable danger because the human body, completely immersed in water at 115° to 120° F. in as short a period as 15 or 20 minutes may register a fever well above 106, a temperature the human cannot long survive. Since there is no evaporation from the skin—therefore no physiologic cooling of the body—the high temperature within the brain soon exhausted the brain cells and general collapse occurred, with not infrequent deaths.

Hyperthermia for the treatment of mental and many other medical disorders was continued by means of the Kettering sweat box where evaporation from the skin was maintained to a controlled degree by forcibly administering large amounts of fluid by mouth and vein, to promote excessive perspiration. By carefully checking the patient's temperature and fanning the skin at necessary intervals it could be kept between 104° and 106° F., for from three to six hours without the sudden risk that occurred with tub immersion. While effective in controlling mental disturbances, it was also used to treat syphilis of the nervous system, rheumatism and many other chronic disorders. Most psychiatrists of the 1920's were just as enthusiastic about the various forms of physical hyperthermia in treating mental disease as are those of the present day regarding the efficacy of

tranquilizers. Hyperthermia appeared to demonstrate the theory that increases in body temperature could impede the growth, if not kill, the *treponeema pallidum* and possibly some of the common pathogens.

Now to return to the main point of my thesis which is: *boiling water can certainly cause cell death when injected into living tissue and will impair the normal function of cells when they are not completely destroyed.* Experiments to demonstrate these phenomena in nerve cells and other nervous system tissues were carried out in the brain of living animals, of postmortem brains of humans at body temperature and later in living persons.

Briefly, it was observed that water at temperatures of 70° C. and above, produced visible coagulation of the protein in egg albumin. Temperatures at 80° C. or above, produced coagulation in the brains of animals and humans while with boiling or at slightly less temperatures, actual destruction and necrosis. These experiments were initiated for the purpose of trying to find a new destructive medium to inject into the frontal lobes of the brain to produce a lobotomy effect for the cure of the anxiety and pain of cancer patients and the presently incurable psychotic states, principally that of dementia praecox.

The injection of hot water into the living human being was first carried out on patients suffering intense pain from advanced cancer (the first case was so treated, February 13, 1953). Those who were extremely anxious and where sedation produced only transitory relief were selected. Since these patients all ultimately died from

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their disease it gave us a number of brains on which detailed pathological studies could later be made. In one instance, the entire family of a patient was so grateful for the relief produced by the operation that they consented to the patient and her husband's wish to leave their remains to Jefferson Medical College for complete, unqualified scientific studies.

The operation of hydrothermal lobotomy was carried out by trephining the skull bilaterally over the temples. The dura and periosteum were carefully removed so as to prevent closure of the opening from bone regeneration. The wounds were sutured and the head undraped. By careful calculation and x-ray identification, those parts of the brain to have the brain cells destroyed or crippled were injected through a blunt needle with varying amounts and temperatures of water. Usually the lesions were scattered in three selected locations in the frontal lobes using from 2 to 5 cc. of water. These injections are repeated at desired intervals by simply puncturing the skin and then inserting a blunt pointed needle into the brain substance. Hemorrhage, which is the hazard of lobotomy, is either entirely absent or minimal. The procedure usually is repeated in ten days to three weeks. In the usual cancer case, three injections are sufficient. In mental diseases the treatment is more prolonged and may even be repeated a year or so later if needed.

Autopsy and histological studies showed complete brain destruction with necrosis and a cyst formation of debris and serum when 2 cc. or more of boiling water was injected. The water temperature was then reduced

to 75° C., at which temperature no necrosis occurred, in fact, no tissue destruction was visible on sectioning the brain although nerve cell changes could be demonstrated by microscopic study. More than 70 patients were subjected to this procedure with gratifying results and with only one death (of a very sick cancer patient), which proved that not only will the injection of boiling or sub-boiling water produce a satisfactory lobotomy, but it can be produced safely and progressively at elected intervals to the point of optimum effect.

As so often happens in experimental scientific investigations, the primary purpose of this study—which was the control of cancer pain and cure of mental disease—became secondary to a much more pressing, baffling problem of the neurosurgeons, namely, the cure of the atrocious pain of *tic douloureux* or as Wilfred Harris more appropriately termed it "Paroxysmal trigeminal tic" of the fifth cranial nerve. The only treatments that have been permanent and consistently effective in this incurable painful disease were through destroying all or part of the trigeminal (gasserian, semilunar) ganglion beneath the base of the brain, where it is entwined and in close proximity to many other very important nerves, by a potentially hazardous operation or dangerous injection of a chemical. Any surgical approach to this structure entailed opening the skull, lifting the brain and bypassing, without trauma, many very important nerves and blood vessels. Rupture of a blood vessel in such limited quarters increased the hazard from further vessel rupture and hemorrhage, and often crippling of some

important nerve—most often the facial.

Accidents occurred other than to this nerve. The ganglion lies so near the third, fourth and sixth cranial nerves, the greater and lesser petrosal nerves and brain stem as to constitute a surgeon's nightmare. It is no wonder that even at the present time many good brain surgeons shy away from the operation far too often; and when an elderly poor-risk case or one who has become refractory to temporizing peripheral alcohol injections presents himself, the surgeon is apt to tell the patient "it is better to have the pain than to run the risks of operation." Those timid about the operation occasionally resort to injecting alcohol or some corrosive drugs into the ganglion. But while alcohol injection seldom kills it often leaves residuals of visual loss, facial paralysis, deafness, double vision, or laryngeal paralysis that are permanent, which, to say the least, is devastating to the surgeon's equanimity. Alcohol injection into the ganglion has proved to be so unpredictable in its extent of action that few surgeons are bold enough to use it as a destructive agent in the gasserian ganglion at the present time.

There has been no doubt that alcohol can destroy the cells of the gasserian ganglion and stop the pain when injected properly through the foramen ovale, and with a very small mortality, but its disastrous unpredictability has negated its usefulness. Other chemicals have been used on the ganglion and have been unsatisfactory for the same reason that alcohol is not acceptable. Electro-coagulation has been tried many times and often fails because there is no way of measuring the heat at the end of

an electrode. Therefore, excessive heat causes excessive steam and boiling water so that there is no quantitative determination possible. Furthermore, an electrode sufficiently insulated and of small enough diameter as to enter the foramen ovale, has not been made.

After a considerable experience with hot water in producing a lobotomy it was obvious that hot water should be an ideal medium for applying a destructive agent, namely, pre-measured heat, to the ganglia cells to cripple or kill these essential life centers for the nerves carrying pain to the brain. Since the foramen ovale, through which the mandibular nerve passes, presented an open gateway directly to the ganglion, which is just inside the skull, it was already common knowledge that this was a God given entrance to the structure which must be treated to stop the pain. All that was needed was a safe chemical to carry heat which could be no hotter than boiling; which could be easily and accurately measured for lower temperatures; would not disseminate far from its point of injection and be innocuous when mixed with the brain fluids. All of these criteria were met by hot water.

A fortuitous circumstance occurred in 1952. On a trip through Europe I had the great pleasure of being entertained by a number of leading neurosurgeons of the various countries visited. Among them was my gracious host and skilled neurosurgeon Bent Broager of Copenhagen. He related to me the fact that a younger associate of his, Palle Taarnhøj, had performed a decompression of the gasserian ganglion by slitting the dural covering

overlying it, thereby relieving the pain of *tic douloureux* in a fairly large percentage of cases. This procedure was tried on the assumption that pressure from this structure and the brain on the ganglion or sensory root caused the sharp, sudden paroxysms of pain of trigeminal tic. The theory was an old one and had been used previously and discarded before the days of electro-coagulation, as being ineffective. However, I tried the operation on two patients, using electro-coagulation to stop hemorrhage, and sure enough the pain was relieved and the patients are free of discomfort to this day. But, as an after effect it was noted that both had an appreciable area of pain and touch sense loss (hypalgesia and hypesthesia) over the formerly painful area of the face. Since I had not cut any portion of the ganglion or sensory root or in any way bruised the structure, it was obvious that some other factor destroyed the nerve cells to produce the hypalgesia, thereby relieving the patient of pain.

It was easy to reconstruct the surgical mechanics to explain the sensory loss. In order to reach the ganglion the middle meningeal artery first had to be coagulated and cut to get it out of the operative field. I reasoned that the heat produced hot cerebrospinal fluid at the outer edge of the ganglion and that this hot fluid killed part of the ganglion cells and produced the sensory loss. Acting on this observation it was a short, but not too easy step, to inject a few drops of hot water through the foramen ovale into the ganglion. It was necessary to perfect a radiological technic by which a 20-gauge spinal needle could be observed to approach the foramen ovale

and enter with great precision. Furthermore, the puncture must be done painlessly, to permit due deliberation to free the surgeon of frustration and the feeling of impending failure. Very light pentothal anesthesia answered this problem admirably. Indeed it was found that by giving fractional doses of this drug, only to the point of somnolence, that the patient could be readily conversed with and answered correctly to diagnostic pin prick and yet have no memory of pain nor did the patient's quiet muscular movements disturb the surgeon's meticulous maneuvers.

The first patient on whom this was tried was an elderly woman who had been carried along with incomplete comfort for a number of years by peripheral nerve branch injections of alcohol. She was far too feeble to be operated on. Boiling water (1.5 cc.) was injected into the ganglion. This produced a scattered hypalgesia over the entire distribution of the fifth cranial nerve without anesthesia at any spot. She has retained this pattern to date and has been free of pain. Subsequent patients, to the number of 420, have been treated by this maneuver with no deaths or facial paralysis. Other side effects have been minimal. No patient has been denied this procedure because of age or infirmity.

After extensive experimental work and practical experience in the use of hot water for lobotomy and ganglion injection it appeared logical to apply the same principle of destruction by hot water to other nerve problems. However desirable it may be to quiet *the mental anxiety of the person* with intractable pain from cancer, it is

equally important that some specific measure be used to stop the painful stimulus from reaching the brain. The neurosurgeon has many procedures for preventing peripheral pain from reaching the brain thereby isolating the pain to its anatomical location. As an example, a simple maneuver for controlling the pain from cancer of the antrum is to inject the gasserian ganglion with hot water. Incurable lesions about other parts of the face can be stopped by this simple procedure. Extensive lesion involving the face and neck requires both injecting the gasserian ganglion with water and sensory root section of the ninth cranial (glossopharyngeal) nerve and upper four cervical sensory roots by rhizotomy. Unilateral chordotomy at a high cervical level (C-1 or C-2) can be done to stop the pain in the neck, shoulder, chest and lower anatomical parts when the lesion does not extend across the midline. Bilateral chordotomy at a lower cervical level (C-5 or C-6) is very effective in stopping pain in both sides of the abdomen. Touch sensation is retained after such an operation and locomotion is rarely disturbed.

Unfortunately, many of our incurable cancer cases are not even offered the relief from their pain which neurosurgery has to offer. The physician and surgeon are so distracted by the numerous new untried pain killing drugs, that they often lose sight of the fact that most of the old methods and drugs, tested by time, are still superior and will outlive the so-called "miracle pain killers" of the moment. We are being brain-washed by the drug manufacturers as never before. If their claims are extravagant enough

to excite curiosity, and the exposure to them prolonged enough for the propaganda to soak in, sales success is assured for a long enough period to permit them to get out a second one for which they make greater claims. This gives the conscientious investigator little opportunity to determine the true efficacy of any new preparation.

It has been demonstrated that the intrathecal injection of boiling water by lumbar puncture will relieve the pain resulting from cancer of the leg and lower abdominal quadrant. This was first observed in a man with very severe pain in the hip, leg and inguinal region from a massive destructive lesion of the hip. Under ordinary circumstances a chordotomy would have been performed, but this patient was so emaciated and bankrupt metabolically from starvation and partial relief of pain from narcotics, that this could not be considered. Spinal puncture was done at L-2 with the painful hip elevated and uppermost to direct the effect of hot water toward the nerve segments which supplied the painful parts. Ten cc. of boiling water was injected. This instantly produced a large area of hypalgesia covering the pain site and he was immediately relieved of his atrocious distress. His general condition gradually improved and he was free of pain throughout a prolonged period of observation. Other similar cases responded in a like fashion. In skilled hands it is possible to restrict hypalgesic areas to limited dermatomes, on one side only, by performing spinal puncture at the appropriate location and injecting the proper amount of boiling water. Incidentally, this too

can be done painlessly by using light pentothal anesthesia.

The spinal puncture method of injecting boiling water intrathecally has been effective in stopping the involuntary spasms of the lower extremities in paraplegics. This more or less constant painful state in these hopeless patients in the past has only been controlled by extensive laminectomy and section of the many nerve roots to the flexor muscles of the hips and legs. Most paraplegics are in poor general condition to stand such a procedure. Since most of these patients have no voluntary motion or useful sensation there is no reason why the roots of the *cauda equina* can not be destroyed without worsening the patient's general state. Since only the reflex arc of the lower lumbar nerves need be interrupted to stop these reflex contractions, it was thought that injection of boiling water in the upper lumbar location should stop the reflex contraction by impairing the conductivity of both the sensory and motor nerve elements without even completely destroying the nerves. It was found that the spasms were instantly abolished with the injection of 5 to 10 cc. of boiling water at the first lumbar segment. Should the spasms be not completely controlled larger amounts of hot water can be injected on other occasions. It is to be always remembered that the hot water will rise to the desired location by properly posturing the patient, so the maneuvers should be carried out in such a way as to concentrate its effects at the appropriate dermatomes.

One might well ask: if hot water will destroy nerve cells permanently, could this technic not be used for in-

jecting peripheral nerves? The answer to this must be given in terms of our knowledge of the fundamental mechanism of the death of various nerve elements when exposed to varying concentrations of both chemicals and heat. Actually it is extremely difficult to anesthetize a nerve which is covered by its thick perineural sheath even though a concentrated solution is injected alongside of it. Nerve block of large trunks outside the spinal dura is extremely difficult and usually unsatisfactory. Exposure of nerve cells and uncovered nerve fibers inside the spinal canal or cranial cavity (as in the gasserian ganglion) to anesthetic agents or heat is quite another thing. Outside these cavities the destructive or anesthetizing agent must be injected beneath the nerve sheath directly into the nerve trunk itself. This can be rarely achieved in large trunks except where the nerve is rather tightly fixed in its foramen of exit such as in the foramen ovale or infra-orbital foramen. In fact, these are the only two peripheral nerves where there is any hope that a consistent anesthesia can be produced safely in the entire body. Even both of these openings pose hazards, for excessive amounts of alcohol into the infra-orbital foramen can cause blindness and only a small amount of alcohol into the foramen ovale can cause the hideous paralytic phenomena of extravasation of this drug around the base of the brain. The answer to the likelihood of water being effective in the injection of peripheral nerves then must be in the negative. It is far too weak in its action to be used for peripheral nerve trunk injection. At best its action will be transient since

death of a nerve fiber is seldom permanent since it will regenerate from its still viable nerve cell body. Therefore, it can be said with some assurance that peripheral nerve injections are seldom effective except in those locations where the nerve has become split into tiny fibers. There appears to be little rational reasoning behind the often performed therapeutic anesthetic blocking procedure. Its anesthetic and physiologic effects are so transient that, at its very best, it must be classified as a psychotherapeutic maneuver.

Prospective disorders which might be amenable to hot water injections undoubtedly present themselves but it must always be remembered that it is a destructive agent and must be used as such. However, there are many crippling lesions which attack the body that must be destroyed by the knife or heat in some form. A hydrocele could be easily emptied and filled with boiling water. Only enough need be replaced to coagulate the lining membrane. It might save the patient a hospital stay and considerable costs.

Other cysts with very thin walled secreting surfaces might be amenable to such therapy. Varicose veins might be treated using boiling water as a substitute for the commonly used sclerosing agents. Hot water is admirably suited to causing punctate circumscribed lesions in the brain for disorders other than mental diseases. Parkinsonism—for which alcohol injection is now used—would appear to be much more safely treated by injecting hot water. However, I have not used the hydrothermal technic because I am not sure that Parkinsonism

is helped by any method which employs destructive lesions in the basal nuclei of the brain. In any condition which is attended with an abnormal cavitation needing obliteration of a thin lining membrane hot water can be considered as a surgical tool.

FINALE

One can not be unmindful of the great honor accorded me in being invited to give the anniversary address before the Philadelphia Academy of Surgery. Many famous surgeons have preceded me in this assignment. None have been of greater stature in medicine than Samuel D. Gross, native born Pennsylvanian, graduate in medicine and for many years the illustrious Professor of Surgery at Jefferson Medical College (1856-1882), who originated this Society in 1879, and who delivered the first anniversary address before the Philadelphia Academy of Surgery in 1881. His is the only statue of an American surgeon gracing our national shrines in Washington, D. C. This nine-foot bronze monument stands on the lawn between the Army Medical and National Museums. The granite base bears the following inscription:

SAMUEL D. GROSS

American Physicians have erected this statue to commemorate the great deed of a man who made such an impress upon American surgery that it has served to dignify American Medicine.
1897.

It is to his memory that we perhaps gather here this evening to hear this contribution as related to the attempted solution of some fundamental

problems in surgery. It is hoped that this address will be accepted in the spirit of Gross who wrote in the opening paragraph of his autobiography:

"It is my wish to write a sketch of my life for the gratification of my children and grandchildren, and for the benefit of such members of my profession as may feel an interest in me from my long connection with it. Possibly some

good may grow out of such a labor, by stimulating the ambition of those who may come after me to work for the advancement of science and the amelioration of human suffering. The devotion which I have shown to my profession, may perhaps, exert a salutary influence upon the conduct of young physicians, and thus serve to inspire them with a desire to excel in good deeds."

Annual Oration for 1960

The Origin of Infection in Surgical Wounds*

H. TAYLOR CASWELL, M.D.

THE DEVELOPMENT of sepsis in the surgical wound is a subject which many would relegate to texts on medical history under the mistaken impression that we have reached the limit in the investigation of this problem and in its prevention. The development of sepsis in the surgical wound is still one of the most common and significant causes of morbidity in the surgical patient. Prevention of infection can do much to widen the scope and the efficacy of modern surgical treatment. The new horizons of present day surgery with its heart-lung machines, prosthetic replacements and perfusion technics have paid scant attention to the morbidity and mortality incurred in these procedures as a result of surgical infection.

Many surgeons look upon wound infection as an act of God which can be most readily explained by contamination of the wound by organisms floating in the air of the operating room and seeding the operative incision. Although this explanation of the mode of transmission of pathogenic bacteria into the surgical wound is a most convenient one, like most easy explanations it is an inadequate one. The principal danger in accept-

ing this concept is the development of the attitude that little more can be done in solving the problem. The purpose of this paper is to present our concepts on the origin of infection in operative wounds and observations on methods of control.

METHOD OF STUDY

The clinical and bacteriological material which makes up this study is the result of five years of investigation of the problem of infection by the Committee on Infection of the Temple University Medical Center.

All cultures, sensitivity studies and bacteriophage typing were carried out in the Department of Microbiology. Over 3,000 bacteriophage typings of staphylococci have been carried out in this department. The Committee has surveyed and abstracted the charts of some 2,500 patients during the time of the study in addition to initiating numerous improvements in hospital technics and preparing a number of publications, lectures and educational material in the field. An effective committee on infection is an essential part of the modern hospital; without it, statements as to the incidence of infection are at best a guess.

All patients in the study had bacteriologic confirmation of the infection

* Delivered January 1961.

and bacteriophage typing was carried out on all staphylococci. Surgical infections of any type and degree of severity, ranging from mild to severe, were included. No patient was excluded because of diabetes, malnutrition, age, cardiovascular disease, extensive surgery, pre-existing infection or the previous administration of corticoids.

Both ward and private patients were included. The surgical wounds included in this paper were clean at the time of the operative procedure. Exceptions were made in the cases of appendectomy and cholecystectomy where patients with acute inflammatory lesions limited to the organs named were included in the study. The incidence of staphylococcal surgical wound infection is based upon approximately 40,000 consecutive operative procedures deemed suitable to be included in the study. Such procedures as hemorrhoidectomy, D and C, surgery of the cervix, T and A, etc., were excluded.

RESULTS

The coagulase positive hemolytic *staphylococcus aureus* is the dominant organism in surgical wound infections. Its incidence is approximately three times that of all other organisms combined. It is of interest that the once dreaded hemolytic *streptococcus pyogenes* has practically disappeared as a source of clean surgical wound infection. In the past five years, we have had two clean wounds infected with this organism in more than 50,000 operative procedures which should give pause to those who point the finger at the nasal carrier as a major factor in the development of wound sepsis.

