The American Society for Pharmacology and Experimental Therapeutics, Incorporated

THE FIRST SIXTY YEARS

1908-1969

K. K. Chen, Editor

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PREFACE

THIS VOLUME provides a summary of many aspects of the American Society for Pharmacology and Experimental Therapeutics (ASPET) during its first sixty years—a period that all too quickly will be thought of as its infancy and early childhood. The youthfulness of our organization is especially apparent to those of us now charged with administering its affairs because several of our prominent members were, at the other end of their careers, close associates of the founders of ASPET in 1908. It is also apparent, in the face of the relatively little knowledge we have about drug effects, that our Society must play the central role in interpreting the multilevel actions that accrue when chemical substances interact with biological systems.

Our Society exists in many ways: as a collection of journals filling ever more space on library shelves; as a series of meetings, heralded by abstracts and laid to rest in the archives, but very much alive to those who attend; as a part of the activities of Beaumont House; as a budget to be planned and well spent; and as a warm fellowship with our many colleagues who, by some whimsy of nature, like ourselves find the great questions of pharmacology, toxicology, and therapeutics entrancing enough to be given the primary role in their thoughts and work.

The Council has appropriately chosen K. K. Chen to be Historian of the Society. He was a member of John J. Abel's laboratory and is generous and untiring in his efforts to support the Society. During the prebudget years of ASPET, Chen was our treasurer. It was always such a delight to hear him give his report that our financial burdens seemed easier to bear. Later, while he was our president and also the president of the Federation of American Societies for Experimental Biology (FASEB), he was one of the leaders in establishing Beaumont House as a permanent headquarters. His other activities on our behalf were in the fields of scholarship, finance, and international relations with other pharmacologists. He was largely responsible for the development of the John J. Abel Award, which each year recognizes the scholarship of an outstanding young pharmacologist. In the field of finance, he helped immeasurably with suggestions for our corporate associates program. And, in the early days of international cooperation among pharmacologists, he was one of the very few who knew well the intricacies of the web that bound us to our colleagues in other countries, first through the International

Union of Physiological Sciences (IUPS) and later in the International Union of Pharmacology (IUPHAR).

This history begins with Chen's account of the meetings, which more than any other feature of a society's existence give it life for its members. These are temporal events and, like musical performances, will never be repeated. Their format changes and their numbers and kinds proliferate with time. Many of these changes are described, from the first meeting in 1908 to the planning for the Vth International Congress of Pharmacology to be sponsored by ASPET in San Francisco in 1972. The biographies of our founders and presidents and the achievements of our members are presented. The description of awards indicates the recognition of our members and of pharmacology as a distinct scientific discipline.

The most enduring part of our Society's activities is its publications. Maurice H. Seevers describes the development of these and discusses their relationship to the Society. They will be the permanent records of our thoughts and work—referred to less and less as the years pass and new volumes appear, but that is the way of science and none of us would have it otherwise.

Allan D. Bass has compiled the membership of the Society, showing our growth from a handful to more than 1400. His account of the many factors responsible for, and the results of, this growth follows the evolution of our Society into an organization that is playing an important role in governmental and public affairs.

Ellsworth B. Cook, Executive Officer of the Society, presents the constitution, the bylaws, and their inevitable revisions. The history concludes with a look into the future by Maurice H. Seevers, who writes from his present and long-term tenancy of the first professorship of pharmacology in the United States.

From its beginning, the American Society for Pharmacology and Experimental Therapeutics has been an important part of the scientific life of the United States. It is truly a multidisciplinary and interdisciplinary organization, now in a healthy stage of development. This history of the first sixty years is presented by Chen, his colleagues, and the Council as a mark of gratitude for the spirit and foresight of our founders, and for the devotion to the science of pharmacology shown by our past and present members. We hope it will be a valuable record of their heritage for future generations.

ROBERT M. FEATHERSTONE

CHAPTER 1

Introduction

CHAPTER 1

INTRODUCTION

K. K. Chen

MANY PEOPLE may be surprised that President Harold C. Hodge and the Council appointed an Oriental as ASPET Historian. The first reason must be a certain acquaintance of Society affairs through long years of affiliation. Younger pharmacologists may appreciate our organization more if they can find the events of early years in a single compilation.

ASPET has not been negligent in recording its history. In 1948 W. deB. MacNider served as Historian; when he resigned because of illness in 1951, E. M. K. Geiling immediately succeeded him. A devoted pupil and friend of John J. Abel, Geiling has collected archival material about both Abel and his wife—sufficient for a biography of a pioneer pharmacologist and his family. He is such a perfectionist, however, that a complete account does not seem to be forthcoming. The editor of this history received his appointment in 1967. Fortunately four eminent leaders consented to write important chapters in order to finish the task for the occasion of our sexagenarian anniversary.

A fine example has been set by our senior society, the American Physiological Society (APS). Under the chairmanship of W. J. Meek, W. H. Howell and C. W. Greene presented the history of the first fifty years. In 1963 W. 0. Fenn wrote *The Third Quarter Century* of APS. There have been mutual events in which ASPET participated, both before and after the formation of the Federation of American Societies for Experimental Biology (FASEB). The minutes of ASPET have been meticulously recorded by our loyal successive secretaries, the first being Reid Hunt. There are ten bound volumes. Other valuable sources of information were published in the *Federation Yearbook* (1914-42), *Federation Proceedings* (1942 to present), and *The Pharmacologist* (1959 to present).

American pharmacology and therapeutics can be traced back to the 19th century; the clinical application of nitrous oxide and ether as anesthetics, the use of ergot in obstetrics, and the isolation of epinephrine, ethyl sulphide, and carbamic acid. Our organized discipline, however, did not start until the turn of the century.

Acknowledgments are gratefully made to C. H. Best for permission to reproduce the figure in the Banting Memorial Number of The *Canadian Medi-*

ca/ *Association Journal* (47: 398, 1942) and to its editor G. T. Dickinson; also to Thomas H. Maren for the picture of E. K. Marshall, Jr. in the *Bulletin of Johns Hopkins Hospital* (119: facing p. 247, 1966), now known as *Johns Hopkins Medical Journal,* and to its editor E. S. Stafford. Our special thanks are due to Miss Sara F. Leslie, Publications Manager and Executive Editor of APS, for her expert advice and supervision of the production of this volume. We also wish to express our deep gratitude to Mrs. Laurie S. Chambers of the APS staff for her editorial assistance. With few exceptions the photographs of past presidents were furnished by the ASPET Executive Officer, E. B. Cook. The editor is responsible for the omission of full names and their titles (such as William B. Abrams and Sir Frederick G. Banting, M.D.) in order to economize space.

CHAPTER 2

Meetings

CHAPTER 2

MEETINGS

K. K. **Chen**

AFTER THE American Society for Pharmacology and Experimental Therapeutics (ASPET) was organized in Baltimore by John J. Abel, the first four Annual Meetings were held in the same cities with the American Physiological Society (APS) and the American Society of Biological Chemists (ASBC), although they were theoretically independent. From the Fifth Meeting to the present our Annual Meetings have been arranged by the Executive Committee or Board of the Federation of American Societies for Experimental Biology (FASEB). In order to make up for the meeting missed in 1918, there were two in 1919. Until 1926 all the meetings were scheduled after Christmas, with one exception. Thereafter they were held between March and April, except in 1929 when the meeting was held simultaneously with the XI I Ith International Physiological Congress in August. There was no meeting in 1926, and during World War II three meetings were canceled. The 57 Annual Meetings thus cover 60 years of ASPET history.

Four special Council meetings were called; the first was held with the Society during the FASEB meeting in 1933 to receive Abel's offer of The *Journal of Pharmacology and Experimental Therapeutics* to ASPET. The second one was held in 1939 at Chicago for editorial matters, and the third was convened in 1958 at Ann Arbor to plan the move to Beaumont House. The last special meeting was held in 1966 for urgent financial and legal items.

From 1931 to 1950 the Constitution provided for a Vice-President and the President could succeed himself. A President-Elect was substituted for the Vice-President in 1951; this procedure limits the President's term of service to 1 year. R. A. Hatcher was elected President in 1934, but declined shortly before the meeting, and 0. P. Plant was voted President in 1939, but did not live to the next spring; in both instances the Vice-President then presided.

Organizing Meeting—Baltimore, Maryland, December 28, 1908

On the invitation of John J. Abel, 18 pharmacologists met in Abel's laboratory to organize a new society. They elected Abel as Temporary Chairman and Reid Hunt as Temporary Secretary.

MINUTES

Hunt took three pages of minutes, which he and Abel both signed, and had them mimeographed. Four articles of agreement were unanimously adopted.

1. In order to further the growth of pharmacology and experimental therapeutics in this country and to facilitate personal intercourse among investigators in these branches of science, we hereby organize the American Society for Pharmacology and Experimental Therapeutics and subscribe ourselves thereto as its founders.
2. The management of the Society will be left in a Council of seven members —a President, a Secretary, a Treasurer and four councilors.
3. The Council is to prepare a constitution, to consider ways and means for permanent establishment of the Society, and furtherance of its purposes by calling meetings.
4. Twelve members in person or by proxy will constitute a quorum until a constitution is adopted.

The officers for the following year were elected: J. J. Abel, President; R. Hunt, Secretary; A. S. Loevenhart, Treasurer; S. J. Meltzer, T. Sollmann, C. W. Edmunds, and A. C. Crawford, Councilors (Table 1). Before adjournment Abel announced the establishment of *The Journal of Pharmacology and Experimental Therapeutics* (JPET) and invited the members to be collaborators. The sentiment of the Society was that although members pledged collaboration, they had neither official duties nor rights.

FOUNDERS

Of the 18 founders, Abel initially used his private address, 3 New Yorkers their office addresses, and all others their university or government affiliations as follows:

John J. Abel, Station L, Baltimore, Maryland
Carl L. Alsberg, Bureau of Plant Industry, Department of Agriculture, Washington, D.C.
John Auer, 13 W. 121st Street, New York City
Albert C. Crawford, Bureau of Animal Industry, Department of Agriculture, Washington, D.C.
Charles W. Edmunds, University of Michigan, Ann Arbor, Michigan
J. A. English Eyster, University of Virginia, Charlottesville, Virginia
W. Worth Hale, Hygienic Laboratory, 25th and E Streets, N.W., Washington, D.C.
Robert A. Hatcher, 414 E. 26th Street, New York City
Velyien E. Henderson, Pharmacological Department, University of Toronto, Toronto, Canada
Reid Hunt, Hygienic Laboratory, 25th and E Streets, N.W., Washington, D.C.
Arthur S. Loevenhart, University of Wisconsin, Madison, Wisconsin
Samuel A. Mathews, University of Chicago, Chicago, Illinois
Samuel J. Meltzer, 13 W. 121st Street, New York City

William Salant, Bureau of Chemistry, Department of Agriculture, Washingron, D.C.
Torald Sollmann, Medical Department, Western Reserve University, Cleveland. Ohio
Maurice V. Tyrode, Harvard Medical School, Boston, Massachusetts
Carl Voegtlin, Johns Hopkins Medical School, E. Monument Street, Baltimore. Maryland
Horatio C. Wood, Jr., University of Pennsylvania, Philadelphia, Pennsylvania

After the New Year of 1909 Abel corresponded repeatedly with C. W. Edmunds on the extension of membership, the draft of a constitution, and publication of JPET. Although the typewriter was available at that time. they frequently wrote in longhand to each other and to other members of the Council. The signatures of the founders are shown here for historical interest. It should be noted that the American Society for Pharmacology and Experimental Therapeutics started out as a joint project between Canada and the United States because V. E. Henderson was from the University of Toronto. The founders first thought of calling the new society the American Pharmacological Society, but this was already in use by a commercial group, so they chose a different name and made it longer by adding "Experimental Therapeutics"—chiefly to emphasize the relation to chemotherapy and a prophecy of things to come. This was revealed by T. Sollmann in his after-dinner speech at Detroit on April 21, 1949. It now appears very appropriate in view of the establishment of the Division of Clinical Pharmacology. In fact, many of the papers published in JPET throughout the years conform to the true meaning of the last two words of ASPET.

Seventeen founders held M.D. degrees, and 16 were members of the American Physiological Society. Nine of them later served as President of ASPET; their biographies appear in the sections on the first meeting at which they presided. The biographies of the other 9 are presented here.

Samuel J. Meltzer was born in Curlan, Russia, on March 22, 1851. His parents planned a rabbinical career for him, but he decided to devote himself to a field of secular learning. He moved to Konigsberg, studied at the University of Berlin under von Helmholz, Du Bois-Reymond, Kronecker, and Virchow, and graduated in medicine at Berlin in 1882. A year later he migrated to the United States and engaged in the active practice of medicine in New York City. In Berlin Meltzer had worked with Kronecker on the mechanism of swallowing; in New York he promptly joined Welch's laboratory at Bellevue Hospital, later attached himself to the College of Physicians and Surgeons of Columbia University, and finally became an associate of the Rockefeller Institute in 1904. In America he published works on reciprocal innervation, vasomotor nerves of the rabbit ear (with his daughter Clara), the remarkable narcotic action of magnesium salts in the rabbit that could be antagonized with calcium salts, and artificial respiration through intratracheal and pharyngeal insufflation. The last project gave him a leading place on three national commissions on resuscitation.

Meltzer was the founder and the first President of the Society for Experimental Biology and Medicine (SEBM) (1903-05), which has also been known as "Meltzer

Signatures of Founders

Verein"; its Proceedings are widely distributed. He was the first Chairman of the Executive Committee of the Federation of American Societies for Experimental Biology (FASEB) and Past-President of APS (1911-13). He was well endowed with high ideals and brought about better mutual understanding between laboratory workers and physicians. He was a member of the Harvey Society, Association of American Physicians, and Association of American Pathologists and Bacteriologists. He died on November 7,1920, at the age of 70.

Samuel A. Mathews was born in 1866. He received his M.D. from the University of Michigan and served as assistant in pharmacology at Michigan and assistant professor in therapeutics at Rush Medical College. He was then called to the University of Kansas, Kansas City, as Professor of Physiology and Experimental Pharmacology and for the same position at the University of Alabama School of Medicine, Tuscaloosa. Finally he became Professor and Head of the Department of Physiology, Pharmacology, and Therapeutics at Loyola University School of Medicine, Chicago. He was a member of APS as well as ASPET. He died in 1928 at the age of 63.

Albert C. Crawford was born in Baltimore in 1869. He received his M.D. from the College of Physicians and Surgeons of Baltimore in 1893 (which later became the University of Maryland). He was J. J. Abel's assistant in pharmacology at the Johns Hopkins University from 1894 to 1900 and participated in the work on epinephrine. From 1904 to 1909 he was first pharmacologist at the Bureau of Plant Industry and later at the Bureau of Animal Industry of the US Department of Agriculture. He was elected in 1910 as Professor of Pharmacology at Stanford University. He published papers on the physiological standardization of drugs and poisonous plants such as loco weed, mistletoe, white snakeroot, mountain laurel, larkspur, and Johnson grass. He was a successful and enthusiastic teacher and a tireless investigator. He died in 1921 at the age of 51. In an obituary Abel stated: "Possessing a knowledge of many languages and being a voracious reader, no man in America had a wider knowledge of the literature of pharmacology and its allied branches than had Crawford."

William Salant was born in 1870. He earned his B.S. from Cornell University and his M.D. from Columbia University in 1899. After holding junior positions at Cornell and Columbia he became an adjunct professor at the University of Alabama (1907-08), chief pharmacologist in the Bureau of Chemistry, US Department of Agriculture (1908-18), Acting Professor of Physiology and Pharmacology at the University of Wisconsin (1919-20), Professor of Physiology and Pharmacology at the University of Georgia (1920-29), and research pharmacologist at Cold Springs Harbor, New York (1929-32). His investigations included studies on the influence of ions on the action of drugs, pharmacology of heavy metals, caffeine, alcohols, metabolism of hepatic glycogen, and toxicity of bile. His contributions also qualified him to be a member of APS and ASBC. He died in 1934.

W. **Worth Hale** was born in Inavale, Nebraska, in 1876. He received his M.D. from the University of Michigan in 1904, served as assistant pharmacologist in the US Public Health Service (1908-13), and settled at Harvard Medical School from 1913 to 1946 as associate professor and assistant dean. He was a member of APS as well as ASPET. He retired at Autrim, New Hampshire, and died at the age of 84.

Horatio C. Wood, Jr. was born in 1874 of a family that has been prominently identified with Philadelphia medicine since colonial times. He graduated from the University of Pennsylvania Medical School in 1896, served as resident physician in the University Hospital for 2 years, and in 1898 began a career in pharmacology that

lasted for the next 48 years. He was demonstrator in pharmacodynamics under his illustrious father, H. C. Wood, Sr. In 1907 he was appointed associate professor of pharmacology and was Acting Head of the department at his alma mater until 1911, when he left to become Head of the Department of Pharmacology at the Medico-chirurgical College of Philadelphia. When the latter merged with the University of Pennsylvania in 1917, he became Professor of Pharmacology and Therapeutics in the Medical and Graduate Medical Schools. He was an effective and popular teacher, and his knowledge of drugs and their uses was as encyclopedic as the *U.S. Dispensatory,* which he edited from 1918 to 1943. Wood was noted for his work on pulmonary circulation. He was a member of the American Medical Association (AMA), American Pharmaceutical Association (APhA), and Revision Committee of US Pharmacopoeia (USP) from 1910 to 1940. After his retirement from Pennsylvania in 1942, he taught pharmacology for 4 more years at the Philadelphia College of Pharmacy and Science. He died in 1958 at the age of 84.

Carl L Alsberg was born in New York City in 1877. He attended Columbia University and received his A.B., A.M., and M.D. degrees in 1900. He joined the Department of Physiological Chemistry, and later Biochemistry, of Harvard Medical School (1902-08). Alsberg then entered government service as a chemical biologist at the Bureau of Plant Industry, US Department of Agriculture, and later was Chief, Bureau of Chemistry (1912-21). This last position corresponds to the present Food and Drug Administration Commissioner. During these 9 years of service Alsberg was effective in controlling the dubious "remedies" for kidney and liver disorders, mineral waters, male rejuvenators, and treatments for cancer. In addition he conducted research on the chemistry of nucleic acids, enzymes, phosphoric acid metabolism, and biology and toxicology of molds, and he was active in Society affairs. He was President of ASBC (1917-18) and presided at the Baltimore Meeting of FASEB in the spring of 1919. He was a member or fellow of APS, AMA, American Chemical Society (ACS), American Public Health Association, and Association of Cereal Chemistry. He was elected director of the Food Research Institute, Stanford University (1921-37), and Dean of Graduate Studies (1927-33). He died in 1940 at the age of 63.

Maurice V. Tyrode was born in Besancon, France, in 1878. He took his M.D. from Harvard Medical College in 1900 and was a Dalton Research Fellow the following year at Massachusetts General Hospital. He joined the Department of Pharmacology at Harvard, progressing from assistant to faculty instructor until his untimely death in 1930 at the age of 51. Tyrode developed a solution for isolated organs that is named after him and studied the action of Strophanthus, Zygadenus, the saline purgatives, and the salts of calcium and magnesium. He was a member of AMA and the Boston Medical and Surgical Library Association and was the reviewer of pharmacology and toxicology for the *Boston Medical and Surgical Journal.*

J. A. English Eyster, the son of a physician, was born in Virginia in 1881. He graduated from the Maryland Agricultural College in 1899 and obtained his M.D. from Johns Hopkins University in 1905. After a year of graduate study at the University of Freiburg in Germany, he returned to his alma mater as a member of the Department of Physiology. In 1909 he was called to the University of Virginia as Professor of Pharmacology and Toxicology. He stayed there for only 2 years, leaving to accept the Chairmanship of Physiology at the University of Wisconsin. He quickly turned the administrative duties over to his colleague Walter J. Meek, because he was more interested in teaching and research. His investigations were mostly on cardiac physi-

ology and pharmacology. Readers may recall that the first article in the first issue of *Physiological Reviews* (1921) was by Eyster and Meek. He published 90 creditable papers and a monograph on the clinical aspects of venous pressure. He was a member of APS, AMA, SEBM, and the Association of American Physicians. After he became Emeritus Professor at Wisconsin in 1950, he retired to Fort Myers, Florida, and died there in 1960. Eyster was scholarly, firm, and somewhat shy—a Virginia gentleman in the finest sense of the term.

CHARTER MEMBERS

In order to increase the membership, a list of prominent men was prepared by Edmunds and circulated among Council members. After exchanges of ideas and agreement, the approved list was submitted to the membership (founders) for voting by mail. Thirty new members were elected by this procedure.

1st Annual Meeting—Boston, Massachusetts, December 29-30, 1909

R. Hunt notified the founders and charter members of the first meeting as follows:

American Society for Pharmacology and
Experimental Therapeutics

There will be a meeting of this Society for the transaction of business and the presentation of scientific papers at Boston, Wednesday and Thursday afternoons, December 29-30th, 1909.

Members are requested to notify the Secretary at their earliest convenience whether they intend to be present and to send him the titles of papers they expect to present.

(signed) Reid Hunt
Secretary

25th and E Streets, N.W.
Washington, D.C.
November 10th, 1909

The first executive (business) meeting was held at Harvard University in the afternoon (3 pm) of December 29, 1909. Abel was in the chair. The minutes of the Organizing Meeting held the year before were read, and the names of the charter members elected by mail ballot were announced. Four additional members were recommended by the Council and were elected by the Society, making a total of 34 charter members, as shown in Table 2.

A constitution was presented. Only the first 2 pages were available in the files of Edmunds. It was obvious that the membership was very strict. Article III, Section 2, specified that "no one shall be admitted who is in the permanent employ of any drug firm." A person could lose his membership in a variety of ways, such as being absent from 3 meetings, 3 years in arrears

in paying dues, etc. After detailed discussion and amendment, the constitution was adopted. The officers, now 5 in number, were elected (Table 1), and a Membership Committee was also elected: C. W. Edmunds to serve as Secretary for 3 years; S. J. Meltzer, 2 years; and T. Sollmann, 1 year. The dues for 1910 were fixed at $1.00. There was enough time for the presentation of only 1 paper.

TABLE 1. Meetings of ASPET

Meeting	*Place*	*Date*	*Officers Elected**
Organizing	Abel's Laboratory, Johns Hopkins Medical College, Baltimore, Md.	December 28,1908	*President,* John J. Abel *Secretary,* Reid Hunt *Treasurer,* Arthur S. Loevenhart *Councilors and Membership Committee:* Albert C. Crawford Torald Sollmann Charles W. Edmunds Samuel J. Meltzer
1st Annual	Harvard Medical College, Boston, Mass.	December 29-30, 1909	*President,* John J. Abel *Secretary,* Reid Hunt *Treasurer,* Arthur S. Loevenhart *Councilors:* Albert C. Crawford George B. Wallace
2nd	Yale Medical School, New Haven, Conn	December 28-29, 1910	*President,* John J. Abel *Secretary,* Reid Hunt *Treasurer,* Arthur S. Loevenhart Councilors: William deB. MacNider George B. Wallace
3rd	Johns Hopkins University School of Medicine, Baltimore, Md.	December 27-28, 1911	*President,* John J. Abel Secretary, John Auer *Treasurer,* Arthur S. Loevenhart *Councilors:* Reid Hunt George B. Wallace
4th	Western Reserve Medical School, Cleveland, Ohio	December 30-31, 1912	*President,* Torald Sollmann *Secretary,* John Auer *Treasurer,* Arthur S. Loevenhart *Councilors:* John J. Abel William deB. MacNider

* Officers were elected to serve the following year.

Meeting	*Place*	*Date*	*Officers Elected*
5th	Jefferson Medical College and University of Pennsylvania, Philadelphia, Pa.	December 28-31, 1913	*President,* Torald Sollmann Secretary, John Auer *Treasurer,* William deB. MacNider *Councilors:* John J. Abel Arthur S. Loevenhart
6th	Washington University School of Medicine, St. Louis, Mo.	December 29-31, 1914	*President,* Torald Sollmann Secretary, John Auer *Treasurer,* Arthur S. Loevenhart *Councilors:* W. Worth Hale Dennis E. Jackson
7th	Harvard Medical School, Boston, Mass.	December 27-29, 1915	*President,* Reid Hunt *Secretary,* John Auer *Treasurer,* Arthur S. Loevenhart *Councilors:* Arthur D. Hirschfelder George R. Roth
8th	Cornell Medical College, New York, N.Y.	December 28-30, 1916	*President,* Reid Hunt *Secretary,* Leonard G. Rowntree *Treasurer,* William deB. MacNider Councilors: John Auer Carl Voegtlin
9th	University of Minnesota, Minneapolis, Minn.	December 27-29, 1917	*President,* Reid Hunt *Secretary,* Leonard G. Rowntree *Treasurer,* William deB. MacNider *Councilors:* Carl Voegtlin Hugh A. McGuigan
10th	Johns Hopkins Medical School, Baltimore, Md.	April 24-26, 1919	*President,* Arthur S. Loevenhart *Secretary,* Edgar D. Brown *Treasurer,* William deB. MacNider *Councilors:* Eli K. Marshall, Jr. Reid Hunt
11th	University of Cincinnati School of Medicine, Cincinnati, Ohio	December 29-31, 1919	*President,* Arthur S. Loevenhart Secretary, Edgar D. Brown *Treasurer,* William deB. MacNider *Councilors:* Eli K. Marshall, Jr. Dennis E. Jackson

Meeting	*Place*	*Date*	*Officers Elected*
12th	University of Chicago, Chicago,	December 28-30, 1920	*President,* Charles W. Edmunds *Secretary,* Edgar D. Brown *Treasurer,* William deB. MacNider Councilors: John Auer Paul J. Hanzlik
13th	Yale University, New Haven, Conn.	December 28-30, 1921	*President,* Charles W. Edmunds *Secretary,* Edgar D. Brown *Treasurer,* Hugh A. McGuigan *Councilors:* Paul J. Hanzlik Henry G. Barbour
14th	University of Toronto, Toronto, Canada	December 27-29, 1922	*President,* Charles W. Edmunds *Secretary,* Edgar D. Brown *Treasurer,* Hugh A. McGuigan *Councilors:* Paul J. Hanzlik Henry G. Barbour
15th	Washington & St. Louis Universities, St. Louis, Mo.	December 27-29, 1923	*President,* John Auer Secretary, Edgar D. Brown *Treasurer,* Hugh A. McGuigan *Councilors:* Paul J. Hanzlik Henry G. Barbour
16th	Washington, D. C.	December 29-31, 1924	*President,* John Auer *Secretary,* Edgar D. Brown *Treasurer,* Arthur L. Tatum *Councilors:* Paul J. Hanzlik Henry G. Barbour
17th	Cleveland, Ohio	December 28-30, 1925	*President,* John Auer Secretary, Edgar D. Brown *Treasurer,* Arthur L. Tatum *Councilors:* Henry C. Barbour William deB. MacNider
18th	Rochester, N. Y.	April 14-16, 1927	*President,* Carl Voegtlin *Secretary,* Edgar D. Brown *Treasurer,* Arthur L. Tatum *Councilors:* Velyien E. Henderson Charles W. Edmunds

Meeting	Place	*Date*	*Officers Elected*
19th	Ann Arbor, Mich.	April 12-14, 1928	*President,* Carl Voegtlin Secretary, Edgar D. Brown *Treasurer,* Arthur L. Tatum Councilors: Charles W. Edmunds Velyien E. Henderson
20th	Boston, Mass.	August 19-24, 1929	*President,* Carl Voegtlin *Secretary,* Edgar D. Brown *Treasurer,* Oscar H. Plant Councilors: Charles W. Edmunds Velyien E. Henderson

TABLE 2. New Members Elected

Year	*Number Elected*	*Names*	
1909	34	J. Adler	W. Koch
		S. Amberg	W. deB. MacNider
		E. D. Brown	J. L. Miller
		R. I. Cole	H. Noguchi
		G. W. Crile	F. G. Novy
		G. Dock	W. H. Park
		D. L. Edsall	F. Pfaff
		S. Flexner	A. N. Richards
		W. W. Ford	L. G. Rowntree
		W. G. Gies	W. H. Schultz
		C. W. Greene	Theobald Smith
		C. C. Guthrie	G. N. Stewart
		L. Hektoen	B. T. Terry
		C. A. Herter	V. C. Vaughan
		A. W. Hewlett	G. B. Wallace
		A. D. Hirschfelder	C. J. Wiggers
		D. R. Joseph	F. H. Williams
1910	6	S. P. Beebe	L. B. Mendel
		P. H. Hiss, Jr.	I. Ott
		P. Lewis	J. H. Pratt
1911	6	T. S. Githens	L. Nelson
		Y. Henderson	J. D. Pilcher
		D. R. Hooker	G. R. Roth
1912	9	H. G. Barbour	I. S. Kleiner
		C. Brooks	0. H. Plant
		C. Eggleston	A. H. Ryan
		P. J. Hanzlik	F. P. Underhill
		D. E. Jackson	

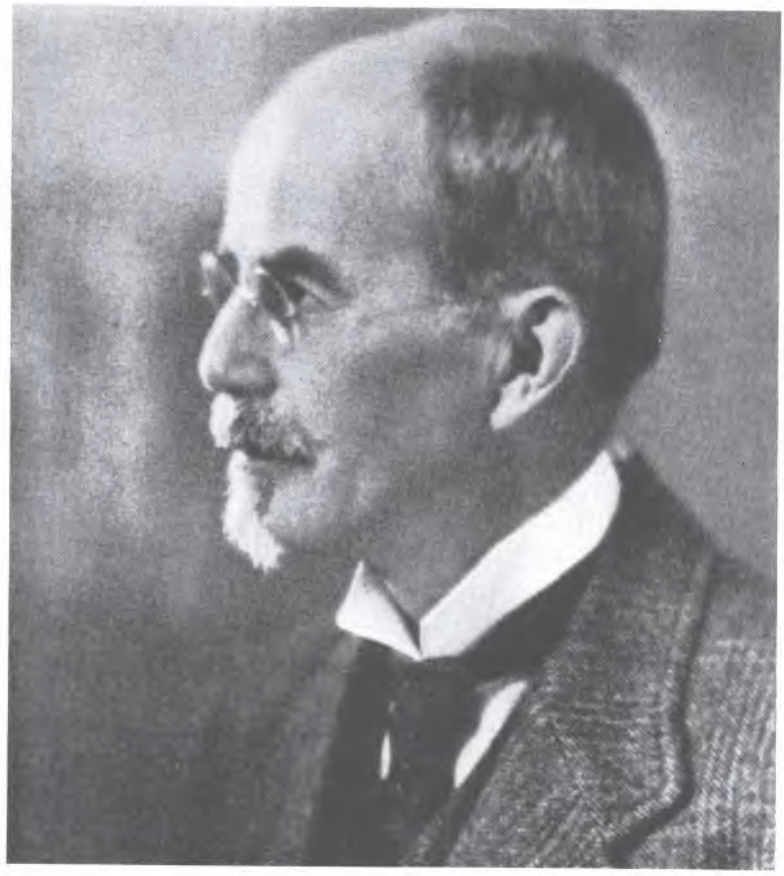
Year	*Number Elected*	*Names*	
1913	4	A. E. Cohn	W. A. Jacobs
		H. F. Helmholtz	H. A. McGuigan
1914	3	F. C. Brecht	F. L. Gates
		W. H. Brown	
1915	11	R. J. Collins	C. C. Lieb
		J. F. Corbett	D. I. Macht
		0. Folin	E. K. Marshall, Jr.
		R. G. Hoskins	Louise Pearce
		P. D. Lamson	R. J. Weil
		R. L. Levy	
1916	5	F. C. McLean	M. I. Smith
		H. B. Myers	J. A. Waddell
		J. M. Rogoff	
1917	3	W. L. Mendenhall	E. L. Roth
			R. W. Scott
1919 (April)	4	A. Arkin	C. M. Gruber
		R. Burton-Opitz	A. C. Kolls
1919 (December)	3	E. A. Livingston	A. L. Tatum
		B. H. Schlomovitz	
1920	2	T. K. Kruse	W. Schwartze
1921	7	W. C. Alvarez	C. Canby Robinson
		E. F. Du Bois	P. D. White
		W. F. Longcope	Hugh H. Young
		W. W. Palmer	
1922	4	H. V. Atkinson	W. G. Smillie
		F. G. Banting	R. L. Stehle
1923	5	W. M. Boothby	F. C. Mann
		M. S. Dooley	W. F. Peterson
		G. P. Grabfield	
1924	10	R. Beutner	R. W. Keeton
		McKeen Cattell	C. D. Leake
		S. J. Cohen	E. E. Nelson
		H. S. Gasser	C. F. Schmidt
		W. J. R. Heinekamp	J. E. Thomas
1925	7	K. K. Chen	W. T. von Oettingen
		H. N. Cole	S. M. Rosenthal
		E. M. K. Geiling	A. G. Young
		G. H. Miller	

Year	*Number Elected*	*Names*	
1927	9	O. W. Barlow	A. M. Hjort
		A. L. Bloomfield	H. A. Huhn
		F. De Eds	C. S. Leonard
		H. Gold	H. D. van Dyke
		E.C. Gross	
1928	11	N. B. Dreyer	R. W. Whitehead
		G. H. W. Lucas	(4 Honorary)
		C. W. Muhlberger	Henry H. Dale
		C. H. Thienes	Rudolf Magnus
		D. C. Walton	Hans H. Meyer
		Soma Weiss	Walther Straub
1929	7	Helen Bourquin	C. C. Johnson
		N. B. Eddy	W. T. McClosky
		William Dock	R. G. Smith
		J. P. Halsey	

The second session was held the following day with AN. The scientific program of ASPET consisted of 14 papers and 4 demonstrations. The abstracts were published in J PET, which was well on its way from June 1909. It may be interesting to recall two of the papers that were read: M. V. Tyrode, "Studies upon the Action of Certain Salts on the Isolated Intestines"; L. G. Rowntree and J. T. Geraghty, "The Use of Phenosulphonethalein in Estimating the Function of the Kidney." The older members of ASPET can certainly recall the popularity of Tyrode's solution and the clinical significance of the PSP test. The meeting ended in mourning over the untimely death, at the age of 46, of charter member Christian A. Herter, Professor of Pharmacology and Therapeutics at Columbia University.

FIRST PRESIDENT OF ASPET

The biography of **John J. Abel**, first President of ASPET, calls for a book as originally planned by Geiling. In its absence, readers may be satisfied with the following account abstracted from various sources. Abel was born in Cleveland, Ohio, on May 19, 1857. His parents, George M. and Mary (Becker) Abel, were of German ancestry and were industrious farmers. Abel attended and graduated from Madison Street Elementary School and East Cleveland High School. At the age of 19 he entered the University of Michigan, but because of financial reasons he became the principal of La Porte High School, Indiana, and Superintendent of Schools from 1879 to 1882. Here he met Mary W. Hinman, whom he married in 1883, and enjoyed 55 years of happy life with her. Abel returned to Michigan in 1883, and under the influence of



FIRST PRESIDENT OF ASPET

John **J. Abel**
1908-1912

Vaughan in physiological chemistry and Sewall in physiology he received his Ph.B. the following year. He became a graduate student at the Johns Hopkins University in 1883 under Martin in physiology and Brooks in biology. He spent 6 weeks at the University of Pennsylvania with Horatio Wood, Sr. in the summer of 1884 and became acquainted with the work of Wier Mitchell on snake venom.

Abel's exposure to the prominent men in American universities gave him the desire to study medicine in Europe. In August 1884 the Abels sailed for Germany. During the next 7 years Abel attended lectures from the foremost leaders in German and Austrian medicine, such as Carl Ludwig, Schmeideberg, Hoppe-Seyler, and Wislicenus in physiology, pharmacology, and chemistry. On the clinical side, he came in contact with Striimpell, Wagner, Kussmaul, Naunyn, von Mering, Minkowski, Erb, and Nothnagel, and his wanderings took him to the universities of Leipzig, Strassburg, Heidelberg, Vienna, Wurzburg, and Berlin. In 1888 he received his M.D. degree at Strassburg. He did biochemical research with von Nencki in Berne, Switzerland, and with Drechsel in Ludwig's laboratory. As a young scientist, he was meditating what to do on his return to the US, but fortunately he was invited by Vaughan to take charge of the Department of Materia Medica and Therapeutics at his alma mater, Michigan. Abel accepted the appointment because he could teach medical students and start his research work in the laboratory as he had done in Europe. Indeed he made a good start in 2 years at Michigan, as well documented by Swain, Geiling, and Heingartner *(Univ. Mich. Med. Bull.* 29: 1, 1963).

When the Johns Hopkins Medical School was being organized, Abel was approached for the Chair of Pharmacology; attracted by the prospective contacts with Osier, Martin, Welch, and Remsen, he agreed to transfer to Baltimore and build a new department in the autumn of 1893 at the age of 36. Voegtlin's account *(I. Pharmacol. Exptl. Therap.* 67: 373, 1939) of his 45 years of service deserves every pharmacologist's perusal. He retired at the age of 75, but continued his work until he died in 1938 at the age of 81.

His published papers, 90 in number, show his originality, keenness of observation, breadth of knowledge, and thoroughness. They cover the fields of endocrinology, isolation of active substances, metabolism of drugs, clinical pharmacology, chemotherapy, and diagnostic agents. His specific projects were epinephrine, poisonous mushrooms, phenolphthalein derivatives for kidney and liver functions, toad venom, "vivi-diffusion" leading to the artificial kidney of today, pituitary extracts, insulin crystallization, and the dual nervous action of tetanus toxin.

Abel was not a solitary investigator; he shared his laboratory with many qualified young scientists and surrounded himself with collaborators and independent workers. A gallery of photographs of his pupils and colleagues is still preserved by his successors, although the old laboratory is demolished and

the department is now located in a new building. Many of his associates became professors or directors of pharmacology all over the world.

On the basis of his experience in Europe, Abel advocated dissemination of research results by publication and advised the separation of medical disciplines. He drew up a set of resolutions to the Johns Hopkins medical faculty that resulted in 1896 in the appearance of the *Journal of Experimental Medicine,* which the Rockefeller Institute for Medical Research took over in 1905 after the first 6 volumes. Between 1903 and 1905 he and C. A. Herter planted the germ that became the *Journal of Biological Chemistry* and served as editors, publishing the first number in October 1905 (A. N. Richards, *Federation Proc.* 15: 803, 1956). After the Organizing Meeting of ASPET, he alone established JPET in 1909 and donated it to ASPET in 1933.

Being biochemically trained and inclined, Abel was instrumental in the formation of the American Society of Biological Chemistry (ASBC). On December 26, 1906 he called a meeting in the Hotel Belmont, New York City, to consider the procedures of founding a new society (P. A. Shaffer, *Federation Proc.* 15: 800, 1956).

No tribute is sufficient for Abel's contributions to medicine and chemistry, particularly to pharmacology in its broadest sense. Honorary degrees were bestowed on him by American and foreign universities (Michigan, Pittsburgh, Harvard, Yale, Lwow, Cambridge, and Aberdeen). He was President of ASPET from 1908 to 1912 and President of the American Association for the Advancement of Science (AAAS) in 1932. He was a member or honorary member of ASPET, British Pharmacological Society, National Academy of Sciences, Association of American Physicians, Royal Society of Edinburgh, Kaiserliche Deutsche Akademie der Naturforscher, Societe de chimie biologiques, Wiener Biologische Gesellschaft, and foreign member of the Royal Society. He was awarded the Gibbs, Conn& and Kober medals and the Medal of the Society of Apothecaries (London).

Second Annual Meeting—New Haven, Connecticut, December 28-29,1910

This meeting was held jointly with APS and ASBC at Yale University. Scientific sessions started at 9 am the first day and at 3:30 pm the second day; executive (business) sessions followed both. Among the 16 papers were those by C. W. Edmunds and W. W. Hale on the physiological standardization of ergot, C. J. Wiggers on the modifying influence of anemia on the action of some well-known drugs, W. Salant and J. B. Rieger on the elimination of creatin and creatinin after the administration of caffeine, and J. Auer and S. J. Meltzer on intramuscular absorption. Demonstrations were part of the program.

The agenda of the business meetings almost set the pattern for those

of today. Officers and Council members were elected (Table 1); T. Sollmann was elected to the Membership Committee, and 6 new members were elected (Table 2). A. S. Loevenhart's (Treasurer) report was accepted; the dues remained at $1.00. A total of 22 members attended the meetings. Readers can surely sense the orderly beginning and utter simplicity of the Society.

Third Annual Meeting—Baltimore, Maryland, December 27-28,1911

This meeting was held at the Johns Hopkins Medical School. The scientific program consisted of 22 papers in 2 sessions, each followed by a short business meeting. There were 6 demonstrations on the first afternoon. Research activities were increasing: for example, W. W. Hale's work on seasonal and sex variation of the common frog to digitalis and W. deB. MacNider's investigation on the action of diuretics in uranium nephritis. Abel and D. I. Macht had succeeded in isolating bufagin and epinephrine from the venom of a tropical toad, and J. A. English Eyster and W. J. Meek had recorded the electrocardiogram in morphine poisoning in the dog. Other contributions were the action of drugs in biological oxidation by C. Voegtlin and the inhibition of iodide absorption by chloride by P. J. Hanzlik and T. Sollmann.

Business affairs were as usual and simple—election of officers for the following year, election of S. J. Meltzer to the Membership Committee, and election of 6 new members (Table 2). For the first time printed blanks were used for the nomination of members, with provisions for academic position, education, and bibliography. The roll call revealed 29 members present.

Fourth Annual Meeting—Cleveland, Ohio, December 30-31,1912

This meeting was held at Western Reserve University. The scientific program consisted of 28 papers presented in 3 sessions. Outstanding reports were made on the physiological action of some methyl purines by L. B. Mendel and R. L. Kahn and on nitrous oxide sleep compared with normal sleep (brain cell studies) by G. W. Crile and J. B. Austin.

In the business meeting the Treasurer's report was checked by an auditing committee; the dues for the following year were increased to $2.00. T. Sollmann was elected President, and 9 new members were taken into the Society (Tables 1, 2).

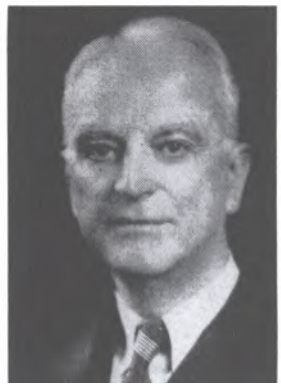
The 4th Annual Meeting was particularly important because FASEB was formed. Upon A. J. Carlson's notice of APS dated November 20, 1912, T. Sollmann, J. Auer, and A. S. Loevenhart represented ASPET at the smoker in the Colonial Hotel. It was agreed that all powers should be vested in the Executive Committee and that the offices of Chairman and Secretary should be rotated by the presidents and secretaries of the constituent societies, according to seniority, starting with APS, ASBC, and ASPET.

PAST-PRESIDENTS

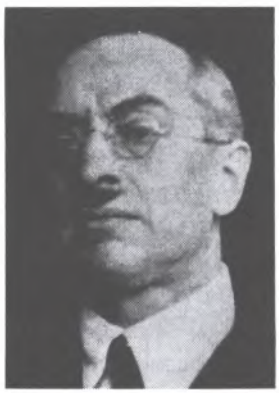
2. Torald Sollmann
1913-1915

3. Reid Hunt
1916-1917,1919 (Spring)

4. Arthur S. Loevenhart
1919 (Winter)-1920



5. Charles W. Edmunds
1921-1923



6. John Auer
1924,1925 (Winter), and 1927 (Spring)

7. Carl Voegtlin
1928-1930

More details were given by Carlson in *Science* (39: 217, 1914) and by C. W. Greene in the *History of APS, Second Quarter Century.* The *Federation Yearbook* began publication in 1914. J. Auer, the Secretary of ASPET, distributed notices and the program, all in printed form for the first time, and recorded in the minutes that 30 members attended the meeting.

Fifth Annual Meeting—Philadelphia, Pennsylvania, December 29-31,1913

The meeting was held the first 2 days at Jefferson Medical College for scientific sessions and the last day at the University of Pennsylvania for demonstrations. This was one of the most exciting meetings in our history because it was the first meeting of FASEB. Chairman S. J. Meltzer addressed the joint group on theories of anesthesia. He was followed by the authors of 10 papers, with Leo Loeb's article read by title. The program of ASPET consisted of 25 papers. There were 20 demonstrations, as reported by ASPET Secretary J. Auer *(Science* 39: 144, 1914).

During the business meetings, officers, Council members, and 4 new members were elected (Tables 1, 2). The dues returned to $1.00. Letterheads with the names of the Council and Membership Committee were used for the first time.

The American Society of Experimental Pathology (ASEP) was organized during the meeting and accepted by FASEB as the fourth member Society of that organization.

Torald Sollmann, second President of ASPET, was born in 1874 in Coburg, Germany; at the age of 13 he migrated to the US. In 1893 his brother sent him to Paris, France, to complete his premedical education. In 1894 he returned to the US and entered the Western Reserve University School of Medicine (now Case and Western Reserve University), receiving his M.D. in 1896. At the same time he was assistant to G. N. Stewart, initiating his 50 years of service in a single school. Like Abel and Hunt, he was impressed by Ehrlich's conception of chemotherapy, and he studied the organic salts of bismuth for the treatment of syphilis. He was glad, of course, to live to see the days of penicillin. The medical faculty of Western Reserve assigned him to develop the Department of Pharmacology in 1898 and sent him to spend one semester in Schmiedeberg's laboratory at Strassburg, Germany. He was Professor of Pharmacology from 1904 to 1944 and was Dean from 1928 to 1944. He was one of the founding members of the AMA Council on Pharmacy and Chemistry, and later the Council on Drugs, for a total period of 55 years, serving as its Chairman from 1936 to 1960. His *Manual of Pharmacology* passed through 8 editions, and he was the author of nearly 500 papers. Sollmann was a member of APS, ASBC, and AMA. Of the honorary degrees conferred on him, he treasured the D.Sc. from Ohio State University and the LL.D. from his alma mater. He died in 1965 just 1 day after he passed the age of 91. His own account of his youth *(Ann. Rev. Pharmacol.* 1961) was most complete. His private life as a naturalist, painter, poet, linguist, and humanist was seldom revealed as thoroughly as in the memorial issue of *Western Reserve University School of Medicine Alumni Bulletin,* 1965.

Sixth Annual Meeting—St. Louis, Missouri, December 27-30, 1914

The American Association of Anatomists joined the Federation for this meeting, held at Washington University. There were 24 papers and 7 demonstrations on the scientific program of ASPET. Research projects in different centers covered the bioassay of pituitary extracts; digitalis in experimental atrial fibrillation; cross-tolerance to heroin, morphine, and codeine; artificial cerebral circulation; and hypoglycemia. As in previous years, the abstracts were published in JPET.

In the business sessions, officers, Council members, and 3 new members were elected (Tables 1, 2). The Secretary recorded 32 members present at the meeting.

Seventh Annual Meeting—Boston, Massachusetts, December 27-29, 1915

This meeting was held at Harvard Medical School. The proceedings listed 32 abstracts, among which were the following reports: D. E. Jackson, on anesthesia and analgesia; H. G. Barbour, on derivatives of phenylethylamine; L. B. Wendel and T. B. Osborne, on the stability of the growth-promoting substance in butterfat; R. J. Collins, on the clinical actions of Veratrum; R. W. Scott, T. W. Thoburn, and P. J. Hanzlik, on the excretion of salicyl in the urines of rheumatic and nonrheumatic individuals; and R. L. Levy and L. G. Rowntree, on the toxicity of emetin. The last 3 papers pertained to therapeutics. (The spelling of some terms has since changed.)

In the business sessions, officers, Council members, and 11 new members (Tables 1, 2) were elected. Sollmann and Edmunds were to serve on the Membership Committee. One member of ASPET who had a part-time connection with a medical school was expelled because of his exploitation of a cancer remedy. This caused the Council a long deliberation from 10 pm to 2 am. He was given an opportunity to vindicate himself, but was unsuccessful. This was apparently the same individual expelled by APS that same year. No public announcement was made by either society. The federal government began to be aware of the existence of ASPET, for the Secretary of State, through the Executive Committee of FASEB, invited a delegate to the Second Pan-American Scientific Congress. President Sollmann appointed W. W. Ford as the representative and J. F. Anderson as alternate. In response to W. M. Bayliss's invitation of the British Physiological Society, the Council of ASPET consented to have our Society name appear on the title page of Physiological Abstracts.

Eighth Annual Meeting—New York City, December 28-30, 1916

The proceedings of this meeting, which was held at Cornell Medical College, showed an increasing number of titles-38 papers. There were 3

scientific sessions of ASPET, 3 joint sessions with FASEB, and 1 joint demonstration. A contribution by W. H. Brown and Louise Pearce dealt with primary scrotal syphilis of the rabbit and its utilization in chemotherapeutic experiments. The 2 business sessions were brief: Treasurer's report, election of officers and Council members for the ensuing year (Tables 1, 2), and election of 5 new members. The secretary recorded the attendance of 48 members and asked future authors to hand over their abstracts after delivery.

The biography of President **Reid Hunt** has been adequately covered by Otto Krayer in the *Dictionary of American Biographies;* a brief account is given here. Hunt was born in 1870 in Martinsville, Ohio. He received his A.B. in 1891 and his Ph.D. and M.D. in 1896 from the College of Physicians and Surgeons of Baltimore (which later became the University of Maryland).

He was tutor in physiology at Columbia University (1896-98) before he joined J. J. Abel's laboratory at Johns Hopkins Medical School, advancing from associate to associate professor between 1898 and 1903. Toward the end of this period he went to Germany to work with Paul Ehrlich. In 1904 Hunt was appointed Chief of the Division of Pharmacology of the US Public Health Service, a position he held until 1913, when he was called to the Harvard Medical School to become Head Professor of Pharmacology. He was named Professor Emeritus in 1936.

One of his best-known contributions was the discovery of the very high potency of acetylcholine in lowering blood pressure. During the war years, Hunt guided the toxicity study of the arsphenamines and their production for clinical use. He was a founder of ASPET (Secretary, 1908-11; President, 1916-19) and a member of APS, ASBC, AMA, ACS, Association of American Physicians, National Academy of Sciences, and Kaiserlich Leopoldinisch-Karolinisch Deutsche Akademie der Naturforscher. He was President of the US Pharmacopoeial Convention in 1920 and Chairman of the Council on Pharmacy and Chemistry (AMA), 1927-36. He was a member of the Permanent Standards Commission of the League of Nations. The University of Maryland conferred an honorary Sc.D. on him in 1925. He died in 1948 at the age of 77. His students remember him as a scholarly teacher; his colleagues, as a methodical investigator; and his friends, as a tall kind gentleman without prejudice.

Ninth Annual Meeting—Rochester, Minnesota, December 27-29,1917

This meeting was held at the University of Minnesota on the first 2 days and at the Mayo Clinic on the last day. The confusion of World War I and the handicap of long-distance travel and sudden cold weather were vividly described by Greene (*History of APS, Second Quarter* Century, p. 103). The number of scientific papers dropped to 27, but their high standards were sustained. C. Voegtlin and G. C. Lake reported on polyneuritis in cats produced by a diet deficient in antineuritic "Vitamine," H. B. Myers on renal cross-tolerance to caffeine and theobromin in rabbits, and A. S. Loevenhart on respiratory stimulation by sodium cyanide. The usual Society business conducted by President Hunt consisted of election of officers and Council members and 3 new members (Tables 1, 2).

Tenth Annual Meeting—Baltimore, Maryland, April 24-26, 1919

This meeting was postponed until the spring of 1919, although the Armistice in Europe was signed November 11, 1918. Attendance was small—only 23 members were present. The scientific papers dropped to 19. Mustard gas (dichloro-ethylsulfide), employed by German military forces, and N-phenylglycinamide-p-arsonic acid, a new arsenical synthesized by W. A. Jacobs, were actively discussed. Hunt served out his term as President of ASPET, and C. L. Alsberg, one of our founders, presided at FASEB sessions because he was President of ASBC. In the business sessions of ASPET, election of officers, Council members, and 4 new members (Tables 1, 2) took place. Hunt was nominated as the Society's representative to the National Research Council, which was made permanent by an executive order of President Woodrow Wilson on May 11, 1918. A resolution of protest was made to Senator G. W. Norris about a bill that prohibited the use of dogs in spite of A. J. Carlson's declaration on animal experimentation *(Science* 39: 217, 1914).

Eleventh Annual Meeting—Cincinnati, Ohio, December 29-31, 1919

This meeting was held at the University of Cincinnati during the post-Christmas week, as usual; thus there was no meeting in 1918, but two in 1919. The number of papers increased to 29 given in 5 sessions with demonstrations. Usual matters were taken up in two business sessions: election of officers, Council members, and 3 new members (Tables 1, 2).

President **A. S. Loevenhart,** Chairman of FASEB, presided at both joint and business sessions of ASPET. He was born in 1878 in Lexington, Kentucky, and received his B.S. and M.S. from the Kentucky State University in 1898 and 1899. As an undergraduate he participated in research work with his chemistry professor J. H. Kastle and published a joint paper on the reversible action of enzyme lipase *(I. Am. Chem.* Soc. 24: 491, 1900). He then transferred to Johns Hopkins University and earned his M.D. in 1903. He immediately joined Abel's Department of Pharmacology (1903-08) and was promoted from assistant to associate professor.

When the University of Wisconsin was looking for a pharmacologist to head its department, Loevenhart's name was first on the recommendation of the Johns Hopkins Medical School. He was appointed Professor of Pharmacology and Toxicology in 1908. His leadership in teaching, research, and public service at Madison was outstanding during the next 20 years. His interest in biological oxidation stayed with him his whole life; and extensive investigations on arsenicals in neurosyphilis and trypanosomiasis were continuations of his connection with the Chemical Warfare Service, US Army, during World War I. It was very appropriate that he named his department one of pharmacology and toxicology, because he developed a unique branch of forensic medicine for the state of Wisconsin.

Loevenhart was also a member of APS, ASBC, and ACS. ASPET lost a valuable founder when he died in 1929 at the age of 51. There were 130 papers, with or without his name, edited by his own hand. He was kind, generous, and witty. His

amiable life has been vividly presented by P. F. Clark *(Univ. Wis. Med. School,* p. 95-99, 1967)..

Twelfth Annual Meeting—Chicago, Illinois, December 28-30, 1920

The first FASEB joint session took place with section N of AAAS at the University of Chicago. There were 30 abstracts in the ASPET proceedings. The two business sessions were devoted to election of officers, Council members, and 2 new members (Tables 1, 2).

Thirteenth Annual Meeting—New Haven, Connecticut, December 28-30, 1921

At this meeting, held at Yale University, the first scientific session of ASPET was followed as usual by the business meeting: election of officers and Council members (Table 1). In the second business meeting 7 new members, all clinicians, were elected (Table 2). The wives of the local committee served tea after the joint demonstrations. The dues of ASPET for 1922 and thereafter were increased to $2.00.

Charles W. Edmunds, fifth President of ASPET (1921-23), was born in Bridport, Dorset, England, in 1873, emigrated to the US in 1883, and attended Indiana University, 1895-96. He transferred to the University of Michigan, earned his M.D. in 1901 and A.B. in 1904, and did postgraduate work at University College (London), Massachusetts General Hospital, and Johns Hopkins Hospital.

He was a member of A. R. Cushny's Department of Materia Medica and Therapeutics at Michigan, and when Cushny left for University College (London) in 1905 he was lecturer; in 1907 he became a full professor and later held other administrative titles such as assistant dean, 1918-21, member of the Executive Committee of the Medical School in 1935, and member of the Executive Board of the Graduate School in 1937.

During his career he made notable additions to pharmacological knowledge in the fields of biological assays, action of digitalis, split-protein poisons, botulinus and diphtheria toxins, and autonomic drugs. Edmunds and J. A. Gunn revised Cushny's *Pharmacology and Therapeutics* from the 9th to 12th edition (1928-40).

He was a member of APS, AMA, SEBM, Association of American Physicians, and a member of the Editorial Board of JPET from the very first volume. He also was a member of the revision committee of U.S. Pharmacopoeia (1910-40), a member of the Second International Conference on Standardization of Biological Products, League of Nations, Geneva (1925), and a member of the Committee on Drug Addiction, National Research Council (1930-40).

Edmunds delivered the Russell Lecture in 1937, an honor reserved for eminent faculty members of the University of Michigan. He died in 1941 at the age of 68. His close colleagues, E. E. Nelson, N. B. Eddy, and R. G. Smith, wrote for the ASPET minutes "Dr. Edmunds was a pioneer in pharmacology in this country. Throughout his life the austerity and firmness of purpose of the pioneer were coupled with a gracious dignity, tactfulness, and personal charm."

Fourteenth Annual Meeting—Toronto, Canada, December 27-29,1922

The attendance was very good at this first Canadian meeting at the University of Toronto. ASPET scheduled 38 papers. F. H. Banting, C. H. Best, G. M. Dobbin, and J. A. Gilchrist reported on the bioassay of insulin, and G. W. Crile and his associates speculated on the biophysical effects of drugs on the temperature of the brain and liver. The wives of the Local Committee served tea at the joint demonstrations. This and the Federation dinner gave opportunities for social contacts among the members of constituent societies of FASEB. The routine items of business sessions were election of officers and Council members (Table 1) and election of 4 new members (Table 2).

Fifteenth Annual Meeting—St. Louis, Missouri, December 27-29,1923

This meeting was held at Washington University on the first 2 days and at St. Louis University on the last day. Clinical pharmacology remained with ASPET, as evidenced by L. G. Rowntree's paper on glandular therapy in Addison's disease and H. H. Young's laboratory and clinical experience with certain germicides. Business matters were as usual: election of officers and Council members (Table 1), election of 5 new members (Table 2), and nomination of R. Hunt to the Membership Committee. The last FASEB joint session drew a large audience-132 members and 133 guests.

Sixteenth Annual Meeting—Washington, D. C., December 29-31,1924

One of the interesting communications dealt with the results of tryparsamide in patients with African sleeping sickness by Louise Pearce. There were many demonstrations in the Hygienic Laboratory. After the election of officers, Council members, and 10 new members (Tables 1, 2) in the business sessions, the Council recommended that each member should give only one paper. The Society also decided to join the Union of American Biological Societies and appointed T. Sollmann to represent ASPET.

Seventeenth Annual Meeting—Cleveland, Ohio, December 28-30,1925

This meeting was held at the Western Reserve Medical School. H. S. Gasser presented an impressive paper on the response of plexus-free preparations from the small intestine to drugs. Election of officers, Council members, and 7 new members was the business of 2 sessions (Tables 1, 2). Discussions were held about possible candidates for honorary members. This was the last post-Christmas meeting; since the Executive Committee of FASEB decided to

change the meetings to spring none was held in 1926. Volume 29 of JPET was dedicated to Abel by his friends and pupils on the occasion of the 50th anniversary of the founding of Johns Hopkins University. Fourteen papers came from outstanding European laboratories.

John Auer was elected president in 1923 and presided at ASPET meetings in 1924, 1925 and 1927. Auer was born in Rochester, New York, in 1875. He took his B.S. from the University of Michigan in 1899 and his M.D. from Johns Hopkins University in 1902, and he was house officer at Johns Hopkins Hospital from 1902 to 1903. After a 2-year fellowship at the Rockefeller Institute for Medical Research, he joined the Department of Physiology, Harvard Medical School (1905-07), and became an associate member of the Rockefeller Institute (1908-21). He was finally appointed Chairman of the Department of Pharmocology at St. Louis University in 1921.

Auer's research interests were in the fields of anaphylaxis, edema, motor phenomena of the gastrointestinal tract, respiration, antiseptics, and connective tissue contraction. He was a member of APS, ASBC, SEBM, AAAS, Harvey Society, and Association of American Physicians. Auer died in 1948 at the age of 73. Those who heard him speak could not help admiring his eloquence and smoothness. He conducted Society business with the greatest precision.

Eighteenth Annual Meeting—Rochester, New York, April 14-16, 1927

This meeting at Rochester University was a great success, in contrast with the postwar Spring Meeting in 1919. Communications of basic importance were in the scientific program: relation of smooth muscle to oxidation-reduction process by C. Voegtlin; morphine tolerance by 0. H. Plant; gaseous metabolism of brain with drugs by C. F. Schmidt and H. B. Haag; and electric changes in living tissue as cause of drug action by R. Beutner. Business items included election of officers, Council members, and 9 new members (Tables 1, 2); a special assessment of $5.00 for 2 years for the XIII International Physiological Congress to be held in the US; and appointment of Abel and Sollmann to the Organizing Committee of the Congress.

Nineteenth Annual Meeting—Ann Arbor, Michigan, April 12-14, 1928

At this meeting, held at the University of Michigan, the Chairman of FASEB Executive Committee, C. Voegtlin, presided over both joint and ASPET sessions. Seven new and 4 honorary members were elected (Table 2). The membership confirmed the election of W. H. Howell as President of the XIII International Physiological Congress to be held the following year.

Carl Voegtlin served as President of ASPET almost on a fiscal basis, whereas his predecessors served on a calendar basis. Voegtlin was born in Basel, Switzerland, on July 28, 1879. He received his Ph.D. from the University of Freiburg, Germany, in 1902 and pursued graduate studies at the University of Manchester, 1903-04.

He was appointed instructor of chemistry at the University of Wisconsin in

1904 and became a naturalized citizen of the US. He moved to Johns Hopkins Medical School to serve as an assistant in medicine in the same year and joined J. J. Abel's Department of Pharmacology as an associate professor (1906-13). Voegtlin's own words *(Bull. Johns Hopkins Hosp.* 101: 303, 1957) tell how Abel induced him to change from medicine to pharmacology. Voegtlin was called to Washington, D.C., to conduct government research for the next 30 years: Chief, Division of Pharmacology, National Institutes of Health (NIH) (1913-40), Director of Cancer Research (1937-38), and Chief, National Cancer Institute (1938-43).

As an investigator he was a clear thinker, thorough in exploration and precise in presentation. His publications cover the areas of metabolism, function of the parathyroid, action of digitalis on the coronary artery, dietary theory of pellagra, calcium treatment for tetany, chemotherapy of arsenicals and antimonials, biological significance of glutathione, biochemistry of cancerous and normal tissues, cell division, tumor growth, and toxicology of uranium compounds. Two volumes on the last subject written with H. C. Hodge (1949) were most exhaustive and accurate.

Voegtlin was a member of APS; ASBC; SEBM; AMA; Committee on Drug Addiction, National Research Council; and First and Second International Conference of Biological Standards, League of Nations; he was also President of the Association of Cancer Research and the Academy of Medicine of Washington.

The University of Rochester conferred on him the honorary degree of Sc.D. in 1947. He was Harvey Lecturer and Herter Lecturer, Bellevue Hospital Medical College, in 1938; Billings Lecturer, Institute of Medicine, Chicago; and Lecturer at the University of Rochester School of Medicine and Dentistry in 1943-55.

Voegtlin and his wife enjoyed traveling to Europe, particularly toward the end of his life. He died on April 9, 1960 at the age of 81. He was quiet, read extensively, was always interested in his research, loyal to his friends, and self-restrained. It was instructive to hear him say, "It takes so little for a person to decay."

Twentieth Annual Meeting—Boston, Massachusetts, August 19-23,1929

This meeting coincided with the Congress; the scientific program was merged with that of FASEB and was published in the *American Journal of Physiology.* Although individuality was retained as far as reading of papers and business matters were concerned, contacts with foreign pharmacologists were most beneficial. Seven new members were elected (Table 2). An appropriation of $10.00 was approved for C. W. Edmunds to furnish "Information of Appointments Service." The latter is now known as the Placement Service of FASEB.

Twenty-First Annual Meeting—Chicago, Illinois, March 26-29,1930

At this meeting at the University of Chicago, the proceedings listed 38 abstracts. The high output under A. L. Tatum's supervision was noticeable. A scholarly paper on the modification of the response of nerve by veratrine and by narcotics was presented by Helen T. Graham.

In the business sessions some senior members suggested revision of

the constitution, including the creation of a nominating committee of officers and other features. Election of officers, Council members, and 4 new members took place (Tables 3, 4).

TABLE 3. Meetings of ASPET

Meeting	*Place*	*Date*	Officers *Elected**
21st	Chicago,	March 26-29, 1930	*President,* George B. Wallace Secretary, Edgar D. Brown *Treasurer,* Oscar H. Plant Councilors: Henry G. Barbour Charles M. Gruber
22nd	McGill University, Montreal, Canada	April 8-11, 1931	*President,* George B. Wallace *Vice-President,* A. Newton Richards Secretary, Velyien E. Henderson *Treasurer,* Oscar H. Plant *Councilors:* William deB. MacNider Paul D. Lamson
23rd	University of Pennsylvania, Philadelphia, Pa.	April 27-30, 1932	*President,* William deB. MacNider *Vice-President,* A. Newton Richards *Secretary,* Velyien E. Henderson *Treasurer,* Oscar H. Plant *Councilors:* George R. Roth Arthur L. Tatum
24th	Cincinnati, Ohio	April 9-12, 1933	*President,* William deB. MacNider *Vice-President,* Arthur L. Tatum *Secretary,* Velyien E. Henderson *Treasurer,* Oscar H. Plant *Councilors:* Charles M. Gruber George R. Roth
25th	New York, N. Y.	March 28-31, 1934	*President,* Robert A. Hatcher *Vice-President,* Arthur L. Tatum Secretary, Eugene M. K. Geiling *Treasurer,* Oscar H. Plant *Councilors:* William deB. MacNider Raymond L. Stehle
26th	Detroit, Mich.	April 10-13, 1935	*President,* Velyien E. Henderson *Vice-President,* Oscar H. Plant *Secretary,* Eugene M. K. Geiling *Treasurer,* Charles M. Gruber *Councilors:* Floyd De Eds Marion S. Dooley

* Officers were elected to serve the following year.