We have previously reported^{1, 2} a .59 per cent incidence of staphylococcal wound sepsis in clean surgical wounds, predicated on the basis of 10,000 surgical procedures per year in which staphylococcal infection could conceivably occur. We have been impressed, as have others, that this overall infection rate could be a deceiving one when applied to certain specific operative procedures. It is unrealistic to be satisfied with the so-called "crude" infection rate when a number of surgical procedures show a much higher incidence of staphylococcal sepsis. It is in this latter group of cases that the surgeons must constantly search for methods of improving surgical wound technic, both in the operating room and in the post-operative period.

The following material presents the staphylococcal infection rate in 7,691 clean surgical wounds incurred in the performance of 16 different operative procedures. The surgical procedures performed have been divided into four broad groups, having certain common characteristics.

Group I. The procedures included in this group consisted of essentially "clean" operations. (Table 1) There was minimal or no bacterial contamination occurring as the result of surgery, and drainage, if used, was of short duration. The over-all incidence of staphylococcal wound infection in this group of 4,011 cases was .97 per cent. Twelve of the 39 infections in this group (30%) were caused by the so-called hospital strain, bacteriophage type 80/81. Preoperative antibiotic therapy was used only in craniotomy. The highest infection

TABLE I. *Staphylococcal Infections in "Clean" Surgical Wounds*

	Four-year Total Operations	Total Infections	Phage Strain 80/81	Wound Infection Rate %
Appendectomy	572	3	2	.5
Thyroidectomy	272	5	1	1.7
Mastectomy (simple and partial)	660	2	0	.3
Inguinal herniorrhaphy	984	12	4	1.0
Cesarean section	551	6	1	1.0
Craniotomy	434	7	2	1.6
Laminectomy	538	4	2	.7
				Average .97

rates listed are in thyroidectomy (1.7%) and in craniotomy (1.6%). In both of these procedures, silk is used for many of the ties and short-term drainage of the wound is usually carried out. In craniotomy, the operative time is considerably longer than in any other procedure in the group. Inguinal herniorrhaphy, which has been reported to show a relatively high staphylococcal infection rate (5%) in other series, showed an incidence of only 1 per cent in this group. All herniorrhaphies done in this institution are carried out with interrupted alloy steel wire technic throughout with the exception of a fine catgut tie in the subcutaneous vessels.

In this group, it is reasonable to assume that the infection incurred resulted primarily from contamination of the wound from organisms of the external environment. These environmental factors would include contact contamination by members of the surgical team and contaminated operating room materials such as sutures, needles, drapes, solutions, etc. It has

been our experience that these inanimate objects play a negligible role in the contamination of the surgical wound. The wound could also be contaminated by means of organisms contained in the operating room air with resultant fall-out. The patient's skin could conceivably be the source of a contaminating organism although, as noted by Elek and as to be discussed later, this would be an unlikely possibility with the exception of thyroidectomy in which the skin of the neck could be contaminated with staphylococci as a result of the nasal carrier state. The surgical procedures in this group are of the type in which there would be no contamination of the operative field with staphylococci as the result of the operation itself. Thus, the infection rate of .97 per cent in this group could be a basic one due primarily to external environmental contamination and conceivably could be lessened by improvements in over-all operating room technics.

Group II. Procedures included in this group consisted of operations in

TABLE 2. *Staphylococcal Infections in Surgical Wounds Involving the Genitourinary, Gastrointestinal and Biliary Tracts*

	Four-year Total Operations	Total Infections	Phage Strain 80/81	Wound Infection Rate %
Hysterectomy (abdominal)	1344	28	12	2.0
Cholecystectomy (including common duct surgery)	856	13	9	1.5
Gastrectomy	324	4	3	1.2
Nephrectomy	152	6	4	3.9
Colectomy	412	9	4	2.1
				Average 1.9

which the mucus membranes of the gastro-intestinal, genito-urinary and biliary tracts were involved in the surgical procedure. Bacteriological contamination of the operative field routinely occurs to some degree. With the exception of cholecystectomy in which T-tube drainage may be prolonged, drainage, if used, was of relatively short duration.

The staphylococcal wound infection rate in this group of operations was 1.9 per cent (Table 2). The 80/81 bacteriophage strain accounted for 53 per cent of the infections as compared to a 30 per cent incidence of the 80/81 strain in Group I infections.

All of the surgical wounds in this group were exposed to bacteriological contamination as a result of the procedure itself. Hemolytic staphylococci may be found in the bile, gastric contents³ (5%) and the genito-urinary tract. The vagina and colon are more likely to contain larger number of staphylococci than other areas included in this group, yet neither of these procedures showed a higher infection rate.

Preoperative systemic antibiotic therapy was not used in any of these procedures. Nonabsorbable antibiotics (neomycin, kanamycin) were given to the patients undergoing colectomy, usually in the 24-hour period preceding the operation. Local antibiotic instillation was used routinely only in colectomy.

Interrupted alloy steel wire was used for closure of the parietal wound routinely in all cases except hysterectomy and nephrectomy. In hysterectomy, alloy steel wire technic alone was used in approximately 50 per cent of the procedures and a closure technic utilizing catgut or catgut and wire was used in the remaining 50 per cent. In nephrectomy, closure of all fascial layers was carried out with catgut and it was in this procedure that the highest infection rate occurred.

The over-all infection rate in this group was 1.9 per cent. This increase over the infection rate in Group I could be considered as being primarily on the basis of contamination of the operative wound with organisms resi-

dent in the mucus membranes involved in the operative procedure. It is not unreasonable to postulate that a certain number of these infections could be prevented by the local use of antibiotics at the conclusion of the surgical procedure. It is of interest that in colectomy, where there is the greatest degree of contamination and also the greatest degree of care to prevent contamination and where antibiotics are used routinely locally, there was no increase in wound infection over the other procedures in which there was far less contamination as a result of the surgery. It is our belief that the so-called towel technic during the time of operation when the contaminated field is open should be carried out in hysterectomy and nephrectomy routinely, and certainly one should seriously consider the local use of antibiotics in the surgical wound at the time of closure in these two procedures.

Group III. In this group were considered radical mastectomy and radical neck dissection in which the pharynx or larynx was not entered. In both of these procedures, there is extensive dissection and dead spaces result. Seroma formation is common and drainage is usually prolonged.

The incidence of staphylococcal wound infection in these two operative procedures was 7.6 per cent in radical mastectomy and 5.6 per cent in radical neck dissection, an average of 6.6 per cent (Table 3). The 80/81 bacteriophage strain was responsible for seven of 16 infections in the radical mastectomy group (43%) and for two of nine infections in the radical neck group (22%) (Table 3). Preoperative antibiotic therapy was not used in any of these patients nor was local instillation of antibiotics at the conclusion of the operative procedure.

The staphylococcal infection rate in these two procedures is more than three times that of the infection rate in Group II and six times that of the infection rate in Group I. As previously stated, these operations create an entirely different wound environment than is noted in Groups I or II. Prolonged drainage is usually necessary and difficult to carry out under aseptic conditions. In these operations, there is no contamination of the wound as a result of the operation itself. The prolonged drainage allows for contamination during the postoperative period. Infection occurring in these two operations usually does not manifest itself in the first two or three

TABLE 3. *Staphylococcal Infections in Radical Neck Dissection and Radical Mastectomy*

	Four-year Total Operations	Total Infections	Phage Strain 80/81	Wound Infection Rate %
Radical neck dissection	160	9	2	5.6
Radical mastectomy	208	16	7	7.6
				Average 6.6

TABLE 4. *Staphylococcal Wound Infections in Laryngectomy and Pneumonectomy*

	Four-year Total Operations	Total Infections	Phage Strain 80/81	Wound Infection Rate %
Laryngectomy	152	13	9	8.5
Pneumonectomy	72	7	3	9.7
				Average 8.9

days as it commonly does in the other groups; it frequently occurs in five or more days after the operation. Also, the infection is commonly noted in the area of the drainage tube. It is our opinion that staphylococcal infection in these two procedures could be controlled to a significant degree by improvement and redesign of drains used. Most of the patients in this group had suction-type drainage which is mechanically efficient but readily lends itself to contamination of the wound by virtue of reflux through the catheter or sump drain whenever the suction is interrupted.

Group IV. In this group are included laryngectomy and pneumonectomy. Although these two procedures are significantly different in the wound environment created, they are similar in that, in both instances, the operative field is contaminated with organisms present in the upper respiratory tract.

The incidence of staphylococcal wound infection in the laryngectomized patient was 8.5 per cent and in the pneumonectomized patient was 9.7 per cent (Table 4). The 80/81 strain was responsible for nine of 13 infections in the laryngectomized group (69%) and three of seven staphy-

lococcal infections in the pneumonectomized group (42%). Patients undergoing laryngectomy did not receive preoperative antibiotic therapy and no antibiotics were used locally in the wound. Patients undergoing pneumonectomy received preoperative antibiotic therapy and also received local instillation of antibiotics in the pleural cavity. These two procedures have the highest staphylococcal wound infection rate of any of the four groups studied (8.9%).

It would appear that the bacteriologic contamination occurring during surgery plays a significant role in the staphylococcal wound infection rate in these operations. The staphylococcus is more prevalent in the upper respiratory tract than in any of the other areas involved in the operations of this study. Frequently, these patients are in the hospital for a week or longer prior to the operative procedure while studies of various types, including biopsy, pulmonary function, etc., are carried out. This relatively prolonged hospital stay increases the incidence of the nasal carrier state (60%) and secondary appearance of these organisms in the secretions of the upper respiratory tract occur. Drainage is usual in laryngectomy and pneumonectomy. In the latter proce-

dures, the large pleural dead space is an ideal culture medium.

It is our opinion that in both of these operative procedures, sputum cultures and sensitivities should be done three days prior to surgery and, depending on the results, appropriate antibiotic treatment instituted. We also believe that antibiotics should be instilled in the wound at the conclusion of surgery and that systemic antibiotic therapy should be continued postoperatively for a period of six days.

A worthy analysis of infection in surgical wounds must include the incidence of infection with organisms other than the coagulase-positive staphylococci. During the past year, we have included non-staphylococcal wound infections as part of our study. The results have paralleled the findings of the staphylococcal study to a marked degree and have further emphasized the dominant role which the bacteriologic flora of the organs involved in the surgical procedure play in the development of wound infection. As was noted in the study of staphylococcal wound sepsis, the "crude" infection rate is a misleading one when specific operative procedure infection rates are determined. The over-all infection rate with non-staphylococcal organisms, predicated on 10,000 operative procedures per year in which infection could conceivably occur, was .23 per cent. Twenty of 23 non-staphylococcal wound infections were incurred in operative procedures involving organs and areas where these organisms are normally present in significant numbers. Twenty-eight of 33 organisms responsible for these 23 infections con-

sisted, in order of frequency, of coli, bacteroides, anaerobic streptococcus, aerogenes, diphtheroids and non-hemolytic streptococcus. In only three instances did non-staphylococcal infection occur in which there was no contamination of the surgical wound as a result of the operative procedure.

The two operative procedures in which 15 of the 23 non-staphylococcal infections occurred were hysterectomy and colon resection. The mucus membranes of the colon and vagina support the growth of the organisms responsible for the wound infection. The use of the towel technic and the local use of antibiotics in the subcutaneous tissues at the conclusion of the operative procedure should be adopted as a surgical routine in both of these operations.

As a result of the studies which have been presented, we believe it is reasonable to conclude that bacteriologic contamination occurring as a result of the specific surgical procedure involved plays a major role in the development of wound infection and that measures to decrease or to prevent the contamination of the wound with these organisms are strongly indicated. This technic could be simply stated as internal environmental asepsis and should be looked upon as being equally important as aseptic technic applied to preparation of the surgeon's hands, the patient's skin, the instruments, the sutures, the drapes, etc. The two measures most effective in preventing this contamination are the use of the towel technic and the local use of antibiotics at the time of closure.

Although we strongly believe in the validity of the above observations,

it is apparent that there must be other factors involved in the development of surgical wound infection. The wound environment which is created by the surgeon's technic plays a definite role in determining whether or not organisms contaminating the wound are able to multiply and cause clinical infection. Henri deMondeville stated in the 13th century the following philosophy in the treatment of wounds: "Wash the wound scrupulously from all foreign matter, use no probes, no tents except under special conditions; apply no oils or irritating matters; avoid the formation of pus which is not a stage of healing but a complication. Wounds dry much better before suppuration than after it. When your dressings have been carefully applied, do not interfere with them for several days. With the new methods, you will have no stinks, shorter convalescence, and clean, thin scars. If treated on Theodoric's and my instructions, every simple wound will heal without any notable quantity of pus. Many surgeons know how to cause suppuration, few know how to heal a wound."

An important but little known paper by Dr. Steven Elek of the Department of Bacteriology at the University of London published in the *British Journal of Experimental Pathology* in 1957 should be read by all in the surgical field. Dr. Elek carried out a fascinating study on the development of staphylococcal infection in human volunteers. Presumably, these were medical students. He determined that a minimal pus-forming dosage using viable pathogenic hemolytic staphylococci from cases of clinical infection consisted of 7,000,000 or more organ-

isms. Controls were carried out with heat-killed organisms and no pus was obtained. On the basis of subcutaneous injection with 5,000,000 organisms injected, no infection occurred. He also determined that the age of the culture and the use of direct passage made no difference in the incidence of infection. There was no difference in organisms obtained from nasal carriers and those from cases of clinical infection. There was an indication that the so-called epidemic strain (80/81) produced more severe lesions in the same individual although the same number of organisms were required. There was no evidence of any acquired immunity in patients who had had previous infection or recent boils. Forty of 45 individuals inoculated with pus-forming dosages formed pus. Of the five failures, three occurred in the same volunteer. He also made full thickness skin cuts and, with 20,000 organisms instilled in the laceration, no infection occurred. An intradermal dose of 6,000,000 organisms at the same time in one of the volunteers produced suppuration.

Dr. Elek believed it was inconceivable that the large doses such as he used in order to create infection would be able to enter surgical wounds and that other factors must be operative.

The use of plasma as an infection-enhancing agent had no effect nor did mucin which has known virulence enhancement in experimental infection show an effect.

He then investigated the potentiation of infection by foreign body. He found that starch created no enhancement. He then impregnated silk sutures with purulent exudate from cases of clinical infection and pulled

these sutures through the skin. Four-fifths of the organisms (40,000) were wiped off in the skin by this procedure and yet no infection occurred. However, when the sutures were tied, a severe infection occurred in which the patients were quite ill and the sutures had to be removed promptly whether tied lightly or moderately. The infection which developed, he stated, was the size of an orange. A suture placed in the skin with 300 organisms created a stitch abscess. This is a virulence enhancement over intradermal infection of at least 10,000 times by virtue of the presence of the foreign body.

In his summary, Dr. Elek stated that there was no reliable information concerning the virulence of staphylococci to man from experiments carried out solely on animals. He believed that foreign body reaction must play a major part in wound infection and in some way block the defense mechanism. The puzzling feature is why there are not more infections in view of the wide dissemination of staphylococci. It is unlikely that surgical wounds can be kept completely free from contamination with these organisms. He believed that the magnitude of the pus-forming dose showed that man was highly resistant to staphylococcus pyogenes and special circumstances must be needed to enable an effective dose to reach the minimum pus-forming level. He concluded that foreign body may be the major one and that the circumstances of the infection rather than the infection dose determine the outcome to a large degree.

The following are factors which we consider to be important in surgical

wound technic in the prevention of wound infection. We have already discussed the necessity of towel technic and the local use of antibiotics in certain operative procedures to prevent and to destroy respectively organisms contaminating the wound. It is obvious that these technics, despite their efficacy, cannot completely prevent contamination of some degree. It is assumed that the technics of surgical scrubbing, preparation of the patient's skin, efficacy of autoclaving equipment and proper cleansing of operating room air are done efficiently and without defect.

SURGICAL SKILL

This is a most difficult attribute to define. In some quarters, the surgeon with a rapid and deft technic with minimal tissue trauma is looked upon askance and with suspicion that he has not been spending enough time in reading the literature. Slowness and roughness in surgical technic is a matter of habit and training, and no patient is made healthier or wound infection rate lower because the operation takes two hours longer than it should. It should be impressed on residents in training that the complete surgeon must possess a high degree of technical skill which can be obtained only by unremitting efforts to improve his technic and constant respect for the tissues he is treating.

SUTURE MATERIAL

The use of catgut of any kind should be minimized. It is a highly irritating foreign body creating a wound environment which enhances the development of infection. The great Swiss

surgeon, Theodore Kocher, in 1887, reported 29 infections in 31 patients using catgut and none when fine silk was used. Halsted developed his all silk technic because of his dissatisfaction with the reaction of the wound to catgut. Despite the improvements in the manufacture of this material, it is our belief that catgut should never be used to close parietal wounds. Interrupted alloy steel wire is a practically inert material in human tissue and clinical experience has shown that the use of wire can definitely lower the incidence of wound sepsis when compared to those using a catgut closure. In our own study, over the past five years, we have found definite evidence of the validity of this observation.

UNNECESSARY HEMOSTASIS

Stating that you are against hemostasis is similar to coming out against mother love. However, there are many small vessels in the surgical wound, particularly in the skin, which clot adequately spontaneously and do not need to be clamped. Innumerable catgut ties in the wound are unphysiologic and fill the wound with an irritating foreign body with multiple areas of necrosis. These factors greatly enhance the chances of bacterial growth. Ties should be kept to a minimum and the finest grades of catgut used with only two knots on the small vessels. Likewise, large bites with hemostats and mass ligation are to be avoided. This type of technic is frequently condemned but, unfortunately, is far too commonly seen.

WOUND LAVAGE

All surgical wounds should be thoroughly lavaged with saline, both during the procedure and always at the end. This technic removes blood, fatty debris, foreign material and bacterial organisms.

PROPER HANDLING OF SHARP INSTRUMENTS

The proper technic in the handling of sharp instruments does much to prevent glove puncture with subsequent contamination of the wound with bacterial flora of the skin of the surgeon's hands. The practice of picking up needles with the fingers is to be particularly condemned.

PATIENTS AND PERSONNEL WITH INFECTION

There is little doubt that operating room personnel with clinical infection can be the source of surgical wound infection. No one with clinical infection should be allowed to work in the operating room or to return until the infection is completely healed. No elective surgery on patients with clinical staphylococcal cutaneous infection should be done. There is a high incidence of wound infection in these situations even though the incision is far removed from the cutaneous lesion, indicating a skin carrier state. One should wait at least three months after clearing of the infection prior to doing an elective procedure. In situations where surgery is essential, we believe the use of plastic drapes is of potential value and, in addition, the local use of antibiotics in the surgical wound is desirable.

DRAINS

The use of drains in surgical wounds should be avoided unless indication for same is sound. If possible, they should be of non-irritating material such as plastic, or the stainless steel sump drain. Where drains are used to remove the accumulation of sterile serum, blood or bile, they should be removed as soon as possible and treated with meticulous aseptic technic. As previously mentioned, suction drains must be treated with great care and, if the patient is to be ambulated, the drain should be clamped before the suction is interrupted to prevent reflux into the wound. In many instances, wounds are drained because of a custom which has been handed down from surgical chief to trainee over a period of many years and with little physiologic basis. In a wound where small amounts of serum may accumulate, it is far more physiologic to aspirate it if necessary than to leave a drain which greatly enhances the possibility of the development of infection.

CONCLUSION

The development of infection in a surgical wound depends to a large degree on two factors. One is the

bacteriological contamination of the wound as the result of the surgery performed, and the second is the wound environment created by the surgical technic. Control of the degree of bacteriological contamination of the wound incurred during the surgery is feasible and meticulous surgical technic, creating a wound environment unsuited to the development of infection, is within the reach of all surgeons. Accomplishment of these measures will do much to lower the morbidity and mortality rates of the patients under our care.

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Annual Oration for 1961

Hypervolemia in the Surgical Patient*

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THE PRIVILEGE of addressing this distinguished academy without limitation as to subject or time, and with one's manuscript exempt both from preliminary approval of committee and subsequent critical discussion — this rare privilege is enjoyed only by the annual orator. I should like to express sincere appreciation on being chosen for this honor. At the same time, I am aware of the large measure of accountability which these prerogatives imply.

It is hoped that the liberties of the orator can be confined to one, namely, the choice of the subject, "Hypervolemia in the Surgical Patient." Nearly 15 years ago, it was my good fortune to be associated with an investigative team whose experimental data emphasized the unusual susceptibility of the surgical patient to overhydration with salt and water. Subsequently, a great number of investigators became interested in this area of research. Through the use of more sophisticated experimental techniques, earlier reports have been substantiated and new facts have been added. It has been fascinating to watch bits of data from various workers accumulate gradually

until at the present time the anticipated metabolic reaction of the surgical patient can be predicted with some accuracy.