Meeting	*Place*	*Date*	*Officers Elected*
27th	Washington, D. C.	March 25-28, 1936	*President,* Velyien E. Henderson *Vice-President,* Oscar H. Plant *Secretary,* Eugene M. K. Geiling Treasurer, Charles M. Gruber *Councilors:* George B. Wallace Charles W. Edmunds
28th	Memphis, Tenn.	April 21-24, 1937	*President,* Arthur L. Tatum *Vice-President,* Eugene M. K. Geiling *Secretary,* G. Philip Grabfield *Treasurer,* Charles M. Gruber Councilors: Velyien E. Henderson Maurice H. Seevers
29th	Baltimore, Md.	March 30–April 2, 1938	*President,* Arthur L. Tatum *Vice-President,* Eugene M. K. Geiling *Secretary,* G. Philip Grabfield *Treasurer,* Charles M. Gruber Councilors: Eli K. Marshall, Jr. Carl F. Schmidt
30th	Toronto, Canada	April 26-29, 1939	*President,* Oscar H. Plant *Vice-President,* Eugene M. K. Geiling *Secretary,* G. Philip Grabfield *Treasurer,* Erwin E. Nelson *Councilors:* Carl A. Dragstedt Arthur L. Tatum

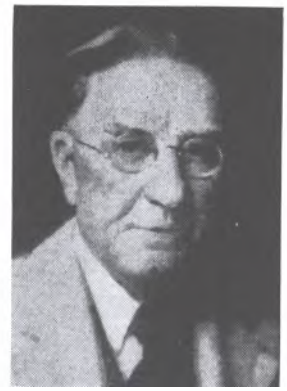
TABLE 4. New Members Elected

Year	*Number Elected*	*Names*	
1930	4	R. F. Bieter	W. J. Kerr
		0. S. Gibbs	M. H. Seevers
1931	14	H. H. Anderson	K. I. Melville
		W. E. Collison	M. G. Mulinos
		F. Co-Tui	I. Neuwirth
		W. T. Dawson	A. B. Stockton
		R. C. de Bodo	E. L. Walker
		H. N. Ets	R. A. Waud
		Helen T. Graham	F. F. Yonkman
1932	7	Johannes G. Dusser de Barenne (honorary)	R. H. Fitch
		C. W. Chapman	J. M. Hayman
		C. A. Dragstedt	N. M. Keith
			A. H. Maloney

Year	*Number Elected*	Names	
1933	8	A. Grollman	Janet G. Travell
		I. H. Pierce	R. P. Walton
		J. Sachs	L. G. Wesson
		H. Schroeder	H. N. Wright
1934	12	W. R. Bond	H. B. Haag
		R. H. Cheney	W. E. Hambourger
		C. F. Cori	P. K. Knoefel
		Gerty T. Cori	M. Rosenfeld
		N. A. David	G. E. Wakerlin
		A. Gilman	Karl Koller (honorary)
1935	6	F. Bernheim	T. Koppani
		A. Cantarow	H. M. Krueger
		G. A. Emerson	J. S. Lundy
1936	4	W. Bourne	B. H. Robbins
		S. Lowe	C. I. Wright
1937	21	A. M. Ambrose	A. T. Milhorat
		H. Beckman	C. A. Morrell
		Phoebe J. Crittenden	S. A. Peoples
		A. C. DeGraff	A. J. Quick
		L. S. Goodman	C. Reynolds
		R. M. Isenberger	M. H. Roepke
		G. Katz	L. T. Samuels
		J. C. Krantz, Jr.	P. K. Smith
		E. Larson	R. M. Waters
		A. J. Lehaman	R. H. Wilson
		F. D. McCrea	
1938	19	M. T. Bush	A. S. Marrazzi
		T. C. Butler	A. R. McIntyre
		W. B. Draper	L. C. Miller
		P. L. Ewing	B. Mukherji
		C. M. Greer	C. C. Pfeiffer
		H. P. Herwick	D. Slaughter
		C. K. Himmelsbach	E. W. Wallace
		H. G. 0. Holck	A. D. Welch
		0. Krayer	R. N. Chopra
		C. R. Linegar	(honorary)
1939	20	G. Barban	H. R. Hulpieu
		H. 0. Calvery	F. L. Kozelka
		I. H. Comroe, Jr.	G. Lehman
		Helen C. Coombs	C. S. Leonard
		W. C. Cutting	J. 0. Pinkston
		J. M. Dille	A. P. Richardson
		E. J. Fellows	L. D. Seager
		J. H. Ferguson	R. W. Stoughton
		A. M. Frazer	W. van Winkle
		V. G. Haury	A. M. Walker

PAST-PRESIDENTS

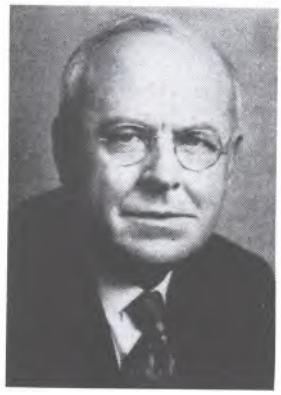
8. George B. Wallace
1931-1932



9. William deB. MacNider
1933-1934

10. Robert A. Hatcher
1935

11. Velyien E. Henderson
1936-1937



12. Arthur L Tatum
1938-1939

13. Oscar H. Plant
1939

Twenty-Second Annual Meeting—Montreal, Canada, April 8-11, 1931

This meeting was held at McGill University, with George B. Wallace presiding. A few members can probably recall the excellent presentations of V. E. Henderson and J. F. A. Johnston on cyclopropane as an anesthetic and of P. D. Lamson on hexylresorcinol as an anthelmintic. In the business sessions the final draft of the changes in the constitution was adopted. It provided for a Vice-President, a nominating committee of 5, adoption of a two-thirds vote for revision of bylaws and of a four-fifths vote for amendment of the constitution, acceptance of one formal paper per member by the Secretary, submission of the abstract before the meeting, election of an active member by a seven-eighths vote and of an honorary member by a unanimous vote, and a quorum of only 10 members for transaction of business. Owing to the lateness of the hour, election of the Council and 14 new members was postponed to the second business session (Tables 3, 4). The strictness in electing members was traditional, for Abel's nomination of his former assistant at Michigan was turned down in 1915.

An appropriation of $50.00 was approved by the Society membership for the support of publishing *Biological Abstracts* by the Union of American Biological Societies. The Treasurer's and the auditor's reports were given and accepted.

George B. Wallace served as President of ASPET for 2 terms, from 1931 to 1932. He was born in Detroit, Michigan, in 1875. After he received his M.D. from the University of Michigan in 1897, he became instructor of pharmacology at his alma mater, but he took time out to study in Europe at the University of Vienna in 1899. He had a long career at the University and Bellevue Hospital Medical College (1901-46), advancing to Professor and Chairman of Pharmacology. He studied with Schmiedeberg at Strassburg in 1904 and visited him several times. On March 31, 1909 he wrote to C. W. Edmunds, "Yes, I saw the Chief in Strassburg. He is the same as ever and we had some very pleasant days together."

While he was a full-time teacher and investigator, he retained his clinical connections with the Almshouse Hospital, Workhouse Hospital, Bellevue Hospital, and Harlem Hospital.

His research work covered the areas of saline cathartics, volatile oils, cyanides, nitrites, diuretics, and bile pigments. He was elected a charter member of ASPET in 1909 and was also a member of APS, AAAS, and the Society for Clinical Investigation. He was President of the Harvey Society (1914-16) and of SEBM (1921-23), and was a member of the Committee on Drug Addiction, National Research Council.

The University of Michigan conferred on him an honorary M.A. in 1934, and New York University, a D.Sc. in 1941. His portrait was presented to the New York University by friends, students, and alumni on the 36th anniversary of his active teaching service.

Wallace retired in 1946 and died in 1948 at the age of 73. In the last third of his life, he was a thin tall man, always willing to give advice to young acquaintances and render help to his assistants in the laboratory.

Twenty-Third Annual Meeting—Philadelphia, Pennsylvania, April 27-30, 1932

At this meeting, held at the University of Pennsylvania, G. B. Wallace presided at both FASEB and ASPET meetings, because he was Chairman of the Executive Committee. In the scientific sessions N. B. Eddy reported results on codeine isomers; A. H. Maloney, on the detoxification of picrotoxin by barbiturates; G. W. Raiziss, on chemotherapy; and R. L. Stehle and K. I. Melville, on the photomethod for observing coronary flow. The new constitution was in operation for the election of the Council and 1 honorary and 6 new members (Tables 3, 4). It was decided by the membership that all authors should furnish abstracts of their papers published in JPET to Biological Abstracts. The Treasurer's report was audited and accepted. A sum of $10.00 was again approved for the Placement Service, and $1.00 for FASEB registration, the latter for the first time.

Twenty-Fourth Annual Meeting—Cincinnati, Ohio, April 9-12, 1933

A special meeting was called by President MacNider on the first day (Sunday, April 9th, 4 pm) to consider the transfer of JPET to ASPET. J. J. Abel attended and explained the publication of the Journal under a contract with Williams & Wilkins. The periodical was originally incorporated with J. J. Abel, R. Hunt, and C. Voegtlin as its members and was later enlarged to include E. K. Marshall, Jr. and E. M. K. Geiling. The first contract was signed on March 16, 1909 by Abel and Edward B. Passano, the President of Williams & Wilkins. There were periodic deficits due to the inexperience of both the corporation and the publisher. When profits had accrued, the corporation, through its editors, spent them in publishing larger volumes. Abel, on behalf of the corporation, offered JPET to ASPET with all its rights and privileges. He further advised that a review journal would be desirable and valuable.

President MacNider appointed a special Journal Committee of 5—Edmunds (Chairman), Hanzlik, Voegtlin, Geiling, and Auer—to negotiate with E. B. Passano, whom MacNider had invited to come to Cincinnati. After several conversations during the next 24 hours, the Journal Committee was dubious of the legal language and in a quandary because it might involve some financial risk on the part of ASPET.

Abel and Passano returned to Baltimore on the same train and continued the discussion of JPET. Abel had Passano write a letter to MacNider stating that ASPET had no commitment with respect to a possible deficit or with respect to compensation to the publisher for services rendered. Abel took the next train back to Cincinnati and brought this letter with him. He reappeared at the last business meeting (April 12, 1933) and had the Passano letter read and discussed in detail. The membership immediately accepted

the offer of the Journal, drew up a 5-year contract with Williams & Wilkins, and nominated and appointed E. K. Marshall, Jr. the Editor-in-Chief for a term of 3 years. The conclusion of this important matter was greeted with prolonged and repeated applause. A resolution was passed, and a copy transmitted to Abel, which read as follows:

> BE IT RESOLVED, that the Secretary of the Society for Pharmacology and Experimental Therapeutics be instructed to write to Professor Abel and to the members of the Corporation of the Journal of Pharmacology and Experimental Therapeutics, (a) That the Society wishes to express to them its deep gratitude and thanks for their most gracious and very generous offer to transfer the Journal, free of all encumbrances, to the Society, (b) That the Society records its grateful appreciation of Dr. Abel's long and faithful service in furthering the advancement of Pharmacology in this country by promoting and editing the Journal, (c) That the Society wishes to assure Dr. Abel that every effort will be made to maintain and extend, if possible, the high standards of excellence as set by the Journal during the twenty-four years it has been under his control, and (d) That the Society is deeply touched by the devotion shown by Dr. Abel to its interest in returning from Baltimore to this meeting in order to aid in completing the arrangements for the transfer of the Journal to the Society.

It was also agreed that J. J. Abel's name be placed on the title page.

The scientific presentations increased slowly-40 abstracts in the proceedings. Business items consisted of reading of minutes of the previous meeting in 1932, Treasurer's report, and the election of the Council and 8 new members (Tables 3, 4). Members of nominating and membership committees were also elected. The dues were raised to $3.00.

Venable, Baetjer, and Howard were hired to execute the incorporation of ASPET and drew up the contract with Williams & Wilkins. On June 19, 1933, the certificate of incorporation of ASPET was approved by the State Tax Commission of Maryland and was recorded (see Appendix C, Chapter 6). Six directors (officers and councilors) authorized the formation of the corporation:

Name	Date Signed and Notarized
William deB. MacNider	June 5, 1933
Arthur L. Tatum	June 5, 1933
Velyien E. Henderson	June 5, 1933
Oscar H. Plant	June 8, 1933
George B. Roth	June 6, 1933
Charles M. Gruber	May 15, 1933

E. K. Marshall, Jr. served as the resident agent and G. H. Mudge succeeded him on April 14, 1959. The current resident agent is E. B. Cook, appointed by C. C. Pfeiffer in 1962.

William deB. MacNider was elected President of ASPET twice consecutively. He was born on June 25, 1881, in Chapel Hill, North Carolina, and received his M.D. from the University of North Carolina. He matriculated at the University of Chicago and Western Reserve University for graduate work. The University of North Carolina appointed him Professor of Pharmacology (1905-18), Kenan Professor (1918-24), and Dean of the Medical School (1937-40). He was Physician-in-Chief pro-tern at Peter Bent Brigham Hospital, Boston, in 1925.

MacNider was principally a toxicologist. His research interests lay in acid-base equilibrium of blood in liver degeneration and repair, toxicity of uranium, toxic effect of general anesthesia, liver changes after chloroform, development of acquired resistance of fixed tissue cells after liver and kidney injury, and process of aging.

He was a member of Phi Beta Kappa, Alpha Omega Alpha, APS, ASBC, ASEP, Pathological Society of Great Britain and Ireland, National Academy of Sciences, and American Philosophical Society. He was a fellow of AAAS, AMA, and American College of Physicians.

Various universities and societies called on him for special lectures. He was elected President by the Harvey Society, International Anesthesia Research Society, Gerontological Society (1945), and North Carolina Medical Society. He received the research prize of the Southern Medical Association and the Kober Medal of the Association of American Physicians. The Medical College of Virginia conferred on him an honorary Sc.D. in 1933, and Davidson College, an LL.D.

MacNider died in 1951 at the age of 70. During his life he was always a kind Southern gentleman, devoted to his friends.

Twenty-Fifth Annual Meeting—New York City, March 28-31,1934

There were 41 scientific presentations on the program, which was held at the Hotel Pennsylvania (now the Statler). Sample high-quality papers may be mentioned: new nitroderivatives on cellular metabolism, by C. Heymans; formaldehyde sulfoxylate in mercury poisoning, by S. M. Rosenthal; and addiction to morphine, by M. H. Seevers.

The Society met with new vigor after acquisition of JPET. In the Editorial Board meeting, certain rules were set up. The Board consisted of the Editor and 6 Associate Editors, all elected for a term of 3 years. A separate account was established to subsidize postage and stationery. The policy of economy was adhered to by reducing the numbers of tables and illustrations. Free reprints would no longer be presented to the authors. The high standards were to be maintained; each manuscript would be approved by two members of the board.

In the business meetings, the items were as usual: election of officers, and 1 honorary and 11 new members, and committee members. Reprints had to accompany applications for membership. In a report by H. B. Lewis of ASBC for the Placement Service, dated March 26, 1934, pharmacology applicants and vacancies were the least of the constituent societies. Apparently the demand for pharmacologists at that time was small.

Twenty-Sixth Annual Meeting—Detroit, Michigan, April 10-13, 1935

R. A. Hatcher was elected President the year before, but he declined to attend the meeting:

March 26,1935

To the Officers and Members of the Society:

I am at a loss for words to express my appreciation of the honor of having been elected President of this Society, for, as I have frequently remarked, one cannot anticipate a greater honor than that accorded by the approbation of those best fitted to evaluate one's work.

I believe it is only proper for me to state that much as I would enjoy the distinction of being elected to this office, I believe that the best interests of the Society demand the election of one who is more active; and who is better acquainted with the problems that will confront the Society.

It is hardly necessary for me to state that I regret deeply my inability to be present and to meet those who have shown me such consideration.

With cordial greetings to all members of the Society, and best wishes for the success of the meeting, I am

Sincerely,
(signed) Robert A. Hatcher

Vice-President Arthur L. Tatum thus presided at both Council and business meetings. Officers, 6 new members (Tables 3, 4), and nominating and membership committees were elected. The Editor-in-Chief reported an income of $156.95 from the publisher, a 50% division. The Society continued to support the Placement Service by contributing $10.00. The members were declared members of the American Society for Pharmacology and Experimental Therapeutics, Incorporated. The number of papers presented was about the same as in the previous year-41. An informal dinner was held on April 11, 1935, at 6:30 pm, in the Café Rouge of the Statler Hotel; 27 members attended.

Robert A. Hatcher was born in 1868 in New Madrid, Missouri. He graduated with a Ph.G. from the Philadelphia College of Pharmacy in 1889 and an M.D. from Tulane University in 1898. To advance his knowledge in pharmacology he joined T. Sollmann at Western Reserve University (1900-04). Cornell Medical College invited him to develop the Department of Pharmacology, advancing him finally to Professor of Pharmacology and Materia Medica (1904-35).

He and his brilliant pupils built a school of digitalis that ran to the present generation, starting with the Hatcher-Brody method assaying digitalis biologically. His areas of research in addition covered strychnine, quinine, and emetics. He was coauthor, with Sollmann, of *Textbook of Materia Medica* (1904) and editor of *Useful Drugs* (1934).

Hatcher was a founder of ASPET and a member of APS, ASBC, AMA, APhA, Harvey Society, New York Academy of Medicine, and Council on Pharmacy and Chemistry. He received an honorary Ph.M. from the Philadelphia College of Pharmacy and a D.Sc. from Columbia University in 1929. He died in 1944 at the age of 76, as modest in retirement as he had been during his academic career.

Twenty-Seventh Annual Meeting—Washington, D.C., March 25–28, 1936

The scientific program was so large that 2 sessions had to run simultaneously. Sample subjects that might be recalled were: histamine factor in canine anaphylaxis, by C. A. Dragstedt; USP standard of digitalis, by C. W. Edmunds; safety factors of inhalation anesthetics, by S. A. Peoples and C. D. Leake; and anesthetics on fetal respiration, by M. Rosenfeld and F. F. Snyder.

In the Council and business meetings, officers and 4 new members were elected as well as the members of nominating and membership committees. The report of the Editor-in-Chief was an important item; he advised the advance publication of abstracts. At an informal dinner held at the Cosmos Club, R. Hunt spoke about his early experience with the Society; 97 members attended.

The growth pains of FASEB were felt significantly. D. R. Hooker was appointed by V. E. Henderson, Chairman of the Executive Committee, as the Executive Secretary to handle multiple duties. A Committee of Public Information was designated to serve as liaison between FASEB and the press. A member could present only one paper. Due to the financial crisis of the Union of American Societies of Biology, ASPET contributed $15.00 to sustain the publication of Biological Abstracts.

Velyien E. Henderson was a founder and the 11th President of ASPET. He was born in Ontario, Canada, in 1877, and played an important part in developing modern pharmacology in both Canada and the US. After he received his M.D. from the University of Toronto in 1902, he spent a brief period at the University of Pennsylvannia and then joined H.H. Meyer's Institute at Marburg, Germany. Later he translated into English the 7th edition of Meyer and Gottlieb's *Experimental Pharmacology.* Before he returned to Canada he worked with Starling in London for several months. His alma mater gave him the responsibility of developing the Department of Pharmacology in 1906. He was a gifted professor and shouldered a large share of the teaching of medical students. His research interests covered the fields of chemical transmission of nerve impulses; hydrocarbon anesthetics, particularly ethylene and cyclopropane; and the respiratory center.

Henderson was a charter member and president of the Canadian Physiological Society, the founder of the Biochemical and Biophysical Society, and a fellow of the Royal Society of Canada. He was the recipient of the Flavelle Medal of the latter organization. He nominated several brilliant Canadians for membership in ASPET. He died in 1945 at the age of 68. For an account of his charming personality and hobbies, the reader is referred to A. D. Welch's article in *Science* (104: 285, 1946).

Twenty-Eighth Annual Meeting—Memphis, Tennessee, April 21–24, 1937

Demonstrations would hereafter be replaced by motion pictures and static illustrations. The Editor-in-Chief's report showed a profit of $387.39 during 1936. Election of officers and 21 new members took place (Tables 3, 4).

A telegram signed by Abel, Jensen, Tainter, Anderson, and Leake was read to the Society: "Greetings from Western Section. Joy and profit to you all." (The late Hans Jensen was not a member of ASPET, but worked on Abel's insulin team.) The Treasurer informed the membership that the assets of the Society were $1,952.23. An appropriation of $10.00 was made for the Placement Service. The Local Committee on Arrangements provided a musical and dramatic entertainment, which was followed by an informal smoker. The Faculty Women's Club served tea the next day in the University Center to enhance the Southern hospitality. G. B. Wallace spoke on pharmacology in the medical curriculum at an informal dinner that 96 members attended.

Of the scientific papers, M. H. Seevers impressed the group with a report on the treatment of opium withdrawal in addicted monkeys, and I. H. Pierce, with a paper on the absorption of nicotine in cigarette smoking. Short-acting barbiturates were popular subjects of discussion.

Twenty-Ninth Annual Meeting—Baltimore, Maryland, March 30–April 2, 1938

This meeting was of special significance because APS celebrated its 50th anniversary; the after-dinner speeches and addresses on April 1st were recorded in the *History of APS Semicentennial* (p. 191). ASPET had 83 presentations in 4 scientific sessions at the armory. Three random titles may be cited: the dosage mortality curve in small samples, by C. I. Bliss; the urinary excretion of morphine after liver injury by carbon tetrachloride in tolerant and non-tolerant dogs, by E. G. Gross and 0. H. Plant; and the toxicity of diethylene glycol and sulfanilamide, by R. M. Isenberger, J. Duffin, and M. C. Carrol. Contemporary pharmacologists can probably recall the disaster of "Elixer of Sulphanilamide" due to the solvent. E. K. Marshall, Jr. arranged a symposium on sulfanilamide in his laboratory, April 1, 1938, which was attended by 19 members and invited clinicians.

Elections of officers and 18 new and 1 honorary members were routine items (Tables 3, 4). A sum of $10.00 was again contributed to the Placement Service, but further support to *Biological Abstracts* was deemed unwise. The informal dinner was attended by 120 persons, after which T. Sollmann talked on the writing of a textbook. After the previous meeting at Memphis, there had been much discussion regarding the status of pharmacology. President A. L. Tatum appointed a special committee to study the problem, consisting of H. G. Barbour, V. E. Henderson, E. K. Marshall, Jr., and G. B. Wallace (Chairman). Their written report, "The Role of Pharmacology in the Medical Curriculum," was completed on March 22, 1938 and made available to the membership at an informal luncheon attended by 120 people. Because the same problem is still with us, the full report is reproduced in this chapter as Appendix A.

Our senior society, APS, is also facing the same problem; readers may be interested in the documented communications in The Physiologist (11:197, 1968). It may also be interesting to compare Abel's conception in 1900 on the teaching of pharmacology, materia medica, and therapeutics in our medical schools (Philadelphia Med. Special Number on Medical Education, September 1, 1900).

Arthur L. Tatum, the 12th President of ASPET, was born on a farm by Wall Lake, Iowa, in 1884. He earned his B.S. at Penn College, Oskaloosa, Iowa, and his M.S. in Chemistry at the University of Iowa. After serving as an instructor in chemistry at the University of Colorado (1907-10), he became more interested in physiology and medicine and went to the University of Chicago, where he obtained his Ph.D. in physiology and pharmacology in 1913 and his M.D. at the closely associated Rush Medical College in 1914.

He was appointed instructor of physiology at the University of Pennsylvania (1915-16) and Professor of Pharmacology at the University of South Dakota (1917-18). He was then called back to the University of Chicago as assistant professor of pharmacology (1918-25) and was promoted to associate professor (1925-28). The University of Wisconsin invited him to be Professor in Pharmacology and Toxicology, and in 1929, after the death of Loevenhart, he was made Head of the Department.

Briefly, his research achievements were in the areas of endocrinology, stimulant analeptics, local anesthetics, chemotherapy with arsenicals in syphilis, and malaria. A more elaborate biography has been written by F. E. Shideman (Science 123: 449, 1956).

Tatum guided no less than 20 graduates in earning their Ph.D.'s in his department. These competent pharmacologists are now serving universities and other organizations.

Arthur served as ASPET Treasurer (1924-29) and Vice-President (1933-34), and was elected President for 2 successive terms. He was also a member of APS, SEBM, AMA, and the National Malaria Society. Before his retirement in 1954 he took summer trips to Peru, picking up the Spanish language; the Medical Faculty of San Marcos, Lima, conferred on him the honorary doctor's degree in 1948. Tatum died in 1955.

Thirtieth Annual Meeting—Toronto, Canada, April 26-29, 1939

Council and business sessions took place in the Royal York Hotel; officers and 20 new members were elected (Tables 3, 4). The loss of money in closed banks at Iowa City was revealed for the first time. The informal dinner was held at Walker House, with an attendance of 160. Edmunds spoke on the New Food and Drug Act (Sec. 505), which gave wider avenue of employment to pharmacologists.

At the third business session Edmunds spoke at some length, reminding members that our name is the Society for Pharmacology and Experimental Therapeutics, stressing the "Experimental Therapeutics," and pointing out that consideration should be given to electing men to membership who were interested in experimental therapeutics as well as electing pharmacologists.

Upon the urging of A. L. Tatum and M. H. Seevers, both at the University of Wisconsin, the newly elected President Oscar H. Plant called a

special Council meeting with the Editorial Board on July 3, 1939 in the pharmacological laboratory at the University of Chicago. The whole Council was present, but no Member of the Editorial Board was able to attend. The meeting lasted from 10:30 am to 10:00 pm. The chief objective was to find ways and means from the constructive suggestions of Tatum and Seevers to improve Society publication policies. The points discussed in detail were:

1. Creation of a Board of Publications Trustees
2. Such a board should be responsible to the Council, appoint the Editorial Board, and administer the finances of the journals
3. Board of Publications Trustees would serve as a referee board in case of disagreement between contributors and editors
4. Expansion of publication activity, stressing equally the importance of experimental therapeutics and toxicology
5. Presentation of the plan to the membership at the next Spring Meeting

Seevers's long writeup (12 pages) contained other measures to correct the weaknesses of our Society so that it could justify pharmacology as an independent discipline.

Thirty-First Annual Meeting—New Orleans, Louisiana, March 12-16,1940

Due to the unfortunate death of 0. H. Plant, Vice-President E. M. K. Geiling presided at both FASEB and ASPET meetings. There were 5 scientific sessions in ASPET.

Many urgent matters were taken up in the Council and business meetings. The minutes of the special Council meeting held on July 3rd were circulated on November 25, 1939 by the Secretary. Besides the election of officers, 1 honorary and 20 new members, the office of Editor-in-Chief was changed from P. D. Lamson to C. F. Schmidt, article Ill, Sec. 2 and Sec. 4b, of the constitution were removed, and nominating and membership committees were elected. The new officers are listed in Table 5 and the new members in Table 6. The amendment of the constitution allowed the scientists in the drug industry to join or rejoin ASPET. A dinner was held at La Louisiane, with an attendance of 140. No speeches were given, but a film of Abel taken in 1930 was shown, lasting more than an hour.

Oscar H. Plant served as ASPET President for 5 months before his untimely death. He was born in Lawrence, Kansas, and obtained his M.D. degree from the University of Texas in 1902. After graduation he took a part-time position as instructor in physiology in Texas and began to practice medicine. During these years he became interested in pharmacology, and in 1911 he joined A. N. Richards's department in Pennsylvania, advancing from assistant professor to Full Professor. In 1920 he was appointed Professor and Head of the Department of Pharmacology at the University of Iowa Medical College, Iowa City, where he spent the rest of his life.

From 1915 to 1920 he collaborated with A. N. Richards on the action of

caffeine on the kidney, from which they elaborated further work on glomerular filtration and absorption. At Iowa he was concerned with the action of volatile oils, anesthetics, and opium alkaloids on gastrointestinal motility. His last papers represented attempts to destroy morphine in the body by substances that altered tissue oxidation. He always considered teaching his first obligation. His machine shop was beautifully equipped, and he made many ingenious modifications of apparatus for use by his students and himself for research purposes.

Plant was a member of APS and SEBM. In 1927 he was invited to join the New York Committee on Drug Addiction to investigate morphine addiction and tolerance. He was 64 years old at the time of his death. Contemporary pharmacologists can recall his pleasant company, kind personality, and fairness.

TABLE 5. Meetings of ASPET

Meeting	*Place*	*Date*	*Officers Elected**
31st	New Orleans, La.	March 12-16, 1940	*President,* Eugene M. K. Ceiling *Vice-President,* Carl F. Schmidt Secretary, G. Philip Grabfield *Treasurer,* Erwin E. Nelson *Councilors:* Benjamin H. Robbins Clinton H. Thienes
32nd	Chicago,	April 15-19, 1941	*President,* Eugene M. K. Geiling *Vice-President,* Carl F. Schmidt *Secretary,* Raymond N. Bieter *Treasurer,* Erwin E. Nelson *Councilors:* Erwin G. Gross Ralph G. Smith
33rd	Boston, Mass.	March 31–April 4, 1942	*President,* Eli K. Marshall, Jr. *Vice-President,* Carl A. Dragstedt *Secretary,* Raymond N. Bieter *Treasurer,* Erwin E. Nelson *Councilors:* McKeen Cattell Ralph G. Smith
None		1943	*President,* Eli K. Marshall, Jr. *Vice-President,* Carl A. Dragstedt *Secretary,* Raymond N. Bieter *Treasurer,* Erwin E. Nelson *Councilors:* McKeen Cattell Ralph G. Smith

* Officers were elected to serve the following year.

Meeting	*Place*	*Date*	*Officers Elected*
None		1944	*President,* Erwin E. Nelson *Vice-President,* Charles M. Gruber *Secretary,* Raymond N. Bieter *Treasurer,* McKeen Cattell *Councilors:* Harry Beckman Nathan B. Eddy
None		1945	*President,* Erwin E. Nelson *Vice-President,* Charles M. Gruber *Secretary,* Raymond N. Bieter *Treasurer,* McKeen Cattell Councilors: Harry Beckman Nathan B. Eddy
34th	Atlantic City, N. J.	March 11-15, 1946	*President,* Maurice H. Seevers *Vice-President,* Harry B. van Dyke *Secretary,* Harvey B. Haag *Treasurer,* McKeen Cattell *Councilors:* Hamilton H. Anderson John C. Krantz, Jr.
35th	Chicago, III.	May 18-22, 1947	*President,* Maurice H. Seevers *Vice-President,* Carl A. Dragstedt *Secretary,* Harvey B. Haag *Treasurer,* K. K. Chen *Councilors:* Hamilton H. Anderson John C. Krantz, Jr.
36th	Atlantic City, N. J.	March 15-19, 1948	*President,* Carl A. Dragstedt *Vice President,* Harry B. van Dyke *Secretary,* Harvey B. Haag *Treasurer, K.* K. Chen *Councilors:* Arthur C. DeGraff Robert A. Woodbury Gordon A. Alles
37th	Detroit, Mich.	April 18-22, 1949	*President,* Carl F. Schmidt *Vice-President,* John C. Krantz, Jr. *Secretary,* Harvey B. Haag *Treasurer,* K. K. Chen *Councilors:* Robert A. Woodbury Thomas C. Butler Arthur C. DeGraff
1st Fall	Indianapolis, Ind.	November 17-19, 1949	Same

TABLE 6. New Members Elected

Year	*Number Elected*	*Names*	
1940	21	H. K. Beecher	J. T. Litchfield
		C. J. Carr	P. H. Long
		B. B. Clark	P. L. McLain
		J. H. Defandorf	J. E. Nadler
		J. H. Draize	M. H. Nathanson
		G. S. Eadie	E. P. Pick
		H. Essex	J. Seifter
		W. E. Evans	H. Silvette
		G. E. Fahr	W. W. Spink
		0. G. Fitzhugh	Otto Loewi (honorary)
		A. T. Kenyon	
1941	34	B. E. Abreu	F. P. Luduena
		G. A. Alles	M. K. McPhail
		R. C. Batterman	F. K. Oldham
		E. M. Boyd	S. Y. Pan
		A. C. Bratton	N. M. Phatak
		H. A. Braun	M. Prinzmetal
		Versa V. Cole	J. C. Rice
		J. M. Coon	P. P. T. Sah
		R. W. Cunningham	H. A. Shoemaker
		J. E. Davis	T. D. Spies
		W. B. Deichmann	R. T. Stormont
		D. D. Donahue	R. B. Tuohy
		J. K. W. Ferguson	B. J. Vos, Jr.
		B. K. Harned	J. H. Weatherby
		J. B. Hermann	J. C. Winter
		F E. Kelsey	R. A. Woodbury
		L C. Li	Paul N. Leech (posthumous)
1942 (by mail)	25	R. C. Adams	H. Molitor
		W. L. Adams	B. 0. Raulston
		0. Bodanskey	W. T. Salter
		J. G. M. Bullowa	E. Shorr
		K. K. Chen	A. E. Smith
		N. B. Dreyer	I. Starr
		P. R. Dumke	F. Steigmann
		D. W. Fassett	R. S. Teague
		D. Green	H. B. van Dyke
		C. A. Handley	A. D. Welch
		J. P. Hendrix	H. W. Werner
		E. L. Jackson	H. G. Wolff
		R. A. Lehman	
1944 (by mail)	33	0. W. Barlow	S. C. Cullen
		A. D. Bass	E. J. de Beer
		A. J. Becker	R. H. K. Foster
		K. H. Beyer, Jr.	N. Fugo
		C. I. Bliss	W. M. Govier
		H. F. Chase	E. R. Hart
		G. Chen	L. W. Hazelton

Year	Number Elected	Names	
1944 (continued)		S. Krop	F. E. Shideman
		W. S. Lawrence	R. B. Smith
		E. L. McCawley	G. W. Stavraky
		R. Mendez	M. R. Thompson
		W. Modell	Clara Torda
		G. K. Moe	K. Unna
		J. Morrison	J. A. Wells
		E. Oppenheimer	A. Wikler
		0. S. Orth	E. G. Williams
		E. Rovenstine	
1945 (by mail)	18	G. H. Acheson	R. D. Dripps
		R. P. Ahlquist	F. W. Ellis
		B. B. Brodie	H. D. Green
		H. D. Bruner	A. A. Hellbaum
		N. 0. Calloway	S. S. Kety
		G. L. Cantoni	J. P. Quigley
		M. B. Chenoweth	C. C. Scott
		W. C. Chu	J. A. Shannon
		R. H. Dreisbach	J. L. Svirbely
1946	23	Elizabeth M. Cranston	P. Hitchcock
		B. N. Craver	E. Loew
		E. H. Dearborn	D. F. Marsh
		H. L. Dickison	P. A. Mattis
		V. A. Drill	L. Peters
		K. P. DuBois	L. A. Rantz
		H. Eagle	H. Robinson
		A. Gellhorn	D. A. Rytand
		C. L. Gemmill	L. H. Schmidt
		Mildred G. Gray	C. 0. Siebenmann
		Margaret Grieg	C. P. Wangeman
		A. McG. Harvey	
1947	35	D. D. Bonnycastle	P. S. Larson
		W. J. Dieckmann	E. P. Laug
		J. R. do Valle	D. Lehr
		R. L. Driver	W. Lipschitz-Lindley
		S. Ellis	J. M. Little
		E. W. Emmart	D. I. Macht
		N. Ercoli	F. N. Martin, Jr.
		G. E. Farrar, Jr.	B. P. McNamara
		R. M. Featherstone	C. F. Morgan
		J. K. Finnegan	M. Nickerson
		H. G. Glass	F. S. Phillips
		A. Goth	R. K. Richards
		T. Guerra	W. F. Riker
		C. H. Hine	G. Sayers
		L. Karel	M. Schubert
		A. C. Kirchhof	H. Tabor
		G. B. Koelle	E. L. Way
		A. M. Lands	

Year	*Number Elected*	*Names*	
1948	32	T. C. Barnes	C. J. Lambertson
		J. H. Baxter	J. H. Last
		W. P. Boger	A. H. Lawton
		W. M. Booker	E. W. Ligon, Jr.
		R. W. Brauer	T. A. Loomis
		N. N. De	G. L. Maison
		B. De Boer	J. Molland
		H. W. Elliott	D. S. Riggs
		A. E. Farah	T. H. Schultz
		A. Goldstein	E. T. Stohlman
		C. M. Gruber, Jr.	J. W. Stutzman
		C. Gutierrez-Noriega	E. A. Swinyard
		P. N. Harris	H. A. Walker
		H. C. Hodge	M. R. Warren
		D. D. Irish	C. V. Winder
		H. K. Iwamoto	E. H. Wood
1949	26	M. Belkin	C. J. Kensler
		J. G. Benton	R. Koster
		F. M. Berger	M. E. Krahl
		E. Bueding	E. Kun
		R. L. Cahen	G. Lu
		G. P. Child	R. Meier
		W. G. Clark	H. W. Newman
		K. S. Grimson	F. W. Oberst
		T. J. Haley	E. M. Papper
		R. N. Harger	F. W. Schueler
		H. W. Hays	W. C. Wescoe
		R. A. Huggins	L. C. Woods
		H. lsbell	W. B. Youmans
1950	46	D. M. Aviado, Jr.	C. P. Kraata
		H. R. Bierman	H. S. Kupperman
		L. J. Boyd	J. R. Lewis
		M. J. V. Brook	0. H. Lowry
		C. M. Brooks	F. C. Macintosh
		R. V. Brown	T. H. Maren
		A. S. V. Burgen	L. C. Mark
		J. C. Castillo	E. A. Maynard
		Y. C. Chin	K. Mezey
		C. F. Code	A. J. Plummer
		M. E. Davis	L. 0. Randall
		G. M. Everett	R. F. Riley
		A. Faulconer, Jr.	L. W. Roth
		R. B. Forney	J. V. Scudi
		J. H. Gaddum	C. B. Shaffer
		G. S. Gordon, Jr.	0. H. Siegmund
		C. W. Gowdey	H. E. Stokinger
		D. A. Greenwood	D. B. Taylor
		F. G. Henderson	R. Tislow
		J. 0. Hoppe	J. E. P. Toman
		E. Jacobsen	D. T. Watts
		R. Jones	R. Wegria
		K. K. Kimura	V. A. Westfall

Year	Number Elected	Names	
1951	47	J. A. Bain	T. H. Li
		I. T. Beck	L. Loewe
		E. M. Bridge	F. C. Lu
		Barbara B. Brown	M. Aiazzi-Mancini
		B. Calesnick	R. C. Millican
		R. T. Capps	J. H. Moyer
		R. J. Cazort	R. G. Page
		Y. P. Chen	L. G. Parmer
		H. I. Chinn	J. A. Richardson
		G. E. Cronheim	S. H. Rinzler
		J. R. DiPalma	E. Rothlin
		L. L. Eisenbrandt	I. H. Slater
		F. C. Ferguson, Jr.	C. C. Smith
		W. A. Freyberger	J. N. Spencer
		S. Garb	J. E. Steinhaus
		T. H. Greiner	A. Stoll
		E. L. Hansen	D. B. Tyler
		S. C. Harvey	E. F. Van Maanen
		C. Heymans	K. G. Wakim
		W. C. Holland	J. H. Willis
		F. E. Hunter, Jr.	A. Wollenberger
		G. Joachimoglu	D. M. Woodbury
		W. Kalow	V. Zapata-Ortiz
		A. S. Keats	

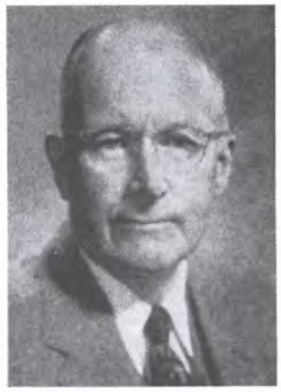
Thirty-Second Annual Meeting—Chicago, Illinois, April 15-19,1941

There were 7 dual (A and B) scientific sessions. Three symposia were sponsored: biometrics, teaching of pharmacology, and myoneural junction. The Council and business meetings took place in the Stevens Hotel (now the Hilton). The usual election of officers and 34 new members, one posthumously, proceeded (Tables 5, 6). A total loss of $300.00 in the Farmers' Loan and Trust Co., Iowa City, was reported. An informal dinner was held at the Chicago Women's Club, with 202 members and guests present. C. W. Muehlberger spoke on the adventures of a pharmacologist in a coroner's office.

Eugene M. K. Geiling presided as ASPET President in both 1941 and 1942. His close friends call him Pete. He was born in the Orange Free State, South Africa, in 1891. He earned his A.B. from the University of South Africa in 1911. He migrated to the US and became a naturalized citizen; he pursued his advanced studies at the University of Illinois and received his M.S. in 1915 and his Ph. D. in pharmacology in 1917. After 2 years of teaching in South Africa, Geiling returned to this country, first to Yale University, and then joined Abel's department at Johns Hopkins Medical School in 1921. Meanwhile he studied medicine and obtained his M.D. in 1923. For 15 years he was Abel's devoted pupil and confidential colleague. He was not married, and looked on Abel and his wife as his parents. In 1936 the University of Chicago called on him to develop an independent Department of Pharmacology, separate from physiological chemistry.

PAST-PRESIDENTS

14. Eugene M. K. Ceiling
1941-1942

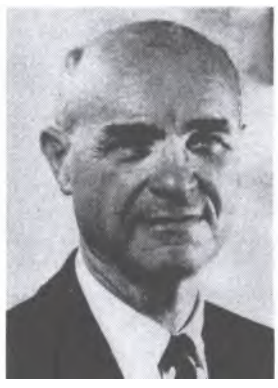


15. Eli K. Marshall, Jr.
1942-1944

16. Erwin E. Nelson
1944-1946 (Spring)

17. Maurice H. Seevers
1947-1948

18. Carl A. Dragstedt
1949 (Spring)



19. Carl F. Schmidt
1949 (Fall)-1951 (Spring)

In a period of 21 years, Geiling supervised a substantial number of M.S. and Ph.D. candidates at Chicago. Those who qualified for these degrees are now serving in various universities, government agencies, and industrial laboratories. His sympathetic attitude and patient coaching as a teacher are well known. His own research work covers several areas: nutritive value of diamino acids, interrelationship of endocrines, pharmacological action of protein-split products, insulin, and use of active medicinally important drugs, with special reference to digitoxin, attracted great attention from pharmacologists all over the world. He and K. P. DuBois published a textbook on toxicology in 1959. During his tenure the University of Chicago named him the Frank P. Nixon Distinguished Service Professor in 1941. He received the Mendel Medal from Villanova College and the honorary D.Sc. from St. Johns College, New York.

Geiling has been a member of ASPET since 1925 and has accepted assignments in various capacities. He is also a member of APS, ASBC, AMA (Council on Drugs and Chairman of Research Grants Committee), Central Society for Clinical Research, Association of American Physicians, Association for Study of Internal Secretions, and German Pharmacological Society. He was President of SEBM from 1947 to 1949. After his retirement in 1957, he served as Chief Medical Officer of the FDA and as Visiting Professor at several universities (Minnesota, Michigan, Rochester, Cornell, Alabama, and Howard). He is now a resident of Washington, D.C.

Thirty-Third Annual Meeting—Boston, Massachusetts, March 31–April 4,1942

The Council and business meetings were held in the Brunswick Hotel; election of officers and 25 new members was the routine matter (Tables 5, 6). The Treasurer was instructed to buy two defense bonds ($500 and $100). The dinner was attended by 159 persons; the speaker was George Sarton on men of science in time of war.

ASPET During World War 11-1943-1945

After the 1941 Pearl Harbor attack and declaration of war, the Executive Committee of FASEB canceled the 1943 meeting scheduled for Cleveland. The Council of ASPET carried on business by mail. Abstracts were published in the first volume of *Federation Proceedings.* G. B. Wallace succeeded C. F. Schmidt as Editor-in-Chief of JPET.

In January 1944 abstracts were again collected for publication in *Federation Proceedings,* including a symposium on analgesics. President E. K. Marshall, Jr. called a Council meeting in the Hotel Stafford, Baltimore, Maryland, April 19-20, 1944, including the chairmen of nominating and membership committees. Editor's and Treasurer's reports were read. The nominated officers and 33 new members were submitted to the membership for voting by mail; they were duly elected (Tables 5, 6). The following members were serving in the armed forces up to July 15, 1944:

Oscar Bodansky, Major, M.C.
James H. Defandorf, Colonel, C.W.S.

Eugene F. DuBois, Captain, M.C.
J. K. W. Ferguson, Wing Commander, R.C.A.F.
Alfred Gilman, Major, Sa.C., USA
G. Philip Grabfield, Colonel, USA
Daniel Green, Captain, USA
Frank L. Kozelka, Captain, Sa.C.
Harry A. Kuhn, Colonel, C.W.S.
Perrin H. Long, Colonel, USA
P. L. McLain, Major, USA
J. Ernest Nadler, Lieutenant, USNR
Morris Rosenfeld, Lieutenant, USA
Paul K. Smith, Major, USA
Andrew B. Stockton, Commander, USNR
Robert T. Stormont, Lieutenant, USNR
Edward B. Tuohy, Captain, USA
Arthur M. Walker, Major, USA
J. H. Weatherby, Lieutenant, USNR
Irwin C. Winter, Captain, USA

E. K. Marshall, Jr., 15th President of ASPET, never presided before the full membership because of the war. Yet he used his initiative to keep Society activities running as usual. He was born in Charleston, South Carolina, in 1889 and graduated with a B.S. from the College of Charleston in 1907. He matriculated at Johns Hopkins University to study chemistry and took his Ph.D. in 1911.

In the fall of 1911 Marshall was appointed as an assistant in physiological chemistry at Johns Hopkins Medical School, a distance from the old campus but in the same city. Three years later Abel invited him to join the Department of Pharmacology. Marshall's own story of his experiences with Abel from 1913 to 1923 *(Bull. Johns Hopkins Hosp.* 101: 311, 1957) told how he obtained his M.D. in an unorthodox manner and also became a pharmacologist. He served the Chemical War Service during World War I at Washington (1917-18) and discovered the racial difference of reaction to mustard gas, which is now one of the examples of pharmacogenetics. On his return to Hopkins he was immediately approached by Washington University, St. Louis, and appointed Professor of Pharmacology. Before long he was recalled to Hopkins to succeed W. H. Howell as Professor of Physiology (1921). After 11 years he was transferred to the Department of Pharmacology to succeed Abel in 1932 and retired in 1955.

It is obvious that Marshall was a versatile man—a chemist, a physiologist, a pharmacologist, and a physician. In physiology he proved the tubular secretion of urine and measured the cardiac output of the unanesthetized dog. In pharmacology he made important contributions to sulfonamide and antibiotic chemotherapy. During World War II he developed sulfapyridine and sulfaguanidine and newer antimalarial synthetics.

Marshall was elected a member of ASPET in 1915. He was also a member of APS, ASBC, Association of American Physicians, National Academy of Sciences, and American Philosophical Society. He was Editor-in-Chief of JPET from 1932 to 1937. After his retirement he was Managing Editor of the *Bulletin of Johns Hopkins Hospital* (1955-58), and for 4 years he was Visiting Professor at the University of Florida College of Medicine.

Marshall died in 1966 at the age of 76. His former colleague, T. H. Maren, wrote a delightful biography about him *(Pharmacologist* 8: 90, 1966). Some of his friends can

recall the pleasant conversations in his room (by invitation) during FASEB meetings. He was a slender, tall man and spoke with a clear, loud voice. Although serious most of the time, he never missed a chance to tease Abel. In 1928 Alfred Smith was running against Herbert Hoover for the presidency. The voting public seemed to feel that Hoover was better educated; it was whispered that Smith was actually less qualified. Marshall, after joining the pharmacology luncheon, told the following story. After the last speech before election Smith drove to the country to shoot a few sparrows, but he forgot to bring his weapon with him. At the roadside he saw a telephone and called his butler Pat, an Irishman, to send out his gun to a certain junction. With his usual nasal tone, he could not make himself understood. He repeated, again no luck; he finally said, "Pat, I will spell it for you, I want my gun—g for Jesus, u for Europe, and n for pneumonia." Abel laughed and remarked "It is just as clever as Marshall's research." Anyone repeating this story will never fail to bring down the house in an after-dinner speech.

President Erwin E. Nelson followed the same procedure for 1945 as in 1944. The abstracts were collected in February for publication in *Federation Proceedings.* The Council and the chairmen of nominating and membership committees assembled in the Department of Pharmacology of Western Reserve University School of Medicine, Cleveland, Ohio, June 10, 1945. R. G. Smith replaced the ailing H. 0. Calvery. The same slate of officers and 18 new members were elected by mail. The Treasurer's and Editor's reports were read and approved.

Thirty-Fourth Annual Meeting—Atlantic City, New Jersey, March 11-15, 1946

The arrangements were made by C. F. Schmidt, and E. E. Nelson presided over the ASPET meetings. There were 166 scientific papers, plus 36 read by title. Three sections ran simultaneously. A symposium on advances in pharmacology resulting from war research was chaired by A. N. Richards. Other declassified subjects occupied almost 4 sections—diisopropyl fluorophosphate (DFP); 2,2-bis-(p-chlorophenyl)-1,1,1-trichloroethane or DDT; malarial and bacterial chemotherapy; and 2,3-dithiopropanol or British antilewisite (BAL).

Officers and 23 new members were elected for the following year, with M. H. Seevers chosen as President (Tables 5, 6). The informal dinner was held on March 14th. For the only time the minutes of the business meetings were published verbatim *(Federation Proc.* 5: 437, 1946) before *The Pharmacologist* made its appearance in 1959. In FASEB William H. Chambers succeeded D. H. Hooker as Secretary-Treasurer, but in less than a year Milton 0. Lee replaced Chambers.

Erwin E. Nelson was president for 3 years, but because of the war he presided over ASPET business meetings only in 1946. As described above he steered the Society to almost prewar normalcy. Nelson was born in Springfield, Missouri, in 1891. He graduated with a B.S. from Drury College in 1914 and an A.M. in 1916; he earned his Ph.D. in physiology and pharmacology in 1920 from the University of Missouri. He

was appointed assistant professor of pharmacology at the University of Michigan Medical School, where he studied medicine and graduated with an M.D. in 1926. He was promoted to associate professor in 1927 and to Professor in 1936. He was called to head up the Department of Pharmacology at Tulane University in 1937, where he taught for 6 years. In 1943 Nelson accepted the invitation of Burroughs Wellcome and Co., Inc., N.Y., to become Director of Research, but after 3 years he joined the FDA as Chief (1947-50) and then as Medical Director (1950-52). His final appointment was as the Director of the Department of Pharmacology, St. Louis University Medical School (1952-57). He retired in Albuquerque, New Mexico, and died in 1966, at the age of 75.

Nelson was noted for his work on the bioassay of ergot, posterior pituitary extracts, and analgesics. He was a member of APS, SEBM, AMA, Revision Committee of USP (1930-47), and Committee on Drug Addiction and Narcotics, NRC (1948-58).

Nelson was tall and dignified; no biography could be more accurate than the one written by his closely associated colleague, R. G. Smith *(Pharmacologist* 9: 109, 1966).

Thirty-Fifth Annual Meeting—Chicago, Illinois, May 18-22, 1947

This meeting was held in the Stevens Hotel (now the Hilton). There were signs of disintegration of FASEB. The following excerpt from a letter written by Baird Hastings, who was serving as Chairman of the Executive Committee, shows the existence of crisis.

> I am delighted to hear that you are to address the Federation on its history. There have been numerous pressures to disband it, but it has always survived.
>
> One occurred in 1947 when I was President of the Biochemists and Chairman of the Federation Executive Committee. I remember that at a meeting of the Committee, at one point, I pounded on the table and declared, "I am not here to preside over the dissolution of this Federation!" And Maurice Seevers supported me vociferously. So another crisis was passed.

It was only the rapid growth of the organization that made its management difficult. The constituent societies were developing their disciplines without letup. M. 0. Lee, with his youthful enthusiasm, kept FASEB advancing in spite of the handicap. The scientific papers of ASPET spread into 3 simultaneous sections, with 80 papers read by title. The minutes of the business meetings were no longer published in *Federation Proceedings.* Officers and 35 new members were properly elected (Tables 5, 6), as well as members of nominating and membership committees. The annual dinner was resumed, and the first Abel Award was presented to George Sayers, who was then at the University of Utah Medical College (see Chapter 7, Table 18).

Maurice H. Seevers is one of the most eminent members of ASPET, a successor to Abel, Cushny, and Edmunds. He contributed much to the Society at the most crucial times. His close friends call him Mose. He was born in Topeka, Kansas, in 1901. He graduated A.B. from Washburn College, Topeka, in 1924 and received his

Ph.D. from the University of Chicago and his M.D. from Rush Medical School in 1930. Those who believe in self-support (entirely) may be interested in Seevers's undergraduate and graduate extracurricular activities. At Washburn he was senior class president and captain of the football team. When he was at the University of Chicago and Rush Medical School, he was head waiter of all dining halls (Commons, Noyes, School of Education, Graduate Club, and dormitories). He was head gateman of Stagg Field and Soldiers Field when the University of Chicago played its home games and when Notre Dame University used Stagg Field while its own stadium was being constructed. During the "long-count" Dempsey-Tunney heavyweight title bout, Seevers recruited 700 students to man the 50 gates from the neighboring universities (Chicago, Northwestern, Illinois, Loyola, Armour, etc.). During his senior year at Rush Medical School he gave the whole course in pharmacology at Loyola Medical School after the death of S. A. Mathews (a founder of ASPET).

Seevers's academic appointments started early: research fellow in pharmacology, University of Chicago (1926-28); instructor, University of Loyola; assistant professor of pharmacology, University of Wisconsin (1930-34), intern, University of Wisconsin General Hospital (1930-32), associate professor, University of Wisconsin (1934-42); Professor and Chairman of the Department of Pharmacology, University of Michigan Medical School (1942–present), and Associate Dean (1947-50).

Seevers is an authority on anesthesiology, drug addiction and tolerance, and respiratory physiology. He is a member of APS, SEBM, AMA, and Central Society for Clinical Research. His services to societies and governments range far and wide: Chairman, Section of Experimental Medicine and Therapeutics (1952-53); Council on Pharmacy and Chemistry, now the Council on Drugs (1952-62); Committee on Alcoholism and Drug Dependence (1964–present); and Chairman, Committee on Tobacco and Health, AMA (1964–present); Board of Scientific Councilors, National Heart Institute; Surgeon-General's Committee on Smoking and Health, Department of Health, Education and Welfare (1962-63); Chairman, Committee on Behavior Pharmacology, Psychopharmacology Service Center (1964); and American Coordinator, U.S.-Japan Cooperative Science Program on Drug Abuse, National Science Foundation-Japan Science Council (1964–present). Internationally he is a member of the Expert Advisory Panel of Drugs Liable to Produce Addiction, WHO (United Nations) (1951–present); Second Medical Mission to Japan (1951); U.S. National Committee of International Union of Physiological Sciences (IUPS) (1955-59); Chairman, American Team, Conference on Physiological and Pharmacological Basis of Anesthesiology, Japan (1956); Consultant to Minister of Public Health, Thailand (1959); and Consultant to Minister of Health and Welfare, Japan (1963–present). He was a member of the Editorial Board of *Physiological Reviews* (1934-51) and *Proceedings of the Society for Experimental Biology and Medicine* (1944-59) and was on the Editorial Committee of the *Annual* Review *of Pharmacology* (1952-62). He was responsible for the establishment of the Board of Publications Trustees (BPT) of ASPET in 1948 and was its Chairman from 1949 to 1961. He was decorated with the Third Class of the Order of the Rising Sun (1963) and Second Class of the Order of the Sacred Treasure (1967) in Japan. He received the Distinguished Service Award of the Washburn Alumni Association in 1964, and he was selected Russell Lecturer, University of Michigan, in 1967 and Dent Memorial Lecturer, Kings College, University of London, in 1968.

Seevers is always friendly to his acquaintances and cordial to his colleagues. At ASPET meetings, young pharmacologists can often find him in the hotel lobby for advice. Before World War II, Japanese pharmacologists sailed for Germany for their postgraduate studies, but now they fly to Ann Arbor to work in Seevers' laboratory. His influence on Japanese pharmacology will last for generations.

Thirty-Sixth Annual Meeting—Atlantic City, New Jersey, March 14–19, 1948

The ASPET headquarters hotel was Haddon Hall, M. H. Seevers, Chairman of the Executive Committee, presided at both FASEB and ASPET meetings. Again 3 scientific sessions took place at the same time. L. G. Goodman gave a brilliant summary on adrenergic blockade and Dibenamine. There was a joint session on biometrics by the American Statistical Association and ASPET.

New officers and 32 new members were elected (Tables 5, 6). Treasurer's and Editor's reports were received and approved. It was decided to publish *Pharmacological Reviews.* After the informal dinner, the Abel Award was presented to J. Garrott Allen, a surgeon (see Chapter 7, Table 18).

Thirty-Seventh Annual Meeting—Detroit, Michigan, April 18–22, 1949

There were 280 abstracts published in *Federation Proceedings.* Papers were read in 3 simultaneous sessions each day. Three Council meetings, 3 Board of Publications Trustees meetings, and 2 ASPET business meetings were held in the Statler Hotel. It was a year of expansion. Officers and 26 new members (Tables 5, 6) were elected. The first volume of *Pharmacological Reviews* appeared as a supplement of JPET.

The informal dinner, held April 21, 1949, was attended by a capacity audience. President Carl A. Dragstedt led off with his witty speech "Time Marches On!" Then came T. Sollmann's unpublished but often-quoted address entitled "The Early Days of the Pharmacological Society." Mark Nickerson received the Abel Award (see Chapter 7, Table 18) to complete the program of the evening.

Carl A. Dragstedt served as ASPET President for 1 year. He was born in Anaconda, Montana, in 1895. He graduated from the University of Chicago with an S.B. (1916), M.S. (1917), and Ph.D. (1923) and from Rush Medical College with an M.D. (1921). He interned at Presbyterian Hospital, Chicago, where he administered ethylene to the first patient after A. B. Luckhardt discovered its anesthetic property. He practiced medicine in Kenmare, North Dakota, from 1923 to 1926.

Dragstedt held academic appointments while he was in graduate training: assistant in physiology, University of Chicago (1916-21), and instructor in pharmacology, University of Iowa (1917-18). Finally he was called to Northwestern University Medical School to become Professor and Chairman of the Department of Pharmacology (1926-64). For more than 35 years he has taught pharmacology to medical and graduate students. His research work covers anaphylaxis, histamine, allergy, epinephrine, digitalis, intestinal obstruction, and the physiology of bone. His literary achievements are as outstanding as his scientific contributions.

Dragstedt is a member of APS, Institute of Medicine of Chicago, Phi Beta Kappa, and Alpha Omega Alpha. He was President of SEBM (1951-53) and of the Chicago Literary Club. He was Chairman of the Section of Experimental Medicine and Therapuetics, AMA (1946-1948), and Pharmacology Study Section, NIH (1952-53). He

served on the Revision Committee, USP (1940-60), and on the Council on Drugs, AMA (1950-62). Since he was named Professor Emeritus in 1964 he has been active in writing scientific and literary articles. At the luncheon for Past-Presidents of ASPET at Chicago in 1967, he passed out the following:

AUNTIE HISTAMINE

It was: 'mine, 'mine, 'mine
In the days of Histamine,
And we used to hold debates
As to its vices.
Now it's Auntie Histamine
That dominates the scene
And has a banner with
A lot of strange devices.

It says: "mine, mine, mine,
Every uncle needs an Auntie Histamine,"
All the nephews and the nieces
Constantly repeat the thesis,
That he needs one just
To keep his nostrils clean.

But the Aunties must wear panties,
Say the U.S. Vigilantes,
So their assets and their defects
Won't be seen;
So we now have regulations
To control our 'mines relations
And decide which 'mine
We really ought to mean.

Yes it's 'mine, 'mine, 'mine
Uncle Sam is fond of Auntie Histamine;
In spite of some abuses
She has now a hundred uses,
And he taxes every one
That he has seen.

Carl is tall, gentle, fair, and friendly. His humor is public and in writing is enjoyed by all his friends. During the summer months he and Mrs. Dragstedt spend their leisure time in a cottage on Elk Lake in Rapid City, Michigan. This is part of a colony founded by A. J. Carlson and A. B. Luckhardt and his brother Lester.

First Fall Meeting—Indianapolis, Indiana, November 17-19, 1949

Because there is much continuity between Spring and Fall Meetings each year, brief accounts of the Fall Meetings are inserted in the appropriate places. The initiation of a second meeting put the terms of office on a fiscal-year basis. Thus Carl F. Schmidt presided at this meeting in the Hoosier State, only 137 miles southeast of La Porte, where Abel taught in the high school 70 years previously. The scientific papers were presented at the Indiana University School of Medicine; the 80 abstracts were mimeographed before the meeting and published in JPET (98: 1, 1950). In the Council and business meetings, the

prominent item was the planning for an international pharmacological congress. Harold R. Hulpieu headed a small local committee and arranged the gathering very smoothly for ASPET, even though for the first time.

Thirty-Eighth Annual Meeting—Atlantic City, New Jersey, April 17-21, 1950

Scientific sessions again took place 3 at a time each day. For the first time each paper was individualy numbered in the program (844-1089), but was published unnumbered in *Federation Proceedings;* 33 papers were read by title. Officers and 46 new members were elected. There was a long list of prominent European pharmacologists recommended for honorary membership but no action was taken by ASPET. C. R. Spealman, Chief, Physiology Branch, Civil Aeronautics Administration, asked for advice regarding "drugs which pilots and crews are warned against taking prior to or during periods of duty." President Schmidt and the Council discouraged the use of antihistaminics, streptomycin, barbiturates, and amphetamine. Otto Loewi was the dinner speaker. 0. Krayer's invitation for the Fall Meeting on behalf of 3 Boston medical schools was accepted.

Carl F. Schmidt, 19th President of ASPET, was born in Lebanon, Pennsylvania, in 1893. He earned the A. B. from Lebanon Valley College in 1914 and the M.D. from the University of Pennsylvania in 1918. He interned at the University of Pennsylvania Hospital, 1918-19.

A. N. Richards invited him to become instructor in the department of pharmacology at his alma mater. There he started his 40-year career in pharmacology—and more. He was promoted to Professor and Chairman of the Department to succeed Richards in 1931. He investigated kidney function, pharmacology of respiration, and cerebral and coronary circulation. When he was called to Peking Union Medical College for 2 years (1922-24), he took on a major share of the study of ephedrine, an alkaloid of a Chinese herb, Ma *Huang.* After he became Professor Emeritus in 1959, he was Research Director of the Aviation Medical Research Laboratory at Johnsville, Pennsylvania, US Navy, and developed space pharmacology in a language alien to general pharmacologists *(Physiologist* 11: 30, 1968).

Schmidt is a member of ASPET, APS, SEBM, Association of American Physicians, National Academy of Sciences, American Academy of Arts and Sciences, and Aerospace Medicine Association. He served as Managing Editor of JPET (1940-42) and of *Circulation Research* (1958-62). He was Consultant to the Surgeon-General, US Army, and the Veterans Administration. For the USPHS, he was Chairman, Pharmacology Study Section (1947-51), member, Physiology Study Section (1947-48), and Chairman, International Fellowship Committee (1963-64). He was the man responsible for the discovery of Atlantic City, N. J., as a suitable place for the annual FASEB meetings.

Thousands of medical and dozens of graduate students appreciate his conscientiousness in teaching. He makes learning pharmacology easy. His kindness and gentle disposition win him countless friends.

Schmidt received an honorary D.Sc. from Lebanon Valley College in 1955 and from the University of Pennsylvania in 1964. He is an honorary member of the Pharmacology Section, Argentine Medical Association, and a visiting lecturer both at home

and abroad: University of Oregon Medical School (1943), College of Physicians of Philadelphia (1943), University of Louisville (1946), Unitarian Medical Mission to Germany (1948), Harvey Society (1949), University of London (1949), and University of the Philippines (1955). The American Heart Association conferred on him the Award of Merit in 1962; the German Pharmacological Society, the Schmiedeberg Plakette in 1963; and Charles University, Prague, an honorary Doctor of Medical Sciences. Schmidt was President of the First and Second International Pharmacological Meetings at Stockholm and Prague, respectively, and Honorary President of the International Union of Pharmacology in 1966. The biography of a great man, even written by a close friend, cannot be as interesting as an autobiography. Fortunately Carl has given us one *(Ann. Rev. Physiol.* 23: 1, 1961).

Second Fall Meeting—Boston, Massachusetts, November 12-15, 1950

President Schmidt asked 0. Krayer, Chairman of the Local Committee on Arrangements, to join the Council meeting. As at the First Fall Meeting, guests (nonmembers) outnumbered the members, 205 to 137. George Wald spoke at the dinner on "Biochemical Evolution." Abstracts of papers were again published in JPET. BPT and business meetings were also held.

Thirty-Ninth Annual Meeting—Cleveland, Ohio, April 29–May 3, 1951

All the meetings were held at the Statler Hotel. President Carl F. Schmidt was in the chair at the Council and business meetings and was toastmaster when Carl Wiggers was dinner speaker. Officers and 47 new members were elected (Tables 6, 7). Membership and nominating committees were also elected. Omaha, Nebraska, was accepted as the site for the next Fall Meeting.

Third Fall Meeting—Omaha, Nebraska, October 15 –17, 1951

The officers elected at the Spring Meeting in Cleveland took office on July 1, 1951. President McKeen Cattell presided at both Council and business meetings at Hotel Blackstone. A. R. McIntyre was the Chairman of the Local Committee on Arrangements. The abstracts of papers were published in JPET. On behalf of BPT M. H. Seevers reported on the operating costs of JPET and Pharmacological Reviews.

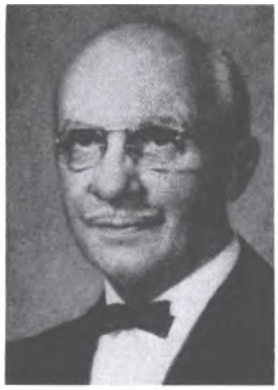
McKeen Cattell, 20th President of ASPET, was born in Garrison, New York, in 1891. He studied at Cambridge, England, before he took his degrees—B.S. from Columbia in 1914; and from Harvard, an A.M. in 1917, Ph.D. in 1920, and M.D. in 1924. He was teaching fellow at Harvard in physiology (1914-17) and in pharmacology (1917-24). Then he went to Cornell Medical College and pursued his teaching and research career, first in physiology (1924-27) and then in pharmacology as associate professor and Professor and Head of the Department (1927-59).

His carefully planned research includes the action of drugs on traumatic shock, double innervation of single muscle fibers from more than one spinal cord

PAST-PRESIDENTS

20. Mc**Keen Cattell**
1951 (Fall)-1952 (Spring)

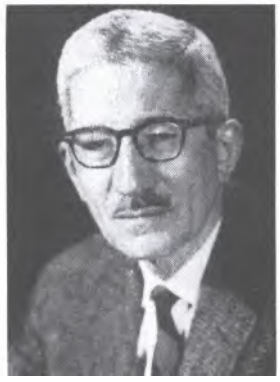
21. K. K. Chen
1952-1953



22. Harvey B. Haag
1953-1954

23. Charles M. Gruber
1954-1955

24. Erwin G. Gross
1955-1956



25. Harry Beckman
1956-1957

segment, the physiological effects of hydrostatic pressure, and the introduction of papillary muscle technique for the demonstration of positive inotropic action of digitalis and its glycosides. In his enviable list of more than 120 communications, one must admire his collaboration with outstanding investigators: J. Loeb, W. B. Cannon, E. D. Adrian, H. Gold, J. Travell, and W. F. Riker, Jr.

President Cattell is a member of APS, SEBM, Harvey Society, and AMA, and an honorary member of British Pharmacological Society, International College of Surgeons, and Japanese Pharmacological Society. He was a member of Mayor La Guardia's Marihuana Committee (1939-42), USP Digitalis Assay Committee (1940-50), Insect Control Committee, OSRD (1944-45), Pharmacology Study Section, USPHS (1946-48), and Unitarian Service Committee to Austria and Colombia (1947-48). He received an honorary Sc.D. from the University of Antioquia. He was President of Alpha Omega Alpha while at Harvard (1922-24), Associate Editor and Managing Editor of JPET (1942-46 and 1946-50, respectively), Chairman of Physiology-Pharmacology Committee, NRC-NAS, Chairman of BPT of ASPET (1948), Chairman of Section on Experimental Medicine and Therapeutics, AMA (1949-50), invitational lecturer at 7 British medical schools (1951), Editor of *Journal of New Drugs* (now *Journal of Clinical Pharmacology),* and founder and President of American College of Clinical Pharmacology and Chemotherapy (1963).

His co-workers all have affection for him, and his kindness and unselfishness are extended to friends outside of his department. He is a preserver of important documents; he kept the whole set of *Federation Yearbook* and presented it to the Federation Library. Although he is modest and appears quiet, he is full of humor. Before introducing the speaker, J. H. Burn, at the ASPET dinner on April 16,1952, he told this story about his trip to Birmingham, England, the year before:

> The day was spent with my hosts visiting the numerous historical relics associated with William Withering, the discoverer of the therapeutic action of digitalis—his home, his manuscripts, his collection of digitalis plants, his grave. It was during the winter in the midst of a severe shortage of coal. The subject of a talk I was to give was digitalis, and I felt I owed some sort of an apology, so I began with the remark that to talk on that subject in Birmingham was comparable to bringing coal to Newcastle. The point of this remark collapsed when, much to the amusement of everyone, a student in the back row shouted—"but that wouldn't be a bad thing these days!"

Fortieth Annual Meeting—New York City, April 14-18, 1952

All the Council and business meetings were held at Hotel Statler under President McKeen Cattell. This was the first year that the Past-President became a member of the Council, and the President-Elect automatically succeeded the one before him. Heretofore, the Vice-President presided only in the absence of the President and might not be nominated for the office of President, as shown in the FASEB Directory (p. 32, 1968). As with the preceding year, the papers were numbered consecutively in the program *(Federation Proc.* 10: 479, 1951), although the abstracts were not numbered but arranged alphabetically according to Societies. Officers and 41 new members were elected (Tables 7, 8) as well as membership and nominating committees. In the four Council and two business meetings, discussions were held on the campus for the Fall Meeting and establishment of an international pharma-

cological congress in connection with the XIXth International Physiological Congress at Montreal. The BPT report was accepted with appreciation. Attendance at the pharmacology dinner was 300; J. H. Burn, the dinner speaker, stressed the important role of the pharmacologist in scientific teamwork.