The importance of deficits in body fluids and blood volume cannot be overestimated, as shock, dehydration and acid base derangements continue to be common surgical complications. The risks of overhydration, water retention and hypervolemia, on the other hand, have attracted less appreciation. This may be because the diagnosis of volume changes in the E.C.F. has been largely clinical due to our inability to measure them simply and accurately in the laboratory. Moreover, the clinical signs of oligemia are rather obvious whereas the manifestations of hypervolemia are less clear and demand a more subtle and artful evaluation.

The specific diagnosis of an abnormality of fluid and electrolyte metabolism in a given patient will give due regard to irregularities of both volume and concentration. Either hypovolemia or hypervolemia can occur in the presence of hypertonic or hypotonic serum electrolyte concentrations. The final combination is dependent not only on the tonicity and volume of the fluids being lost from the body,

but also the tonicity and volume of fluid replacement from both endogenous and exogenous sources.

Hypertonic hypovolemia is uncommon. It could conceivably be produced by simple water deprivation inappropriately corrected by administration of hypertonic saline. Other unusual ailments in which large urinary losses of water are incurred include induced osmotic diuresis and diabetes insipidus. Hypertonic hypovolemia also is rare and, when noted, usually is the result of over-zealous administration of saline.

The more common differential diagnosis which must be made, therefore, is between hypervolemia and hypovolemia in the hypotonic (or hyponatremic) patient. The development of hyponatremia could be most easily accounted for by the loss of hypertonic secretions from the body. This, however, is most unusual. Instead, it is most commonly initiated by the loss of isotonic or hypotonic secretions from the gastro-intestinal tract. The volume is then replaced by transfer of water from the intracellular to the extracellular compartment, or exogenous by the administration of salt free water, or a combination of the two. If the total replacement is inadequate, hypotonic hypovolemia results.

Because water normally is a diuretic and overdose is excreted readily by the kidney, the production of hypervolemia must be accounted for by an added factor of antidiuresis. Despite the fact that this antidiuretic activity is apparently the *sine qua non* for all hypervolemic states, it is poorly understood. There is, however, both direct and indirect evidence of its presence in patients exhibiting hepatic cirrhosis,

heart disease, malnutrition, pregnancy and trauma. The diagnosis of hyponatremic hypervolemia is, therefore, largely a clinical exercise, involving a high index of suspicion in patients with these diseases and a working acquaintance with the clinical signs and symptoms of hypovolemia as opposed to those of hypervolemia.

The clinical signs of hypovolemia are familiar. Because of a decreased blood volume, the pulse is elevated and the blood pressure depressed. The decrease in extracellular fluid volume results in a shrinkage of the tissues which is manifested by loss of tissue turgor, a small shrunken tongue, and soft sunken eyeballs. One of the most characteristic findings is the extreme lethargy and weakness displayed by these patients. It is noteworthy that the mucous membranes need not be dry nor the thirst acute even in the presence of extreme dehydration when the extracellular fluid is hypotonic. If, in addition to the above signs one finds an increase in the formed elements of the blood and a high urinary specific gravity, the diagnosis of hypovolemia is complete.

The clinical findings in severe cases of hypervolemia have been described by Zimmerman and Wangenstein.²¹ These authors use the term "water intoxication" instead of hyponatremic hypervolemia and by so doing emphasize the concept that the decreased sodium concentration is primarily a result of too much water rather than too little salt. They postulated that serum dilution in some manner caused a decrease in glomerular filtration and consequently in the normal diuretic response to a water load. In this manner, a self-perpetuating cycle is estab-

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lished in which dilution causes failure of diuresis which, in turn, causes further dilution. Clinical manifestations are largely the opposite of those found in hypovolemia. They include hypertension, hypothermia and an increased body weight. Nervous irritability and convulsions are considered to be a result of cerebral edema. The concentrations of the formed elements in the blood decrease as the total body volume increases.

Unfortunately, this clear clinical syndrome is indicative of an advanced state which is usually preventable. Prevention demands an awareness of those diseases or conditions in which a tendency to antidiuresis is present. This tendency exists in all patients undergoing major operations. The normal response to injury is, therefore, the most common cause of the hypervolemic state in surgical patients, and deserves the most emphasis.

The retention of salt and water in the early postoperative period was referred to in the introduction to this paper. In this study,⁶ data was collected on three control patients, four patients undergoing herniorrhaphy, and five patients experiencing abdominoperineal resection of the rectum. Each subject was given 750 ml. of 5 per cent glucose intravenously every six hours, a total of 3,000 ml. in 24 hours. The rates of urinary excretion were calculated in ml./hour. The control subjects experienced an initial diuresis, followed by water conservation after 12 hours. Those subjects undergoing relatively minor operations exhibited low outputs of urine for 12 hours, followed by a diuresis. Total water excretion at the end of 24 hours roughly equalled that of the

unoperated controls. Those patients experiencing abdominoperineal resection of the rectum demonstrated a greater tendency to water retention and diuresis was never marked, even after 12 hours.

Rates of sodium and chloride excretion in the urine followed a similar pattern. The control group experienced an initial loss of sodium and chloride for 12 hours, followed by rather strict conservation of these ions. Patients having major resections excreted very little sodium or chloride throughout the study. Those experiencing operations of lesser extent (herniorrhaphy) demonstrated a lesser degree of salt retention.

Evidence that the observed differences in water and salt excretion were reflected in blood volume changes was suggested by the hemoglobin and hematocrit levels before and after operation. The controls developed hemoconcentration; the patients having major operations showed hemodilation; and those with minor procedures demonstrated little change.

Of greater interest were the average variations in serum sodium determinations. A marked drop in serum sodium concentration was noted in those patients who underwent rectal resections. It occurred despite urinary retention of sodium. Similar observations have been confirmed by several investigators,^{1, 7, 20} even in the presence of moderate salt administration. This apparent "Sodium Paradox," as it has been termed by Moore,¹⁴ can be explained by postulating either an expansion of the E.C.F. or a shift of sodium from the E.C.F. to the I.C.F. The extracellular compartment could conceivably be expanded by the furnish-

ing of exogenous water, or by the transfer of intracellular water to the extracellular compartment. Opinions vary as to which of these mechanisms is responsible and it is likely that all may be involved. There is no dispute, however, over the observation that serum sodium levels decrease following major trauma despite urinary retention of sodium and a positive sodium balance. After about 48 hours, a diuresis of both salt and water can be expected, following which both the volume and tonicity of the E.C.F. revert to normal.

In contrast to the urinary retention of sodium and water, there is an increased excretion of potassium during the first 24 (or more) postoperative hours. A certain amount of potassium loss is expected due to cellular destruction. This amount can be calculated on the basis of nitrogen loss, the ratio being three mEq. of potassium for each gram of nitrogen in the urine. In the immediate postoperative period, the rate of potassium excretion exceeds this ratio. This excessive output of potassium is poorly understood. Implications involving aldosterone activity and shifts of sodium into the cell in exchange for potassium are logical but of theoretical value only at present.

Urinary losses of nitrogen are increased in the immediate postoperative period and are greater than expected from simple starvation.¹³ The starving patient loses about 5 to 7 Gm. of nitrogen/day. Following major operations, the daily urinary excretion of nitrogen may reach as high as 20 to 30 Gm./day. The excessive negative nitrogen balance is a consequence of an obligatory period of catabolism

which lasts for 5 to 7 days. Attempts to reverse the postoperative negative nitrogen balance by the administration of carbohydrate, fat and nitrogen have met with varying degrees of success and there are differences of opinion as to the value of such efforts. Infusions of carbohydrate and protein can decrease the nitrogen loss due to starvation, but it is doubtful if losses due to tissue catabolism can be completely corrected by aggressive administration of exogenous nitrogen.

Anabolism ensues during convalescence and the excretion of urinary nitrogen decreases. It is at this stage that positive nitrogen balance is attainable and the patient is able to gain weight if an adequate intake of food can be given.

Interest in hormonal reaction to the trauma of operation was initiated by the desire of investigators to explain the previously defined metabolic alterations. An increase in production of adrenal-cortical hormones was suggested by the observed increases in urinary excretion of nitrogen and potassium and decreased excretion of sodium. Such considerations, plus Selye's¹⁸ classical description of the reaction to stress prompted investigation of the activities of the adrenal cortex in the immediate postoperative period.

One of the first indicators was the total eosinophile count. Early reports of Hardy,⁹ Johnson,¹¹ and others noted that the normal count fell to zero following operation and remained low for one to ten days, depending on the progress of convalescence. This tool, however, has not proved to be a totally accurate guide to adrenal-cortical function nor does it always correlate

well with serum levels of 17-hydroxycorticoids.

An increased urinary excretion of conjugated adrenal-cortical steroids during the first two to four postoperative days has been confirmed by many workers.^{10, 17} The serum levels of 17-hydroxycorticoids also have been shown by Steenberg, *et al.*,¹⁹ to be increased postoperatively with a peak level at about six hours. Normal levels are regained in 2 to 3 days. In short, there can be little doubt that adrenal-cortical hormone production is increased following operation, but a cause and effect relationship between these hormones and observed changes in water and electrolyte metabolism has not been proved.

There is ample evidence of increased aldosterone activity in the postoperative patient.³ Increased quantities have been found in the urine during the first few hours after operation. Few, however, agree with Llaurodo¹² who suggests that the increased production of aldosterone accounts for the known changes in sodium and potassium metabolism. No such correlation has been substantiated. In fact, the mechanism for the stimulation of aldosterone secretion is not clear. It is not affected by ACTH to the same extent as the 17-hydroxycorticoids. Bartter¹ has demonstrated that changes in blood volume are more potent stimuli to aldosterone secretion than are changes in ionic concentration. In the postoperative patient, the decreased serum sodium level theoretically should have an effect on aldosterone secretion just opposite to that of the increased blood volume. In short, it appears that all of these changes occur at the same time, but

the exact mechanism for the production of aldosterone and its exact role are unknown.

The response of the anterior pituitary to trauma with increased production of ACTH has been proven by assays of ACTH in the peripheral blood. Numerous clinical studies on hypophysectomized patients have emphasized further the importance of the pituitary-adrenal relationship following injury.

Posterior pituitary activity, on the other hand, is more difficult to assess. Both bio-assay studies⁵ and indirect evidence⁸ are suggestive of increased postoperative antidiuretic activity but both of these methods leave something to be desired. An equally important implication is the fact that the antidiuresis found in postoperative patients is of the same type as that seen in patients receiving posterior pituitary hormones. That is, there is a decrease in urinary flow, combined with an increase in urine osmolality and a decrease in serum osmolality. As already noted, it is this antidiuretic activity which apparently is the crux of the pathogenesis of the hypervolemic states. It is frustrating, therefore, to be forced to rely on rather indirect evidence in assessing actions of this important hormone.

In planning supportive treatment for the postoperative patient, the natural inclination to keep all laboratory reports "normal" and everything in balance is unsound. The obligatory response to operation can be modified by adequate preparation, good surgery, and good anesthesia, but it cannot be abolished. Because of the tendency to water retention and hypervolemia, water is administered

sparingly, without insistence on an "adequate urinary output" on the day of operation. Mild hyponatremia is not treated but allowed to correct itself in 2 to 4 days. Salt in small doses of 2 to 4 Gm./day is advised by some surgeons but all agree that the emphasis is on the avoidance of "over-salting" the patient. The negative balances of potassium and nitrogen are not harmful in the uncomplicated case. In fact, the patient receives an endogenous infusion of potassium and nitrogen, both of which must be excreted if he is to remain in good health.

In the complicated case, more aggressive treatment is demanded but even this is tempered by the knowledge of what can and what cannot be corrected.

If it is accepted that in preparing a patient for a major operation we are preparing him for a state of hypervolemia, it is reasonable to be interested in those preoperative conditions in which this state already exists. These include hepatic cirrhosis, cardiac decompensation, malnutrition and pregnancy. Many patients heretofore considered inoperable because of these ailments now find their only hope for cure in modern surgical treatment. Prudent attention to the details of metabolic care have made it possible to operate successfully on such individuals.

Malnourished, wasted or starved patients have been a surgical challenge for years. Innumerable feeding regimens have been devised to improve the risk of such persons. Success has been somewhat limited in that a salutary state of anabolism and weight gain often depends upon surgical correction of the primary lesion.

In 1947, the concept of "chronic shock" was introduced by Clark and his associates.⁴ Working with debilitated patients and those suffering from malignancies, these workers determined the blood volume, using T-1824 dye, and the red cell mass by means of the venous hematocrit. It was their contention that blood volume deficits in debilitated patients should be calculated on the basis of the standard for the patient's usual weight prior to illness. On the basis of these studies, it was concluded that protein depletion caused a surgically significant reduction in blood volume. In addition, it was postulated that malignant disease gave rise to a fundamental disturbance in blood metabolism which in turn reduced the blood volume because of a deficiency in the total circulating red cell mass. It was advised, therefore, that these patients exhibiting the syndrome of chronic shock would be better operative risks if repeated transfusions were administered preoperatively. Transfusions sufficient to bring the blood volume to the standard value were advised, without regard to the hematocrit determination.

More recent investigations of Moore and his colleagues¹⁵ have challenged this concept. Using techniques for the determination of total body water, it was pointed out that the starved patient develops a relative increase in extracellular fluid due to shrinkage of the mass of fat and lean tissue. Although the lean tissue mass is primarily muscle, the erythrocyte mass behaves in a similar fashion. At the same time, there is a tendency to antidiuresis with retention of salt and water. Hypoproteinemia results not

only from decreased synthesis of protein but also because of the increase in E.C.F. volume. At the same time sodium enters the cells and potassium is released into the E.C.F. The end result of these changes is hypervolemia and hyponatremia, associated with an increase in total body sodium. Anemia and hyperkalemia are co-existent with a relatively large plasma volume and hypoproteinemia. It is worth noting, perhaps, that all of these factors are exaggerated by surgical trauma.

Moyer's laboratory,¹⁶ in 1960, essentially agreed with the findings of Moore. Using Evans blue dye and radioactive iodinated human serum albumen (RISA) to determine plasma volumes, patients with simple malnutrition were found to have increased values for blood volume, plasma volume, total circulating plasma protein and total circulating hemoglobins. A decrease in total circulating hemoglobin and red cell mass was found in patients who had both malnutrition and cancer, and if infection, hepatic disease or renal disease were involved a deficit in total circulating plasma protein occurred as well. Normal values in this study were control determinations on "lean normal" patients, rather than standard tables.

Preoperative transfusions in these cachectic patients resulted in a tendency for the red cells to remain in the blood stream while the plasma was lost into the extravascular compartment. It was concluded that preoperative transfusions in cachectic patients should only be used in instances of acute blood loss or in oligemic anemia due to chronic blood loss. Transfusions for food value or less well docu-

mented salutary effects were thought to be more harmful than helpful.

With these considerations in mind, the preparation of the malnourished patient for operation resolves itself into an understanding of which factors can be corrected and which cannot. The hyponatremia, since it is due primarily to water excess, is best handled by recognizing its cause and refraining from measures which will make it worse. Hypertonic salt solutions are not indicated.

In the majority of patients, anabolism and solid weight gain cannot be expected until after the surgical lesion has been removed and food can be ingested by mouth. For this reason, aggressive and prolonged attempts to reverse the negative balances of nitrogen and potassium are apt to be both unsuccessful and detrimental. As a matter of fact, the serum potassium tends to be on the high side of normal so that it is illogical to administer potassium unless there is some unusual exogenous loss. Energetic intravenous alimentation with complex solutions of carbohydrates, protein hydrolysates, and the newer fat products undoubtedly are finding a place in the patient who must survive on intravenous alimentation for a prolonged period of time. There are more indications for such attempts, however, during a complicated postoperative course than there are for the preoperative preparation of the patient.

Deficiencies of water and electrolytes due to exogenous loss can be corrected promptly. The serum electrolyte values, however, should be brought to what is "normal" for the starved patient and not to that which is normal for well-nourished patients.

Human serum albumen is often helpful when hypoalbuminemia is present, not for its nutritional qualities but because of its oncotic properties. A reduction of edema decreases the incidence of postoperative complications.

The preoperative administration of blood transfusions to the undernourished patient solely to correct anemia has been criticized as indicated above. This is particularly true if only one unit of blood has been used. It would appear that some of the benefits claimed such as improved wound healing, increased resistance to infection, and improved nutrition are primarily clinical impressions and are difficult to prove.

On the other hand, expert preoperative care involves preparing the patient as best one can for additional stresses, some of which can be predicted and some of which cannot. It would seem rational that a decreased red cell mass would affect adversely the ability of the organism to respond favorably to such common and unpredictable surgical hazards as hemorrhage, shock, and anoxia.

As a matter of fact, it is seldom necessary to operate on an anemic patient. It is rare, in anemia, for the blood volume to be decreased to an extent comparable to that of the red cell mass. According to both Moore and Moyer, it is likely to be abnormally high. It is here that the use of packed cells in place of whole blood transfusions appears to be logical. This technic should allow for the correction of anemia without imprudent expansion of an already large blood volume.

Operations on patients with hepatic cirrhosis are now common. These

people often present themselves to the surgeon with low serum concentrations of sodium and chloride. This hyponatremia may be associated with either hypovolemia or hypervolemia. The distinction is important because the treatment which is beneficial for one is harmful to the other.

Hypovolemic hyponatremia in the cirrhotic is said to be the result of "too successful" therapy. A characteristic example is the patient who has been treated energetically with a low salt diet and various diuretics in an attempt to relieve his ascites. Finally, several liters of ascitic fluid are drained from him by means of paracentesis. During the next few days this fluid re-accumulates in the peritoneal cavity. It contains essentially the same solution of water and salt as found in the serum and, indeed, does represent a loss of serum into the abdomen. This creates an acute oligemia which in turn produces oliguria and a rising blood urea nitrogen concentration. With the mobilization of intracellular water during a period of renal insufficiency, serum potassium levels rise. If fluid is replaced by salt free water, the serum levels of sodium and chloride fall and urinary chloride disappears. The concentration of formed elements in the blood increases and the patient presents the clinical picture of acute dehydration and hypovolemia. Prompt treatment with saline, preferably 3 per cent, may be life-saving in these patients.

The cirrhotic patient with hypervolemic hyponatremia also presents himself with decreased serum levels of sodium and chloride and oliguria but here the similarity ends. This patient may have received rather haphazard

treatment for his ascites. There has been no previous acute loss of salt nor water but he has developed a "new steady state." This consists of hypervolemia and hyponatremia with an increase in total body sodium. Here again the problem is one of too much water rather than too little salt. The oliguria is explained on a theoretical basis as due to increased antidiuretic activity, and the BUN remains normal. Clinically, there are no signs of dehydration; in fact, if the syndrome is not recognized and a water load is added inadvertently, the full-blown clinical picture of water intoxication will develop.

Because the reaction to surgical stress accentuates these tendencies, preoperative therapy is helpful. In most instances, the indication is to get rid of the excess water and not to give salt. An osmotic diuretic such as mannitol has proved helpful. Ethyl alcohol has also been used but less satisfactorily. In the occasional case with frank water intoxication, increasing BUN and muscular hyperirritability, 3 per cent saline in judicious doses may be helpful. The explanation for the effectiveness of hypertonic saline in such patients is not well understood but its worth in certain patients cannot be questioned.

The cardiac patient in chronic congestive failure often comes to the surgeon with evidence of hypervolemic hyponatremia. These patients usually have followed their prescribed regimens of low salt diet, diuretics and ammonium chloride, rather lackadaisically. In addition to the usual clinical signs of peripheral edema, pleural fluid, elevated venous pressure and wasting of peripheral fat, the serum

sodium concentration is depressed and the potassium is somewhat increased. The hyponatremia, once again, is the result of dilution, as total body sodium is either normal or increased. The increased volume is thought to be due to a combination of anti-diuresis and the starvation which accompanies chronic congestive failure.

Treatment is directed toward decreasing the excess of body water by means of a strict cardiac regimen. Diuretics, ammonium chloride and water restriction usually suffice. A slow infusion of mannitol to provoke osmotic diuresis has been used successfully.

That the cardiac patient with hyponatremia can, on occasion, be dehydrated is a circumstance that makes a differential diagnosis essential. These patients, in addition to having followed a strict cardiac regimen directed toward the loss of water and salt, also suffer from a salt-losing type of renal disease. The result is a patient on a salt restriction program whose kidneys are unable to conserve salt. As excessive amounts of salt water are lost, it is replaced by water alone and hypovolemic hyponatremia results. Clinically, there is no evidence of edema; in fact, the syndrome associated with dehydration and oligemia will develop.

A simple differential test has been described.¹³ If the daily urinary sodium excretion is less than 10 mEq./day while the patient is on a salt restriction program, the renal conservation of sodium is adequate. If daily urinary sodium exceeds this level, salt losing renal disease should be suspected.

Treatment of this syndrome involving acute losses of salt and water, of course, is to administer saline. Hypertonic saline is useful if the patient is in shock.

SUMMARY

In summary, an attempt has been made to emphasize the propositions that body fluid volume, as well as composition, plays an important role in the health of the surgical patient; that the diagnosis of increased and decreased volume cannot be surmised from the determinations of ionic concentrations; and that above normal volumes (i.e. hypovolemia) commonly are the source of postoperative complications.

The diagnosis of hypervolemia is subtle and demands an appreciation of the pathogenesis of this syndrome and a knowledge of those diseases in which hypervolemia is found.

Because there is an obligatory tendency to the development of hypervolemia with hyponatremia in all patients undergoing operation, the evidence bearing on this reaction to injury has been examined in detail.

Other common diseases which predispose to anti-diuresis, water loading, hypervolemia, hyponatremia and increased total body sodium, and, because of this, accentuate these trends in the postoperative patient are hepatic cirrhosis, cardiac disease, and malnutrition.

Measures of value in treating the full-blown clinical syndrome include water restriction, osmotic diuresis, and, on occasion, prudent trials of hypertonic saline. Of greater therapeutic importance, however, is the anticipation that these changes will occur

under the circumstances mentioned. In this way, errors in interpretation of clinical data and iatrogenic aggravation of this complication can be avoided.

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Annual Oration for 1962

Teaching Surgery to the Medical Student*

JOHN Y. TEMPLETON, III, M.D.

THE PLEASURE and concern which I felt when I was asked to give the Annual Oration before this, the oldest organization of surgeons in the United States, can be best appreciated by those members who in the past have had this privilege. The President alone appoints the Annual Orator but here his responsibility ends and it would be unfair to blame Dr. Deaver for my choice of subject or for what I shall say about it.

In considering what I would discuss this evening I was mindful that the several orations which have been given in recent years have dealt with scientific subjects which held the interest of audience and speaker alike. My own interests have been much taken up with cardiovascular surgery, a subject that has been so widely discussed that it might be said that where two or three are gathered together there shall appear a cardiac surgeon to address them. Therefore, it seemed wise to look beyond this narrow field of surgical effort to a broader subject. In scanning the programs of our meetings I was struck by the lack of consideration in our hall of anything concerning the teaching of surgery to

medical students. It may be that this indicates a surpassing lack of interest therein. This I find difficult to believe, however, because in our city with its fine medical colleges there are few, if any, of us who are not actively engaged in teaching in one or other of its important phases.

Happily, in recent years there is growing general interest in all phases of medical education spurred no doubt by the increasing complexity of problems concerning it. These problems include the geometric growth of subject matter, the ever enlarging student body, the increasing costs of medical college, the growing competition of other scientific disciplines for top rank students and the disproportionately large sums of money so readily available for research.

In our departments of surgery today are men who are devoted principally to research, men who are principally clinical surgeons and some who are both. It is implicit in our organization that teaching is done by members of these groups so that we have few if any who are principally teachers of surgery. The old saying that those who can, do; those who can't, teach; and those who can't teach, teach teachers, does not apply to us. Nevertheless, the duties of teaching medical stu-

* Annual Oration presented before the Philadelphia Academy of Surgery, December 3, 1962.

dents fall heavily upon the busy surgeon of any category and in the too few hours of the working day are apt to come out second best. The more or less bright young men, who populate the surgical research laboratories, realize all too well that the road to academic heights with high rank on teaching faculties does not lie in devoted attention to teaching. A thoughtfully, constructed, carefully researched series of lectures, skillfully delivered is worth a good deal less in the race for kudos than a paper before the Surgical Forum and regular teaching in the out patient department is practically valueless. In this regard the predominantly clinical surgeon who teaches may have an advantage, since he may not be so concerned with academic rank, and he may realize that the student he teaches today will, by a short tomorrow, attain the pinnacle of the medical hierarchy and become a referring physician. Then perhaps, some of the bread that he has cast upon the waters may return to him. Nonetheless we surgeons of whatever category are the ones who must teach the medical students and each group has its contributions to make. The importance of our teaching activities should be emphasized and our contributions given proper recognition.

To teach surgery to the undergraduate student is a good deal more difficult than to train a surgical resident. The resident studies surgery in all its aspects, over a period of several years devoted solely to this purpose. To the medical student we teach some few things about surgery, during the medical school years which must be shared with the other subjects of the curriculum. The resident presumably finds

surgery the most interesting of subjects or he would not be studying it. This may not be true of the medical student. Finally, we do not teach the medical student to operate and surgery without operating is somewhat as one might imagine marriage without sex.

Teaching surgery to medical students may be considered in several phases. The first is the inculcation of a certain minimum of basic knowledge, without which little can be accomplished. The second is training in means of expanding this basic knowledge and keeping it up to date. The third phase deals with the application of this knowledge to the care of patients and the fourth has to do with investigational work in the surgical research laboratory.

The sound basis of undergraduate teaching of surgery lies in required reading of a standard surgical textbook complemented by a comprehensive series of didactic lectures. The concept that the inexperienced members of our large classes, exposed to a limited amount of clinical material, can winnow necessary knowledge from the bewildering plethora of surgical literature, is an erroneous one. The student cannot profit from his assigned patients without a minimum of factual information. In the time available such information is best given to whole classes rather than repeated, uneconomically, to smaller groups. If the class has carefully read the subject to be discussed, the teacher can devote his limited time to emphasizing important points, to bringing the subject matter up to date, to clarifying controversial matters and to furnishing stimulating examples. Occasional un-

announced quizzes seem helpful in maintaining attention. They must be used with caution since the student must realize that he is learning, not to pass examinations but as part of a process that must continue throughout his professional life if his full productivity is to be realized.

The technical proficiency necessary to the lecturer comes easily to some, but can be acquired by all. Perhaps the department head or another colleague sometimes attends one of the lectures. If not, it might be helpful to ask someone to do so. Before this is done, however, it is wise to make a tape recording of a lecture. The playback will undoubtedly be surprising, probably shocking, certainly helpful and will lead to more time spent in preparation.

Good judgment must be used in placing proper emphasis upon subject matter and undue riding of the instructor's personal hobby avoided. A brilliant exposition of a patient with a reversed flow ductus may lead a majority of the class to the erroneous conclusion that the average patient with a patent ductus arteriosus has clubbed cyanotic toenails, while in fact such patients, as you know, are rare.

Serious problems still unsolved remain in the orthodox curriculum in bridging the gap between the teaching of basic science and its application to the care of patients. The student who does well in his course in biochemistry is too often at a loss when faced with the postoperative patient in hypokalemic alkalosis. Joint interdepartmental presentations are helpful and again the importance of ac-

quiring knowledge for future use should be emphasized. Early exposure to clinical subjects may prove confusing but it will help at least to reassure the student that he is progressing toward his goal. Presentation of a course in emergency treatment of mass casualties in the freshman year affords a beginning at a basic level and increases the number of people who could help, should a disaster occur.

I hasten to correct any misapprehensions these comments may have engendered regarding the value of training in the use of the library and the surgical literature in particular. If this is neglected the student is left in possession of a handful of sterile knowledge, soon out of date, which he is powerless to supplement as the need arises. The student must be given the capability necessary to obtain his own continuing education as his career advances and he must be made to realize the absolute necessity of doing so. Failure to do this is one of the major deficits in our system today, and this failure of continuing education is apparent in equal degree among both good and poor students. The average student does not acquire this ability by being turned loose in the library for several hours each week. He cannot be expected to critically evaluate the articles he encounters. Here small groups led and supervised by experienced surgeons come to the fore and students assigned to give comprehensive, critical discussions before their peers begin to acquire the needed skills. The stimulus to the continued use of these skills after medical school is something else again, to which all teachers in the college must contribute.

Of equal importance to the acquisition of basic knowledge and the means of independently supplementing it, is the training in the clinical application of this knowledge to patient care. The clinical clerkships in the wards, private floors and out patient departments are the laboratories in which the student tries and sharpens his tools as a physician, and matures as a human being. Many of our great hospitals came into being for the express purpose of providing these laboratories. Much should be expected of the student during this clinical assignment and much should be provided him. His duties must be real ones, of importance to the patients' welfare, and he must be required to discharge them diligently. He must be taught to make his own diagnosis in a logical fashion insofar as possible from the history and the evidence of his senses and then to confirm it with a minimum of properly selected laboratory tests. Undue emphasis upon the mere accomplishment of technical procedures so prized by the student himself must be avoided.

At the same time that the student studies the patients he must also study the members of the staff, some of whom may be more interesting. He should have the opportunity to observe, work with and come to know these men personally. From them are learned not only the technics of diagnosis and treatment, but more important the principles of high ethical and moral standards, for which there is all too little time in the crowded curriculum. From them he must learn, above all, to regard the patient as a human being, sick, in strange and frightening surroundings — not as a

mere repository of a diseased organ. In talking with the patient and his family he may learn what he can do to counteract the decline in general public-A.M.A. relations by improving his own relations with his own patients.

Advantages accrue to the student who pursues part of his clerkship in the medical school hospital and part in an affiliated one. It is well that this is so, since greater use of outlying institutions will be necessary as classes inexorably grow. The student gets a more realistic view of surgery, as it is usually practiced, in the community hospital. While it is undoubtedly of value for him to see the patient with phenylketonuria referred to the medical center as a diagnostic problem, it may be more helpful for him to see the people whose abdominal pain results from appendicitis, cholecystitis, duodenal ulcer and so forth. These may constitute a larger percentage of the patients in the community hospital. Patients suffering from trauma may also be more plentiful. Furthermore, the student is often exposed to alternate methods of attaining the desired end. At the same time affiliated hospitals profit greatly since, consciously or not, their staff men, like the staffs of the medical school hospitals, are stimulated to keep abreast of progress by the critical minds of the omnipresent clinical clerks. There are at present in the Philadelphia area more hospitals desiring teaching affiliations than there are students to go around. This is due in large measure, I am sure, to the continuing interest in teaching by members of this Academy.

Finally, what of the student and the surgical research laboratory? Few in-

deed, are those undergraduate medical students capable of carrying on an independent research project. Such men should be carefully nourished, provided with their needs and given every encouragement. The potential rewards are great! Other students have no interest in, nor particular aptitude for research, and compulsory participation by them seems unwise. Supervised work during vacation or other elective period in an established project is best suited to the needs of the average student. This type of participation should be encouraged, even though the student does not in-

tend to follow a career in laboratory work. Understanding of investigational technics will permit him to make a more valid evaluation of the work of others, and the additional library work he will do during the conduct of his work and the preparation of his report will be rewarding.

Finally, as you all know, great pleasure and satisfaction are to be derived from teaching surgery to medical students. They remain a highly intelligent group, usually attentive, most often interested and always sincerely grateful for the efforts of their competent teachers.

Annual Oration for 1963

The Role of the Non-University Hospital in Surgical Training*

EDWIN W. SHEARBURN,^{°°} M.D.

"To consider his offspring equal to my brothers. To teach this art if they require to learn it without fee or indenture and to impart, precept, oral instruction and all the other learning to my sons, to the sons of my teacher and to pupils who have signed the indenture and sworn obedience to the physician's law but to none other."—Hippocrates

THE TEACHING of surgery in a non-university hospital is not strictly a product developed since World War II. Nevertheless, there has been a pronounced increase in the extent to which non-university hospitals have participated in the teaching of medical students and the number of residency programs in surgery in non-affiliated hospitals represents 64 per cent of the total today.¹ The role of surgical experience during internship is a constantly changing picture.

The programs of a non-university hospital for teaching surgery embrace only two real requirements: patients and teachers. Pancreatitis presents the same clinical picture in a non-university hospital as it does in a large university medical center. Depending on the type and severity of the disease process, patients recover and die in about the same proportion at both locations. Patients covered by insurance suffer most of the same medical

ills as the charity patient. The ultimate essential, then, is the teacher.

Teachers of surgery seem to be diminishing in number, whereas research surgeons appear to be constantly increasing in number. Obviously, each category is necessary for the constant improvement of surgery. Occasionally both abilities are present to a high degree in the same individual. However, one is not necessarily the other, so there must be a balance for the ultimate benefit of students and profession.

A teacher of surgery is an individual who has the ability and desire to impart by thought, work, and example, surgical knowledge to his students, whether it be at the level of the medical student, the intern, or the resident. He should have the ability to stimulate the student to ask "why" in a conference. He should be able to stimulate the intern to do independent reading and thinking, when he is confronted with a challenging diagnostic problem. He must be willing to take the time to lecture—often to only a few—formally or informally, on subjects of

[°] Presented before the Philadelphia Academy of Surgery, December 2, 1963.

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interest. Also, he must be able to demonstrate in a decisive manner the technical maneuvers required for a good operation. Julian Johnson alluded to this specific aspect in his presidential address to the American Association for Thoracic Surgery: "I fear that we may foster that the technical side of surgery is unimportant."² There should be one or more surgeons with these abilities in any good hospital today. In fact, it may be that men with these qualities are as common in non-university hospitals as in university hospitals. However, either by choice or circumstance, a goodly number are not in a university hospital.

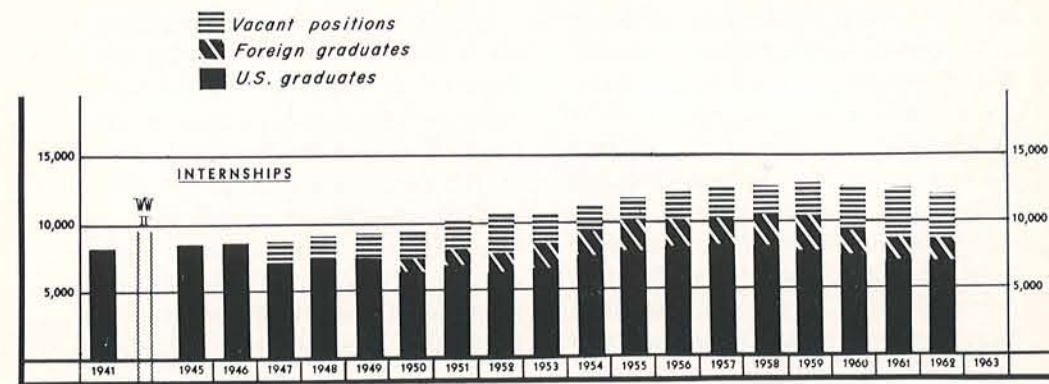
Many university hospitals today are not large enough to provide sufficient teaching material to all their medical students. In some areas, large medical centers have developed around a medical school with affiliated private, veterans, and city or county hospitals, united under a central administration for a broadened teaching program. Another solution to this problem is the utilization of non-university hospitals within driving distance of the medical school where junior or senior students may be located for a period of time, for teaching and clinical experience. The over-all direction of this program may be the responsibility of a director of medical education, who is a member of the staff of the designated hospital. He should be approved by the medical school and may have a faculty appointment in that school. However, there need not be an official nor non-official affiliation between the hospital and the medical school. The Lankenau Hospital has enjoyed this relationship with Jefferson Medical College for the last 15 years, with

many related opportunities and obligations.

Senior students receive assignments for a clinical clerkship, of five-week duration, in surgery. This period of time constitutes half of their surgical block, the alternate five weeks being at Jefferson. Other hospitals with a similar arrangement in this area are: Chestnut Hill, Misericordia, Methodist, and the Veterans Administration Hospital. During their five weeks at Lankenau, these students become an integral part of a surgical service. They attend clinics three mornings a week. In the clinics, they treat patients, under supervision of the residents and an attending staff member. At morning conferences, the same three days a week, they take an active role in the discussion of patients and have specific patients to present for discussion, from time to time. These days are admission days, and new patients, most of them private patients, are assigned to the students for history and examination. The residents and attendings review the records and then comment upon them. Later in the day, formal or informal conferences are conducted for an hour by an assigned member of the staff. These conferences may include a review of x-rays, a discussion of patients, or the presentation of a specific topic. In the evening, when these students are on duty, they may spend their time in the emergency room, in the library, or helping with emergency patients and operations.

Alternate days are operating days. These days begin at eight o'clock in the morning and may continue until two or three o'clock in the afternoon, or even later. A special effort is neces-

STATUS OF INTERNSHIP PROGRAMS IN THE U.S.A.

FIG. 1. The status of internship programs in the United States.¹

sary to see that the student is a member of the team that operates on the patients he has examined before operation. They usually serve as second assistants, but, on occasion they may be first assistants, when they may tie knots or even put in some sutures. After the surgery schedule is complete, a staff member takes them for informal rounds, to discuss interesting patients or to demonstrate dressings.

After completion of their tours, most students comment that they have not seen so many rare and unusual cases as they have at Jefferson, but at Lankenau, they had had a more intimate experience with a greater number of a more typical cross-section of patients. This comment is to be expected, because of their small number, in proportion to the surgical staff. Therefore, in this manner, the non-university hospital may contribute effectively to the education of the medical student.

Approved internships are increasing in number faster than medical schools are graduating doctors. There is a

considerable disproportion between appointees and appointments (Fig. 1). Almost half the appointments are available in non-affiliated hospitals—with only 65 per cent filled—as contrasted to 82 per cent filled in affiliated hospitals.¹

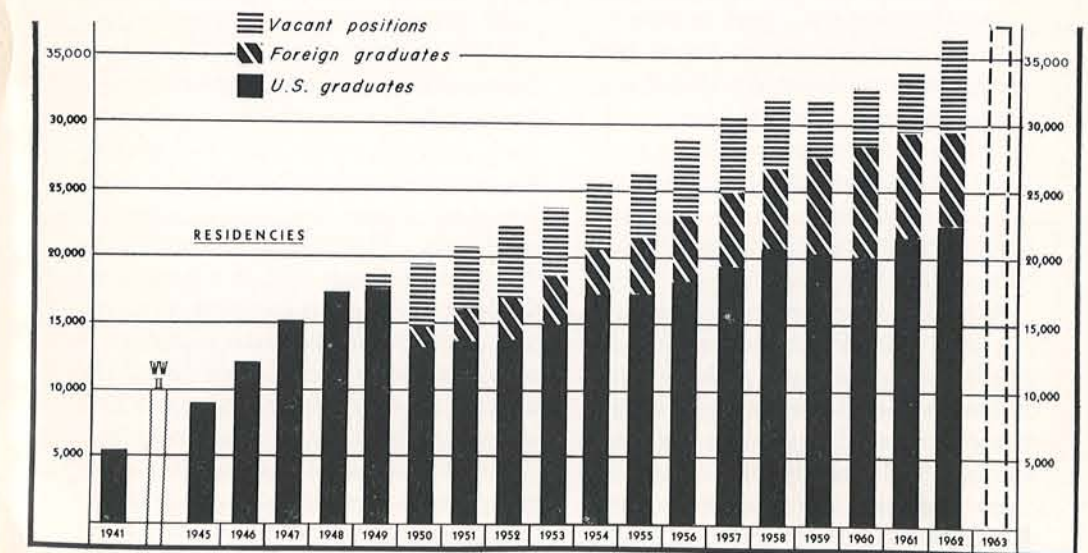
The role of the intern in surgical training and of surgical training for the intern is a changing one. Straight surgical internships go unfilled almost as often as rotating or mixed internships.² In some institutions, straight surgical internships are, in reality, the first year of a prolonged residency program, frequently filled by interns who have completed a rotating or straight medical internship. More and more hospitals are offering straight internships in medicine. (There were 124 such programs available in 1962.)² It is difficult to know why this condition is so. It may be due to the influence of medical educators, or it may be the result of a demand by medical students. I fail to see the virtue in this trend. The importance of a broad background for medical or surgical

specialists receives repeated stress. Naturally, then, a diverse background should have virtue for either a general practitioner or one who embarks upon additional training in a specialty, but, outstandingly, for the general practitioner.

At Lankenau we still have rotating internships, in which interns spend two months on surgery. The purpose of surgery in the internship is not to allow the untrained and unskilled intern to do surgery, so that he can say, when he finishes his service, "I did four hernias and five appendectomies." Rather, the purpose is to teach him to diagnose appendicitis, perforated ulcer, or intestinal obstruction, pre- and postoperative care, as well as to have an understanding of metabolic processes after trauma, surgical or otherwise. The general practitioner who embarks upon a practice after only

one year of post-graduate experience can hardly do a good job, unless he can repair lacerations, set minor fractures, and handle a diverse group of minor surgical situations. The public demand is for more general practitioners of medicine. The public need is for doctors in this category. Thus, internships should not deviate from the type of training which best prepares a man to do general practice. Part of this trend may be due to the fact that more medical schools are in metropolitan areas, where the trend is more toward specialty practice. Bucher³ has stated that only 24 per cent of the senior medical students at Temple indicate a desire to enter general practice, whereas, in Kansas, a study revealed a substantial increase in family doctors in smaller communities from 1955 to 1960.⁴ Some experience in surgery for this group of phy-

STATUS OF RESIDENCY PROGRAMS IN THE U.S.A.