TABLE 7. Meetings of ASPET

Meeting	*Place*	*Date*	*Presiding Officers**
38th Spring	Atlantic City, N. J.	April 17-21, 1950	*President,* Carl F. Schmidt *Vice-President,* McKeen Cattell *Secretary,* Harvey B. Haag *Treasurer,* K. K. Chen *Councilors:* Thomas C. Butler Arthur C. DeGraff Louis S. Goodman
2nd Fall	Boston, Mass.	November 12-15, 1950	Same
39th Spring	Cleveland, Ohio	April 29—May 3, 1951	Same
3rd Fall	Omaha, Nebr.	October 15-17, 1951	*President,* McKeen Cattell *President-Elect,* K. K. Chen *Secretary,* Carl C. Pfeiffer *Treasurer,* Robert P. Walton *Councilors:* Thomas. C. Butler Louis S. Goodman Peter K. Knoefel
40th Spring	New York, N.Y.	April 14-18, 1952	Same
4th Fall	Madison, Wis.	September 8-10, 1952	*President,* K. K. Chen *President-Elect,* Harvey B. Haag *Past-President,* McKeen Cattell *Secretary,* Carl C. Pfeiffer *Treasurer,* Robert P. Walton *Councilors:* Peter K. Knoefel Louis S. Goodman Allan D. Bass

* Officers presided at the meetings listed.

Meeting	*Place*	*Date*	*Presiding Officers*
41st Spring	Chicago, III.	April 6-10, 1953	Same
5th Fall	Yale University, New Haven, Conn.	September 7-9, 1953	*President,* Harvey B. Haag *President-Elect,* Charles M. Gruber *Past-President,* K. K. Chen Secretary, Carl C. Pfeiffer *Treasurer,* Robert P. Walton Councilors: Peter K. Knoefel Allan D. Bass Julius H. Comroe, Jr.
42nd Spring	Atlantic City, N.J.	April 11-16, 1954	Same
6th Fall	University of Virginia, Charlottesville, Va.	September 6-8, 1954	*President,* Charles M. Gruber *President-Elect,* Erwin G. Gross *Past-President,* Harvey B. Haag *Secretary,* Carl C. Pfeiffer *Treasurer,* James M. Dille *Councilors:* Allan D. Bass Julius H. Comroe, Jr. Kenneth I. Melville
43rd Spring	San Francisco, Calif.	April 11-16, 1955	Same
7th Fall	State University of Iowa, Iowa City, Iowa	September 5-8, 1955	*President,* Erwin G. Gross *President-Elect,* Harry Beckman *Past-President,* Charles M. Gruber *Secretary,* Carl C. Pfeiffer *Treasurer,* James M. Dille *Councilors:* Julius H. Comroe, Jr. Kenneth I. Melville Paul K. Smith
44th Spring	Atlantic City, N.J.	April 16-20, 1956	Same
8th Fall	French Lick, Ind.	November 8-10, 1956	*President,* Harry Beckman *President-Elect,* Otto Krayer *Past-President,* Erwin G. Gross Secretary, Harold C. Hodge *Treasurer,* James M. Dille Councilors: Kenneth I. Melville Bernard B. Brodie Paul K. Smith
45th Spring	Chicago, Ill.	April 15-19, 1957	Same

TABLE 8. New Members Elected

Year	*Number Elected*	*Names*	
1952	41	H. L. Borison	L. E. Morris
		K. W. Cochran	W. T. Neuman
		D. A. Clarke	J. A. Orcutt
		D. L. Cook	E. W. Pelikan
		C. W. Crumton	J. Reilly
		T. Z. Csaky	J. F. Reinhard
		E. W. Dennis	B. P. Rennick
		E. F. Farnsworth	J. S. Robb
		F. F. Foldes	M. Rocha e Silva
		H. F. Fraser	Mary A. Root
		R. F. Furchgott	A. Rothstein
		L. R. Goldbaum	1. C. Seed
		R. E. Green	T. R. Sherrod
		J. H. Hafkenschiel, Jr.	H. C. Struck
		S. C. Harris	J. Tepperman
		S. G. Hershey	P. S. Timiras
		H. M. Lee	S. C. Wang
		P. A. Lief	M. M. Winbury
		R. K. S. Lim	C. A. Winter
		E. W. Maynert	C. G. Zubrod
		B. Mintz	
1953	47	Clara M. Ambrus	Y. Kobayashi
		J. L. Ambrus	H. Langemann
		J. Axelrod	L. Lasagna
		T. M. Brody	K. S. Lee
		J. C. Burke	H. M. Mating
		M. DeV. Cotton	R. A. McLean
		B. Davidow	H. M. Peck
		W. E. DeTurk	J. L. Radomski
		P. B. Dews	R. W. Ridley
		H. Diermeir	V. P. Seeberg
		E. T. Domino	R. A. Seibert
		J. Doull	M. J. Shear
		E. Eagle	D. L. Smith
		W. H. Funderburk	T. Sperli g
		N. J. Giarman	J. N. Stannard
		L. I. Goldberg	C. Y. Sung
		W. D. Graham	I. D. Taylor
		R. W. Houde	J. F. Fazekas
		K. Hwang	S. W. Thesleff
		L. M. Jones	E. G. Fingle
		K. Kamijo	J. P. Frawley
		A. Karczmar	C. G. Van Arman
		H. Keasling	G. Woodward
		E. E. King	
1954	38	T. K. Adler	W. M. Benson
		R. C. Anderson	K. C. Blanchard
		S. B. Barker	H. Blumberg
		J. Belford	E. D. Brand

Year	*Number* Elected	*Names*	
1954 *(continued)*		H. Brieger	J. B. Kahn, Jr.
		J. P. Bunker	E. T. Kimura
		J. H. Burn	G. R. McKinney
		J. J. Burns	L. J. Milch
		W. F. Cantrell	P. L. Munson
		B. E. Etsten	M. M. Nothmon
		W. H. Gantt	Y. T. Oester
		M. I. Gluckman	R. W. Payne
		D. R. H. Gourley	C. B. Pittinger
		C. C. Grutzit	H. L. Price
		A. E. Hemin	T. Rieders
		R. G. Herrmann	B. Rubin
		D. E. Holtkamp	J. A. Schneider
		D. E. Hutcheon	C. A. Stone
		L. B. Jaques	H. A. Wendel
1955	38	W. W. Baker	F. H. Myers
		W. B. Bass	W. C. North
		R. 0. Bauer	Stata Norton
		J. Cochin	L. R. Orkin
		A. C. Corcoran	L. J. Roth
		L. Cook	P. R. Salerno
		B. D. Davis	P. H. Seay
		P. E. Dresel	M. B. Slomka
		F. P. Ellinger	C. M. Smith
		E. L. Foldz	D. J. Smith
		E. De Freis	M. A. Spirtes
		D. G. Friend	F. M. Sturtevant
		D. G. Gray	J. H. Trapold
		C. Hanna	A. P. Truant
		J. G. Hilton	E. B. Truitt
		S. Irwin	L. C. Weaver
		D. J. Jenden	T. C. West
		N. T. Kwit	P. Whittlesey
		H. G. Mandel	H. L. Zauder
1956	47	J. F. Artusio, Jr.	D. A. Karnofsky
		D. H. Baeder	D. Karp
		L. V. Beck	R. R. Levine
		0. F. Davis	J. P. Long
		A. S. Dontas	S. Malloy
		W. W. Douglas	G. J. Mannering
		I. G. Foulkes	T. E. Mansour
		J. M. Glassman	J. W. Miller
		A. Goldin	T. S. Miya
		G. W. Gray	N. C. Moran
		D. Grob	G. H. Mudge
		P. B. Hagen	T. R. O'Dell
		M. A. Heinrich, Jr.	G. T. Okita
		J. B. Hoekstra	R. E. Parks, Jr.
		L. Hurwitz	P. L. Perlman
		S. M. Kalman	D. F. Peterson
		A. Kandel	J. B. Preston

Year	*Number Elected*	*Names*	
1956 *(continued)*		D. P. Rall	J. L. Strominger
		J. Roberts	E. E. Swanson
		I. Rosenblum	S. Udenfriend
		J. P. Saunders	C. W. White, Jr.
		I. Scholler	W. Wilbrandt
		K. G. Scott	W. D. Winters
		P. A. Shore	
1957	60	L. B. Achor	C. C. Lee
		J. M. Benforado	M. Lubin
		W. P. Blackmore	W. H. Macmillan
		M. R. Blair, Jr.	D. F. Magee
		D. F. Bogdanski	R. W. Manthei
		F. N. Briggs	S. Margolin
		T. N. Burbridge	R. A. Maxwell
		H. Busch	S. E. Mayer
		E. A. Carr, Jr.	J. D. McColl
		D. J. Cavanaugh	H. McKennis, Jr.
		G. M. Conzelman, Jr.	J. G. Millichap
		H. Cullumbine	L. C. Mills, Jr.
		C. Davison	J. F. O'Leary
		D. W. Esplin	A. H. Owens, Jr.
		Gertrude Falk	E. G. Pardo
		M. J. Frumin	L. Procita
		A. Furst	C. D. Proctor
		A. Ganz	J. A. Rider
		J. F. Gardocki	H. Rosen
		R. George	W. B. Schallek
		R. M. Gesler	A. Sjoerdsma
		R. E. Gosselin	E. W. Sutherland, Jr.
		L. C. Hendershot	H. H. Swain
		H. E. Himwich	R. C. Ursillo
		C. A. M. Hogben	V. G. Vernier
		K. C. Huang	R. I. H. Wang
		M. E. Jarvik	J. L. Way
		A. C. Keyl	J. H. Werkel, Jr.
		J. J. Kocsis	P. N. Witt
		C. Kornetsky	D. W. Woolley

Fourth Fall Meeting—Madison, Wisconsin, September 8-10, 1952

0. Sidney Orth, Chairman of the Local Committee, arranged most functions to take place on the University of Wisconsin campus. All those attending were housed in the dormitories. The Council meeting was held in Kronshage Hall and the business meeting in building T-16. A decision was made to hold the 1954 Fall Meeting on the Yale University campus, New Haven, Connecticut, since it was impossible to have it in Montreal with the XIXth International Physiological Congress. New members were called on to stand up for recognition—a custom still practiced today. W. Heubner of Berlin was present

at the dinner on September 9, 1952. W. J. Meek, Professor of Physiology at Wisconsin, was the main speaker. His instructive address was published in *Federation Proceedings* (12: 626, 1952), and the last paragraph deserves quoting:

> Medicine in our time, with all its inadequacies, has taken on many of the attributes of Deity itself. It has conquered pain, removed plagues and lengthened life. The fates are impotent in its presence. Two of its handmaidens are the Societies of Physiology and Pharmacology.

K. K. Chen (Ko Kuei Chen) was born in a village 10 miles southwest of Shanghai, China, in 1898. He arrived in the United States in 1918 for higher education: University of Wisconsin, B.S. in 1920 and Ph.D. in 1923; Johns Hopkins University, M.D. in 1927. His preceptors at Wisconsin in graduate school were W. J. Meek, H. C. Bradley, A. S. Loevenhart, and J. A. English Eyster.

He returned to China to accept an assistantship at Peking Union Medical College in 1923 and to work under C. F. Schmidt. After the completion of the appointment, he came back to the US in 1925 to continue his research and finish his medical course. At Johns Hopkins Medical School he obtained his M.D. in 1927 and *as assistant in pharmacology (1926-27) and associate (1927-29). While waiting for a suitable post from his native land he received an invitation from Eli Lilly and Company to be the Director of Pharmacological Research, a post he accepted and held until retirement (1929-63). Meanwhile he was appointed to the faculty of Indiana University Medical School in 1937 on a part-time basis and became a full-time faculty member from 1963 to 1968.

Unaware of previous work, he isolated ephedrine by his own procedure from the Chinese herb *Ma Huang*. His joint investigation with C. F. Schmidt on the pharmacology of this alkaloid, leading to its clinical use in Western medicine, marked an exciting beginning to his career. Other studies that may be credited to him include the successful treatment of acute cyanide poisoning with nitrite-thiosulfate therapy, structure-activity relationship of over 400 cardiac glycosides and toad venom steroids, hepatotoxic action of Senecio alkaloids, and synthetic analgesic drugs of the methadone series.

Chen is a member of Phi Beta Kappa, APS, SEBM, Society of Toxicology, German Pharmacological Society, Swiss Chemical Society, APhA, AMA, Central Society of Clinical Research, American College of Physicians, American College of Clinical Pharmacology and Chemotherapy, American Therapeutic Society, and Academia Sinica (Taiwan). He is a consultant to the Medical Service, Marion County General Hospital (1948–present). He was a member of the Antimalarial Survey, and Motion Sickness, OSRD; Study Section on Pharmacology and Experimental Therapeutics, USPHS (1950-55 and 1957-60); and Pharmacology Training Committee (1961-65). He served on the US National Committee of IUPS (1955-63) and as a delegate to the First, Second, and Third General Assemblies at Brussels, Buenos Aires, and Leiden, respectively. He was a member of the Drug Research Board, NAS-NRC (1936-67), and was Chairman of the Panel on Pharmacology of the President (1964).

Chen has been an invited lecturer in various universities (Wisconsin, Rochester, Vanderbilt, Johns Hopkins, and Howard). He is the recipient of China Foundation Prize (1927), Remington Honor Medal (1965), and Students AMA Distinguished Service Award (1966). An Honorary Sc.D. was conferred on him by the Philadelphia College of Pharmacy and Science in 1946 and by the University of Wisconsin in 1952.

Known as K. K. to his many friends, his complete name appears only on documents where required, such as Social Security checks. He is a devoted and public-spirited member of ASPET and FASEB.

Forty-First Annual Meeting—Chicago, Illinois, April 6-10, 1953

A total of 278 titles appeared in the program. Election of officers and 47 new members (Tables 7, 8) was the main function of the Council and business meetings. The minutes of the Madison meeting and the Treasurer's report were approved.

Fifth Fall Meeting—New Haven, Connecticut, September 7-9, 1953

The date of this meeting at Yale University was set to allow the foreign guests to attend after the XIX International Physiological Congress at Montreal, in spite of the fact that September 7, 1953 was Labor Day. The Chairman of the Local Committee was D. D. Bonnycastle. President Harvey Haag presided at both Council and business meetings. Outside of usual items, all the discussions were centered around the formation of a pharmacological union. A Council of 7 replaced the Committee of 5 at Montreal. M. H. Seevers suggested negotiations with the International Council of Scientific Unions (ICSU). The North American pharmacologists were so anxious to have the movement started that they passed the following resolution:

> The American Society of Pharmacology and Experimental Therapeutics favors the organization of an International Union of Pharmacologists within the framework of ICSU on a basis of parity with organized physiology, the pattern of organization to be somewhat analogous in principle to that of the Federated Societies of Experimental Biology but on an international level in so far as this is consistent with the policies of ICSU.

A symposium on neurohumoral transmission was held in Philadelphia, September 11-12, 1953, after the Yale meeting, with European pharmacologists participating.

Harvey B. Haag was born in Richmond, Virginia, in 1900. He graduated from the School of Pharmacy, Medical College of Virginia, in 1923 and from the School of Medicine in 1928. After a year of graduate study with R. A. Hatcher, he was called back to his alma mater to become assistant professor of pharmacology, advancing to Professor and Chairman of the Department (1933) and Dean (1947-50). He was a visiting assistant in W. Straub's laboratory, University of München, Germany, for half a year, 1930.

In the classroom he was such a popular and impressive teacher that his students created a "Harvey Haag Day" as a tradition. His research interests covered several fields: pharmacology of tobacco and tobacco smoke, digitalis, rotenone, arsenic poisoning, and phenol.

Haag was a member of A.Ph.A., USA Revision Committee (1940-50), and Coun-

cil on Drugs, AMA (1960-61). He was President of the American Therapeutic Society in 1954. His early death in 1961 deprived ASPET of a valuable member whose services as Secretary (1946-50) and President (1953-54) were admirable. Harvey was the first member to leave a bequest to the Society.

Forty-Second Annual Meeting—Atlantic City, New Jersey, April 11-16, 1954

Election of officers and 38 new members was conducted (Tables 7, 8). C. F. Schmidt reported on the satisfactory affiliation with IUPS through the representation of NAS. C. F. Schmidt, M. H. Seevers, and K. K. Chen were appointed to serve on the US National Committee of IUPS. The 1954 Fall Meeting was set for the University of Virginia at Charlottesville. The reports of BPT and the Treasurer were received and approved.

Sixth Fall Meeting—Charlottesville, Virginia, September 6–8, 1954

The Chairman of the Local Committee was Chalmers L. Gemmill. Charles M. Gruber presided at each of the Council and business meetings. There were some complaints about Labor Day being included in the meeting dates, like the previous year at Yale. Beyond anybody's control, the weather during the meeting period was exceptionally hot.

Charles M. Gruber was born in Hope, Kansas, in 1887. He graduated from the University of Kansas, A.B. 1911, A.M. 1912; Harvard University, Ph.D. 1914; Washington University, M.D. 1921.

He was appointed Professor of Physiology and Pharmacology at Albany Medical College (1915-17), associate professor of pharmacology at Washington University (1921-32), and Professor of Pharmacology at Jefferson Medical College (1932 until his retirement in 1953). He continued teaching pharmacology at the Loma Linda School of Medicine after retirement (1953-57), during which two classes selected him as the outstanding teacher. He was invited to become visiting professor of biology at the University of Redlands, California (1957-63), where he now enjoys home gardening.

Gruber has published many papers on muscular fatigue, pharmacology of benzylesters, barbituric acid derivatives, and analgesic drugs. He was elected a member of APS in 1914 and ASPET in 1919. In addition to being President of ASPET, he served as Treasurer from 1935 to 1959.

Forty-Third Annual Meeting—San Francisco, California, April 11-16, 1955

President Charles M. Gruber presided at Council and business meetings. The former were held in Hotel Whitcomb and the latter, in Polk Hall, Civic Auditorium. The Secretary's report on Federation matters was received by the membership; the Treasurer's report was audited for the first time by a firm of certified public accountants. The BPT report was received with enthusiasm. Election of officers and 38 new members took place.

Seventh Fall Meeting—Iowa City, Iowa, September 5-8, 1955

Erwin G. Gross acted in dual capacity—as Chairman of the Local Committee and as President of ASPET. The principal item of discussion in the Council and business meetings was the shortage of travel funds to send young pharmacologists to the Brussels International Congress of Physiological Sciences the following year.

Erwin G. Gross was born in Merrimac, Wisconsin, in 1892. He graduated from the University of Wisconsin, B.S. in 1917, M.S. in 1919, and Ph.D. in 1921; and from the University of Iowa, M.D. 1930. His teaching career started at Yale University School of Medicine (1921-29) as instructor and assistant professor. He was called to the University of Iowa as associate professor of pharmacology (1929-37) and became Professor and Head (1937-60). As Professor Emeritus his permanent address is Medical Laboratories, Iowa City, Iowa. In the winter months he and Mrs. Gross live in Redington Beach, Florida.

Gross has published about 100 papers in the area of metabolism and excretion of morphine and related alkaloids and in biochemical pharmacology. He is also a member of APS, ASBC, SEBM, AMA, and Alpha Omega Alpha.

Forty-Fourth Annual Meeting—Atlantic City, New Jersey, April 16-20, 1956

President Gross presided at both Council and business meetings at Haddon Hall and Ritz Carlton Hotel, respectively. Reports of the Treasurer and Chairman of BPT were accepted. Officers and 47 new members were elected. Preparations were made for the Louisville meeting in the fall and for the centennial celebration of Abel's birthday the following year.

Eighth Fall Meeting—French Lick, Indiana, November 8-10, 1956

The Council took the unusual responsibility of changing the meeting site and date from Louisville to the French Lick Sheraton Hotel, the chief reason being inconvenience in finding hotel lodging. The officers wanted to see all members accommodated on an equal basis. Despite the change, the scientific and business meetings proceeded in order under President Harry Beckman. Several members had just returned from the XXth International Congress of Physiological Sciences at Brussels, July 30—August 4, 1956. C. F. Schmidt reported satisfactory adherence to ICSU as a Section of Pharmacology in IUPS. In the scientific program there were 170 pharmacology papers and two symposia.

Harry Beckman was born in Louisville, Kentucky, in 1892. He studied medicine at the University of Louisville (M.D. 1921), and he interned at the New York Skin and Cancer Hospital (1921-23). He was called to Marquette University School of Medicine, Milwaukee, Wisconsin, for a long teaching career—assistant professor of pharmacology (1923-25), acting director of the Department of Pharmacology (1925-26), Professor and Chairman (1926-61), and Emeritus Professor (1962).

Beckman has been interested in malaria research as an investigator for NIH (1937-66). He has written several textbooks: *Treatment in General Practice: Pharmacology in Clinical Practice; Drugs, Their Nature,* Action *and Uses; and Dilemmas in Drug Therapy,* 1967.

He has been a member of ASPET since 1937, Alpha Omega Alpha, AMA, ACS, American Therapeutical Society, Central Society for Clinical Research, and American Heart Association. He received the Marquette University Teaching Excellence Award in 1960 and was honored by the *Wisconsin Medical Journal.* He is currently a clinical research fellow, Columbia Hospital, Milwaukee, Wisconsin.

Forty-Fifth Annual Meeting—Chicago, Illinois, April 15-19, 1957

President Harry Beckman presided at all Council and business meetings in the Conrad Hilton Hotel. It was Beckman's questionnaire that brought F. L. Stone of NIH to the Council meeting and showed him the critical shortage of pharmacologists, necessitating a training program on a national scale. Election of officers and 60 new members was conducted in business sessions. Discussions were held on the establishment of a Society Office at Beaumont House.

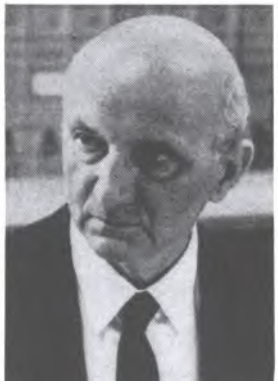
Ninth Fall Meeting—Baltimore, Maryland, September 4-7, 1957

Gilbert H. Mudge, Chairman of the Local Committee, arranged registration and housing at the Homewood campus of Johns Hopkins University. There were 251 regular papers. President Otto Krayer presided at the Council meeting on September 4th and at the business meeting on September 7th. He presented the important matter of having ASPET occupy quarters at Beaumont House and the initiation of corporate associate membership. The Beaumont House Office would consolidate publication activities of BPT and Society business affairs. A motion was made by H. B. Haag to support Krayer's recommendation and was seconded by W. B. Deichmann. Pioneers T. Sollmann and C. D. Leake both spoke in favor of the motion. When President Krayer called for the vote, it was unanimously passed.

Otto Krayer was born in Kondrigen, Baden, Germany, in 1899. After studies at the universities of Berlin, München, and Freiburg, he received his M.D. from Freiburg in 1926. He became an assistant at Freiburg under P. Trendelenburg; when the latter transferred to the University of Berlin, Krayer moved with him to become Privatdozent in 1929. He was promoted very rapidly at Berlin: Acting Head of Pharmacology in 1930 and Professor Extraordinarius of Pharmacology and Toxicology in 1932-33. In 1934 he was invited by E. B. Verney, University College, London, to be a Rockefeller Fellow; 8 months later, he was appointed Visiting Professor and Head of Pharmacology, American University of Beirut, Lebanon (1934-37).

It was the good fortune of Harvard Medical School to induce Krayer to succeed R. Hunt; he was associate professor of pharmacology (1937-39), Head of the Department (1939-66), associate professor of comparative pharmacology (1939-51), Pro-

PAST-PRESIDENTS



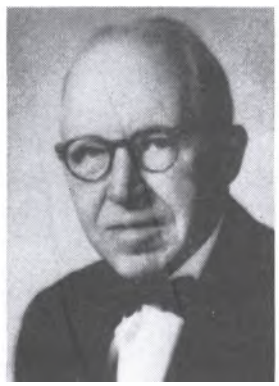
26. Otto Krayer
1957-1958

27. Chauncey D. Leake
1958-1959

28. Louis S. Goodman
1959-1960

29. Alfred Gilman
1960-1961

30. Carl C. Pfeiffer
1961-1962



31. Harry B. van Dyke
1962-1963

fessor (1951–54), Charles Wilder Professor (1954-64), and G. A. Pfeiffer Professor (1964-66). He has been G. A. Pfeiffer Professor-Emeritus since 1966.

Although his first research paper was on apocodeine, he has spent more than 35 years on cardiac pharmacology, particularly the Veratrum alkaloids, including protoveratrine and veratramine. He is capable of stimulating students and colleagues to share his enthusiasm, which is so apparent in his discussions.

Krayer is a member or honorary member of the German Pharmacological Society, British Pharmacological Society, Finnish Pharmacological Society, Pharmacological Society of Canada, National Academy of Sciences, American Academy of Arts and Sciences. He served as Editor-in-Chief of *Pharmacological Reviews* (1953-59), as Chairman of BPT (1960-62), and on the Pharmacology Study Section, USPHS, and the US National Committee, IUPS (1959-65). He has been called on to lecture in both American and foreign universities.

Krayer has received many honorary degrees and honors: Harvard conferred on him the M.A. (1942); University of Freiburg, M.D. (1957); and University of Gottingen, M.D. (1962). A *Festschrift* of *Archiv fur experimentelle Pathologie and Parmakologie,* volumes 248-250, was presented to him in 1965 by his colleagues. In the same year he was honored with the Schmiedeberg Plakette. He is the first recipient of the T. Sollmann Award, and his speech gave us an inspiring account of his life. He and Mrs. Krayer have been residing at West Newton, Massachusetts.

JOHN J. ABEL CENTENNIAL CELEBRATION

During Krayer's administration there was another great event, the centennial celebration of John J. Abel's birthday. It took the whole day of September 5,1957.

I. The morning program was arranged by E. K. Marshall, Jr. at Hurd Memorial Hall, the Johns Hopkins Hospital, 10:00 am.

1. J. J. Abel, Pre-Hopkins Years	T. Sollmann
2. Decade 1893-1903	S. Amberg
3. Decade 1903-1913	C. Voegtlin
4. Decade 1903-1913	L. G. Rowntree
5. Decade 1913-1923	E. K. Marshall, Jr.
6. Decade 1923-1932	E. M. K. Geiling
7. Retirement, 1932-1938	W. M. Firor

The above speeches appeared in the Bulletin of the Johns Hopkins Hospital (101: 297-328, 1957).

II. A courtesy luncheon was served at the Welch Medical Library by the Johns Hopkins University School of Medicine.

Ill. The Welch Medical Library held an exhibit on John J. Abel in conjunction with the Abel Centennial Meeting of ASPET, Baltimore, September 4-7,1957.

IV. H. B. van Dyke, Chairman, organized a special symposium at 2:00 pm, September 5,1957.

1. The Chemistry of Insulin. L. C. Craig, The Rockefeller Institute for Medical Research
2. The Significance of Epinephrine in Metabolism. E. W. Sutherland, Jr., Western Reserve University School of Medicine
3. The Isolation of the Hormones of the Posterior Pituitary, their Chemical Nature and some of their Pharmacological Properties. V. du Vigneaud, Cornell University Medical College.

V. Centennial dinner honoring John J. Abel, 1857-1938, at Levering Hall, Homewood, Johns Hopkins University, at 7:30 pm, September 5, 1957.

VI. After-dinner program at Shriver Hall:

1. Welcome. Thomas B. Turner, Dean of the Medical Faculty, Johns Hopkins University
2. Greetings to the Recipients of the Abel Award. K. K. Chen
3. Tributes from Foreign Societies. Otto Krayer, Charles Wilder Professor of Pharmacology, Harvard Medical School, and President of the Society

a. Western Hemisphere

Argentina	B. A. Houssay
Canada	E. M. Boyd

b. Eastern Hemisphere

Japan	S. Miyazaki
Australia and New Zealand	A. Albert
India	C. L. Malhotra

c. Europe

Austria	F. Brücke
Belgium	A Simonart
Denmark, Sweden, and Norway	K. 0. Moller
Finland	A. Vartiainen
France	R. Hazard
Germany	P. Holtz
Holland	W. G. Bijisma
Italy	M. Aiazzi-Mancini
Portugal	J. T. Rico
Switzerland	W. Wilbrandt

4. Tribute from the British Pharmacological Society and Personal Reminiscences, Sir Henry Dale
5. A film on "Biochemical, Pharmacological, and Chemical Stories," as told by Abel, was shown to the membership. This was based on the C. E. Dohme Memorial Lectures delivered by Abel on December 2, 1930, at the Johns Hopkins University. For this special occasion K. K. Chen had the film reduced from the original 35 mm to

16; it is now available at the Department of Pharmacology and Experimental Therapeutics, Johns Hopkins University.

VII. For private circulation, Williams & Wilkins reprinted Abel's four papers, P. D. Lamson's Obituary of Abel, and E. K. Marshall's ''Abel the Prophet." Krayer's tributes from foreign societies were also printed for limited distribution.

VIII. At the Golden Jubilee of the American Society of Biological Chemists in 1956, P. A. Shaffer and A. N. Richards had already stressed the part of John J. Abel played in the formation of this important society (Federation Proc. 15: 800-806, 1956).

Special Meeting—Ann Arbor, Michigan, January 6-7,1958

President Krayer called this meeting to have the Council and BPT join forces in occupying Beaumont House. Chairman M. H. Seevers suggested extension of publication activities in order to increase income. Decisions were left to the next FASEB meeting at Philadelphia.

Forty-Sixth Annual Meeting—Philadelphia,. Pennsylvania, April 14-18,1958

President Krayer presided at both Council and business meetings. Despite deliberate and painstaking discussions, no new journal was created, such as one on toxicology. Other matters decided were the Fall Meeting at Ann Arbor and its date, occupancy of 2 rooms at Beaumont House, changes of Federation rules, travel grants to the XXIst International Congress of Physiological Sciences at Buenos Aires, and joint sessions with BPT and the membership committee. It was not surprising that it took 6 Council meetings to finish the agenda. The most important items in the two business meetings were the announcement of Council decisions and the election of officers, 69 new members, and members of membership and nominating committees.

TABLE 9. Meetings of ASPET

Meeting	Place	*Date*	*Presiding* Officers*
9th Fall	Baltimore, Md.	September 4-7,1957	*President,* Otto Krayer *President-Elect,* Chauncey D. Leake *Past-President,* Harry Beckman *Secretary,* Harold C. Hodge *Treasurer,* James M. Dille Councilors: Paul K. Smith Bernard B. Brodie Oliver H. Lowry

* Officers presided at the meetings listed.