FIG. 2. Status of residency programs in the United States.¹

sicians, during an internship, would seem to be worthwhile. On the other hand, a rotating internship provides a balanced background for those who may elect to continue in a specialty career.

The ultimate opportunity and responsibility for teaching surgery develop in those hospitals where an approved residence program exists. These, too, have constantly increased in number. Figure 2 shows the increase in residencies for all specialties. Figure 3 shows the increase in general surgical residencies. Sixty-four per cent of the approved residency programs in general surgery are in non-affiliated institutions, constituting almost 50 per cent of the appointments offered. In 1961-62, the appointments offered in affiliated hospitals were 93 per cent filled, and 88 per cent of those in non-affiliated hospitals were filled.¹ It is apparent, then, that about half of the surgeons receiving training today are being trained in non-university hospitals. This development offers a great opportunity and imposes a real responsibility upon those who undertake a program of surgical residency training. Despite these facts, only two of the 16 general surgeons on the Advisory Committee on Graduate Medical Education of the American College of Surgeons are non-university surgeons.

A variety of programs is approved by the Review Committees—some emphasize a prolonged period of time in the research laboratories, at the expense of a broad experience in clinical surgery and related sub-specialties. Such hospitals are the most likely source of the future professors of surgery. These surgeons are not always

the best teachers or the best clinical surgeons, however. Nevertheless, this is the source of supply for filling most academic posts. At the other end of the scale, some residencies continue to be essentially an apprenticeship—a type of training which has considerable merit, if the chief under whom the apprentice trains is a man of broad experience and has a true desire to teach, instead of merely looking for additional help in caring for his patients and operating upon them.

Another type of program which has been in existence at Lankenau Hospital for nearly ten years is one conceived to give a resident, in four years, a broad experience in not only what is strictly general surgery in academic areas but also training in those related specialties which he might use, were he to practice in rural area. The rural areas are the remaining frontier for the general surgeons. Statistics show that 10,000 people can support one general surgeon⁵ whereas, Dr. Gerbode estimates that one cardiac surgical group can provide service for 750,000 people.⁶ These smaller cities have not been without surgeons in the past—in fact, up until the very recent past, probably more than half of the surgery done in this country was performed by doctors not formally trained in surgery. The goal of the American Board of Surgery and the American College of Surgeons has been to train and identify surgeons who could, and would, provide a creditable brand of surgery for most of the citizens of the country. This statement is not to imply that much of the surgery done in the past by men not formally trained in surgery has not been good. But that was another era—created by necessity

RESIDENCIES IN GENERAL SURGERY

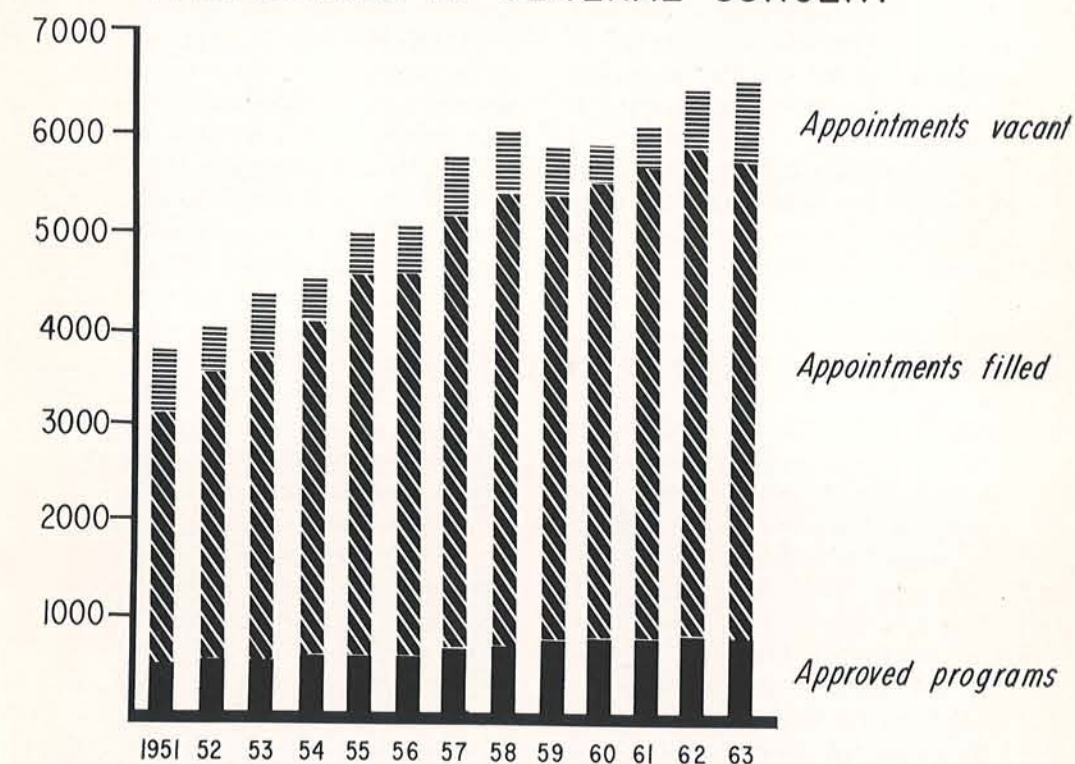


FIG. 3. The status of residencies in general surgery in the United States.¹

and influenced by supply and demand. Now, the younger graduates are discouraged from doing surgery for which they have not prepared themselves. Small hospitals have created standards of practice under the influence of the College of Surgeons. Thus, there is a need—even a demand—for qualified surgeons in rural areas. Therefore, the type of program which we have had at Lankenau appears to fill a need and provide a broad type of experience which prepares a man for practice in rural area or creates a substantial experience from which he can progress into a more specialized field.

The resident spends his first year in general surgery—six months on each of two surgical services. During this year the duties are entirely within the field of general surgery. Operating experience is limited, but he studies the basic skills and develops a surgical philosophy. The second year is again in six-month periods, one of which is in Orthopedics and Plastic Surgery—each of which complements the other. The second six months are in Neurosurgery and Urology—at first glance an unholy combination—but, because of such a feature as operating schedules, a very practical and feasible arrangement in our hospital. In the

third year, one six-month period is in the laboratory, where the emphasis is on surgical pathology but where a regular rotation for autopsies occurs. During this period, the resident is responsible solely to the Chief of Pathology, and, except for attendance at Journal Club and Surgical Mortality Conference, he does not leave the laboratory. Some residents have found time to carry out research projects during this period. The second six-month period is at Jefferson Hospital, where the emphasis has been on cardiopulmonary surgery. This period provides a "time away from home" and offers the trainee a different experience in unfamiliar surroundings—an opportunity which is both stimulating and challenging. The fourth year he is senior resident on one of the two surgical services at Lankenau. During this last year, he assumes more responsibility for patients and accumulates his greatest operating experience.

Numerous articles, debates and discussions have appeared concerning the dilemma as to the way to train surgeons without a large ward service. This problem has become a matter of concern to both university and non-university hospitals. It is not my intention to include such a debate in this presentation. Suffice it to say that this problem is not insurmountable and that the surgical residents can receive satisfactory training in a hospital providing service for semi-private and private patients in 90 per cent of the bed occupancy. Dunlop⁷ has clearly outlined the principles of such a program. While precise statistics are not available from the American Board of Surgery, a statement says, "Those trained at Lankenau

Hospital compare favorably in the examinations with those trained in university hospitals."⁸

An increasing number of foreign graduates in medicine are receiving their post-graduate training in the United States today (Fig. 2). This program has been encouraged by our State Department, as well as by our national medical societies. The opportunity to enhance the medical knowledge of these friends from abroad is a source of satisfaction to those who take part in this program. It truly constitutes a facet of foreign aid and international relations. Now that more careful screening of those candidates is possible, more of those accepted for training have the facilities to learn that which is offered them. To be qualified by an ECFMG certificate requires satisfactory knowledge of the English language, plus the basic requirements of a medical education. Many of these interns and residents are truly superior. Others present a deficiency in their medical background. Of these, many can overcome these deficiencies to a considerable extent, and, by determination and hard work, can pull themselves up to the level of our American graduates. One of the most obvious deficiencies from which these people suffer is the lack of clinical experience during the medical-school years.

We should welcome the opportunity to have a part in training these men and women from less medically fortunate countries, in order that they may return to enhance the level of medical care in their own countries. Nevertheless, we must not delude ourselves into believing that we are completely altruistic. Many more resi-

dency openings would go unfilled, were it not for these visitors from afar. Some house staffs would be nearly, or completely, empty, were it not for this foreign source of supply. Therefore, we must be careful to know truly whether we want to serve or to be served. It has seemed desirable to maintain a balance between foreign and American residents at Lankenau. On occasions, we have chosen a foreign resident in preference to an American graduate, both because of his apparent abilities and also to maintain a balance between foreign and American house officers. The ratio which we have found to be satisfactory is one-to-one.

Since there are more approved surgical residencies than there are candidates—over 800 appointments were unfilled in September, 1963¹—there may be some temptation to accept inferior candidates in order to fill the house staff. This practice we should not follow, whether they be American or foreign. If we train foreign residents who are not capable of developing into adequate surgeons, then we do them and their country a disservice. If we train inferior American residents, then we do ourselves and our people a disservice. In 1963, there were more than 268,000 physicians in the United States. Over 31,000 of these were practicing general surgery—almost 12 per cent of the physician population.¹ The number of Fellows of the American College of Surgeons practicing general surgery is 13,885—roughly 55 per cent of the total Fellowship.⁹ This year there are 14,295 surgeons certified by the American Board of Surgery.⁸ In addition, nearly

6,000 physicians are in residencies in general surgery¹—roughly 20 per cent of the resident-physician population. Therefore, we must not permit physicians of less than average ability to spend their time in training and to dilute still further the already crowded practice of surgery in some areas.

If we are to balance supply and demand and if we are to further the goals of the American Board of Surgery and the American College of Surgeons, then some revision may be necessary in the number of accredited residencies in surgery. If opportunities for the practice of surgery are going to diminish, as a result of flooding the field, then men of superior abilities may seek out less densely populated specialties and leave less than superior men to be trained in General Surgery. An alternative—and one proposed as having greater merit—would be to reduce the number of residencies in general surgery, as well as some other specialties, and thereby create a larger number of general practitioners, a situation which most medical analysts consider advisable.

To summarize, we must realize that non-university hospitals constitute an important segment of postgraduate medical education today. In metropolitan areas, they may play a role in medical education during the third and fourth years of the medical-school curriculum. Non-university hospitals that undertake to provide postgraduate education at the intern and residency level must acknowledge the responsibility for such a program, as well as accept the benefits from the program. We must not approve internships and residencies solely to de-

crease the chores and night work of any hospital staff. Contrary to the opinions of some medical educators, non-university hospitals can, and do, offer a substantial training opportunity to a large proportion of the graduate-physician population. It constitutes a worthwhile opportunity for the teachers so engaged. It also demands frequent critical review, to be certain the ultimate product is not quantity at the expense of quality.

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Transactions of the Philadelphia Academy of Surgery

The Year 1957

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, January 7, 1957, at 8:15 P.M. The President, Dr. Gibbon, was in the chair. Forty-one Fellows registered as being present.

SCIENTIFIC PROGRAM

DR. GEORGE AUSTIN DR. FRANCIS C. GRANT	The Use of Hypothermia in Ruptured Aneurysms of the Circle of Willis <i>Discussors:</i> DRs. FROBES and MURTAGH
DR. JOHN E. LYDAY* DR. MARGUERITE MARKARIAN* DR. JONATHAN E. RHOADS	Report of an Operation for Ruptured Peptic Ulcer in a Premature Infant with Recovery <i>Discussors:</i> DRs. MARKARIAN, WEEDER and RHOADS
DR. DOMENICO DELAURENTIS* Introduced by DR. W. EMORY BURNETT	Leiomyosarcoma of the Stomach <i>Discussors:</i> DRs. DEEVER and BURNETT

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, February 4, 1957, at 8:15 P.M. The President, Dr. Gibbon, was in the chair. Forty-one Fellows registered as being present:

SCIENTIFIC PROGRAM

DR. CLIFTON F. WEST, JR.* Introduced by DR. GILSON COLBY ENGEL	An Unusual Case of Delayed Post-gastrectomy Hemorrhage Due to Traumatic Aneurysm <i>Discussed by:</i> DR. STAUFFER
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* By invitation.

- DR. ALEX W. ULIN
DR. IRVIN H. SOKOLIC[°]
Massive Hemorrhage as a Complication of Diverticulitis of the Colon
Discussors: DRs. FERGUSON and BEHREND
- DR. GEROLD W. TESKIN[°]
Introduced by DR. B. ROBERTS
and DR. FRANCIS A. WOOD[°]
The Problems of Internal Carotid Artery Thrombosis
Discussors: DRs. JAEGER and ROBERTS

CONJOINT MEETING

New York Surgical Society and Philadelphia Academy of Surgery
March, 13, 1957
New York Academy of Medicine
103rd Street and Fifth Avenue, New York
2:00 P.M.

SCIENTIFIC PROGRAM

- DR. GEORGE JOHNSON, JR.[°]
DR. JOHN M. BEAL, JR. and
DR. MARVIN SLEISINGER[°]
The Surgical Treatment of Duodenal Ulcer in the Young Adult—A Review of 151 Patients
Discussed by: DR. L. KRAEER FERGUSON
- DR. E. JEFFERSON BROWDER and
DR. ALBERT W. COOK[°]
Embolic Occlusion of the Cervical Internal Carotid Artery
Discussed by: DR. ROBERT GROFF
- DR. RAFAEL SANCHEZ-UBEDA[°]
DR. LOUIS M. ROUSSELOT and
DR. FRANCIS F. RUZICKA[°]
The Effect of Peritonitis of Non-Biliary Origin on the Function of the Gallbladder as Measured by Cholecystography, its Frequency and Duration
Discussed by: DR. J. MONTGOMERY DEAVER
- DR. MELVIN M. NEWMAN[°]
DR. BRIAN KIELY[°] and
DR. CLARENCE DENNIS
Motion Picture Angiocardiography in the Diagnosis of Congenital Heart Disease
Discussed by: DR. ROBERT P. GLOVER

[°] By invitation.

- DR. WILLIAM L. WATSON
A Report on 61 Cases of Lung Cancer Free of Disease 5 Years After Treatment
Discussed by: DR. JULIAN JOHNSON
- DR. PRESTON A. WADE and
DR. PAUL W. BRAUNSTEIN[°]
Automotive Crash Injury Research: Its Medical Aspects and Recent Findings
Discussed by: DR. JOHN ROYAL MOORE

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, April 1, 1957, at 8:15 P.M. The 1st Vice President, Dr. Adolph Walkling, was in the chair. Thirty-nine Fellows registered as being present.

SCIENTIFIC PROGRAM

- DR. JOHN B. FLICK, JR.[°]
DR. FREDERICK R. ROBBINS
Right Ventriculotomy for Removal of Intracardiac Bullet
Discussors: DRs. BAILEY, LEVERING, WALKLING, FERGUSON and JOHNSON
- DR. GEORGE PILLING, IV[°]
DR. SAMUEL L. CRESSON
DR. W. EMORY BURNETT
Massive Resection of Small Bowel in Neonatal Period: Report of Two Cases with Survival
Discussed by: DR. KOOP
- DR. GEORGE J. HAUPT[°]
DR. JOSE H. AMADEO[°]
DR. JOHN Y. TEMPLETON, III
Replacement of the Esophagus with an Isolated Segment of Colon
Discussed by: DR. KOOP

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, May 6, 1957, at 8:15 P.M. The Secretary, Dr. J. Montgomery Deaver, presided in the absence of the President and the 1st and 2nd Vice-Presidents. Forty-five Fellows registered as being present.

SCIENTIFIC PROGRAM

- DR. LAWRENCE SINGMASTER[°]
Introduced by
DR. GILSON COLBY ENGEL
Diverticulitis of Cecum Simulating Appendicitis: Report of 2 Cases
Discussors: DRs. SHEARBURN, WEEDE, SMYTH, RAVDIN

[°] By invitation.

- DR. T. A. RANIERI
DR. O. V. BATSON*
MR. MICHAEL HART,* FRCS
- Clinical Evaluation of the Ligation of Internal Mammary Arteries Including Surgical and Anatomical Principles
Discussors: DRs. HART, BATSON, RAVDIN, BEARD

GUEST SPEAKER

- DR. REGINALD H. SMITHWICK
Professor of Surgery, Boston University School of Medicine
- Hemigastrectomy and Vagotomy in the Treatment of Duodenal Ulcer
Discussors: DRs. GOLDSMITH, FERGUSON

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, October 7, 1957, at 8:15 P.M. The 2nd Vice-President, Dr. W. Emory Burnett, was in the chair in the absence of the President and 1st Vice-President. Forty-six Fellows registered as being present.

SCIENTIFIC PROGRAM

- DR. FREDERICK R. ROBBINS
DR. FREDERICK R. ROBBINS
DR. ROBERT H. BARNETT*
- Memoir on the late DR. GEORGE WAGONER
Sciatic Hernia: Case Report
Discussor: DR. BURNETT
- Papillary Cystadenocarcinoma of the Pancreas with a 7-year Follow up
Discussors: DRs. KING, FLICK, RHOADS
- DR. H. TAYLOR CASWELL
DR. KENNETH SCHRECK*
DR. ELSIE R. CARRINGTON*
DR. NORMAN LEARNER*
DR. HOWARD STEEL*
DR. R. ROBERT TYSON*
DR. WILLIAM C. WRIGHT*
- Hospital Infections due to Antibiotic Resistant Staphylococci
Discussors: DRs. BOTHE, WEEDER, RHOADS, BLAKEMORE, GOLDSMITH

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, November 4, 1957 at 8:15 P.M. The 2nd Vice-President, Dr. W. Emory Burnett, was in the chair in the absence of the President and 1st Vice-President. Forty-one Fellows registered as being present.

* By invitation.

SCIENTIFIC PROGRAM

- DR. GEORGE P. PILLING, IV
DR. W. EMORY BURNETT
- New Instrument for Pyloromyotomies in Infants
Discussors: DRs. CRESSON and DEAVER
- DR. JOHN Y. TEMPLETON, III
DR. THOMAS F. NEALON, JR.
- Case Report: Distal By-Pass in Thoracic Aortic Aneurysm
Discussors: DRs. KIRBY and BURNETT
- DR. WM. S. BLAKEMORE
DR. WM. A. JEFFERS*
DR. HAROLD A. ZINTEL
DR. ALFRED M. SELLERS*
DR. CHARLES C. WOLFERTH*
- Three to Seven Year Results of Thoracolumbar Sympathectomy and of Adrenalectomy for Severe Hypertension
Discussors: DRs. RHOADS, BOTHE and TEMPLETON

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, December 2, 1957 at 8:15 P.M. The President, Dr. John Gibbon, was in the chair. Forty-two Fellows registered as being present.

SCIENTIFIC PROGRAM

- DR. ROBERT S. MORRIS*
Introduced by
DR. CALVIN M. SMYTH
- Subtotal Enterectomy in an Eight-Day-Old Infant
Discussors: DRs. GOLDSMITH, BURNETT, RAVDIN, PILLING, JOHNSON and CRESSON
- DR. O. P. LARGE*
Introduced by
DR. G. P. ROSEMOND
- DR. JOHN J. MURPHY*
Introduced by
DR. JONATHAN E. RHOADS
- An Unusual Complication of Meckel's Diverticulum
Experience with Isolated Intestinal Segments for Urinary Diversion in 52 Patients
Discussors: DRs. SHEARBURN, BLAKEMORE and RHOADS

* By invitation.

Report of the Secretary for the Year 1957

During the year 1957, the Philadelphia Academy of Surgery held seven regular meetings. In addition, on March 13, 1957 there was a Conjoint Meeting with the New York Surgical Society. The meeting was held in New York; 50 members from the Philadelphia Academy of Surgery attended this meeting. Six papers were presented by the New York Surgical Society and discussed by the Philadelphia Academy of Surgery.

The average attendance at the Academy meetings was 43 Fellows. Twelve case reports were presented during the year and eight papers were presented. During the year one memoir was given.

The following nine physicians were elected Fellows during the year 1957: Drs. Wm. S. Blakemore, Wm. S. Stainback, John B. Flick, Jr., Thomas F. Nealon, Jr., Ward O'Sullivan, Henry T. Nichols, Robert Swartley and Lawrence Singmaster, and James B. Carty.

The Nominating Committee, Drs. Calvin Smyth, I. S. Ravdin and L. K. Ferguson, presented the following nominations for officers for the year 1958: *President*: Dr. Adolph Walkling. *1st Vice-President*: Dr. W. Emory Burnett. *2nd Vice-President*: Dr. J. Montgomery Deaver. *Secretary*: Dr. Wm. B. Fitts. *Treasurer*: Dr. S. Dana Weeder. *Recorder*: Dr. Frederick A. Bothe. *Chairman of the Business Committee*: Dr. Jonathan Rhoads. *Council*: Drs. John H. Gibbon and Frederick Robbins.

J. MONTGOMERY DEAVER, M.D.
Secretary

The Year 1958

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, January 6, 1958, at 8:15 P.M. The President, Dr. John Gibbon, was in the chair. Forty-two Fellows registered as being present.

SCIENTIFIC PROGRAM

DR. RICHARD S. OAKEY, JR.	Restorative Surgery Following Progressive Destruction of the Volar Musculature from a Simple Laceration of the Forearm <i>Discussed by</i> : DR. MAY
DR. HARRY M. BURROS* Introduced by DR. ANTHONY F. DEPALMA	The Value of Translumbar Aortography—Experience with 350 Cases <i>Discussors</i> : DRs. TYSON, ROBERTS, WAGNER and NEMIR

* By invitation.

DR. ANTHONY F. DEPALMA

Transplantation of Osteochondral Grafts (Femoral Caps)

Discussors: DRs. MOORE and MAY

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, February 3, 1958, at 8:15 P.M. The 1st Vice-President, Dr. W. Emory Burnett, was in the chair. Thirty-three Fellows were present.

SCIENTIFIC PROGRAM

DR. ALFRED S. FROBESSE DR. HERBERT R. HAWTHORNE DR. HAROLD L. ISRAEL*	The Problem of Major Bleeding in Post-tuberculous Bronchiectasis <i>Discussors</i> : DRs. BURNETT, DEIBERT and HAWTHORNE
DR. DRYDEN P. MORSE* DR. CHARLES P. BAILEY	Recurrent Mitral Stenosis <i>Discussors</i> : DRs. JOHNSON, GLOVER, ROSEMOND and BAILEY
DR. JULIAN A. STERLING	Total Biliary Duct Atresia—Case Report (Motion Picture) <i>Discussors</i> : DRs. PILLING and RHOADS

CONJOINT MEETING

New York Surgical Society and Philadelphia Academy of Surgery
Wednesday, March 12, 1958
Mitchell Hall, College of Physicians
19 South 22 Street, Philadelphia, Pa.
2:15 P.M.

SCIENTIFIC PROGRAM

DR. THOMAS F. NEALON, JR. DR. RICHARD T. CATHCART* DR. WILLIAM FRAINMOW DR. JOHN H. GIBBON, JR.	Multiple Determinations of Cardiac Output During Surgical Operations <i>Discussed by</i> : DR. AARON HIMMELSTEIN
DR. JULIAN JOHNSON DR. CHARLES K. KIRBY DR. WILLIAM S. BLAKEMORE	The Use of Direct Vision in the Repair of Atrial Septal Defects <i>Discussed by</i> : DR. ELLIOTT S. HURWITT

* By invitation.

- DR. WALTER F. BALLINGER^o
DR. ARTHUR J. WEISS^o
Introduced by
DR. JOHN H. GIBBON, JR.
- The Feasibility of Storage of Intact Platelets with Apparent Preservation of Function
Discussed by: DR. ALFRED HURWITZ
- DR. C. EVERETT KOOP
- Successful Separation of Siamese Twins
Discussed by: DR. DONALD DAVIS
- DR. ROBERT H. IVY
- Thirty-eight Year Follow-Up of Iliac Bone Graft to Restore a Defect of the Mandible
Discussed by: DR. WM. P. WHALEN
- DR. W. EMORY BURNETT
DR. R. ROBERT TYSON
DR. WM. C. WRIGHT^o
- The Implications of Postgastrectomy Pancreatitis: Illustrative Cases
Discussed by: DR. LOUIS M. ROUSSELOT
- DR. L. KRAEER FERGUSON
DR. LEROY H. STAHLGREN^o
- Effect on Sexual Function of Abdominoperineal Resection for Ulcerative Colitis
Discussed by: DR. CLARENCE DENNIS

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, April 7, 1958, at 8:15 P.M. The President, Dr. Adolph Walkling, was in the chair. Fifty Fellows were present.

SCIENTIFIC PROGRAM

- DR. FREDERICK R. ROBBINS
- Congenital Absence of the Gallbladder
Discussors: DRs. TROPEA and MARTIN
- DR. GEORGE P. ROSEMOND
- Bronchial Adenoma of Left Lung with Subsequent Squamous Cell Carcinoma of Right Lung
Discussors: DRs. JOHNSON, GIBBON, FLICK and BURNETT
- DR. IRVIN E. DEIBERT
- Annual Oration: Intestinal Obstruction

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, May 5, 1958, at 8:15 P.M.

^o By invitation.

The President, Dr. Adolph Walkling, was in the chair. Thirty-six Fellows were present.

SCIENTIFIC PROGRAM

- DR. SHERMAN A. EGER
- New Anatomical and Technical Factors in Adrenal Denervation: Results in 30 Cases of Hypertension
Discussors: DRs. MICHAELS and LEHMAN
- DR. DAVID SELIGMAN^o
DR. FRANZ GOLDSTEIN^o
Introduced by
DR. PAUL NEMIR, JR.
- The Differentiation of Medical from Surgical Jaundice by Means of the Transaminase and Iron Determinations
Discussors: DRs. BLAKEMORE, NEMIR and CROSSAN
- DR. DAVID C. SCHECHTER^o
DR. THOMAS F. NEALON, JR.
DR. JOHN H. GIBBON, JR.
- The Removal of Potassium and Ammonium from Bank Blood Prior to Transfusion

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, October 13, 1958, at 8:15 P.M. The President, Dr. Adolph Walkling, was in the chair. Forty-three Fellows were present.

SCIENTIFIC PROGRAM

- DR. PETER J. JANNETTA^o
Introduced by
DR. WILLIAM S. BLAKEMORE
- The Diagnosis of Pheochromocytomas by Measurement of Catecholamines in the Urine
Discussed by: DR. WILLIAM S. BLAKEMORE
- DR. OSCAR SERLIN^o
DR. GEORGE T. WOHL^o
Introduced by
DR. JOHN Y. TEMPLETON, III
DR. JONATHAN E. RHOADS
- Surgical Implications of Unsuspected Ingested Foreign Bodies
Discussors: DRs. STERLING and WALKLING
- DR. WILLIAM H. ERB
DR. ELMER L. GRIMES^o
- Pancreatitis: Experience with Three Cases of Gastrocystostomy
Discussors: DRs. BOTHE, BEHREND, WEEDER, WALKLING and HOWARD

^o By invitation.

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, November 3, 1958, at 8:15 P.M. The 1st Vice-President, Dr. W. Emory Burnett, was in the chair. Forty-four Fellows were present.

SCIENTIFIC PROGRAM

DR. EDWARD W. EHRLICH ^o	Experimental and Clinical Studies of Factors Affecting the Coagulation Mechanism During Massive Transfusion <i>Discussors:</i> DRs. GIBBON, JOHNSON, TEMPLETON, WEEDER and ULIN
DR. ALEX W. ULIN	
DR. SEYMOUR GOLLUB ^o	
DR. H. SAUL WINCHELL ^o	
DR. DONALD B. ROCHLIN ^o	Prescalene Node Biopsies: Report of 142 Cases <i>Discussors:</i> DRs. GIBBON and RHOADS
DR. H. T. ENTERLINE ^o	
Introduced by	
DR. JULIAN JOHNSON	
DR. RICHARD N. MYERS ^o	Granulomatous Peritonitis Due to Starch Glove Powder: A Clinical and Experimental Study <i>Discussors:</i> DRs. RHOADS, DEIBERT and DEEVER
Introduced by	
DR. J. M. DEEVER	

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, December 1, 1958, at 8:15 P.M. The 1st Vice-President, Dr. W. Emory Burnett, was in the chair. Forty-three Fellows were present.

SCIENTIFIC PROGRAM

DR. ROBERT H. IVY	Memoir on the late Dr. John D. Reese
DR. PAUL MECRAY, JR. ^o	Diagnosis of Cutaneous Anthrax <i>Discussors:</i> DRs. IVY, ROYSTER, RHOADS, CROSSAN, HAWTHORNE, MOORE and BURNETT
Introduced by	
DR. JONATHAN E. RHOADS	
DR. ORVILLE C. KING	Annual Oration: Surgery of the Aged

Report of the Secretary for the Year 1958

During the year 1958, the Philadelphia Academy of Surgery held seven regular meetings. In addition, on March 12, 1958, there was a Conjoint Meeting with the New York Surgical Society. The meeting was held in Philadelphia

^o By invitation.

at the College of Physicians. There were 77 members of the Philadelphia Academy of Surgery present and 75 members of the New York Surgical Society present. Seven papers were presented by the Philadelphia Academy of Surgery and discussed by the New York Surgical Society.

The average attendance at the Philadelphia Academy of Surgery meetings during the year was 46 Fellows. Seven case reports were given during 1958 and 13 papers were read.

On April 7, 1958, Dr. Irvin E. Deibert gave an Oration entitled *Intestinal Obstruction*. On December 1, 1958, an Oration was given by Dr. Orville C. King entitled *Surgery of the Aged*.

The following seven physicians were elected Fellows during the year: Drs. Frank Tropea, Jr., George Pilling, 4th, Robert S. Morris, Harry V. Armistage, John J. Murphy, Jerry Zaslow and Octavus P. Large.

The following officers were unanimously elected to serve for the year 1958: *President*—Dr. Adolph Walkling; *1st Vice-President*—Dr. W. Emory Burnett; *2nd Vice-President*—Dr. J. Montgomery Deaver; *Secretary*—Dr. William Fitts; *Treasurer*—Dr. S. Dana Weeder; *Recorder*—Dr. Frederick Bothe; *Business Committee*—Dr. Jonathan Rhoads; *Council*—Dr. John Gibbon and Dr. F. Robbins.

J. MONTGOMERY DEEVER, M.D.
Acting Secretary

The Year 1959

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, January 5, 1959, at 8:15 P.M. Dr. Adolph Walkling, President, presided in the chair and Dr. S. Dana Weeder assumed the duties of Secretary, in the absence of Dr. Deaver who was called away on an emergency. Thirty-nine Fellows were present.

SCIENTIFIC PROGRAM

DR. R. W. PAUL MELLISH ^o	Lobectomy for Hepatic Tumors in Children <i>Discussors:</i> DRs. FEINGERY and KOOP
DR. C. EVERETT KOOP	
DR. THEODORE P. VOITTELER ^o	A New Approach to Lymphedema of the Lower Extremity <i>Discussor:</i> DR. ROYSTER
DR. C. ALEXANDER HATFIELD	
DR. CHARLES K. ZUG ^o	
DR. WILLIAM A. TOMASCO ^o	Reversible Hypertension Following Resection of Thrombosed Renal Artery <i>Discussors:</i> DRs. JOHN MURPHY and JOHN H. GIBBON, JR.
DR. WILLIAM S. BLAKEMORE	
DR. JOHN J. MURPHY	
DR. SYLVAN H. EISMAN ^o	

^o By invitation.

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, February 2, 1959, at 8:15 P.M. Dr. W. Emory Burnett presided in the chair in the absence of Dr. Walkling. Forty-five Fellows were present.

SCIENTIFIC PROGRAM

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| DR. JOHN M. HOWARD* | The Renal Artery and Hypertension |
| DR. ROBERT BOWER* | <i>Discussors:</i> Drs. GIBBON, JR., BLAKE-MORE, NEMIR and the discussion was closed by Dr. HOWARD |
| Introduced by
DR. PAUL NEMIR, JR. | |
| DR. TERESITA L. TONGSON* | Smooth Muscle Tumors of the Stomach |
| Introduced by
DR. J. MONTGOMERY DEEVER | <i>Discussors:</i> Drs. DELAURENTIS, BURNETT, DEEVER and discussion closed by Dr. DEEVER |
| DR. JACOB GERSHON-COHEN* | Radiographic Findings in the Growth of Early Breast Carcinoma |
| DR. SIMON M. BERGER* | <i>Discussors:</i> Drs. CASWELL, RHOADS, ROSEMOND, ROYSTER, BURNETT and ALBERT BEHREND. Discussion closed by Dr. GERSHON-COHEN |
| Introduced by
DR. JULIAN A. STERLING | |

CONJOINT MEETING

Philadelphia Academy of Surgery and the New York Surgical Society
March 11, 1959

A stated conjoint meeting of the Philadelphia Academy of Surgery and the New York Surgical Society was held at the New York Academy of Medicine, on Wednesday, March 11, 1959, from 2:00 to 5:00 P.M. Forty-six Fellows were present.

SCIENTIFIC PROGRAM

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| DR. IVAN D. BARONOFSKY | Endocrinologic Aspects of Ascites |
| DR. ISIDORE KREEL* | <i>Discussed by:</i> DR. ROBERT G. RAV-DIN |
| DR. JEROME W. CANTER* | |
| DR. LAWRENCE ZAROFF* | |
| DR. JEROME A. URBAN | Clinical Experience with Extension of the Radical Mastectomy Procedure to Include En Bloc Resection of the Internal Mammary Chain |
| | <i>Discussed by:</i> DR. EMORY BURNETT |

* By invitation.

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| DR. DAVID V. HABIF, | Treatment of Esophageal Varices by Partial Esophagogastrectomy and Interposition of Jejunal Segment |
| | <i>Discussed by:</i> DR. DONALD R. COOPER |
| DR. J. WILLIAM LITTLER | Restoration of Sensation in the Injured Hand through the Transfer of a Neurovascular Skin Island Flap |
| | <i>Discussed by:</i> DR. RICHARD S. OAKY |
| DR. GORDON MCNEER | The Surgical Management of Small Gastric Ulcerations |
| DR. ROBERT SHERMAN* | <i>Discussed by:</i> DR. CALVIN M. SMYTH |
| DR. GEORGE T. PACK | |
| DR. JAMES DILORENZO | |
| DR. FRANK GLENN | Experiences with Hyperparathyroidism at the New York Hospital—Cornell Medical Center |
| DR. RICHARD KARL | <i>Discussed by:</i> DR. HERBERT R. HAWTHORNE |

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, April 6, 1959, at 8:15 P.M. Dr. Adolph Walkling, President, presided. Thirty-eight Fellows were present.

SCIENTIFIC PROGRAM

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| DR. JULIAN A. STERLING | Thorotrast Splenitis: An Indication for Splenectomy |
| | <i>Discussor:</i> MR. CHERRY (chemist), who discussed chelation as a means of degradation of radioactive products |
| DR. JOHN E. HOPKINS | Cardiac Arrest: Successful Resuscitation of Ambulatory Patient in Accident Ward |
| | <i>Discussor:</i> DR. BORKOWSKI who described cardiac arrest in a senior Jefferson student which occurred in class in the X-ray Department, with successful resuscitation. DR. RHOADS also discussed this paper. |

* By invitation.

- DR. LEYDON P. PITT*
Introduced by
DR. ORVILLE C. KING
- Case Report: Pulmonary Alveolar Proteinosis
Discussors: DRs. GIBBON and FRAIMOW
- DR. L. KRAEER FERGUSON
- Case Presentation: A Patient with Six Primary Malignancies
Discussor: DR. STAINBACK

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, May 4, 1959, at 8:15 P.M. Dr. Adolph Walkling, President, presided. Thirty-three Fellows were present.

SCIENTIFIC PROGRAM

- DR. DONALD C. GEIST
- Memoir on the late Dr. Thomas J. Ryan
- DR. RICHARD H. FLANDREAU*
DR. RICHARD M. SWEENEY*
Introduced by
DR. WARD D. O'SULLIVAN
- Clinical Experiences with a Series of Smith Fractures
Discussed by: DRs. DEEVER, O'SULLIVAN and WALKLING
- DR. FREDERICK A. BOTHE
- Far Advanced Oat Cell Carcinoma of the Bronchus Treated by Cobalt Bomb
Discussed by: DR. JULIAN JOHNSON
- DR. RICHARD N. MYERS*
DR. EDWIN W. SHEARBURN
- Diverticulitis of the Ascending Colon: Report of Four Cases
Discussed by: DRs. WALKLING, FEINBERG and SHEARBURN

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, October 5, 1959, at 8:15 P.M. Dr. Adolph Walkling, President, presided and forty-three Fellows were present.

SCIENTIFIC PROGRAM

- DR. LEROY H. STAHLGREN*
DR. L. KRAEER FERGUSON
- Is Ileostomy Always Necessary in the Surgical Treatment of Segmental Ulcerative Colitis?
Discussed by: DRs. JAMES ROTH, RHOADS, WALKLING, FERGUSON, with closing by DR. STAHLGREN

* By invitation.

- DR. JULIAN A. STERLING
- Use of Semi-Automatic Anastomosis in Small Blood Vessels (Motion Picture)
- DR. GEORGE J. HAUPT*
DR. JOHN Y. TEMPLETON, III
DR. RUDOLPH C. CAMISHION*
DR. JOHN H. GIBBON, JR.
- Surgical Therapy of Malignant Pleural Effusions with Talc Poudrage
Discussed by: DRs. GIBBON, KIRBY and HOWARD

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, November 2, 1959 at 8:15 P.M. Dr. Adolph Walkling, President, presided and forty-six Fellows were present.

SCIENTIFIC PROGRAM

- DR. DEMETRIUS S. SARIS*
Introduced by
DR. PAUL J. GROTZINGER
- Superior Mesenteric Arterial Embolotomy
Discussed by: DRs. GIBBON, HOWARD, RHOADS and SHEARBURN
- DR. ALFRED S. FROBESSE
DR. GEORGE N. STEIN*
- Hiatal Hernia as a Complication of the Heller Operation—Report of Three Cases
Discussed by: DRs. STEIN, STERLING, HAWTHORNE, HARRIS, JOHNSON, AMSTERDAM and FROBESSE
- DR. JOHN J. MURPHY
DR. HARRY W. SCHOENBERG*
- Pathogenesis of Pyelonephritis

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, December 7, 1959, at 8:15 P.M. Dr. Adolph Walkling, President, presided and there were twenty-eight Fellows present.

SCIENTIFIC PROGRAM

- DR. ROBERT G. RAVDIN
- Cancer Chemotherapy
Discussed by: DR. WISE
- DR. RUDLPH JAEGER
- Annual Oration:* Hot Water Injection into Nerve Structures as a Method for Relieving Intractable Pain.

* By invitation.

Report of the Secretary for the Year Ending December, 1959

In the calendar year 1959, the Philadelphia Academy of Surgery held seven regular meetings. There was also a Conjoint Meeting with the New York Surgical Society held in New York City at the New York Academy of Medicine. Forty-six Fellows of the Philadelphia Academy of Surgery attended, and ninety from the New York Surgical Society. Six papers were presented by members of the New York Surgical Society and these were formally discussed by Philadelphia members.

The average attendance at the seven stated meetings of the Philadelphia Academy of Surgery for the year was 40.8. Nine case reports were given and 17 papers were read.

On December 7, 1959 the Annual Oration was given by Dr. J. Rudolph Jaeger, entitled *Hot Water Injection into Nerve Structures as a Method of Relieving Intractable Pain*.

The following surgeons were elected to Fellowship: George J. Haupt, Oscar Serlin, Walter F. Ballinger, Paul Mecray, John M. Howard, and Charles Feinberg.

Brig. General Alvin Gorby, Capt. Horace D. Warden and Col. Edwin J. Pulaski were elected to Associate Membership.

Four members were transferred to the Senior List.

The following Fellows died: Dr. Thomas J. Ryan and Dr. Peter Keating.

The following officers were unanimously elected to serve for the year 1959: *President*—Dr. Adolph Walkling; *1st Vice-President*—Dr. W. Emory Burnett; *2nd Vice-President*—Dr. J. Mont. Deaver; *Secretary*—Dr. Henry P. Royster; *Treasurer*—Dr. S. Dana Weeder; *Recorder*—Dr. Fred A. Bothe; *Chairman, Business Committee*—Dr. Jonathan E. Rhoads; *Council*—Drs. John H. Gibbon and Orville C. King.

HENRY P. ROYSTER, M.D.
Secretary

The Year 1960

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, January 4, 1960, at 8:15 P.M. Dr. Adolph Walkling, President, presided and fifty-three Fellows were present.