Meeting	*Place*	*Date*	*Presiding Officers*
46th Spring	Philadelphia, Pa.	April 14-18, 1958	Same
10th Fall	Ann Arbor, Mich.	August 25-28, 1958	*President,* Chauncey D. Leake *President-Elect,* Louis S. Goodman *Past-President,* Otto Krayer *Secretary-Elect,* Karl H. Beyer, Jr. *Treasurer,* Allan D. Bass *Councilors:* Bernard B. Brodie Oliver H. Lowry Robert M. Featherstone
47th Spring	Atlantic City, N.J.	April 13-17, 1959	Same
11th Fall	Miami, Fla.	August 31—September 3, 1959	*President,* Louis S. Goodman *President-Elect,* Alfred Gilman *Past-President,* Chauncey D. Leake *Secretary,* Karl H. Beyer, Jr. *Treasurer,* Allan D. Bass *Treasurer-Elect,* Frederick E. Shideman *Councilors:* Oliver H. Lowry Robert M. Featherstone Walter F. Riker, Jr.
48th Spring	Chicago, Ill.	April 11-15, 1960	Same
12th Fall	Seattle, Wash.	August 21-25, 1960	*President,* Alfred Gilman *President-Elect,* Carl C. Pfeiffer *Past-President,* Louis S. Goodman *Secretary,* Karl H. Beyer, Jr. *Secretary-Elect,* Paul K. Smith *Treasurer,* Frederick E. Shideman *Councilors:* Robert M. Featherstone Walter F. Riker, Jr. George H. Acheson
49th Spring	Atlantic City, N.J.	April 10-14, 1961	Same
13th Fall	Rochester, N.Y.	August 29—September 1, 1961	*President,* Carl C. Pfeiffer *President-Elect,* Harry B. van Dyke *Past-President,* Alfred Gilman *Secretary,* H. George Mandel *Treasurer,* Frederick E. Shideman *Treasurer-Elect,* James A. Bain Councilors: Walter F. Riker, Jr. George H. Acheson Lawrence Peters

Meeting	*Place*	*Date*	*Presiding Officers*
50th Spring	Atlantic City, N.J.	April 14-18, 1962	Same
14th Fall	Nashville, Tenn.	August 27-30, 1962	*President,* Harry B. van Dyke *President-Elect,* F. E. Shideman *Past-President,* Carl C. Pfeiffer *Secretary,* H. George Mandel *Secretary-Elect,* Sidney Udenfriend *Treasurer,* James A. Bain *Councilors:* George A. Acheson Lawrence Peters Allan D. Bass
51st Spring	Atlantic City, N.J.	April 16-20, 1963	Same

TABLE 10. New Members Elected

Year	*Number* Elected	*Names*	
1958	69	H. V. Aposhian	H. E. Hill
		N. Back	F. G. Hofmann
		J. W. Bellville	A. Horita
		B. G. Benfey	Elizabeth H. Jenney
		E. S. Boyd	C. M. Kagawa
		H. H. Bryant	K. F. Killam, Jr.
		Ann Marie Budy	T. 0. King
		R. M. Burgison	W. A. Krivoy
		E. J. Cafruny	W. P. McCann
		E. Costa	L. B. Mellett
		P. J. Costa	C. Mendez
		A. P. Crosley, Jr.	E. Mihich
		E. E. Daniel	P. E. Morrow
		T. D. Darby	] B. Nash
		J. D. Davidson	S. H. Ngai
		E. W. J. De Maar	J. M Parker
		J Dempsher	N. P. Plotnikoff
		J. B. Dillon	S. N. Pradhan
		V. F. Di Stefano	W. T. Rockhold
		J. J. Elkes	R. R. Roepke
		Marian V. Freeman (Narrod)	F. E. Roth
		S. B. Gertner	P. R. Saunders
		J. P. Green	W. H. Sawyer
		L. Gyermek	L. S. Schanker
		Z. Hadidian	J. L. Schmidt
		J. A. Hagans	A. M. Shanes
		N. Haugaard	T. C. Smith
		W. J. Hayes, Jr.	J. R. Smythies
		J. Hidalgo	Violette C. Sutherland

Year	*Number Elected*	*Names*	
1958 (continued)		I. I. A. Tabachnick	W. J. Waddell
		C. W. Tabor	G. Werner
		D. H. Tedeschi	D. R. Wood
		E. O. Titus	E. F. Woods
		U. G. Trendelenburg	T. F. Yu
		R. L. Vick	
1959	69	E. Adams	B. H. Marks
		J. D. Arnold	W. R. Martin
		W. E. Barrett	W. L. Miller, Jr.
		W. R. Beavers	W. H. Morse
		C. T. Bello	E. F. Murtha
		D. R. Bennett	J. W. Nelson
		R. P. Bircher	N. Nelson
		P. Brazeau	Margaret K. O'Gara
		D. A. Brodie	Claudia S. (Sutherland) Prickett
		T. G. Brown, Jr.	Gertrude P. Quinn
		J. P. Buckley	W. K. Riker
		P. H. Bulle	J. M. Ritchie
		A. Burger	G. G. Rowe
		M. N. Carroll, Jr.	L. H. Saxe, Jr.
		Mary Kathleen Carter	R. W. Schayer
		W. Clark	R. W. Sevy
		J. R. Cooper	Jean Sice
		L. E. Detrick	H. F. Smyth, Jr.
		0. D. Easterday	Virginia L. Sydow
		J. R. Fouts	R. E. Tedeschi
		M. E. Friedkin	E. G. Trams
		J. R. Gillette	R. C. Troop
		C. N. Gillis	E. J. Walaszek
		H. F. Hardman	S. S. Walkenstein
		Clare T. Harwood	D. P. Wallach
		F. Herr	V. S. Waravdekar
		S. Hess	J. R. Weeks
		G. J. Hildebrand	I. M. Weiner
		D. A. Holaday	N. Weiner
		F. W. Hughes	B. West
		0. Jardetzky	R. P. White
		H. J. Kayden	J. A. Zapp, Jr.
		A. D. Kenny	3 Honorary Members:
		S. Kuna	A. Newton Richards
		D. Leigh	Torald Sollmann
		F. J. Macri	Carl Voegtlin
		Gertrude D. Maengwyn-Davies	
1960	57	L. Aronow	P. P. C. Feng
		J. E. Baer	M. Finkelstein
		R. E. Bagdon	G. B. Frank
		Y. T. Chang	J. M. Fujimoto
		J. A. Christensen	J. D. Gabourel
		M. L. Clark	J. H. Gogerty
		S. J. Desalva	J. S. Gravenstein
		D. K. Eckfeld	G. Grupp

Year	*Number Elected*	*Names*	
1960 *(continued)*		P. B. Hammond	P. D. Orahovats
		R. C. Haynes	B. L. Oser
		C. D. Hendley	A. M. Ostfeld
		Marilyn E. Hess	C. C. Porter
		H. B. Hucker	T. W. Rall
		C. G. Huggins	I. Ringler
		Flora B. (Hughes) Orlans	V. K. Rowe
		I. R. Innes	E. A. Sellers
		Anne M. Kunkel	H. Sheppard
		B. N. La Du	S. Spector
		M. Lane	J. R. Stern
		A. Lasslo	C. M. Stowe, Jr.
		G. J. Levinskas	T. Verhave
		P. M. Lish	W. J. Visek
		W. M. Manger	H. Waelsch
		J. W. McCubbin	D. R. Waud
		R. J. Mclsaac	J. W. West
		R. Mergirian	H. L. Williams
		J. H. Mirsky	M. W. Williams
		C. B. Nash	G. Zbinden
		C. A. Nichol	
1961	60	E. G. Anderson	M. L. Keplinger
		Mary F. Argus	R. L. Klein
		B. A. Becker	A. S. Kuperman
		J. R. Beem	V. G. Laties
		W. R. Burack	J. Leiter
		A. Burkhalter	B. Levy
		D. A. Buyske	T. M. Lin
		C. I. Chappel	Jean M. Marshall
		K. I. Colville	R. J. Matthews, Jr.
		G. A. Condouris	H. G. Mautner
		A. H. Conney	G. G. Nahas
		E. B. Cook	M. H. Pindell
		I. A. Coret	G. L. Plaa
		J. R. Cummings	J. W. Poutsiaka
		P. G. Dayton	W. H. Prusoff
		W. F. Durham	P. Rosenberg
		C. H. Ellis	A. P. Roszkowski
		G. L. Ellman	G. C. Salmoiraghi
		J. W. Fisher	M. C. Sheps
		J. H. Fleisher	E. B. Sigg
		W. W. Fleming, Jr.	F. A. Smith
		D. X. Freedman	F. G. Standaert
		R. W. Gardier	H. C. Stanton
		P. S. Guth	J. E. Stone
		J. H. Hagen	S. I. Szara
		W. E. Harrisson	A. E. Takemori
		M. Heimberg	A. W. Vogel
		L. E. Hollister	B. Weiss
		R. L. Irwin	L. B. Witkin
		J. J. Jaffe	D. W. Wylie

Year	*Number Elected*	*Names*	
1962	53	E. T. Angelakos	Gerda I. Klingman
		A. H. Anton	J. K. Kodama
		J. Ashmore	I. H. Krakoff
		J. V. Auditore	K. C. Leibman
		H. J. Bartelstone	D. Lester
		L. Beck	W. G. Levine
		J. A. Bevan	B. K. B. Lum
		M. J. Bleiberg	0. M. Meredith, Jr.
		J. R. Blinks	H. C. Moeller
		G. C. Boxill	R. L. Mundy
		E. Braunwald	W. L. Nyhan
		A. H. Briggs	J. J. Piala
		R. H. Buller	H. M. Redetzki
		R. M. Burton	A. M. Revzin
		C. S. Delahunt	G. V. Rossi
		D. E. Duggan	R. A. Salvador
		Rose Ruth Ellison	T. G. Scharff
		Jane Frances Emele	A. Scriabine
		E G. Erdös	I. Shemano
		W. E. Flacke	Jane R. Telford
		T. E. Gaffney	J. F. Treon
		I. Geller	G. E. Ullyot
		K. H. Ginzel	R. L. Voile
		W. Hollander	L. P. White
		Audrey R. Holliday	R. G. Wiegand
		R. T. Kelleher	Eli Kennerly Marshall, Jr.
		T. L. Kerley	(Honorary)
		J. W. Kissel	
1963	67	R. Aston	Williamina A. Himwich
		P. Bass	Z. P. Horovitz
		A. Beaulnes	J. A. Kaiser
		D. A. Berman	C. Y. Kao
		L. Brand	R. Karler
		B. M. Breckenridge	W. J. Kinnard, Jr.
		D. N. Calvert	S. C. Kinsky
		P. P. Cervoni	S. D. Kraus
		J. R. Crout	L. Levy
		J. J. De Feo	R. P. Maickel
		T. J. DeKornfeld	M. H. Malone
		J. D. Demis	D. T. Masuoka
		A. B. Dobkin	L. P. McCarty
		G. I. Drummond	R. S. McCutcheon
		J. N. Eble	D. B. McDougal
		R. B. Fink	R. E. McMahon
		R. G. Gale	T. B. Miller
		L. E. Gaudette	B. L. Mirkin
		M. E. Goldberg	R. A. Moe
		L. Goldstein	K. E. Moore
		P. Greengard	F. Moya
		M. H. Heiffer	H. B. S. Murphree, Jr.
		A. Heller	C. W. Nash
		I. B. Hill	E. Nelson

Year	Number Elected	Names	
1963 *(continued)*		J. H. Nodine	E. Soaje-Echague
		C. A. Papacostas	J. L. Spratt
		L. D. Prockop	R. M. Taylor
		R. H. Rech	A. R. Timms
		A. A. Rubin	W. C. Werkheiser
		M. P. Schulman	H. E. Williamson, Jr.
		H. S. Schwartz	W. D. Wosilait
		M. A. Schwartz	Helen C. Y. Yen
		A. A. Sekul	G. K. W. Yim
		M. J. Silver	

Otto Krayer contributed to ASPET immensely during his term of presidency. It was his initiative that provided the tributes of the Abel Centennial from foreign societies. It was his conviction that drew a unanimous vote of the membership to set up the Society headquarters at Beaumont House. His efforts have given our organization lasting benefits.

Tenth Fall Meeting—Ann Arbor, Michigan, August 25-28, 1958

M. H. Seevers was Chairman of the Local Committee, and Chauncey D. Leake, President. Subjects of discussion in both Council and business meetings clearly indicated the rapid growth of ASPET. Three of our own pioneers were elected honorary members, the constitution was revised to legalize corporate associate membership, and it was decided to publish abstracts of Fall Meetings separately. President Leake's farsightedness inaugurated the appearance of the first issue of The Pharmacologist (Spring 1959), comprising the business and scientific proceedings of the Society. The wide distribution of The Pharmacologist makes ASPET history more easily available, and now every member looks forward to reading it before each meeting.

Chauncey D. Leake is one of the most colorful Presidents of ASPET. Born in Elizabeth, New Jersey, in 1896, he graduated from Princeton University, Litt.B., in 1917. When he was a sergeant in a machine gun company in World War I, he was ordered to Madison, Wisconsin, to report to Major J. A. English Eyster of the Chemical Warfare Service. The reader may recall that Eyster, one of the ASPET founders, was Professor of Physiology at the University of Wisconsin. After the Armistice the following year, Leake liked Wisconsin so much that he took advanced degrees, his M.S. in 1920 and Ph.D. in 1923; he was then appointed associate professor of pharmacology (1923-28). At Wisconsin his military nickname "Sarge" stayed with him, and his many friends still consider it a privilege to address him so informally.

The University of California, San Francisco, called on him to organize the Department of Pharmacology (1928-42) and to be lecturer in medical history (1930-42). He became Executive Vice-President, University of Texas, Medical Branch, Galveston, Texas (1942-1955); Professor of Pharmacology and lecturer of the history of medicine, Ohio State University, Columbus, Ohio (1955-62); and lecturer in pharma-

cology and the history of medicine, University of California Medical Centre, San Francisco (1962–present).

Leake's radiant personality and enthusiasm are readily observable in his lectures and conversations. His penetrating investigations are numerous: acidosis of ether anesthesia, hematopoietic effect of splenic extract, chemotherapy of amoebiasis, to mention but a few. He is author of 9 books and contributor of some 600 publications relating to pharmacology, physiology, history of medicine, and philosophy. His broad knowledge qualifies him to be the Director of the Medical Research Program, Wine Advisory Board, California State Department of Agriculture (1965–present).

Honorary degrees have been conferred on him: L.H.D. by Kenyon College (1959); D.Sc. by Women's Medical College, Philadelphia (1960), and by Philadelphia College of Pharmacy and Science (1969); and LL.D. by the University of California (1965). He received the Special Award, International Anesthesia Research Society, in 1928.

He has served as a consultant for the NRC and the USPHS, National Library of Medicine, and as Chairman, Section of Pharmacology and Experimental Therapeutics, AMA. He is a member, fellow, or honorary member of APS, American Academy of Arts and Sciences, Institute for Advanced Study, Princeton (1950, 1952, 1954), and International Academy for the History of Science. As his close colleagues observe his hair change from dark to white, they notice the growth of his energy. For example, he has been the President, successively or simultaneously, of History of Science Society (1937-39), ASPET (1958-59), FASEB (1959), AAAS (1960), and SEBM (1961). In addition, he readily accepts invitations to lecture in the US and abroad. Let us wish him eternal success and more accomplishments.

Forty-Seventh Annual Meeting—Atlantic City, New Jersey, April 13-17, 1959

President Leake presided at all meetings. The value of *The Pharmacologist* immediately became obvious; minutes, abstracts for the Fall Meeting, and other events were published in volume 1, number 2. The format has since been enlarged to accommodate more material and the pages have been made continuous for each volume after the first 3 years. President Leake created another tradition that has lasted, namely, the Past-Presidents' luncheon. The interest of this group in ASPET affairs is greater than its past honors. Election of officers, 69 new members, and 3 honorary members took place, as can be seen in Tables 9 and 10.

Eleventh Fall Meeting—Miami, Florida, August 31–September 3, 1959

While Chairman W. B. Deichmann and the Local Committee were getting ready for this meeting, President Louis S. Goodman was hurrying back after his attendance at the XXI International Congress of IUPS, Buenos Aires, August 9-15, 1959, in order to preside at Council and business meetings and act as toastmaster. The abstracts and minutes in *The Pharmacologist* served a useful purpose and as an avenue of communication; a resolution of appreciation to C. D. Leake was adopted by the membership. C. F. Schmidt's report

on SEPHAR of IUPS and the planning of the First International Pharmacological Meeting was important news to our discipline. President Goodman successfully extended the Corporate Associate Program. J. M. Dille's "Opening Remarks" referred to his checklist of 243 books on pharmacology published between 1850 and 1950, generously made available to the membership.

Louis S. Goodman is another outstanding President of ASPET whose devoted efforts strengthened the foundation of the Society. Lou was born in Portland, Oregon, in 1906. He graduated with a B.A. from Reed College in Portland in 1928 and earned his M.D. and M.A. from the University of Oregon Medical School in 1932. While attending these two schools, he was teaching assistant in psychology at Reed (1927-29) and research assistant in neurology and pharmacology at Oregon (1929-32). He was house officer in medicine at the Johns Hopkins Hospital (1932-33). He joined the Department of Pharmacology, Yale University School of Medicine, in 1934 with a NRC fellowship and later became an instructor of pharmacology and toxicology (1935-37) and assistant professor (1937-43). After a year as Professor and Head of the Department of Pharmacology and Physiology at the University of Vermont in Burlington (1943-44), Goodman accepted appointment as Professor and Head of the Department of Pharmacology, University of Utah College of Medicine, Salt Lake City (1944–present).

His research interests have been concentrated in anticonvulsants, adrenergic blocking drugs, neuropharmacology, and psychopharmacology. He has more than 200 publications to his credit, and his joint editorship with A. Gilman in the production of *The Pharmacological Basis of Therapeutics,* now in its third edition, disseminates the whole discipline of pharmacology to medical students and physicians. Expert reviewers have called the volume the "Blue Bible" and it is frequently quoted as the source of authority.

His services to his University, scientific organizations, and government agencies have been extensive: Editor-in-Chief, *Pharmacological Reviews* (1949-53); member, BPT of ASPET (1949-61); USPHS, Pharmacology Study Section (1948-52, 1954); National Advisory Neurology Diseases Council (1954-58); Chairman, Advisory Committee, Psychopharmacology Service Centre (1958-62); Chairman, Pharmacology Training Committee (1958-61); member, National Advisory Mental Health Council (1962-66); member, Advisory Council, Division of Health Research Facilities (1966–present); and member, Neurological Sciences Mission to USSR, Departments of State and Health, Education, and Welfare (1958). He also is a member of the Advisory Editorial Board, *The Medical Letter* (1960–present).

Goodman also belongs to APS, SEBM, AAAS, AMA, and American Academy of Neurology. He has been receiving honors since undergraduate days: Phi Beta Kappa, Alpha Omega Alpha, honorary member of Academy of Anesthesiology and American Society of Anesthesiologists, and member of National Academy of Sciences. The University of Manitoba, Canada, has conferred on him the honorary D.Sc. His modesty, friendliness, and kindness are as well known as his textbook.

Forty-Eighth Annual Meeting—Chicago, Illinois, April 11-15, 1960

L. S. Goodman presided at all meetings. The results of election of officers and 57 new members are shown in Tables 9 and 10. C. F. Schmidt's re-

port on SEPHAR and the forthcoming First International Pharmacological Meeting at Stockholm was most complete and exhaustive. A satisfactory budget for operating costs at Beaumont House was worked out by 0. Krayer and his committee. The T. Sollmann Award was accepted by the Society. The date of the Fall Meeting at Seattle was announced by J. M. Dille, Chairman of the Local Committee. M. H. Seevers, Chairman of BPT, consented to serve a 12th year. President Goodman persuaded J. H. Gaddum to be after-dinner speaker; his topic was "Pharmacologists of Edinburgh."

Twelfth Fall Meeting—Seattle, Washington, August 21-25, 1960

J. M. Dille, Chairman of the Local Committee, arranged an efficient gathering for ASPET on the campus of the University of Washington to accommodate lodging, scientific presentation, Council and business meetings. Alfred Gilman, with his usual vigor, succeeded in winning the support of a large number of Corporate Associates. Tom Holmes was the after-dinner speaker on August 24th in the Student Union Building; his subject was "How to be Sick Successfully."'

The nomination and election of Alfred Gilman to succeed L. S. Goodman as President of ASPET was a natural sequence, because of their success together in giving knowledge of pharmacology to the medical circle through their textbook, clearly of benefit to the scientific community.

Alfred Gilman was born in Bridgeport, Connecticut, in 1908. His advanced education was pursued at Yale University: B.S. (1928), Ph.D. in biochemistry (1931), research fellow in biochemistry (1931-32), and research fellow in pharmacology (1932-35); he was then appointed assistant professor of pharmacology and toxicology (1935-43).

During World War II, Gilman was commissioned Captain, and later Major, US Army, as Chief, Pharmacology Section, Medical Division, Chemical Warfare Service (1943-46). His contributions to war research, such as diisopropyl fluorophosphate (DFP), are substantial. His peacetime investigations have been in renal physiology, salt and water metabolism, and other pharmacodynamics.

The College of Physicians and Surgeons, Columbia University, called on Gilman, after his military discharge, to be associate professor of pharmacology (1946-47) and Professor (1948-56). The Albert Einstein College of Medicine, New York, appointed him Professor and Chairman, Department of Pharmacology (1956–present) and Associate Dean for Graduate Education (1966–present).

Gilman is a member of APS, SEBM, and New York Academy of Medicine; honorary member of Alpha Omega Alpha; honorary fellow of American Academy of Allergy; and member of National Academy of Sciences. He has served scientific organizations and government agencies; member, Scientific and Educational Council, Allergy Foundation of America (1948-50); Editorial Board, *American Journal of Physiology* and *Journal of Applied Physiology* (1950-56), Consulting Editor (1956-59); Editorial Board, *Pharmacological Reviews* (1948-55); and Advisory Council, New York City Health Research Council (1958-64). For USPHS, Gilman was a member, Pharma-

cology and Experimental Therapeutics Study Section (1946-49, 1950-55), Chairman (1956-60); member, Pharmacology Training Committee (1960-63); member, Heart Special Projects Committee (1963-65). He has served on the Drug Research Board, NAS-NRC, since 1964. On behalf of FDA, Gilman acted as Chairman of both the Organizing Committee and the Executive Committee of the Drug Efficacy Study. This large-scale review involved 10,000 assignments to 30 panels of experts and took 2 years to finish *(Pharmacologist* 10: 120, 1968). Gilman received a commemorative medallion on the bicentennial anniversary of the College of Physicians and Surgeons, Columbia University, in 1967 for distinguished service. He has delivered addresses in the US and abroad—a most enviable record.

Forty-Ninth Annual Meeting—Atlantic City, New Jersey, April 10-14, 1961

President Alfred Gilman introduced Ellsworth B. Cook, the new Executive Officer of ASPET, who was to take office on October 1, 1961. C. F. Schmidt, President of SEPHAR of IUPS, called for application of travel grants to the First International Pharmacological Meeting in Stockholm, Sweden, August 22-25, 1961. Officers and 60 new members were elected (Tables 9, 10). R. Keith Cannan proved himself a witty after-dinner speaker on April 12th.

Thirteenth Fall Meeting—Rochester, New York, August 29–September 1, 1961

H. C. Hodge and the Local Committee managed a magnificent meeting on the campus of the University of Rochester. President Carl C. Pfeiffer had several pleasant items to deal with in both scientific and business meetings. A long list of Corporate Associates continued to support ASPET. The *Pharmacologist* became a "legitimate reference" of JPET and other journals. The "page charge" was effective after the first of the next year.

The First International Pharmacological Meeting, August 22-25, 1961, Stockholm, was a great success under President C. F. Schmidt. The theme was "The Mode of Action of Drugs." Attendance was approximately 1500, with 300 (20%) from North America. B. Uvnäs, Chairman of the Local Committee, was such a model organizer for the Congress that nothing was left to be desired. The Congress justified the urgent desire of the membership of ASPET to have pharmacologists from all over the world meet and discuss subjects of mutual interest. Only 4 days later the American pharmacologists assembled at Rochester to report their research results and to conduct their business without letup. The first T. Solimann Award was presented to 0. Krayer, and his scholarly oration about his "Accidents in the Pursuit of Knowledge" was most instructive *(Pharmacologist* 4: 68, 1962).

Carl C. Pfeiffer, 30th President of ASPET, was born in 1908 in Peoria, Illinois. He was educated at the University of Wisconsin (B.A., 1931; M.A., 1933; Ph.D. in pharmacology, 1935) and at the University of Chicago (M.D., 1937). He held teaching

and research positions while studying: assistant, instructor, Wisconsin, 1930-35; instructor, Chicago, 1936-37. He interned at Wisconsin General Hospital (1937-38) and continued his career in pharmacology by becoming instructor at the University of Chicago (1938-40), associate professor at Wayne State University College of Medicine, Detroit, Michigan (1940-41), and chief pharmacologist at Parke, Davis & Co., Detroit, Michigan (1941-43). When World War II broke out, Pfeiffer was commissioned Lieutenant, US Navy, in charge of pharmacology and toxicology at the Naval Medical Research Institute, Bethesda, Maryland. After finishing his military duties, he was invited to be Professor and Head, Department of Pharmacology, University of Illinois, College of Medicine (1945-54); he was then called to Emory University School of Medicine, Atlanta, Georgia, as Professor and Chairman of Pharmacology (1954-57) and became, in addition, Director of Division of Basic Health Sciences (1956-60). Since 1960 he has been Head, Section on Neuropharmacology, Bureau of Research, New Jersey Neuropsychiatric Institute, Princeton.

He is author of more than 200 papers covering physiology of pain, analgesics, chemical structure-activity relationships as exhibited by functional groups of molecules, cryogenic action of drugs, convulsants, neuropharmacology, and chemotherapy of schizophrenia.

He is a member or fellow of SEBM, AMA, ACS, American Academy of Neurology, Association for Research in Nervous and Mental Disease, Canadian Pharmacology Society, Society for Biological Psychiatry, and American College of Neuropsychopharmacology. Pfeiffer readily answers the call to serve—he was a member of the USPHS Pharmacology Study Section (1951-54, 1960-63) and Heart Special Projects (1963-66); President, Medical and Dental Staff, New Jersey Neuropsychiatric Institute (1965-66); and Vice-President, American College of Neuropsychopharmacology (1965-66). He is Co-Editor, *International Review of Neurobiology,* and a member of the Editorial Boards of *Clinical Pharmacology and Therapeutics* and *Journal of Practical Therapy and Applied Therapeutics.*

He is a member of Phi Lambda Upsilon and Alpha Omega Alpha; he has received the Certificate of Merit, University of Chicago (1954); R. B. Allen Teaching Award, University of Illinois (1959); and honorary membership in the Faculty Universidad de Chile, Instituto Farmacologia Santiago, Chile, 1966.

Carl is modest and kind. He and Mrs. Pfeiffer remember their colleagues by sending messages from their family at Christmas time. For 1968 their greetings were in seven languages:

We'd like to be original,
Say something bright and gay,
And in a foreign language
Perhaps we'd find a way.
But '68, that year of years,
For us was much the same:
We pulled the weeds and carried rocks
It all was very tame.
For Carl it's seven days a week.
He seldom stops at all.
In spring we had a trip to Spain,
On Lisbon made a call.
Our children now are rivals,
Have a January date.
It's at Miami's Orange Bowl
When Kansas meets Penn State.

A very merry, merry Christmas
We send to all of you.
No matter what the language
Our wish is sure and true.

The Carl Pfeiffers
Cherry Hill Road, R.D. 5
Princeton, New Jersey 08540

Fiftieth Annual Meeting—Atlantic City, New Jersey, April 14-18, 1962

Carl C. Pfeiffer presided at Council and business meetings. The results of the election of officers and 53 members are shown in Tables 9 and 10. Since SEPHAR was part of IUPS, ASPET members were eligible to apply for travel grants to the XXII International Congress of Physiological Sciences at Leiden, Netherlands, September 11-17, 1962. Scientific sessions were to be held in the lecture theaters of Leiden University, and the congress members would be housed in the hotels at the seaside resorts of Scheveningen and Noordwijk. Certain improved methods of accounting were adopted by the Council, and the annual budget changed from fiscal to calendar year. The Executive Officer, E. B. Cook, furnished biographical information on the nominees for the first time. Our experience at the Dennis Hotel since 1961 has been good.

Fourteenth Fall Meeting—Nashville, Tennessee, August 27-30, 1962

Harry B. van Dyke had a successful year of administration. Allan D. Bass offered good facilities at Vanderbilt University to ASPET for an enjoyable meeting. The Corporate Associate Program continued to be successful. Several ASPET members contributed to the Proceedings of the XXIInd International Congress of Physiological Sciences at Leiden, Netherlands, September 11-17, 1962. C. F. Schmidt reported his plans for the Second International Pharmacological Meeting at Prague, Czechoslovakia, to be held the following year.

President Harry **B. van Dyke** was born in 1895 in Des Moines, Iowa. His higher education and teaching career are enviable. For almost two decades, he was connected with the University of Chicago (B.S., 1918; Ph.D., 1921). He completed his M.D. at Rush Medical College in 1923 and interned at Cook County Hospital (1922-23). He was appointed by the University of Chicago as assistant in anatomy and physiological chemistry (1918-19), assistant professor of pharmacology (1924), associate professor (1926-30), and Professor (1930-32). He spent 2 years in Europe: with A. R. Cushny at Edinburgh University (1924-25), with E. Zunz at the University of Brussels (1925), and with P. Trendelenburg at the University of Freiburg (1925-26).

After returning to Chicago, he lost no time in establishing himself as an endocrinologist, studying in particular the pituitary body, on which he published a monograph. He also contributed to the study of metabolism of drugs, autonomic drugs, and

PAST-PRESIDENTS

32. Frederick E. Shideman
1963-1964

33. Karl H. Beyer, Jr.
1964-1965

34. George B. Koelle
1965-1966

35. Harold C. Hodge
1966-1967

36. Allan D. Bass
1967-1968

37. Robert M. Featherstone
1968-1969

ion effects. In 1932 he accepted an invitation to be Professor and Chairman of Pharmacology, Peking Union Medical College, Peking, China. Oriental students are particularly fond of him because of his clear manner of teaching and excellent penmanship on blackboard or paper. When the Japanese waged war on China (1937-45), van Dyke joined the new Squibb Institute for Medical Research, New Brunwick, New Jersey, as Head, Division of Pharmacology (1938-44). Six years later the College of Physicians and Surgeons, Columbia University, called on him to be Professor and Chairman, Department of Pharmacology (1944-63), and Hosack Professor Emeritus (1963-present).

He has served abroad across both the Atlantic and Pacific Oceans; Unitarian Service Mission to Greece and Italy (1948); and as a visiting professor to the Far East —University of Hong Kong (1956), University of Singapore (1960, 1964), National Defense Medical Center and National Taiwan University School of Medicine, Taiwan (1963-64), and University of Malaya, Kuala Lumpur (1965-68). These contacts have excited his interest in the chemotherapy of leishmaniasis, malaria, and bacterial infections. ASPET members will appreciate his recent paper *(Proc. Roy. Soc., London, Ser. 8* 170: 3-5, 1968) on the characterization of "van Dyke protein" isolated from the posterior pituitary gland.

In addition to ASPET van Dyke is a member or fellow of APS, SEBM, AMA, New York Academy of Medicine, and Association for Study of Internal Secretions. He was Managing Editor of JPET (1950-53) and was elected an honorary member of the British Pharmacological Society and the Italian Pharmacological Society.

Fifty-First Annual Meeting—Atlantic City, New Jersey, April 16-20, 1963

Harry B. van Dyke presided at both Council and business meetings. Almost by custom, the minutes stood as published in *The Pharmacologist.* As in the previous year the Society was warned of a deficit by the Treasurer. The three symposia—on anesthetics, anticholinesterase agents, and electrolyte transport across cell membranes—indicated the scientific progress and broadening of research by our members. W. Clarke Wescoe's after-dinner speech was delightful. Election of officers and 67 new members took place.

Fifteenth Fall Meeting—San Francisco, California, August 11-15, 1963

It became very popular to hold Fall Meetings on the Pacific Coast. R. M. Featherstone and his Local Committee arranged an excellent meeting on the campus of San Francisco State College. This was convenient because lodging, meals, visiting, and scientific and business meetings could be held in a small area. Frederick E. Shideman presided at all meetings. Bernard B. Brodie, an authority on chemical pharmacology, received the Sollmann Award on August 13th and his oration was most fundamental: "Of Mice, Microsomes and Man."

Frederick E. Shideman was born in 1915 in Albion, Michigan. He obtained his B.A. from Albion College in 1936, his Ph.D. from the University of Wisconsin in 1941, and his M.D. from the University of Michigan in 1946. He held research fellowships

or staff positions during postgraduate years—University of Wisconsin research assistant (1936-41) and fellow in pharmacology (1941-42); University of Michigan; instructor in pharmacology (1943-47), assistant professor of pharmacology (1947-49), and associate professor (1949-52). At Wisconsin he was also Professor of Pharmacology and Toxicology (1952-62) and Chairman of the Department of Pharmacology and Toxicoligy (1954-62). Since 1962 he has been Professor and Head, Department of Pharmacology, University of Minnesota, Minneapolis, Minnesota.

In more than 200 publications, he reported investigations on hyperventilation and acapnic shock, effects of morphine and derivatives on intermediary metabolism, site of detoxication and degradation products of thiobarbiturates, renal tubular transport mechanisms, cardiac catecholamines and inotropic response to drugs, anticonvulsant pyrimidines, and psychopharmacology.

Shideman is a member of SEBM, American Institute of Nutrition, Society of Toxicology, American Therapeutic Society, and Minnesota Society of Neurological Sciences; he is also a member of Phi Beta Kappa, Phi Lambda Upsilon, Sigma Sigma, and Alpha Omega Alpha, and an honorary member of Wisconsin State Medical Society and the Korean Medical Association, and a fellow of the Royal Society of Medicine. He served as a member of the Panel of Sterilization of Blood and Plasma, NRC; Study Section on Pharmacology and Experimental Therapeutics, USPHS (member 1960-63, Chairman 1963-65); and Pharmacology and Toxicology Training Committee (1965-69). He is a member of the Editorial Committee, *Annual Review of Pharmacology* (1966-70); Advisory Committee on Abuse of Depressant and Stimulant Drugs, FDA (1966-present); and Joint NIH-FDA Committee on Psychomimetics (1967-present). Fred is very active in ASPET affairs, as members must recall from the Fall Meeting of 1968.

Fifty-Second Annual Meeting—Chicago, Illinois, April 12-17,1964

President Frederick E. Shideman had a busy year. The Treasurer's Financial Summary from June 14, 1954 to December 31, 1963 was most informative. New officers and 64 new members were elected (Tables 11, 12). C. F. Schmidt's

TABLE 11. Meetings of ASPET

Meeting	*Place*	*Date*	*Presiding Officers**
15th Fall	San Francisco, Calif.	August 11-15, 1963	*President,* Frederick E. Shideman *President-Elect,* Karl H. Beyer, Jr. *Past-President,* Harry B. van Dyke *Secretary,* Sidney Udenfriend *Treasurer,* James A. Bain *Treasurer-Elect,* Julius M. Coon *Councilors:* Lawrence Peters Allan D. Bass Alfred Farah

* Officers presided at the meetings listed.

Meeting	*Place*	*Date*	*Presiding Officers*
52nd Spring	Chicago, Ill.	April 12-17, 1964	Same
16th Fall	Lawrence, Kans.	August 23-27, 1964	*President,* Karl H. Beyer, Jr. *President-Elect,* George B. Koelle *Past-President,* Frederick E. Shideman *Secretary,* Sidney Udenfriend *Secretary-Elect,* Robert M. Featherstone *Treasurer,* Julius M. Coon *Councilors:* Allan D. Bass Alfred Farah Avram Goldstein
53rd Spring	Atlantic City, N.J.	April 10-14, 1965	Same
17th Fall	University of Pennsylvania, Philadelphia	August 16-20, 1965	*President,* George B. Koelle *President-Elect,* Harold C. Hodge *Past-President,* K. H. Beyer, Jr. *Secretary,* R. M. Featherstone *Treasurer,* Julius M. Coon *Treasurer-Elect,* Lauren A. Woods *Councilors:* Alfred Farah Avram Goldstein John J. Burns
54th Spring	Atlantic City, N.J.	April 12-16, 1966	Same
18th Fall	Mexico City, Mexico	July 15-20, 1966	*President,* Harold C. Hodge *President-Elect,* Allan D. Bass *Past-President,* George B. Koelle Secretary, Robert M. Featherstone Secretary-Elect, Thomas H. Maren *Treasurer,* Lauren A. Woods *Councilors:* Avram Goldstein John J. Burns Edward J. Walaszek
55th Spring	Chicago, Ill.	April 16-21, 1967	Same
19th Fall	Howard University, Washington, D.C.	August 27-31, 1967	*President,* Allan D. Bass *President-Elect,* Robert M. Featherstone *Past-President,* Harold C. Hodge *Secretary,* Thomas H. Maren *Treasurer,* Laureen A. Woods *Treasurer-elect,* Maynard B. Chenoweth *Councilors:* John J. Burns Edward J. Walaszek Sidney Ellis

Meeting	*Place*	*Date*	*Presiding Officers*
56th Spring	Atlantic City, N.J.	April 15-20, 1968	Same
20th Fall	University of Minnesota	August 18-22, 1968	*President,* Robert M. Featherstone *President-Elect,* James A. Bain *Past-President,* Allan D. Bass *Secretary,* Thomas H. Maren *Secretary-Elect,* John J. Burns *Treasurer,* Maynard B. Chenoweth *Councilors:* Sidney Ellis Edward J. Walaszek Parkhurst A. Shore
57th Spring	Atlantic City, N.J.	April 13-18, 1969	Same

TABLE 12. New Members Elected

Year	*Number Elected*	*Names*	
1964 (Spring)	64	E. E. Aldinger	B. F. Hoffman
		M. H. Alper	P. B. Hollander
		M. Ben	R. L. Katz
		R. K. Bickerton	B. G. Katzung
		F. R. Blood	G. F. Kiplinger
		J. F. Borzelleca	J. Koch-Weser
		P. Calabresi	B. A. Kovacs
		H. F. Cascorbi	R. Kuntzman
		W. Y. Chan	F. S. LaBella
		J. E. Chapman	E. J. Landon
		C. A. Chidsey	J. Larner
		G. Cohen	C. L. Mitchell
		P. T. Condit	Joanne I. Moore
		T. Cooper	M. F. Murnaghan
		A. N. Corbascio	S. D. Murphy
		G. J. Cosmides	T. Namba
		J. P. Davanzo	K. Nishie
		G. A. Deneau	L. G. Raisz
		F. R. Domer	R. N. Reynolds
		B. Dubnick	K. Rickels
		B. V. Kranko	I. M. Rollo
		A. H. Friedman	J. Rotstein
		J. Gatgounis	B. V. Rama Sastry
		T. M. Gilfoil	H. G. Schoepke
		J. T. Gourzis	S. K. Sharpless
		A. J. Hance	S. Shimosato
		R. E. Handschumacher	G. M. Smith
		L. S. Harris	F. Sulser
		I. W. Hillyard	E. I. Takesue

Year	*Number* Elected	*Names*	
1964 (continued)		P. Talalay	K. M. H. Wang
		J. A. Thomas	M. E. Webster
		D. R. Varma	J. Yelnosky
1965 (Spring)	79	R. H. Adamson	D. C. Kroeger
		E. L. Aiello	F. E. Leaders, Jr.
		F. Alexander	P. E. Leveque
		N. Altszuler	J. V. Levy
		S. Archer	F. N. Marshall
		D. L. Azarnoff	A. V. Marton
		T. Baum	P. Mazel
		W. 0. Berndt	V. D. B. Mazzia
		J. R. Bertino	I. A. Michaelson
		J. H. Biel	V. Nair
		W. F. Bousquet	J. Nakano
		M. J. Brody	B. R. Nechay
		Jane H. Chin	J. A. Oates
		E. N. Cohen	L. T. Potter
		J. N. Cohn	P. Prioreschi
		F. F. Cowan, Jr.	N. Rakieten
		J. R. Davis	0. S. Ray
		S. Deutsch	E. M. Renkin
		A. M. Dominguez	R. L. Robinson
		Eileen T. Eckhardt	M. E. Rosenthale
		E. I. Eger	J. Ross, Jr.
		Seymour Ehrenpreis	A. C. Sartorelli
		J. T. Elder	G. E. Schreiner
		M. J. Freund	A. Schwartz
		A. R. Furgiuele	A. E. Sloboda
		J. H. Gans	T. L. Sourkes
		C. L. Gantt	L. Stein
		P. K. Gessner	C. R. Swaine
		S. E. Gitlow	J. C. Szerb
		A. J. Glazko	A. H Tashijian, Jr.
		D. Goldman	Mary L. Torchiana
		H. Green	H. Weissbach
		E. N. Greenblatt	A. M. Weissler
		M .G. Hardinge	H. Wells
		T. Hernandez	T. C. Westfall
		P. F. Hirsch	R. A. Yeary
		G. G. Jackson	V. G. Zannoni
		P. A. Khairallah	B. G. Zimmerman
		D. E. Knapp	H. J. Zimmerman
		W. P. Koella	
1965 (Fall)	27	K. C. Back	T. C. Hall
		E. Bresnick	J. A. Harvey
		C. Elison	G. G. Hyadu
		H. Foreman	D. C. Kvam
		K. L. Gabriel	K. H. Lee
		A. Gero	R. J. Levine
		J. P. Gilmore	G. Levy
		E. I. Goldenthal	S. J. Mule

Year	*Number Elected*	*Names*	
1965 *(continued)*		M. W. Osborne	A. J. Weiss
		E. R. Pinson, Jr.	A. Weissman
		F. J. Rosenberg	H. H. Wolf
		S. J. Sarnoff	W. B. Wood
		T. R. Tephly	(Posthumous honorary)
		M. Weiner	Francis P. McGrath
1966 (Spring)	60	M. W. Adler	F. G. McMahon
		A. Askari	G. H. Muelheims
		H. H. Bendixen	W. W. Oppelt
		C. P. Bianchi	R. A. O'Reilly
		F. E. Bloom	A. C. Osterberg
		W. S. Chernick	R. F. Palmer
		L. Chin	J. W. Pearson
		J. W. Constantine	A. M. Poisner
		W. A. Creasey	T. P. Pruss
		S. A. Cucinell	J. D. Robinson
		Rose Dagirmanjian	H. Salem
		L. E. Davis	H. R. Schreiner
		D. H. Efron	C. R. Schuster, Jr.
		M. B. Feinstein	H. C. Shirkey
		W. F. Geber	P. E. Siegler
		H. V. Gelboin	E. R. Smith
		L. M. Greenbaum	G. Tonelli
		A. Grossman	D. M. Travis
		D. C. Harrison	E. M. Uyeki
		D. M. Jacobowitz	R. A. Van Dyke
		Sarah Chinn Kaiser	E. E. Vogin
		R. J. Kitz	J. G. Wagner
		I. J. Kopin	M. Walser
		G. M. Ling	D. T. Walz
		J. G. Llaurado	G. Weber
		B. R. Lucchesi	W. L. West
		D. A. McCarthy, Jr.	H. G. Williams-Ashman
		R. H. McDonald, Jr.	R. J. Wurtman
		J. C. McGiff	S. J. Yaffe
		W. R. McGrath	(Honorary)
			Linus Pauling
1966 (Fall)	47	M. D. Aceto	M. Goldstein
		S. C. Alexander	T. L. Goodfriend
		C. A. Berry	V. A. Green
		I. Bihler	C. R. Hollett
		C. R. Boshart	R. D. Hudson
		R. K. Chalmers	N. B. Javitt
		E. A. Conrad	R. M. Kark
		C. R. Creveling	Eva Maria Kovacs
		E. A. Daigneault	T. J. Marczynski
		K. F. Finker	Irena M. Mazurkiewicz-Kwilecki
		Irene S. Forrest	E. C. McManus
		J. J. Fudema	J. H. Mennear
		H. Fujimori	H. Minatoya
		S. Gabay	J. M. Musacchio

Year	*Number Elected*	*Names*	
1966 *(continued)*		W. J. Novick, Jr.	W. W. Tourtellotte
		R. Perez-Cirera	E. J. Van Loon
		B. M. Phillips	R. Vargas
		A. D. Rudzik	Antonia Vernadakis
		R. L. Russell	H. Vidrio
		M. Segal	R. M. Welch
		A. A. Smith	F. W. Wolff
		S. H. Snyder	Barbara A. Zablocka
		E. H. Sonnenblick	E. F. Zimmerman
		R. D. Tanz	
1967 (Spring)	49	B. M. Altura	K. L. Melmon
		W. Y. W. Au	S. P. Miller
		E. E. Bagwell	D. H. Morrow
		R. F. Banziger	S. I. Oroszlan
		J. W. Bastian	R. R. Paradise
		W. T. Beaver	J. H. Peters
		Leslie C. Blaber	H. S. Posner
		J. J. Bonica	M. M. Reidenberg
		H. J. Burford	B. D. Roberts
		R. H. De Jong	R. P. Rubin
		Jocelyn F. Douglas	H. J. P. Ryser
		P. R. Draskoczy	0. Z. Sellinger
		K. E. Eakins	A. P. Shapiro
		E. J. Fedor	C. B. Smith
		M. I. Gold	R. Snyder
		G. E. Groblewski	R. E. Stitzel
		C. D. Harakal	S. Symchowicz
		D. F. Hawkins	W. L. Thompson
		K. R. Hornbrook	A. Tye
		R. E. Jewett	Isabel J. Wajda
		D. H. Kessel	H. H. Wang
		S. M. Kirpekar	V. D. Wiebelhaus
		R. A. Levine	W. R. Wilson
		A. S. C. Ling	M. Wurzel
		P. Lomax	
1967 (Fall)	53	H. P. K. Agersborg, Jr.	R. Greenberg
		G. K. Aghajanian	J. A. Gylys
		K. F. Austin	P. E. Hochstein
		H. Barry, Ill	F. Homburger
		R. Bressler	R. W. Jelliffe
		I. Brodsky	W. R. Jondorf
		L. J. Casarett	M. Kletzkin
		H. I. Chernov	B. K. Koe
		Doris H. Clouet	H. Lal
		J. A. Coppola	R. P. Link
		B. G. Covino	T. L. Loo
		A. Despopoulos	K. L. MacCannell
		J. L. Emmerson	A. Manian
		Elinor M. Glauser	D. T. Mason
		S. C. Glauser	D. J. McCarty
		N. D. Goldberg	J. L. McNay
		W. C. Govier	M. Okamoto

Year	*Number Elected*	*Names*	
1967 *(continued)*		V. T. Oliverio	N. T. Smith
		K. E. Osserman	R. P. Smith
		A. L. Picchioni	H. M. Soloman
		S. J. Piliero	Marie T. Spoerlein
		Doris T. Poole	C. E. Spooner
		U. H. Schaeppi	P. Stark
		S. M. Schanberg	M. C. Sutter
		R. T. Schopp	L. S. Van Orden
		N. N. Share	(Honorary)
		R. L. Singhal	Irvine H. Page
1968 (Spring)	44	W. B. Abrams	A. Lorenzo
		E. X. Albuquerque	L. E. McCarthy
		H. J. Bader	G. S. Marks
		C. H. Burnett	C. Martin
		0. Carrier, Jr.	N. H. Neff
		J. W. Daly	P. E. Pool
		R. A. Deitrich	H. Rackow
		J. V. Dingell	D. J. Reed
		A. G. Ebert	E. Reit
		H. Feinberg	H. W. Rudel
		B. D. Fremming	B. P. Salafsky
		S. Goldstein	J. J. Schrogie
		A. W. Gomoll	S. Shibata
		Mary L. Graeme	J. M. Stewart
		A. P. Grollman	F. W. Sunderman, Jr.
		H. M. Hanson	W. J. R. Taylor
		P. Hebborn	C. D. Thron
		M. Helrich	J. E. Usubiaga
		L. M. Hofmann	A. Van Poznak
		J. H. Jaffe	W. H. Vogel
		G. E. Johnson	G. B. Weiss
		B. Levitt	C. D. Withrow
1968 (Fall)	65	S. G. A. Alvisatos	A. S. Fairhurst
		J. J. Barboriak	H. C. Ferguson
		K. V. Batra	Z. N. Gaut
		J. R. Bianchine	G. L. Gebber
		H. H. Borgstedt	P. Goldman
		J. L. Borowitz	T. E. Gram
		Anne R. Bourke	L. B. Hinshaw
		M. C. Braude	J. B. Hook
		F. G. Carpenter	C. C. Hug, Jr.
		C. J. Cavallito	T. N. James
		R. J. Collins	D. G. Johns
		C. R. Craig	N. Khazan
		J. W. Cramer	N. Kirshner
		H. B. Daniell	G. Y. Koff
		D. W. Ducharme	K. Kuriyama
		S. Dutta	L. Lemberger
		M. D. Fairchild	L. Levy

Year	*Number Elected*	*Names*	
1968 (continued)		J. J. McPhillips	C. 0. Rutledge
		C. Mitoma	H. D. Sanders
		N. R. Morris	F. Schneider
		J. I. Munn	N. W. Scholes
		T. Narahashi	P. Somani
		S. R. Nelson	J. H. Thompson
		T. E. Nelson, Jr.	Clara Torda
		R. Okun	T. H. Tsai
		J. J. O'Neill	Christina Vanderwende
		J. Pearl	E. S. Vessell
		W. A. Pettinger	Lavern J. Weber
		J. K. Pruett	I. Weinstein
		E. Roberts	P. W. Willard
		C. R. Ross	K. C. Wong
		R. H. Roth	G. R. Zins
		R. W. Ruddon, Jr.	
1969 (Spring)	65	M. W. Anders	V. Nigrovic
		Tatiana A. Assaykeen	Jean C. Panisset
		C. D. Barnes	C. M. Pearson
		S. S. Bloomfield	J. H. Pirch
		J. H. Brown	0. J. Plekss
		R. C. Cantu	A. Raines
		Y. H. Chang	D. J. Reis
		T. S. Chiang	A. A. Renzi
		F. R. Ciofalo	C. A. Ritter
		Joan V. Danellis	H. C. Sabelli
		H. C. B. Denber	L. F. Sancilio
		R. L. Dixon	W. M. Schach von Wittenau
		K. W. Dungan	S. L. Schwartz
		J. W. Eckstein	L. S. Seiden
		A. J. Eisenfeld	D. H. Singer
		R. M. Epstein	J. E. Stambaugh
		R. W. Estabrook	M. Steinberg
		H. W. Felsenfeld	Paula H. Stern
		E. D. Frohlich	R. N. Straw
		G. Glick	W. E. Stumpf
		A. M. Goldberg	L. Triner
		R. D. Green	M. H. Van Woert
		I. B. Hanenson	A. E. Wade
		C. Heidelberger	N. Watzman
		J. L. Holtzman	B. Weiss
		H. I. Jacoby	Annemarie S. Welch
		M. H. Joffe	B. L. Welch
		J. J. Kamm	E. H. Wiseman
		A. M. Karow, Jr.	A. J. Wohl
		J. D. Kohli	C. W. Young
		B. Korol	T. Zsoter
		R. Levi	(Honorary)
		S. Mohammed	Arthur Stoll
		R. Y. Moore	Corneille Heymans (posthumous)

detailed reports on the Second International Pharmacological Meeting, Prague, Czechoslovakia, August 19-23,1963, and the XXII International Congress of Physiological Sciences, September 10-17,1962, clearly showed the maturity of pharmacology. Richard Ridgway, of Haynes, Fitzgerald, Wanner, Haislip and MacHale, amended the Society's Constitution (1963) and Certificate of Incorporation (1964). The Corporate Associate members continued to support the Society and generously contributed to make possible our travel grants to international meetings.

Sixteenth Fall Meeting—Lawrence, Kansas, August 23-27,1964

For more convenient facilities, Lawrence Peters, Chairman of the Local Committee, used the Lawrence campus instead of Kansas City where the Medical Centre is located. President Karl H. Beyer, Jr., presided at all meetings. E. B. Cook, Editor of *The Pharmacologist,* made visible improvements in the publication: photographs of officers and Past-Presidents, summary pages of the scientific program, and information about foreign pharmacological societies. In the business meeting the membership was informed of the ASPET financial structure; the XXIII International Congress of Physiological Sciences in Japan, 1965, and Third International Pharmacological Meeting in Brazil, 1966; the reduced rate of JPET to members; and the appearance of a new journal, Molecular *Pharmacology.* The lists of Corporate Associates and sustaining members were unusually long.

Karl H. Beyer, Jr., was born in 1914 in Henderson, Kentucky. After he graduated B.S., 1935, from Western Kentucky State College, he went to the University of Wisconsin, Madison, for graduate studies (Ph.M., 1937; Ph.D. (physiology), 1940; and M.D., 1943). He held teaching positions while working for his degrees: instructor in chemistry, Western Kentucky State College (1935-36); and instructor in physiology, University of Wisconsin Medical School (1939-43). After completing his medical degree, he became Assistant Director, and then Director, of Pharmacological Research (1943-50) and Assistant Director of Research (1950-56) at Sharp and Dohme. When the latter was merged with Merck and Company, Beyer was appointed Director and President of Merck Institute for Therapeutic Research, West Point, Pennsylvania (1956-66). He became Vice-President for Life Sciences, Merck Sharp and Dohme Research Laboratories (1958-66), and Senior Vice-President (1966–present). While his title changed at promotion, his office remained at West Point, Pennsylvania.

Beyer has written more than 150 papers in the fields of sympathomimetic amines, renal physiology and diuretics, penicillin therapy, metabolism of drugs in the body, and enzymologic studies on secretory mechanisms of cells.

He is a member of APS, ACS, SEBM, Canadian Pharmacological Society, American Therapeutic Society, Society of Toxicology, American Society of Nephrology, and International Biochemical Pharmacology; and a fellow of American College of Physicians, New York Academy of Sciences, and Royal Society of Medicine. He served as Chairman, Medicinal Chemistry Section, Gordon Research Conference, and as President of FASEB (1965-66). Beyer has been on the faculties of four medical schools in

the Philadelphia area. He has lectured in the US and abroad: Howard University School of Medicine; University of Wisconsin School of Medicine; Institute of Pharmacology, Free University of Berlin; Karolinska Institutet, Stockholm; University of Uppsala; and University of Goteborg.

During the last decade Beyer has received much recognition: the Merck Scientific Award (1959); the Gairdner Foundation Award (1964); Modern Pioneers in Creative Industry Award, National Association of Manufacturers (1967); APhA Foundation Award in Pharmacodynamics (1967); Distinguished Service Award, Wisconsin Alumni Association (1968); Certificate of Distinction, the Lewis Harvie Taylor Lecture, American Therapeutic Society (1968).

Fifty-Third Annual Meeting—Atlantic City, New Jersey, April 9-14,1965

The proposed budget for the calendar year 1965 put ASPET in the black. There was a scarcity of travel funds to the next two congresses—physiology in Japan and pharmacology in Brazil. The results of election of officers and 79 new members appear in Tables 11 and 12. The next Fall Meeting was to be held on the campus of the University of Pennsylvania in conjunction with its bicentennial celebration. The two symposia organized by W. Kalow on pharmacogenetics and by J. Axelrod on uptake, storage, and release of norepinephrine marked progress of knowledge in these areas. The after-dinner speaker was J. F. Sadusk on April 12th.

Seventeenth Fall Meeting—Philadelphia, Pennsylvania, August 16-20,1965

George B. Koelle served in dual capacity as President of ASPET and Chairman of the Local Committee. It was one of the largest Fall Meetings (total registration, 1131). Society affairs required 6 Council and 2 business meetings. Despite the busy schedule, the Local Committee was able to arrange a social mixer, a piano concert by Miss Susan Starr, and a banquet on August 18th, after which James A. Shannon spoke. His thesis was instructive: "American pharmacology is too narrowly focused," and "The pharmacologist has a major and challenging role to play in the development of new therapeutic agents." This was a heart-to-heart talk from one pharmacologist to another. As shown in Table 12, 27 new members were elected.

George B. Koelle, one of the youngest Presidents of ASPET, was born in Philadelphia, Pennsylvania, in 1918. He matriculated in the Philadelphia College of Pharmacy and Science, the first school of pharmacy in the US, established in 1821. Koelle graduated in 1939 with a B.Sc. in biology. He transferred to the University of Pennsylvania for a Ph.D. in pharmacology (1946), and to Johns Hopkins University Medical School for an M.D. (1950).

While pursuing his undergraduate studies, he held part-time positions at his alma mater: bioassayist and laboratory instructor, La Wall and Harrisson Laboratories (1939-42). He was commissioned 1st Lieutenant, AUS, during World War II (1942-46).

At Hopkins he held the Chalfant fellowship in ophthalmology, Wilmer Institute (1946-50). He was appointed assistant professor of pharmacology, College of Physicians and Surgeons, Columbia University (1950-52). He was called to the University of Pennsylvania to be Professor of Pharmacology, Graduate School of Medicine (1952–present); Chairman, Department of Physiology and Pharmacology; Dean, Graduate School of Medicine (1957-59); Chairman, Department of Pharmacology, School of Medicine (1959–present); and E. H. Bobst Professor of Pharmacology (1963–present).

He is author of over 100 papers, among them reports on the pharmacology of the autonomic nervous system, histochemistry of cholinesterase and amine oxidase, and cardiovascular drugs. He has been repeatedly honored for excellence in teaching: W. Pepper Medical Society Annual Honor Lecture (1965), Lindback Distinguished Teaching Award (1966), and Outstanding Teaching Award (1967).

Koelle is a member of the Physiological Society of Philadelphia, Histochemical Society, Harvey Society, Society for Biological Psychiatry, and John Morgan Society. He has served on the editorial boards of *Pharmacological Reviews* (1955-59; Chairman, 1959-62), *Annual Review of Pharmacology* (1959-66), and *Journal of Neuropharmacology* (1961–present). He has been appointed to committees of government agencies and other organizations: USPHS, Pharmacology and Experimental Therapeutics Study Section (1958-62; Chairman, 1964-68); Board of Scientific Counselors, NIH (1960-64); Senior Fellowship Selection Committee (1958); Board of Wistar Institute, Philadelphia (1957–present); Post-Graduate Education Committee, Association of American Medical Colleges (1958-60); and Board of Trustees, Philadelphia College of Pharmacy and Science (1962-65, 1966–present). He is a consultant of the Heart Station of the Philadelphia General Hospital (1953–present), Valley Forge Army Hospital (1954–present), and US Naval Hospital at Philadelphia (1957–present).

Koelle received the John J. Abel Award (1950), Borden Research Award (1950), honorary membership in Alpha Omega Alpha (1962), and an honorary D.Sc. from the Philadelphia College of Pharmacy and Science (1965). He has been invited to lecture in the US and abroad: Georgetown University Medical School; McGill University, Montreal; University of London; University of Birmingham; University of Brazil; and Biological Society of Chile. He was Guggenheim Fellow and Visiting Professor at the University of Lausanne, Switzerland. Currently he is Secretary-General, IUPHAR (1966-69).

Fifty-Fourth Annual Meeting—Atlantic City, New Jersey, April 11-16,1966

President G. B. Koelle had a busy administration. He presided at 6 Council and 2 business meetings and served as toastmaster at the annual dinner. Officers and 1 honorary and 59 new members were elected (Tables 11, 12); there was a long list of Corporate Associate members. SEPHAR withdrew from IUPS at the XXIII Congress, Tokyo, Japan, September 1-9, 1965. Planning for the Fall Meeting in Mexico and formation of the International Union of Pharmacology (IUPHAR) were items of great importance. H. W. Thompson, President of ICSU, hinted that pharmacology would have its own sovereignty *(Pharmacologist 7:* 119, 1965), although its application for an independent union was rejected twice *(Pharmacologist* 8: 58, 1966). Our own member, J. H. Comroe, Jr., gave a most humorous after-dinner speech. The

President set a precedent by publishing an annual report *(Pharmacologist* 8: 121, 1966).

Eighteenth Fall Meeting—Mexico City, Mexico, July 15-20, 1966

President Harold C. Hodge would have faced a difficult situation conducting a meeting in Mexico without assistance, but fortunately our loyal member, E. G. Pardo, was an efficient Secretary of the Local Committee and took every advantage of our friendly neighboring nation. R. Mendez and R. P. Circera were named Chairman and Vice-Chairman of the Local Committee and Pardo had the assistance of V. Santander. The date was originally set at August 21-26, 1966, but in order to dovetail with the Third International Congress of Pharmacology, it was changed to July 17-22, and finally to July 15-20. The topic of the after-dinner speaker, I. Bernal, was "Autochthonous Cultures of Mexico." All the meetings and sessions took place at the Universidad Nacional de Mexico in Mexico City. Forty-seven new members were elected. The T. Sollmann Award was presented on July 16th to A. D. Welch, whose oration appeared in *The Pharmacologist* (9: 46, 1967). A total registration of 702 was recorded. The banquet was held at the Club Campestre de la Ciudad de Mexico and the local Committee entertained ASPET members and guests with a social mixer at the Hotel del Prado.

President **H. C. Hodge** was born in Chicago, Illinois, in 1904. He earned his B.S. (1925) from Illinois Wesleyan University and his M.S. (1927) and Ph.D. (1930) from the State University of Iowa. He was assistant professor of chemistry, University of Pacific, Stockton, California (1929-30), and Professor of Chemistry, Ottawa University, Ottawa, Kansas (1930-31). Since 1931 he has been on the faculty of the University of Rochester School of Medicine and Dentistry, advancing from Rockefeller Fellow in Dentistry (1931-36) to assistant professor of biochemistry and pharmacology (1937-40), associate professor and consultant in dental research (1940- 46), Professor of Pharmacology and Toxicology (1946-58), Chief of Manhattan Project and Atomic Energy Project (1943-58), Professor of Pharmacology, and Chairman and Professor of Radiation Biology and Biophysics (1958—present). He was Visiting Professor at St. Mary's Hospital Medical School, London, in 1962 and at the University of California, San Francisco, in 1963.

His research interests have been in the fields of physical and chemical properties of enamel, dentine, cementum, and bone; fluorine and caries; molecular composition of calcium phosphates; and toxicology of thorium, zirconium, uranium, and beryllium compounds. He is co-author of *The Pharmacology and* Toxicology *of Uranium Compounds, Clinical Toxicology of Commercial Products,* and *Biological Effects of Fluorides.* He has published 230 articles in scientific journals.

He is a member or fellow of ACS, ASBC, SEBM, Rochester Academy of Science, American College of Dentists, and Royal Society of Medicine. He was President of the International Association for Dental Research (1947), New York State Society for Medical Research (1960), and Society of Toxicology (1961). He has been called to serve as Chairman, State of New York Department of Health, Committee on Fluoridation of Water Supplies (1944-57); NAS-NRC Committee on Toxicology (1951-58) and Committee on Dentistry (1951-54); and US National Committee, IUPAC (1954-57).

He has been a member of the USPHS Dental Research Study Section (1946-47), National Advisory Dental Research Council (1948-52, 1957-58), and Pharmacology Training Committee (1961-65). He is a consultant to the Atomic Energy Commission (1958–present) and the World Health Organization, Expert Advisory Panel on Dental Health (1956–present).

Harold is an honorary member of Alpha Omega Alpha, Rochester Academy of Medicine, and American Dental Association. He received the Chaim Prize, First District Dental Society of New York, in 1934 and 1937 and the International Association for Dental Research Award in 1965. Both Illinois Wesleyan and Western Reserve Universities conferred on him an honorary D.Sc.

THIRD INTERNATIONAL PHARMACOLOGICAL CONGRESS—SAO PAULO, BRAZIL, July 24-30, 1966

This was the first Congress (third meeting) since SEPHAR had become IUPHAR. The theme was "The Pharmacological Basis of Therapy." H. Raskova convened the plenary meetings, because C. Heymans was ill; M. Rocha e Silva was Chairman of the Local Committee. There were 1050 active and 250 associate members present. The scientific program consisted of 11 symposia, 17 lectures, and 545 short communications--a great success. US attendance was surprisingly large in view of the shortage of travel grants. The statutes of IUPHAR were adopted *(Pharmacologist* 9: 42, 1967), and G. B. Koelle was elected Secretary-General. Regretably, the local operations sustained financial losses. Basel was chosen as the site of the Fourth Congress of IUPHAR.

SPECIAL MEETING—October 8, 1966

This special Council meeting at the ASPET Office was called by President Hodge to discuss with Fred Stone the possible termination of training grants from the USPHS, to pay $1000 dues to IUPHAR, to elect officers by mail ballot, and to propose organization of a biochemical pharmacology subsection of ASPET.

Fifty-Fifth Annual Meeting—Chicago, Illinois, April 16-20, 1967

H. C. Hodge presided at 7 Council and 2 business meetings and was present at the Past-Presidents' luncheon and the Society dinner. Officers in an organization of our size have little time to themselves. In addition the President had to give an account of what had happened during the year. New officers and 49 new members were elected; the minutes are available in The *Pharmacologist.*

Nineteenth Fall Meeting—Howard University, August 27-31, 1967

Allan D. Bass conducted 3 Council and 2 business meetings. The attendance was greater than that at the Philadelphia meeting-1208 vs. 1131. Walter M. Booker, Chairman of the Local Committee, made every event a

success, and even the weather was pleasant. This memorable occasion was fitting for the centennial year of Howard University. A clinical pharmacology seminar on the treatment of shock was scheduled with 7 travel awardees. One honorary and 52 new members were elected (Table 12). The banquet was held at the Washington Hilton Hotel, and our honorary member, I. H. Page, gave the address. President Bass, with Council approval, appointed Past-Presidents F. E. Shideman, G. B. Koelle, and H. C. Hodge to serve on the Election Committee of Officers for the first time in ASPET history.

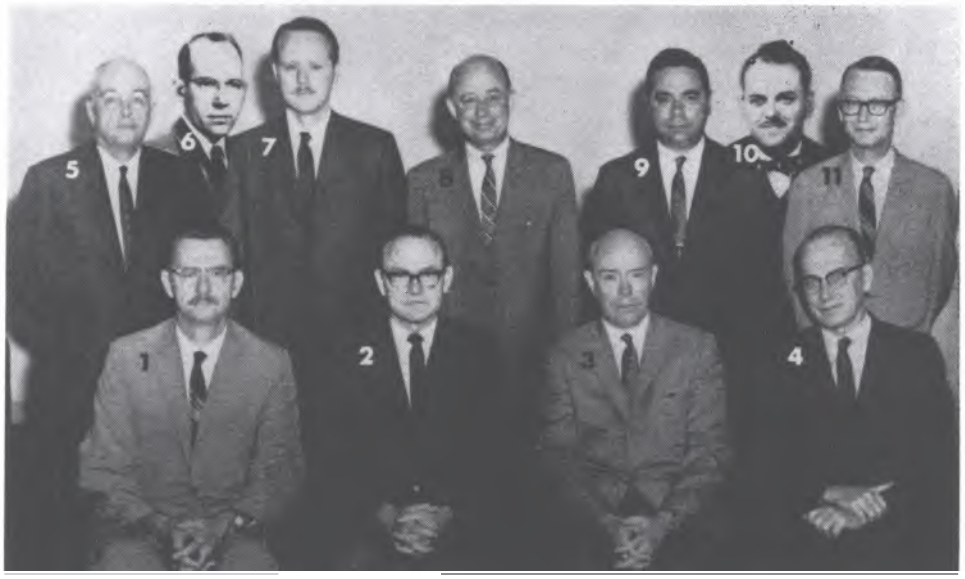
President **Allan D. Bass** was born in 1910 in Marcus, Iowa. After he received his B.S. from Simpson College in 1931, he went to Vanderbilt University and Hospital, Nashville, Tennessee, for postgraduate and medical education: M.S. (1932), M.D. (1939), house officer (1939-40), and assistant resident (1940-41). He transferred to Yale University Medical School as a fellow and instructor in pharmacology (1941-43) and then returned to Vanderbilt as an instructor in medicine (1943-44). World War II interrupted his career; he served USA, M.C. in the Philippine Islands, 1944-45. After discharge, he became Chairman of Pharmacology, Syracuse Medical College, Syracuse, New York (1945-52). His alma mater, Vanderbilt, called on him to be Professor and Chairman of the Department of Pharmacology (1952–present).

Bass has written more than 50 papers covering the areas of chemotherapy of lymphoma, antiseptics, anthelmintics, steroid metabolism, cyanide poisoning, hypnotics, and nucleoproteins.

He is a member or fellow of SEBM, AMA, American College of Physicians, and Association for Cancer Research. His advice is sought by the government and by other societies: Secretary of Section N, AAAS (1952-60); USPHS, Pharmacology and Experimental Therapeutics Study Section (1960-64) and General Medical Research Project Committee (1966–present); AMA Council on Drugs (1966–present); and Chairman, Test Committee, National Board of Medical Examiners (1960).

Fifty-Sixth Annual Meeting—Atlantic City, New Jersey, April 15-20,1968

President A. D. Bass convened 4 Council and 2 business meetings. Election of officers by mail ballot proved feasible and less time consuming. Forty-four new members were elected (Table 12). Ten clinical pharmacology travel grants were awarded. The offer of an annual award for experimental therapeutics by Hoffmann-La Roche Inc., Nutley, New Jersey, was accepted by the Council, with the first one scheduled for the 57th Annual Meeting at Atlantic City. Those who heard our after-dinner speaker, S. M. Mellinkoff, enjoyed his humor, but to some serious-minded members of ASPET, two points stood out: it was mentioned, but not printed, that young pharmacologists skip the Spring dinner; and there was a discussion about how others appraise American pharmacologists. The theme of the Fourth International Pharmacological Congress, which will take place in Basel, Switzerland, on July 14-18,1969, will be "The Application of Physical and Chemical Methods to Pharmacology"; the Chairman of the Local Committee is K. Bucher. The Fifth International Congress of Pharmacology will be in the US at San



Fall Meeting at Minneapolis, Minnesota, August 18-22, 1968

1. Maynard B. Chenoweth, Treasurer
2. James A. Bain, President-Elect
3. Robert M. Featherstone, President
4. Allan D. Bass, Past-President
5. Ellsworth B. Cook, Executive Officer
6. Sydney Ellis, Councilor
7. Parkhurst A. Shore, Councilor
8. Thomas H. Maren, Secretary
9. Nicholas J. Giarman, Secretary-Elect (deceased), replaced by John J. Burns
10. Edward J. Walaszek, Councilor
11. Frederick E. Shideman, Chairman

Francisco on July 21-28, 1972; R. M. Featherstone is Chairman of the Executive Committee and the FASEB Convention Office will handle arrangements.

Twentieth Fall Meeting—Minneapolis, Minnesota, August 18-22, 1968

Chairman Frederick E. Shideman and his Local Committee spared no detail in planning a most enjoyable meeting on the campus of the University of Minnesota. President Robert M. Featherstone presided at Council and business meetings, and Past-President A. D. Bass addressed the membership after the Teaching Institute in Coffman Union Auditorium. Total registration reached 1068. Many individuals took advantage of the free afternoon to travel to Rochester, Minnesota, and toured through the Medical Research Laboratories, Clinical Laboratories, and Publications and Arts Divisions of the Mayo Clinic. The Local Committee did away with the customary dinner, but provided a free mixer at the Leamington Hotel one evening and a free performance of *Serjeant Musgrave's Dance* at the Tyrone Guthrie Theatre another evening. The photograph of the Council marks the completion of 60 years of ASPET.

Immediately after our Fall Meeting the XXIVth International Congress of Physiological Sciences was held in Washington on August 25-31, 1968. Although this Congress was sponsored by APS and the Society of General Physiology through NAS-NRC, many ASPET members attended. It was a great success under the presidency of W. 0. Fenn.

Robert M. Featherstone, 37th President of ASPET, was born in Anderson, Indiana, in 1914. He studied music for 2 years at the Arthur Jordan Conservatory, Indianapolis, Indiana (1934-36), before entering and graduating from Ball State University, Muncie, Indiana, with a B.A. in 1940. He transferred to the University of Iowa, Iowa City, and earned his M.S. in 1942 and Ph.D. (biochemistry and pharmacology) in 1943. As an undergraduate and graduate student, he was involved in many activities: Music Club, German Club, Biology Club, Student Council, Symphony, Blue Key Men's Service Fraternity (President). After a year as instructor in biochemistry at the Medical College of the State of South Carolina, Charleston, he was appointed to the faculty of the College of Medicine, University of Iowa, advancing from associate in biochemistry to assistant professor, associate professor, and Professor of Pharmacology (1944-1957). Since 1957 he has been at the University of California School of Medicine, San Francisco, as Professor and Chairman of the Department of Pharmacology.