SCIENTIFIC PROGRAM

DR. NEWTON L. MASSON*	Abdominal Angina: Report of a Case Successfully Treated with Endarterectomy
DR. JOSEPH W. STAYMAN	<i>Discussors:</i> DR. BROOKE ROBERTS and DR. JOSEPH STAYMAN
DR. ROBERT N. SWARTLEY	
DR. HARRY V. ARMITAGE	Spontaneous Perforation of the Right Hepatic Duct
	<i>Discussor:</i> DR. W. EMORY BURNETT
DR. THEODORE R. FETTER*	Concepts in the Management of Bladder Tumors
Introduced by	<i>Discussor:</i> DR. JOHN J. MURPHY
DR. ANTHONY F. DEPALMA	

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, February 1, 1960, at 8:15 P.M. Dr. W. Emory Burnett, the new President, was in the chair. Forty-nine Fellows were present.

SCIENTIFIC PROGRAM

DR. CALVIN M. SMYTH	Memoir of the late Dr. A. C. Wood
DR. W. BOSLEY MANGES*	The Surgical Repair of Eighty Hiatal Herniae
Introduced by	<i>Discussed by:</i> DRs. JOHNSON, NEMIR and ROSEMOND with closing by DR. MANGES
DR. KENNETH E. FRY	
DR. HAROLD J. ISARD*	Cinefluorography of the Coronary Artery (motion picture film)
DR. JULIAN A. STERLING	<i>Discussed by:</i> DR. JONATHAN E. RHOADS
DR. W. EMORY BURNETT	The Clinical Course of Two Hundred and Fifty Cases of Gastric Ulcer
DR. D. A. DELAURENTIS*	<i>Discussed by:</i> DR. JORDEN

CONJOINT MEETING

Philadelphia Academy of Surgery and the New York Surgical Society
March 9, 1960

* By invitation.

The Scientific Meeting was held at 2:00 P.M. in Mitchell Hall of the College of Physicians in Philadelphia. Seventy-five members from New York came to Philadelphia and 82 of the Philadelphia membership were present.

SCIENTIFIC PROGRAM

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| DR. JOHN M. HOWARD
DR. ROBERT BOWER
DR. DEMETRIUS TZIROS | Lymphangiographic Studies of Surgical Patients
<i>Discussed by:</i> DR. DAVID V. HABIF |
| DR. LAWRENCE SINGMASTER
DR. G. COLBY ENGEL
DR. OSCAR V. BATSON | Ligation of the Internal Iliac Arteries to Facilitate Abdomino-Perineal Resection
<i>Discussed by:</i> DR. MICHAEL R. DEDDISH |
| DR. H. T. CASWELL
DR. W. EMORY BURNETT | A Three Year Study of Staphylococcal Disease with Observations on Control
<i>Discussed by:</i> DR. PETER DINEEN |
| DR. JULIAN JOHNSON
DR. CHARLES K. KIRBY
DR. WILLIAM S. BLAKEMORE | The Surgical Treatment of Aortic Stenosis
<i>Discussed by:</i> DR. GEORGE HUMPHREYS |
| DR. HENRY P. ROYSTER
DR. HERNDON B. LEHR | Radiation Dermatitis Following Treatment for Benign Disease
<i>Discussed by:</i> DR. GORDON P. MCNEER |
| DR. JOHN H. GIBBON, JR.
DR. THOMAS F. NEALON, JR.
DR. VINCENT CUDDY
DR. JOHN Y. TEMPLETON, III | Instrumental Perforation of the Esophagus
<i>Discussed by:</i> DR. JOHN L. POOL |
| DR. I. H. STONE
DR. PAUL NEMIR | The Significance of Hyperserotoninemia Occurring During Surgery for Malignant Carcinoid Tumors
<i>Discussed by:</i> DR. S. ARTHUR LOCALIO |

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, April 11, 1960, at 8:15 P.M. Dr. W. Emory Burnett, President, presided and 39 Fellows were present.

^o By invitation.

SCIENTIFIC PROGRAM

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| DR. FREDERICK E. ROBBINS | Memoir on the late T. McKean Downs |
| DR. ALBERT BEHREND | Substernal Adenomas of the Thyroid in Older Patients
<i>Discussed by:</i> DRs. SHEARBURN and BURNETT |
| DR. HERBERT LIPSHUTZ ^o
Introduced by:
DR. JOHN H. GIBBON, JR. | Spontaneous Rupture of Flexor Tendons
<i>Discussed by:</i> DRs. ROYSTER and MAY |
| DR. HERBERT E. COHN ^o
DR. CHARLES FINEBERG
DR. JOHN H. GIBBON, JR. | Cardiac Arrest During Tracheal Aspiration
<i>Discussed by:</i> DR. NEMIR |

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, May 2, 1960, at 8:15 P.M. Dr. W. Emory Burnett, President, presided and 43 Fellows were present.

SCIENTIFIC PROGRAM

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| DR. JAMES CARTY | Lymphangiosarcoma of Lymphedematous Arm Following Mastectomy: Report of a Case and Review of Literature
<i>Discussed by:</i> DRs. BURNETT, RHOADS, ERB and TYSON |
| DR. FRANCIS SCHUMANN
DR. JOHN C. HOWELL
Introduced by:
DR. WILLIAM H. ERB | Right Colon Carcinoma: A Survey of 242 Cases at the Philadelphia General Hospital
<i>Discussed by:</i> DR. HOPKINS |
| DR. JOHN V. BLADY | Use of Tissue Grafts in Repair of the Facial Nerve Following Resection for Malignant Tumor
<i>Discussed by:</i> DR. ROYSTER |

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, October 3, 1960, at 8:15 P.M. Dr. W. Emory Burnett, President, presided and 39 Fellows were present.

^o By invitation.

SCIENTIFIC PROGRAM

- DR. GEORGE P. PILLING, IV The High Incidence of Infectious Complications Following Splenectomy in Children
Discussed by: DRs. DICKSTEIN, MELLISH, WEEDER
- DR. LOUIS PIERUCCI^o
DR. JOHN Y. TEMPLETON, III Deep Hypothermia, Biventricular Bypass and Circulatory Arrest for Intracardiac Operation
Discussed by: DR. KIRBY

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, November 7, 1960, at 8:15 P.M. Dr. W. Emory Burnett, President, presided and 43 Fellows were present.

SCIENTIFIC PROGRAM

- DR. FREDERICK R. ROBBINS
DR. THOMAS H. AINSWORTH Complete Transection of the Common Bile Duct by Blunt Trauma with a Brief Review of the Literature
Discussed by: DRs. JULIAN STERLING, JONATHAN E. RHOADS and AINSWORTH
- DR. JOHN J. MCKEOWN, JR.
Introduced by:
DR. JOHN H. GIBBON, JR. Radical Excision of Rhabdomyosarcoma of the Thigh
Discussed by: DRs. GIBBONS, ROYSTER, NICHOLSON and PILLING
- DR. FRANCIS E. BARSE
DR. JOHN M. HOWARD Experimental Studies in Coronary Blood Flow and Peripheral Blood Flow in Hemorrhagic Shock, and following Norepinephrine and Transfusion
Discussed by: DRs. HOWARD, FINEBERG and BARSE

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, December 5, 1960, at 8:15 P.M. Dr. J. Montgomery Deaver, First Vice-President, presided and 46 Fellows were present.

^o By invitation.

SCIENTIFIC PROGRAM

- DR. ROBERT N. SWARTLEY
DR. JOSEPH W. STAYMAN Lymphoid Hyperplasia of the Intestinal Tract Requiring Surgical Intervention
Discussed by: DRs. MELLISH, FERGUSON and KOOP
- DR. JULIAN A. STERLING Study of 51 Babies with Congenital Biliary Atresia
Discussed by: DRs. LOENBERG, HAWTHORNE and KOOP
- DR. ALFRED AYELLA^o
DR. JOHN M. HOWARD Cystadenoma of the Pancreas, Clinical Experiences
Discussed by: DRs. GROTZINGER, RHOADS and KING

Report of the Secretary for the Year Ending
December, 1960

In the calendar year 1960, the Philadelphia Academy of Surgery held seven regular meetings. The usual Conjoint meeting with the New York Surgical Society was held in the city of Philadelphia at the College of Physicians. Seventy-five members from New York came to Philadelphia and 82 of the Philadelphia membership were present. Seven papers were presented by Philadelphia members and discussions in each case were opened by the New York group.

The average attendance at the seven stated meetings for the year was 44, which represents an increase of four members. In general, it was believed that the meetings were more lively and the material presented better than in the previous two years.

During this year, 15 papers and five case reports were presented.

The Annual Oration was not presented in the year 1960. This was to have been given by Dr. H. Taylor Caswell on *The Origin of Infections in Surgical Wounds* but was postponed one month and will be given on January 9, 1961.

The following seven Philadelphia surgeons were newly elected to membership: Drs. Theodore Fetter, Clifton West, Elmer Grimes, Leroy Stahlgren, Fletcher Sain, Leldon Pitt and John V. Blady. No Associate members were elected in the past year. Drs. Hans May and Alfred Shands were transferred to the Senior List.

^o By invitation.

The following Fellows died during this year:

Dr. A. C. Wood
Dr. T. McKean Downs
Dr. John O. Bower
Dr. Bernard Lipshutz

The following officers were unanimously elected to serve for the year 1960: *President*—Dr. W. Emory Burnett, *1st Vice-President*—Dr. J. Montgomery Deaver, *2nd Vice-President*—Dr. Julian Johnson, *Secretary*—Dr. Henry P. Royster, *Treasurer*—Dr. Orville C. King, *Chairman, Business Committee*—Dr. John Y. Templeton, III, *Recorder*—Dr. H. Taylor Caswell, *Council*—Adolph A. Walkling and Jonathan E. Rhoads.

HENRY P. ROYSTER, M.D.
Secretary

The Year 1961

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, January 9, 1961, at 8:15 P.M. Dr. W. Emory Burnett, President, presided and 49 Fellows were present.

SCIENTIFIC PROGRAM

DR. JAMES P. BOLAND ^o DR. ALFRED S. FROBESSE	Hydatid Disease of the Liver: An Unusual Cause of Obstructive Jaundice
DR. R. K. JONES ^o DR. EDWIN W. SHEARBURN	Intracranial Aneurysm in a Four-Week Old Infant
DR. H. TAYLOR CASWELL	Annual Oration: The Origin of Infection in Surgical Wounds

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, February 6, 1961, at 8:15 P.M. Dr. W. Emory Burnett, President, presided. There were 17 Fellows present.

SCIENTIFIC PROGRAM

DR. LEWIS C. MANGES, JR.	The Exposure Treatment of Burns in a Small Hospital <i>Discussed by:</i> DRs. BURNETT, ROYSTER and RHOADS
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^o By invitation.

DR. ROBERT JOHNSON
DR. FRANZ GOLDSTEIN^o
Introduced by:
DR. JOHN H. GIBBON

Biliary Dyskinesia: Its Diagnosis and Surgical Aspects
Discussed by: DRs. BURNETT, ROYSTER, WEEDER, GOLDSTEIN, WALKLING. The pros and cons of the existence of this condition were debated.

DR. BROOKE ROBERTS
DR. WILLIAM HARDESTY^o

Results Following Femoral and Popliteal Arterial Reconstruction: 108 Patients
Discussed by: DRs. TYSON and NEMIR

CONJOINT MEETING

Philadelphia Academy of Surgery and the New York Surgical Society,
March 1, 1961

The Conjoint Meeting with the New York Surgical Society was held in New York and was attended by 45 Academy members.

SCIENTIFIC PROGRAM

DR. FREDERICK M. GOLOMB	An Improved Method of Drug Selection for the Perfusion of Human Malignancies Using Tissue Culture Techniques <i>Discussed by:</i> DR. BLAKEMORE
DR. JOHN L. POOL DR. R. COLLINS	The Transmission of Infection from Patient to Hospital Personnel <i>Discussed by:</i> DR. CASWELL
DR. BRONSON RAY	Hypophysectomy for Metastatic Breast Cancer <i>Discussed by:</i> DR. GROFF
DR. J. WILLIAM LITTLER	Restoration of Hand Function in Severe Volkman's Contracture Through Median and Ulnar Nerve Liberation and Tendon Transfer <i>Discussed by:</i> DR. MAY
DR. GEORGE E. WANTZ, JR. DR. F. PAYNE	Experience with Portacaval Shunt for Portal Hypertension <i>Discussed by:</i> DR. HOWARD

^o By invitation.

- DR. ARTHUR H. BLAKEMORE The Control of Upper Gastro-Intestinal Bleeding by Gastric Hypothermia
Discussed by: DR. BALLINGER

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, April 3, 1961, at 8:15 P.M. Dr. W. Emory Burnett, President, presided. There were 36 Fellows present.

SCIENTIFIC PROGRAM

- DR. RAYMOND F. BARNES[°] The Philadelphia Red Cross Regional Blood Program
 Introduced by:
 DR. LEWIS C. MANGES
Discussed by: DR. FERGUSON
- DR. JAMES C. THOMPSON Demonstration of Antral Inhibitory Hormone by Cross Transfusion
 DR. HARRY LERNER[°]
 Introduced by:
 DR. ORVILLE C. KING
Discussed by: DR. RHOADS
- DR. JAMES G. BASSETT[°] The Relationship of Adrenal Cortical Steroids to Gastric Secretions and Peptic Ulceration: An Experimental Study
 Introduced by:
 DR. DONALD COOPER
Discussed by: DR. HOWARD

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on Monday, October 9, 1961, at 8:15 P.M. Dr. Emory Burnett, President, presided and 50 Fellows were present.

SCIENTIFIC PROGRAM

- DR. JOHN L. KLINE[°] Tuberculous Aneurysm of the Ascending Aorta: A Case Report
 DR. JOHN DURANT[°]
 Introduced by:
 DR. GEORGE ROSEMOND
 This paper was not presented. Dr. Kline was absent unexpectedly due to a death in the family and the paper will be presented at a later date.
- DR. ALAN L. DORIAN[°] Syndrome of Hydrochloric Acid Aspiration
 Introduced by:
 DR. ROBERT A. BUYERS

[°] By invitation.

- DR. THOMAS F. NEALON Chemical Correction of Bank Blood
 DR. JEROME F. SANDLER[°] Prior to Transfusion

A stated meeting of the Philadelphia Academy of Surgery was held on November 6, 1961, in Thomson Hall, College of Physicians, at 8:15 P.M. Dr. W. Emory Burnett, President, presided. There were approximately 40 Fellows present.

SCIENTIFIC PROGRAM

- DR. PETER RANDALL[°] First Branchial Cleft Cyst
 Introduced by:
 DR. HENRY P. ROYSTER
Discussed by: DRs. BISHOP and ROYSTER
- DR. JOHN L. KLINE[°] Tuberculous Aneurysm of the Ascending Aorta: A Case Report
 DR. JOHN DURANT[°]
 Introduced by:
 DR. GEORGE P. ROSEMOND
Discussed by: DRs. JOHNSON, TRONCILETTI, ARMITAGE and DURANT
- DR. GERALD DODD[°] Percutaneous Cholangiography
 Introduced by:
 DR. JOHN Y. TEMPLETON
Discussed by: DR. HODES and COOPER

A stated meeting of the Philadelphia Academy of Surgery was held on Monday, December 4, 1961, at 8:15 P.M. in Thomson Hall, College of Physicians. Dr. W. Emory Burnett, President, presided. There were 44 Fellows present.

SCIENTIFIC PROGRAM

- DR. GERALD MARKS[°] Ruptured Aneurysm of the Hepatic Artery: A Case Report
 DR. JOHN H. GIBBON, JR.
Discussed by: DRs. RHOADS and ROBERTS
- DR. CHARLES FINEBERG Arteriovenous Aneurysm of the Thoracic Wall: A Case Report
Discussed by: DRs. STAYMAN, BLAKEMORE and WAGNER
- DR. DONALD R. COOPER Annual Oration: Hypervolemia in the Surgical Patient

[°] By invitation.

Report of the Secretary for the Year Ending December, 1961

In the year 1961, the Philadelphia Academy of Surgery held six Stated Meetings. The Conjoint Meeting with the New York Surgical Society was held in New York in March and attended by 45 Academy members. A special meeting in May with the Philadelphia Society of Anesthesiologists featured a Panel Discussion on Medico-Legal problems. Additionally, an unofficial trip to Chicago was enjoyed by nine members who were guests of the Chicago Surgical Society at an excellent two-day program.

The scientific program has continued to improve in quality. The 11 papers predominated over the four case reports. There were two Annual Orations during the year. The first by Dr. H. Taylor Caswell on *Origin of Infection in Surgical Wounds* was scheduled in December 1960 but postponed for a month. The second, by Dr. Donald R. Cooper, entitled *Hypervolemia in Surgical Patients* was given at the December, 1961 Stated Meeting.

The average attendance at the Stated Meetings was 41, a little below that of 1960, due to the severe snow storms.

Deaths: The Academy lost two distinguished members when death came to Drs. Ralph Goldsmith and Robert P. Glover.

New Members: The following eight new members were elected in 1961: Dr. John J. McKeown, elected April 3, 1961; Dr. Thomas H. Ainsworth, Jr., elected October 9, 1961; Dr. Robert T. Boyd, III, elected November 6, 1961; Dr. W. Bosley Manges, elected November 6, 1961; Capt. H. P. Mahin, elected December 4, 1961 (Government Fellow); Dr. James G. Bassett, elected December 4, 1961; Dr. Robert G. Johnson, elected December 4, 1961, and Dr. James C. Thompson, elected December 4, 1961.

Officers Elected: The entire group of incumbent officers was nominated and elected at the January 1961 meeting. They were as follows: *President*—W. Emory Burnett; *1st Vice-President*—J. Montgomery Deaver; *2nd Vice-President*—Julian Johnson; *Secretary*—Henry P. Royster; *Treasurer*—Orville C. King; *Recorder*—H. Taylor Caswell; *Chairman, Business Committee*—John Y. Templeton; *Council*—Adolph A. Walkling and Jonathan E. Rhoads; *Samuel D. Gross Committee*—George P. Rosemond, *Chairman*, S. Dana Weeder and George Willauer.

Present Membership status of the Academy as of December 31, 1961:

Honorary Members	7 living
Senior Fellows	49
Active Fellows	86
Government Fellows	5
Nonresident Fellows	13
Total	160

HENRY P. ROYSTER, M.D.
Secretary

The Year 1962

A stated meeting of the Philadelphia Academy of Surgery was held on Monday, January 8, 1962, at 8:15 P.M., in Thomson Hall, College of Physicians. Dr. W. Emory Burnett, President, presides. Four new members were presented. There was a total of 58 Fellows present.

SCIENTIFIC PROGRAM

DR. JOHN H. HALL*	The Anterior Tibial Compartment
DR. GERALD MARKS*	Compression Syndrome
DR. MARIA GETZY*	<i>Discussed by:</i> DRs. HUNTER, DEEVER
Introduced by:	and ROYSTER
DR. GEORGE P. ROSEMOND	

DR. MARIO A. TRONCELLITI*	Reversible Intestinal Shunt for In-
Introduced by:	tractable Obesity: Report of Five
DR. WILLIAM H. ERB	Cases
	<i>Discussed by:</i> DRs. CHARLES THOMP-
	SON, STAHLGREN and FERGUSON

DR. VINCENT W. LAUBY*	Results of the Peet Sympathectomy in
DR. ROBERT M. BUCHER	the Treatment of Premalignant and
DR. CARMEN T. BELLO*	Malignant Hypertension
	<i>Discussed by:</i> DR. BLAKEMORE, and
	closed by DR. LAUBY

A special meeting of the Philadelphia Academy of Surgery was held on February 5, 1962, in the Mitchell Room of the College of Physicians. One hundred twenty-five Fellows were present.

This was for the purpose of presenting the Samuel D. Gross Prize Fund Award to Dr. Lester R. Dragstedt for his opus, *The Pathogenesis of Gastric and Duodenal Ulcers*.

The Scientific Meeting was held at 2:00 P.M. in Mitchell Hall of the College of Physicians in Philadelphia.

CONJOINT MEETING

March 7

New York Surgical Society

* By invitation.

SCIENTIFIC PROGRAM

- DR. L. KRAEER FERGUSON
DR. JAMES P. BOLAND* Anterior Resection of Lesions of the Upper Rectum, Rectosigmoid, and Sigmoid: A Report of Indications and Five Year Results in 101 Patients
Discussed by: DR. DEDDISH
- DR. ROY R. GREENING*
DR. SIDNEY WALLACE*
Introduced by:
DR. KENNETH E. FRY Clinical Applications of Lymphangiography
Discussed by: DR. SMITH
- DR. JONATHAN E. RHOADS The Use of Diuretics in Increasing the Caloric Intake by the Intravenous Route
Discussed by: DR. BEAL
- DR. H. TAYLOR CASWELL Typhus of Surgical Wounds in the War Between the States
Discussed by: DR. CONWAY
- DR. J. MONTGOMERY DEEVER
DR. RICHARD N. MYERS* Cinefluorography of the Common Bile Duct
Discussed by: DR. HURWIT
- DR. W. EMORY BURNETT
DR. VINCENT W. LAUBY* Value and Risk of Needle Aspiration Biopsy of Pulmonary Lesions: 21 Years' Experience
Discussed by: DR. POOL

A stated meeting of the Philadelphia Academy of Surgery was held on Monday, April 2, 1962, at 8:15 P.M. in Thomson Hall, College of Physicians. Dr. J. Montgomery Deaver, President, presided.

Dr. Alan L. Dorian was presented to the Academy by Dr. Alfred S. Frobese. There was a total of 39 Fellows present.

SCIENTIFIC PROGRAM

- DR. EUGENE HUGHES*
DR. JOSEPH W. STAYMAN Traumatic Rupture of the Duodenum
Discussed by: DRs. FROBES and STAYMAN
- DR. J. GERSHON-COHEN*
DR. LOUIS S. BRAINGHURST*
DR. ROBERT N. BYRNE* Toward Better Management of Breast Cancer with Mammography
Discussed by: DRs. DEEVER and KING

* By invitation.

DR. ORVILLE C. KING
DR. HARVEY LERNER*

Fibroma, Sarcoma of the Breast: A Case Report
Discussed by: DRs. BECK, GERSHON-COHEN and KING

A stated meeting of the Academy was held on Monday, May 7, 1962, at 8:15 P.M. in Thomson Hall, College of Physicians. Dr. Jonathan E. Rhoads, Vice-President, presided. There were 33 Fellows present.

SCIENTIFIC PROGRAM

- DR. HARRY FARRELL* Multiple Primary Carcinomas of the Colon with Case Report
- DR. BENJAMIN BACHRACH*
DR. JOHN T. TEMPLETON Post-Nephrectomy Arterio-Venous Aneurysm
- DR. ROBERT B. LAUCKS*
DR. ALFRED FROBES Experience with Cardiac Pacemakers
Discussed by: DR. GEORGE HAUPT

A stated meeting of the Philadelphia Academy of Surgery was held Monday, October 1, 1962, at 8:15 P.M., Thomson Hall, College of Physicians. There was a distinguished visitor from Great Britain, Mr. James McArthur, presented by Dr. Rhoads. And 58 Fellows were present.

SCIENTIFIC PROGRAM

- DR. H. ALAN HUME*
DR. LLOYD W. STEVENS
DR. WILLIAM H. ERB Case Report: Idiopathic Retroperitoneal Fibrosis
Discussed by: DR. MURPHY
- DR. JOHN ROBERTS*
DR. JOSEPH W. STAYMAN
DR. S. DANA WEEDE Carotid Artery Obstruction: Report of Six Cases Treated Surgically
Discussed by: DR. CAMISHION
- DR. WILLIAM INOUE*
DR. GEORGE EVANS*
DR. LESTER BAKER*
Introduced by:
DR. JONATHAN E. RHOADS Gastric Perforations in New-Born Infants and a Presentation of Three Recent Cases Treated with Survival and a Review of 126 Reported Cases
Discussed by: DR. KOOP

A stated meeting of the Philadelphia Academy of Surgery was held Monday, November 5, 1962, at 8:15 P.M., Thomson Hall, College of Physicians. Dr. J. Montgomery Deaver, President, presided. There were 43 Fellows present.

* By invitation.

SCIENTIFIC PROGRAM

DR. JOHN E. HOPKINS DR. J. MONTGOMERY DEEVER	Lipomatosis of the Ileocecal Valve
DR. ERWIN A. COHEN* DR. JAY H. PORTNER* DR. JERRY A. ZASLOW	Gastrocolic Fistula Secondary to Primary Pathology of the Transverse Colon
DR. EDWIN W. SHEARBURN	The Shouldice Hernia Repair: A Comparison with Other Technics

A stated meeting of the Academy of Surgery was held on Monday, December 3, 1962, at 8:15 P.M., in Thomson Hall, College of Physicians. Dr. J. Montgomery Deaver, President, presided. There were 41 Fellows present.

SCIENTIFIC PROGRAM

DR. HERBERT LIPSHUTZ* Introduced by: DR. CHARLES FINEBERG	Osteogenic Sarcoma of the Mandible: A Case Report
DR. HOWARD STEELE* Introduced by: DR. ROBERT R. TYSON	Radical Extirpation of the Chondrosarcoma of the Symphysis
DR. JOHN Y. TEMPLETON, III	Annual Oration: Teaching of Surgery to Medical Students

Report of the Secretary for the Year Ending
December, 1962

The Philadelphia Academy of Surgery experienced a most satisfactory year in 1962. The highlight was a special meeting addressed on February 5, 1962, by Dr. Lester R. Dragstedt before a full house on *The Pathogenesis of Gastric and Duodenal Ulcers*. This was preceded by a dinner meeting attended by over 125 members and guests.

Next, the Conjoint Meeting of the New York Surgical Society and the Philadelphia Academy of Surgery took place in Philadelphia on March 7, 1962. This was attended by over 100 members of the two bodies.

At six Stated Meetings, there were interesting programs on various subjects with an average attendance of 45 Fellows, slightly lower than the previous year.

The Annual Oration was delivered by Dr. John Y. Templeton, III, on December 3, 1962, on *The Teaching of Surgery to the Medical Students*.

* By invitation.

Eight new surgeons were elected to Fellowship. The Academy was saddened by the death of two Fellows, Dr. Charles Franklin Mitchell who died on July 4, 1962 and Dr. James A. Lehman who died on December 21, 1962.

In this year, there were none to be advanced to the Senior List.

HENRY P. ROYSTER, M.D.
Secretary

The Year 1963

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall of the College of Physicians on Monday, January 7, 1963, at 8:15 P.M. with Dr. J. Montgomery Deaver, presiding. There was a total of 56 Fellows present.

SCIENTIFIC PROGRAM

DR. CLYDE F. BARKER* DR. WILLIAM T. FITTS, JR.	Treatment of Massive Colonic Bleeding by Local Hypothermy: A Case Report <i>Discussed by:</i> DR. STAHLGREN
DR. JOHN Y. TEMPLETON, III DR. CHARLES FINEBERG	Treatment of Stricture of the Common Bile Duct <i>Discussed by:</i> DR. RHOADS
DR. JULIAN A. STERLING	Prolonged Lifespan and Biliary Atresia: A Case Report <i>Discussed by:</i> DR. KOOP

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians on February 4, 1963. Dr. J. Montgomery Deaver presided and there were 46 Fellows present.

SCIENTIFIC PROGRAM

DR. RICHARD N. MYERS* DR. GEORGE J. HAUPT* DR. NEWTON C. BIRKHEAD* DR. J. MONTGOMERY DEEVER	A Comparison of Cine and Radiographic Technics for Renal Angiography in the Evaluation of Patients with Hypertension <i>Discussed by:</i> DR. TYSON
DR. WILLIAM COCHRAN* DR. ALFRED S. FROBES	The Management of Abdominal Trauma—Results of a Ten Year Experience <i>Discussed by:</i> DR. WEEDER

* By invitation.

DR. F. E. ROSATO*
 DR. BROOKE ROBERTS
 Heparin as a Cause of Arterial Emboli
Discussed by: DR. ROBERTS

CONJOINT MEETING

Philadelphia Academy of Surgery and the New York Surgical Society
 March 6, 1963

The Conjoint Meeting of the Philadelphia Academy of Surgery and the New York Surgical Society was held in New York on Wednesday, March 6, 1963. Approximately 64 members of the Philadelphia Academy went to New York for the meeting.

SCIENTIFIC PROGRAM

DR. GERALD W. SHAFTAN DR. IRVING ENQUIST	Radial Head Fractures, Is Excision Necessary? <i>Discussed by:</i> DR. MOORE
DR. C. PAUL BOYAN DR. WILLIAM S. HOWLAND	Cardiac Arrest and Temperature of Bank Blood <i>Discussed by:</i> DR. NEALON
DR. ROBERT B. SMITH, III* DR. E. FOSTER CONKLIN* DR. MILTON R. PORTER	Common Bile Duct Exploration <i>Discussed by:</i> DR. DEAVER
DR. ADRIAN KANTROWITZ DR. ISAAC SALTIEL DR. AKIRA NONOYAMA	Electronic Control of Postoperative Adynamic Ileus <i>Discussed by:</i> DR. BURNETT
DR. L. BURROWS DR. R. HOROWITZ DR. D. A. DREILING DR. A. E. KARK	Immunocytochemistry of Kidney Homograft Rejection <i>Discussed by:</i> DR. BLAKEMORE
DR. W. GRAHAM KNOX DR. RICHARD B. STARK DR. HAROLD A. ZINTEL DR. ROBERT E. McCABE	Effect of Regional Lymph Node Ablation on Kidney Homotransplant Survival <i>Discussed by:</i> DR. MURPHY

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall on April 1, 1963. Dr. J. Montgomery Deaver, President, presided. A total of 41 Fellows were present.

* By invitation.

SCIENTIFIC PROGRAM

DR. ROBERT TROUT* Introduced by: DR. JONATHAN E. RHOADS	Compression and Perforation of the Trachea Due to a Tuberculous Abscess <i>Discussed by:</i> DR. WILLAUER
DR. F. DANA LAW* Introduced by: DR. ORVILLE C. KING	Leiomyoma of the Jejunum <i>Discussed by:</i> DR. BUYERS
DR. JONATHAN E. RHOADS	Is Transabdominal Operation Indicated for Polyp-shaped Shadows on Colon X-ray? <i>Discussed by:</i> DR. CASWELL

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, May 6, 1963, with Dr. J. Montgomery Deaver, President, presiding. There were 36 Fellows present.

SCIENTIFIC PROGRAM

DR. DAVID J. LAFIA* Introduced by: DR. JOHN J. DETUERK	The Technic of Thalamotomy in the Treatment of Parkinsonism and Related Extra-Pyramidal Disorders
DR. CHARLES C. WOLFERTH, JR.* Introduced by: DR. WILLIAM T. FITTS, JR.	Epidemiology of Bacteriological Vectors in Operative Wounds
DR. CHARLES SACHS* Introduced by: DR. J. MONTGOMERY DEAVER	Experiences with Soviet Stapling Instruments

The stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, October 7, 1963, with Dr. J. Montgomery Deaver, President, presiding. There were 54 Fellows present.

SCIENTIFIC PROGRAM

DR. ORVILLE KING	Memoir on the late Dr. Fred Bothe
DR. HERBERT E. COHN* DR. JAMES E. CLARK* DR. J. BOGAEV* Introduced by: JOHN H. GIBBON, JR.	Renal Homotransplantation in Chronic Glomerulonephritis <i>Discussed by:</i> DR. HENDERSON

* By invitation.

- DR. J. MONTGOMERY DEEVER
 DR. RICHARD N. MYERS*
 DR. GEORGE J. HAUPT*
 DR. NEWTON C. BIRKHEAD*
 Cinecholangiography as an Aid in the
 Interpretation of T-Tube Cholangi-
 ogram Deformities
Discussed by: DR. DODD
- DR. DOMINIC DELAURENTIS*
 Introduced by:
 DR. GEORGE P. ROSEMOND
 The Replacement of Veins
Discussed by: DR. ROBERTS

The stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on November 4, 1963. The meeting was called to order by Dr. J. Montgomery Deaver, President. There were 57 Fellows present.

SCIENTIFIC PROGRAM

- DR. HERBERT LIPSHUTZ
 An Analysis of the Management of
 Flexor Tendon Injuries
Discussed by: DR. OAKEY
- DR. ELMER L. GRIMES
 Segmental Jejunitis in a 15 Year Old
 Child
Discussed by: DR. COOPER
- DR. RONALD B. BERGGREN
 Clostridial Myositis Secondary to Pa-
 renteral Injections
Discussed by: DR. CASWELL

A stated meeting of the Philadelphia Academy of Surgery was held in Thomson Hall, College of Physicians, on Monday, December 2, 1963, at 8:15 P.M. There were approximately 50 Fellows present.

- DR. DAVID Y. PL LIN*
 DR. GEORGE J. WILLAUER
 Aneurysm of the Hepatic Artery:
 Case Report
- DR. MOREYE NUSBAUM*
 DR. STANLEY BAUM*
 DR. WILLIAM S. BLAKEMORE
 Demonstration of Intra-abdominal
 Bleeding by Selective Celiac and
 Superior Mesenteric Arteriography
- DR. EDWIN W. SHEARBURN
 Annual Oration: The Role of the Non-
 University Hospital in Surgical Edu-
 cation

* By invitation.

Report of the Secretary for the Year Ending December, 1963

The Philadelphia Academy of Surgery experienced a most satisfactory year in 1963.

At seven Stated Meetings, there were interesting programs on various subjects with an average attendance of 50 Fellows, a higher average than the previous year.

The Conjoint Meeting of the Philadelphia Academy of Surgery and the New York Surgical Society was held in New York on Wednesday, March 6, 1963. Approximately 64 members of the Philadelphia Academy went to New York for the meeting. The program was an excellent one and the meeting was enjoyed by everyone.

The Annual Oration was delivered by Edwin W. Shearburn, *The Role of the Non-University Hospital in Surgical Education*.

Four new surgeons were elected to Fellowship. The Philadelphia Academy was saddened by the death of Dr. Frederick A. Bothe. A memoir was delivered before the Academy on October 7, 1963 by Orville C. King.

This past year, the Academy sponsored a Surgical Essay Competition for surgical residents in the Philadelphia area. The deadline for the papers to be submitted was December 31, 1963. A Committee will decide on the winners and the papers will be presented before the Academy at the April meeting in 1964. The first prize will be \$300, the second prize, \$150, and the third prize, \$75.

The Philadelphia Academy of Surgery canvassed its membership for names of the residents in the Philadelphia area. A list of these names was compiled and added to the mailing list. These residents will receive a copy of the program of the Academy each month.

Two Fellows are to be transferred to the Senior List. Both of these men have completed 20 years of service. They are Drs. Jonathan E. Rhoads and Julian Johnson.

HENRY P. ROYSTER, M.D.
Secretary

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Bothe, Frederick A.
Bower, Robert
Boyan, C. Paul
Brainghurst, Louis S.
Braunstein, Paul W.
Browder, E. Jefferson
Bucher, Robert M.
Burnett, W. Emory
Burros, Harry M.
Burrows, L.
Buyers, Robert A.
Byrne, Robert N.
- Camishion, R. C.
Canter, Jerome W.
Carrington, Elsie R.
Carty, James
Caswell, H. Taylor
- Cathcart, Richard T.
Clark, James E.
Clift,
Cochran, William
Cohen, Erwin A.
Cohn, Herbert E.
Conklin, E. Foster
Collins, R.
Cook, Albert W.
Cooper, Donald R.
Cresson, Samuel L.
Cuddy, Vincent
- Davis, Donald
Deaver, J. Montgomery
Deddish, Michael R.
Deibert, Irvin E.
DeLaurentis, Domenico
Dennis, Clarence
DePalma, Anthony F.
DeTuerk, John J.
Dickstein,
Dineen, Peter
Dodd, Gerald
Dorian, Alan L.
Dreiling, D. A.
Durant, John
- Eger, Sherman A.
Ehrlich, Edward W.
Eisman, Sylvan H.
Engel, Gilson Colby
Enquist, Irving
Enterline, H. T.
Erb, William H.
Evans, George
- Farrell, Harry
Feingery,
Ferguson, L. Kraeer
Fetter, Theodore R.
Fineburg, Charles
Fitts, William T., Jr.
Flandreau, Richard H.
Flick, John B., Jr.
Frainmow, William
Frobese, Alfred S.
Fry, Kenneth E.
- Geist, Donald C.
Gershon-Cohen, J.
Getzy, Maria
Gibbon, John H., Jr.
Glenn, Frank
Glover, Robert P.
Goldsmith, Ralph
Goldstein, F.
Gollub, Seymour
Golomb, Frederick M.
Grant, Francis C.
Greening, Roy R.
Grimes, Elmer L.
Groff, Robert A.
Grotzinger, Paul
- Habif, David V.
Hall, John H.
Hampton, Louis H.
Hardesty, William
Hart, Michael
Hatfield, Charles A.
Haupt, George J.
Hawthorne, Herbert R.
Henderson, Lee
Himmelstein, Aaron
Hodes, Philip
Hopkins, John E.
Horowitz, R.
Howard, John M.
Howell, John C.
Howland, William S.
Hughes, Eugene
Hume, H. Alan
Humphreys, George
Hurwitt, Elliott S.
Hurwitz, Alfred
- Inouye, William
Isard, Harold J.
Israel, Harold L.
Ivy, Robert H.
- Jaeger, J. Rudolph
Jannetta, Peter J.
Jeffers, William A.
Johnson, George, Jr.

- Johnson, Julian
Johnson, Robert
Jones, R. K.
- Kark, A. E.
Karl, Richard
Kantrowitz, Adrian
Kiely, Brian
King, Orville C.
Kirby, Charles K.
Kline, John L.
Knox, W. Graham
Koop, C. Everett
Kreel, Isidore
- LaFia, D. J.
Large, O. P.
Lauby, Vincent W.
Laucks, Robert B.
Law, F. Dana
Learner, Norman
Lehman, James A.
Lehr, Herndon B.
Lerner, Harry
Levering, J. W.
Lipshutz, Herbert
Littler, J. William
Localio, S. Arthur
Loenberg,
Lyday, John E.
- Manges, Lewis C., Jr.
Manges, W. Bosley
Markarian, Marguerite
Marks, Gerald
Martin, William L.
Masson, Newton L.
May, Carl
McCabe, Robert E.
McKeown, John J.
McNeer, Gordon
Mecray, Paul, Jr.
Mellish, R. W. Paul
Michaels,
Moore, John Royal
Morris, Robert S.
Morse, Dryden P.
Murphy, John
Murtagh, Frederick
Myers, Richard N.
- Nealon, Thomas F., Jr.
Nemir, Paul, Jr.
Newman, Melvin M.
- Nicholson, Jesse T.
Nicholson, John
Nonoyama, Akira
- Oakey, Richard F.
Oakey, R. S., Jr.
Olsen, Axel K.
O'Neill, James
O'Sullivan, Ward D.
Orloff, T. L.
- Pack, George T.
Payne, F.
Pierucci, Louis
Pilling, George, IV
Pitt, Leldon P.
Pool, John L.
Portner, Jay H.
- Randall, Peter
Ranieri, T. A.
Ravdin, I. S.
Ravdin, Robert G.
Rhoads, Jonathan E.
Robbins, Frederick R.
Roberts, Brooke
Rochlin, Donald B.
Rosato, E. F.
Rosato, F. E.
Rosemond, George P.
Roth, James L. A.
Rousselot, Louis M.
Royster, Henry P.
Ruzicka, Francis F.
Ryan, Thomas J.
- Sachs, Charles
Saltiel, Issac
Sanchez-Ubeda, Rafael
Sandler, Jerome F.
Saris, Demetrius S.
Schechter, David C.
Schoenberg, Harry W.
Schreck, Kenneth
Schumann, Francis
Seligsom, David
Sellers, Alfred M.
Serlin, Oscar
Shaftan, Gerald W.
Shearburn, Edwin W.
Sherman, Robert
Singmaster, Lawrence
Sleisinger, Marvin
- Smithwick, R. H.
Smyth, Calvin M.
Sokolic, Irvin H.
Stahlgren, LeRoy H.
Stainback, William C.
Stark, Richard B.
Stauffer,
Stayman, Joseph W.
Steele, Howard
Sterling, Julian A.
Stevens, L. W.
Stone, I. H.
Swartley, Robert N.
Sweeney, Richard M.
- Templeton, John Y., III
Teskin, Gerold W.
Thompson, James C.
Thompson, James E.
Tomasco, William A.
Tongson, Teresita L.
Tronciletti, Mario A.
Tropea, Frank, Jr.
Trout, Robert
Tyson, R. Robert
Tziros, D.
- Ulin, Alexander W.
Urban, Jerome A.
- Votteler, Theodore P.
- Wade, Preston A.
Wagner, Frederick B., Jr.
Walkling, Adolph A.
Wallace, Sidney
Wantz, G. E., Jr.
Watson, William L.
Weeder, S. Dana
Weiss, Arthur J.
West, C. F.
Whalen, William P.
Willauer, George
Winchell, H. Saul
Wohl, George T.
Wolferth, Charles C.
Wood, Francis A.
Wright, William C.
- Zaroff, Lawrence
Zaslow, Jerry
Zintel, Harold A.
Zug, Charles K.