Featherstone is author and co-author of 4 books and more than 80 articles published in leading journals. His symposium introduction to "The Molecular Pharmacology of Anesthesia" *(Federation Proc.* 27: 870, 1968) is a fine example of academic accomplishment. During the past decade his research interests have been also focused on functional enzymes in avian and mammalian cells and their relationship to the development of tumors.

At both Iowa and California Universities he generously serves on numerous committees to improve the standards of the medical school. He is a member or fellow of ACS, SEBM, Pharmacology Society of Canada, AMA (Council on Drugs), Western Pharmacology Society (President, 1959), Royal Society of Medicine (England), and FASEB. He is a delegate to the Fourth Congress of IUPHAR (1969) and is Chairman, Executive Committee of the Fifth Congress of IUPHAR (1972). He participated in the XXI Congress of !UPS at Buenos Aires in 1959, the XXII Congress at !UPS at Leiden in 1962, and the First European Congress of Anesthesia at Vienna in 1962. He has been a consultant in various capacities: USPHS, Cancer Chemotherapy Study Section, NCI (1960-64); Committee on Pharmacology–Anesthesia Training Programs (1962); Committee on Pharmacology and Toxicology Training Programs (Chairman) (1963-67); Director, Presentation of Pharmacology Program to NIGMS Council (1968); USA Delegation to USSR on Problems of Higher Nervous Activity, NINDB (1968); Consultant, Indiana University School of Medicine and University of Oregon School of Medicine.

Featherstone has been a member of the editorial boards of *Biochemical Pharmacology* and of *Molecular Pharmacology.* He has also been an invited lecturer in the US and in foreign countries. He was elected honorary member, Rho Chi Society, and Alumnus-of-the-Year, Ball State University, 1960. He was named Professor of the Muncie Academy of Medicine in 1962; that same year he received an honorary LL.D. from Ball State University. While in Russia in 1968, V. V. Zakusov, President of the USSR Pharmacology Society, presented him the Kravkov Medal, which was named after N. P. Kravkov (1865-1924), a pioneer Russian pharmacologist. He enjoys playing violin or oboe in a chamber music group, hiking and camping, and color photography.

Fifty-Seventh Annual Meeting—Atlantic City, **New Jersey, April 13-18,1969**

President R. M. Featherstone convened the Council and business meetings. Officers were again elected by mail ballot. On the recommendation of the Membership Committee and Council, 65 new and 2 honorary members were elected (Table 12), one posthumously. The first Award for Experimental Therapeutics was processed and presented.

Regional Get-Togethers

Pharmacologists have gathered periodically, in addition to the FASEB and ASPET meetings, in groups arising from geographical locations.

WESTERN PHARMACOLOGY SOCIETY

For over a dozen years pharmacologists (Chairmen of Departments) have been attending the annual meetings of the Western Clinical Society, and in 1956 they discussed the feasibility of organizing a regional pharmacology society. J. M. Dille's "Ten Years in Retrospect" *(Proc. Western Pharmacol. Soc.* 10: 5, 1967) reveals how he invited the members of ASPET on the Pacific Coast to meet the following year for such an organization. Twelve pharmacologists showed up and decided on the name and object of presenting research papers. In 1958 Dille solicited papers for a program, presented a draft of a constitution and bylaws, and devised means of financing publications. The Western Pharmacology Society was born—informal, friendly, and full of opportunities for exchange of knowledge. It has grown from 12 founders to 366 active members, with 22 affiliate members and 79 friends.

Year	*President*	*Place*
1957	Founders' Meeting	La Playa Hotel, Carmel
1958	J. M. Dille	Bellevue Hotel, San Francisco
1959	J. M. Dille	Bellevue Hotel, San Francisco
1960	R. M. Featherstone	Bellevue Hotel, San Francisco
1961	H. R. Bierman	Miramar Hotel, Santa Monica
1962	G. A. Alles	Miramar Hotel, Santa Monica
1963	N. A. David	Bellevue Hotel, San Francisco
1964	E. Leong Way	Jack Tar Hotel, San Francisco
1965	G. E. Cronheim	Miramar Hotel, Santa Monica
1966	A. Horita	Sir Francis Drake, San Francisco
1967	H. E. Elliott	Pine Inn, Carmel
1968	E. L. McCawley	Bellevue Hotel, San Francisco
1969	S. A. Peoples	Bellevue Hotel, San Francisco

In the 1967 Proceedings 27 articles were published and 19 were orally presented but not published. C. D. Leake has been Secretary-Treasurer and Editor since 1968.

MIDWEST PHARMACOLOGY GROUP

Harry Beckman in 1957 wrote to pharmacologists in the Midwest suggesting that they meet in his Department to interchange research information. It was to be entirely informal; there have been no officers, no dues, and no formal papers. Location and time are irregular and depend on convenience. Donald L. Cook volunteered to be the Secretary and is asking an institution to host a meeting in 1969. As in the Western Pharmacology Society, the expenses in large measure have been met by the pharmaceutical houses. The attendance has been between 100 and 150. Cook has kept the records of meetings so far and furnished the pertinent information.

Date	*Host Institution*
June 25, 1957	Marquette University
December 21, 1959	University of Loyola
June 20, 1960	State University of Iowa
June 16, 1961	University of Wisconsin
June 15, 1962	Abbott Laboratories
June 14, 1963	The Chicago Medical School
June 18-19, 1964	Indiana University, Eli Lilly & Co., and Pitman-Moore (Dow Chemical Co.)
December 21, 1964	University of Illinois
June 17, 1966	University of Chicago
December 15, 1967	G. D. Searle & Co.

BIOCHEMICAL PHARMACOLOGICAL DISCUSSION GROUP

In the New York-New Jersey area, a substantial number of biochemically oriented pharmacologists have met at the New York Academy of Science on the 4th Tuesday of each month, except April, June–September, and December, to present research subjects of interest. S. M. Hess informed the writer that he was Chairman from 1961 to 1967 and that H. Sheppard succeeded him in 1967.

International Union of Pharmacology

According to H. Herken *(Pharmacologist* 6: 108, 1964), in 1900 0. Schmiedeberg, J. F. Heymans (Ghent), G. G. Santesson (Stockholm), and others discussed meetings that would be devoted to the special problems of pharmacology. Three such meetings were held, all in Germany. The first was at Strassburg in 1902 under the auspices of Schmiedeberg, and the second at Leipzig in 1904 under the sponsorship of R. Bohm. The third pharmacological meeting was held at Heidelberg as a subsection of the VII International Physiological Congress in 1907.

Pharmacologists as well as biochemists were in company with close relatives triennially, but somehow felt like outsiders. The Congress was in the

hands of the Permanent Committee of Physiologists. This sort of sensitivity was well illustrated in a letter from A. R. Cushny to R. Hunt that had been in 0. Krayer's file for a long time. He forwarded it to the writer in 1968 and it is reproduced with his permission.

8 Upper Park Road
Hampstead, N.W.
3. I. 1914

Dear Hunt,

It has been on my conscience for long that I have never written you to ask you to convey my congratulations to Harvard on your appointment. It was a first rate thing for Harvard and I hope you find it a first rate thing for yourself. After all there are good points about the University career and if you have not too much teaching put on you, you will enjoy it. We all missed you and Mrs. Hunt at the Physiological Congress this year and, whether it was your absence or something else, it seemed duller than usual. The most interesting thing by far by common consent was Abel's experiment [1] which went well and made a great impression. We are trying to get up an International Pharmacological Congress in a year or two just to show that there is such a thing and to get to know each other better and I hope everyone will put his shoulder to the wheel and jam it forward.

Kindest regards to Mrs. Hunt and yourself from us both.

Very truly yours,
(signed) A. R. Cushny

World pharmacologists appeared more conscious of their discipline at the XVI International Physiological Congress. ASPET Secretary G. P. Grabfield recorded in the minutes, "The XVI International Congress of Physiology will meet in Zurich, Switzerland, August 14-18, 1938. There will be a Pharmacological section of the Congress and there will also be a *special evening* meeting for Pharmacologists." C. Voegtlin, a founder of ASPET, wrote a letter to the Secretary that read as follows:

I note that you announced the date of the next Physiological Congress. It will interest you to know that steps are being taken to hold an international meeting of pharmacologists in Zurich probably preceding the International Physiological Congress. The committee which was appointed in Russia during the last Physiological Congress to make the necessary arrangements for this meeting of pharmacologists, consists of Anitschkow, Dale, Straub, Meyer, Tiffeneau, and myself. I shall keep you informed concerning future developments.

There was no definite information after the Congress, but from the autobiography of E. Rothlin, who was Secretary-General of the Congress,

[1] Cushny was referring to Abel's work on "Vividiffusion" or artificial kidney presented at the IXth International Physiological Congress at Groningen.

a general discussion of "The Scope and Future in Teaching and Research of Pharmacology" was held *(Ann. Rev. Pharmacol.* 4: xxix, 1964).

After World War II, the XVII International Physiological Congress took place at Oxford, Great Britain, in 1947, with H. H. Dale, a pharmacologist, as its President. F. R. Winton, University College, London, hosted a 1-day meeting immediately after the closing of the Congress for the presentation of pharmacological papers. M. L. Tainter of ASPET, in an informal discussion, proposed the formation of an international organization of pharmacologists, but no specific resolution was drawn up.

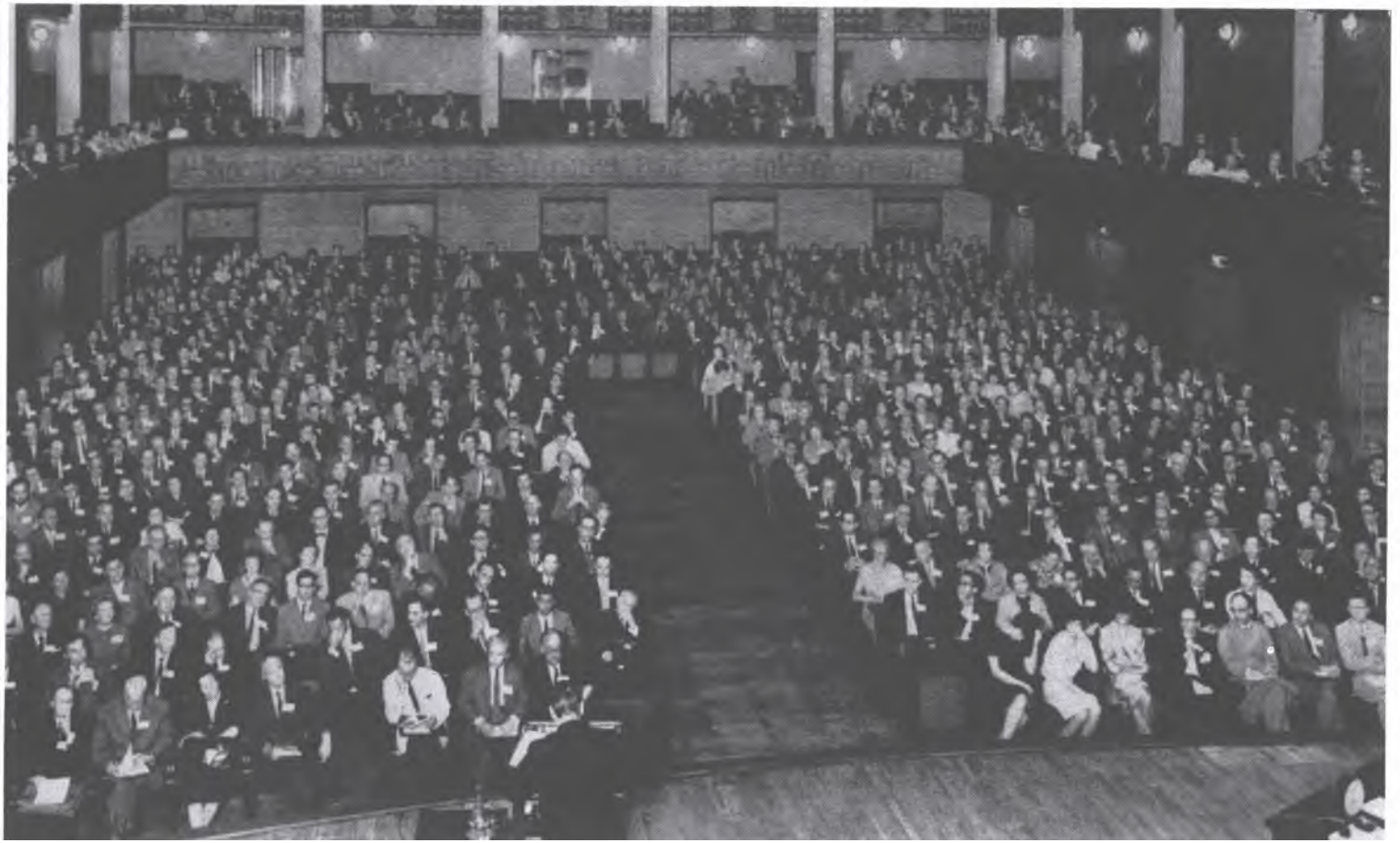
A 2-day conference was arranged for pharmacologists after the XVIIIth Congress at Copenhagen in 1950. The program consisted of scientific papers and an excursion to Soro. En route by train an informal exchange of ideas was held, and there was much enthusiasm for an independent organization. The pharmacologists in attendance decided to elect an International Committee of 5 pharmacologists to devise ways and means of forming such an international society.

At the XIX Congress in Montreal, Canada, in 1953, K. I. Melville of ASPET counted 450 pharmacologists from 21 countries. He arranged a 1-day scientific meeting of pharmacologists at Macdonald College. Contemporary colleagues can recall the heated discussions. An International Council of 7 pharmacologists was elected. Physiologists had to be organized into the International Union of Physiological Sciences (IUPS) and adhered (for the first time) to the International Council of Scientific Unions (ICSU).

At the XXth Congress in Brussels, an open meeting of pharmacologists was held, and the 7-man International Council of Pharmacologists was urged to negotiate with IUPS for more specific recognition. This led to the formation of the Section of Pharmacology (SEPHAR), within the framework of IUPS, at the XXIst Congress in Buenos Aires in 1959.

A major stride toward independent status came with the organization of the First International Pharmacological Meeting at Stockholm in 1961. Discussions were continued when the SEPHAR Council met at the XXII IUPS Congress at Leiden in 1962. Finally, during the Second International Pharmacological Meeting at Prague, 1963, SEPHAR voted to apply to ICSU for a separate union.

Despite the fact that IUPS endorsed the plan, the ICSU rejected the application for a new union on January 23, 1964, and again on April 13, 1965. The confusion was almost similar to that before the establishment of the International Union of Biochemistry (E. Stotz, *Federation Proc.* 15: 807, 1956). At the XXIII Congress in Tokyo in 1965, the SEPHAR Council voted to withdraw from IUPS and to form a new International Union of Pharmacology (IUPHAR). The statutes of IUPHAR were formally adopted on July 28, 1966 *(Pharmacologist* 9: 42, 1967). For quick reference the following data may be recorded.



Opening Ceremony at Konserthuset

Congress	*Place*	*Date*	*President*
First	Stockholm	August 22-25,1961	C. F. Schmidt
Second	Prague	August 20-23,1963	C. F. Schmidt
Third	São Paulo	July 24-30,1966	C. Heymans
Fourth	Basel	July 14-18,1969	B. Uvnäs
Fifth	San Francisco	July 23-28,1972	

It can be anticipated that the Fourth IUPHAR Congress will be a great one. The University of Basel is more than 5 centuries old. Paracelsus (1493-1541), who could have been the first man to use ether as a hypnotic, lectured in this university. Some members may be aware that our contemporary, T. Reichstein, is a Nobel Laureate whose extensive work on cardiac glycosides, adrenal cortical hormones, and synthesis of vitamin C made the University Institute of Organic Chemistry illustrious. Several Basel pharmaceutical firms have subsidiaries in the US.

Borje Uvnàs, who will preside at the Fourth IUPHAR Congress at Basel, was born in Malmo, Sweden. He graduated with an M.D. and special training in physiology and pharmacology from the University of Lund. He served his alma mater for 18 years, attaining the rank of Professor of Physiology. In 1952 the Karolinska Institutet called on him to be Professor and Chairman of Pharmacology.

His outstanding contributions to the mechanism of release of biogenic substances (histamine and gastrin) and to the pharmacology and physiology of circulation are well known on this side of Atlantic. He is a member or officer of many Swedish and European scientific societies and academies from which he has received honors and awards. He serves as the Vice-Chairman of the Nobel Committee of Karolinska Institutet. Those who attended the First International Pharmacological Meeting (Congress) in 1961 can never forget his expert management of the assembly.

APPENDIX A2

The Role of Pharmacology in the Medical Curriculum

The present day Pharmacology has many ramifications. In its beginning it brought order and system to the field of drug therapy. Following the isolation of active principles in plants, the sites and types of their action, their absorption, excretion and chemical changes were studied by means of animal experimentation. From the information thus acquired, an explanation of therapeutic efficiency became possible, and a more rational use of drugs followed. In carrying out this line of work, there was developed a definite perspective and methodology, which marked off Pharmacology from other disciplines among the medical sciences.

The scope of Pharmacology broadened with the introduction of synthetic preparations as substitutes for natural ones. Because of the uncertainty in foretelling

2 Typographical errors in the original report have been corrected in this reproduction.

the usefulness of the new compounds, it devolved on the pharmacologist to determine accurately their actions and dangers. The financial return from commercial exploitation of synthetic drugs has resulted in a flood of these and it has become impossible for existing pharmacological departments to make any study of the vast majority of them. For public protection it is probable that before long government requirements will markedly limit the output of synthetic drugs by demanding pharmacological evidence of their usefulness and safety. If so, pharmacological departments will be called on to supply manufacturers with trained workers, a situation which has been faced by departments of Chemistry and Bacteriology.

Pharmacology occupies a definite place in the field of specific chemotherapy. The study of the manner of entrance, development, and effects of parasites within the body is beyond its province. The action of the chemotherapeutic agent on the invading organism and on the host tissues, the determination of its toxicity, the facts concerning absorption, distribution and excretion, these are matters which come within the scope of Pharmacology.

Knowledge of organ extracts, hormones and vitamins has come from the anatomist, physiologist, chemist and pathologist. With the application of these substances as therapeutic agents, however, a definite pharmacological aspect comes in. They produce measurable reactions in body tissues; many of them cause injurious effects in over-dosage. The pharmacological approach in this connection is highly desirable.

In preventive medicine the study of poisonous effects of chemicals used in industry falls within the scope of Pharmacology. Further, in the war against insect and animal pests there is a widespread employment of chemicals. The relative effectiveness of these and the inherent dangers attendant in their use are matters for pharmacological study.

In its consideration of beneficial effects of therapeutic agents, the pharmacologist finds occasion to enter the field of experimental Pathology and to reproduce when possible conditions occurring in disease. This allows not only a better insight into the effects of disordered function but a detailed knowledge of drug effects in the condition under study. Its usefulness in adding to physiological knowledge needs no mention.

With this limited review it should be clear that, far from being lessened, the field of Pharmacology has progressively widened. With its special methods of study it offers information not otherwise available, and is essential in rounding out knowledge in a great variety of subjects.

However tempting it may be to discuss in detail the general field of Pharmacology, in this report the Committee presents its views only on the place the pharmacological department should occupy in the medical school organization and teaching. The opinions expressed are necessarily of a more or less general nature. It is realized that conditions vary in different schools, and that no fixed or uniform arrangement is applicable for all. It is realized also that whatever the arrangement is, its successful carrying out depends on the directing departmental head.

The Pharmacological Course

The scope of Pharmacology in the medical school is a wide one. Pharmacology deals with reactions produced by chemical substances not only in normal but abnormal or diseased tissues. It is concerned not only with beneficial but also with harmful effects. It applies and adds to physiological and chemical knowledge. It re-

lates to therapeutics in supplying necessary information concerning toxic effects of chemicals and means of combatting these.

In the limited time allowed for the course, individual judgment must determine the manner of its arrangement. In any program, however, two main objectives stand out clearly. The first is to give the student an understanding of Pharmacology as a special discipline, its scope, its viewpoints, and its methodology. The second is to supply precise knowledge concerning drugs which the student is to use later as therapeutic agents, their form and composition, their actions and administration. These two objectives are not separate but interlock throughout the course.

In treating Pharmacology as one of the preclinical sciences, it is the knowledge personally acquired by the student which has the greatest value and permanence. The laboratory experiment is especially effective here. When the success of an experiment done by a student is determined only by obtaining a record which conforms to that described in the text or lecture, its value is minor. Indeed, a failure to obtain an anticipated result, if it leads to critical analysis for causes, is of much greater value than a success. The student should understand clearly the conditions under which the experiment is performed, the type and state of the material studied, the interfering effect of any anesthetic used, the accuracy or sources of error in recording devices. With these and other factors kept in mind, and with knowledge of the physiology of the system studied, the experimental results can be discussed and interpreted in a logical manner. Through the laboratory experiments, supplemented by lectures and conferences, the means are available for carrying out the first objective. The result naturally will depend on the enthusiasm and care in planning on the part of the instructing staff.

In carrying out the second objective, it is desirable to start with a list of drugs used not only in internal medicine but in various other clinical departments as well. This list will be a large one, and contain many substances which the pharmacologist considers superfluous or of questionable value. He must therefore exercise judgment in his selection for teaching. The treatment of this part of the course may be grouped generally under these headings: the origin, physical and chemical properties of the drugs selected, methods of administration, and pharmacological and therapeutic actions.

The first heading has to do with what is termed the materia medica. There is no doubt that too much time has been and often still is given to this subject. What the student should know are the parts of plants, their pharmacopeial preparations, their active principles, which he may be called upon to prescribe in his subsequent therapeutic activities. He should also have some knowledge concerning the chemistry of synthetic drugs included in the list, and of relations between chemical structure and tissue responses. The memorizing of chemical formulas, with few exceptions, has in general no permanency, however, and is of doubtful value. Finally, instruction should be given concerning organ extracts, hormones and vitamins, in consideration of their use as therapeutic agents.

How much time should be given to this part of the course, and what arrangements are best for its presentation, is again a matter for individual judgment. The most effective plan is to combine, as the course progresses, the materia medica part with that of drug administration as expressed by the prescription.

The statement is commonly made that senior medical students and recent graduates are strikingly deficient in their ability to prescribe drugs, whose actions they are familiar with, and that a result of this is the tendency to rely more and more on manufacturers' preparations, whose composition they know little about. There is

no question that the teaching of prescription writing should begin in the pharmacological department, but that it should end here is another matter. The purpose of the prescription is to inform the pharmacist exactly what is wanted and the patient how he is to take the drugs ordered. If this information is given clearly and precisely its form is of minor importance. It is unreasonable and unsatisfactory to stress Latin terminology, considering the number of students who have no knowledge of this language. The customary form of the prescription, a knowledge of solubilities of its ingredients, of suitable vehicles and excipients, some experience with flavors, may be mastered with no great difficulty. The forms other than solutions in which drugs may be administered, in pills, capsules, suppositories, can also easily be learned in the laboratory. If with each laboratory experiment, the student writes a complete prescription for each drug as he uses it, the whole prescription picture stands out clearly in his mind. At the end of the course he should be able to write an acceptable prescription for any of the drugs on the selected list.

In the practical application of therapeutic measures it is recognized that treatment should be individual. It is here that judgment enters in determining the drug to be given, the dosage, the time and manner of administration, and other factors bearing on the case. It is here then that the continuation of prescription teaching should be made. Since this is so commonly neglected, inadequacy in prescribing is the fault of clinical rather than pharmacological teaching. It should be impressed on the student that drugs listed in the Pharmacopeia and accepted by the Council on Pharmacy and Chemistry are with few exceptions adequate for therapeutic requirements. This aspect of the teaching could undoubtedly be effectively presented again in the clinical departments.

As has been stated the list of drugs used by the different clinical departments is a large one, and even when a careful selection is made for teaching purposes, there remains a very considerable number. In handling this material from the standpoint of pharmacologic and therapeutic actions, both didactic and laboratory teaching come in. If the materia medica and prescribing methods are adequately given in the general laboratory course, the lecture load is that much lightened. In the lecture course not only the pharmacologic actions but their application in disease are discussed, and it becomes necessary to describe in some detail the nature of the abnormal conditions amenable to treatment. Some discussion of hormones and vitamins as therapeutic agents should be included, and the pharmacological principles of their actions made clear.

In the laboratory experimental work, the pharmacological actions of the more important drugs in the list can be demonstrated and studied and there seems no necessity of repeating in the lectures all the knowledge gained through the experiments. But it should be made clear to the student just what interpretations can be made from the experiment. For example, it is a simple matter to produce in an animal excessive stimulation with strychnine or depression with chloral, but if the student himself is the subject and takes either of these drugs in therapeutic dosage, it is often a difficult matter to show by measurements available, the effects for which they are used in therapeutics. In a digitalis experiment, fatal doses are often given and in the actions which follow, special attention is directed to toxic phases, which in therapeutic usage are of great rarity. The effects of morphine on laboratory animals differ in many ways from those commonly seen in patients. Experiments such as these afford opportunity for detailed study of types and location of drug actions. But unless the student is made to understand that this is the purpose, that in therapeutics, conditions are quite different in regard to dosage, state of the subject, presence of pathological states and other factors, the experiments may be quite misleading. It is in the lecture

that the proper relationship between the laboratory experiment and the therapeutic usage can be made clear.

In the medical curriculum the course in Pharmacology is usually given in the second year, after Physiology and Biochemistry. This is the proper sequence. The time allotted varies with different schools and probably in all could be extended to advantage, but the pharmacologist has no direct control in the matter. Of especial usefulness, however, would be a subsequent course, of a dozen or so hours, in which on the basis of pharmacological teaching, the selection of drugs for treatment of stated pathological conditions is discussed. Such a course might consist of lectures, or of discussion of treatment from history charts of patients. If well conducted it would lessen at least the criticism that the pharmacological department does not train the student to the degree desired by the clinicians.

Pharmacological Research

That the carrying on of research in the department is one of its functions goes without saying, for it is through this that advances in knowledge occur and the interest and development of the staff are maintained. The field of Pharmacology, as has been pointed out, is an unusually wide one, and research problems are of a most varied character. What direction the research shall take is a matter for the worker to decide but it should be kept in mind that Pharmacology is a department not in the University proper, or in a research institute, but in a medical school. The research program should then not be too one-sided but should consider both the purely scientific and the applied aspects of the subject. In some departments, part at least of the research work is on physiological or chemical subjects, which have no immediate connection with Pharmacology. Objection has been made to this on the ground that it makes no direct contribution to Pharmacology and shows that the worker's interest lies outside his department. Very often, however, the work done is to supply information which is needed for subsequent pharmacological research. There can be no valid objection to this. If on the other hand the main interest of the worker is in a field other than Pharmacology, he should transfer to that and give up his place to one more suited for it.

There is no question concerning the obligation of the pharmacological department to cooperate with clinical departments in attempts to solve therapeutic problems. Such cooperation is of mutual advantage. The laboratory offers facilities for animal experimentation otherwise unavailable, and the clinical opportunities for study of drug effects. It is not implied that the pharmacologist should give an unreasonable portion of his time to this type of work. The most satisfactory plan is to have younger members of the clinical staff carry out their laboratory experiments with the help and under the direction of the pharmacological staff and to allow members of the pharmacological staff access to the wards, for such additional study as falls within the range of their problems. The department should also offer facilities for clinical research in other than therapeutic subjects. It is, generally speaking, the most suitably equipped and staffed of the preclinical departments for much of the laboratory work coming under the head of experimental medicine. There is no doubt that effective cooperation along these lines to the prestige of Pharmacology and emphasizes its usefulness and importance as a unit in the educational organization.

The Pharmacological Staff

It is obvious from the scope of his subject that the pharmacologist should have a wide knowledge of correlated subjects. Since the pharmacologist deals with alterations in function, a knowledge of physiology and biochemistry is essential;

since he makes use of chemical substances he should be informed in chemistry. In his teaching he lays the foundation for the use of drugs not only in the treatment of disease, but for their use as anesthetics, antiseptics and for diagnostic purposes and should, therefore, have some knowledge of clinical fields. Further, in all of these lines his suggestions and advice may be called for and considered valuable. In no other of the preclinical branches does it appear that a wider range of information is needed. It is not assumed that the pharmacologist's knowledge in any one of these related subjects should be equal to that of those working exclusively in one of them, but his training should be such that he can quickly and clearly understand any problems arising in his own work which require this collateral knowledge.

There has been some criticism of the appointment in a number of medical schools of a doctor of philosophy rather than a doctor of medicine as head of the pharmacological department. The basis for this criticism is that pharmacology is so closely related to practical medicine that a knowledge of the latter is essential for the pharmacologist. If two men of equal ability and general biological training were being considered, there is no doubt that the one with the doctor of medicine degree should be chosen. If on the other hand, the one with the doctor of philosophy degree were definitely superior in all around ability the choice might well be otherwise. It is a simple matter for such a man to have on his staff members who are graduates in medicine and can supply the medical knowledge required for the department. Examination of some of the schools in which the professor of Pharmacology has the Ph.D. and not M.D. degree shows the excellence of the course given, the high quality of the research work and the real appreciation in which he is held.

The appointment of members of the staff is a matter for decision by the departmental head. There is no doubt that the presence of an organic or physical chemist is of much advantage. What is especially important is that during his stay, each member has as thorough a training as possible in the pharmacological point of view and technique. With the younger men this comes from teaching and from selected research. Voluntary assistantships, fellowships and temporary appointments of younger clinical men serve a useful purpose in carrying pharmacological principles into the clinic. Membership in the national society affords additional education and encouragement. The society might well consider whether it would not render a useful service in admitting to membership men who are beginning a chosen career in Pharmacology, but have a very limited number of publications to their credit. The membership of such men is of much more advantage than that of those, however distinguished, who have no real interest in Pharmacology.

As an Independent Department

The usefulness and the necessity of an independent department of Pharmacology with staffs made up of trained pharmacologists is fully recognized in those colleges which have them. From the standpoint of medical education it is unfortunate that a number of schools, among them some which in other respects maintain a high standard of teaching, are without such departments. In a publication by C. W. Edmunds in 1936, it is pointed out that in twenty-five medical schools, Pharmacology is combined with either Physiology or Biochemistry and that in no one of these is a pharmacologist head of the combined department. Further, in only three of them is the head a member of the American Society of Pharmacology. Under such conditions it seems inevitable that Pharmacology suffers neglect through its subordinate position. There is bound to occur some lack of freedom, distraction of interest, and an inadequate staff. The medical course is of necessity a graded one and coordinated one.

No matter how able the controlling head of the department may be, it cannot be accepted that he is qualified to direct and see carried out the full functioning of the Pharmacological division. Beyond question the placing of Pharmacology as a subdivision of Physiology or Biochemistry is not only detrimental to the teaching and research of the subject, but creates a void in any well considered plan of coordinated preclinical instruction. In certain of these schools an effort is made to compensate by stressing the therapeutic measures employed in the department of internal medicine. It is doubtful, however, how effective this is if the students have no sound pharmacological background, and the fact that heads of such schools would establish independent departments if funds were available demonstrates that the situation is unsatisfactory. The divorcement of Pharmacology from Biochemistry, giving it an independent status, which has recently taken place in one of our leading medical schools, has been hailed as a decided advance in the educational policy by the school in question. It would seem that if the administrative heads would study the matter carefully with unbiased consideration of what the medical student requires in his educational progress, they would make such readjustments of departmental budgets as to allow of the establishment of independent pharmacological departments.

The Relation of Pharmacology to Other Departments

In some medical schools, through force of circumstances, through indifference or for other reasons, the pharmacological department occupies a somewhat isolated position. While this may not affect the quality of its teaching or research work, it does lessen its sphere of usefulness and of growth. Very commonly, however, there exists a more or less close relationship between Pharmacology and others of the preclinical departments. This relationship may be expressed in various ways. The application and review by the pharmacological department of Physiology and Biochemistry is of great advantage to the student and exchanges of ideas on this matter are very useful. Each department has special facilities for certain phases of work which may arise in a research problem. The offer and acceptance of such facilities, with friendly help in using them, does much to draw the departments together. A joint seminar for report on research or review of literature offers unusual educational advantage. Such a seminar has been carried on for years at the University of Chicago and is outstanding in effectiveness. In these and other ways relationships have been and may be established with mutual benefit and for the good of the college as a whole.

It has been realized for a long time that in medical education, the teaching in the preciinical departments, anatomy, physiology and biochemistry, has been uncoordinated, with a failure to fit each with the others into a fairly unified whole. There is no doubt that this situation is being carefully studied. A correction of the faults will be to the advantage of Pharmacology, but precisely what part it may take in the arrangements is not clear. It should be considered, however, whether this unification of knowledge begun in the first year might not advantageously be continued in the second. If so, the departments concerned would be Bacteriology, Pathology and Pharmacology, and it is quite possible to draw them together, through their many points of contact, into relationships not existing at present. Pharmacologists should consider this matter, and if favorable to it, should take the initiative in carrying it out.

The relationship between the pharmacological department and the clinical ones is far from satisfactory. It is generally acknowledged that the teaching of therapeutics is usually given little consideration. In the opinion of heads of departments of medicine consulted, the establishment of an independent department of therapeutics is not viewed with favor. It is not considered practical to turn over the

treatment of patients to a separate department; in certain divisions of medicine, such as diabetes, heart disease, syphilis, pneumonia, a department of Therapeutics can add little to what is already being satisfactorily done; it would be associated mainly with internal medicine and have little connection with other departments; it could function in carrying on therapeutic research, but here the necessity for a separate department, with its individual equipment, staff and expense account is questioned.

In the teaching of therapeutics in the department of medicine, no one can doubt the superiority of bedside instruction. In the last year of the medical course, lectures and general clinics have been largely replaced by section work, in which the students study intensively all the manifestations of disease in individual patients. The advantages of this are patent. There seems to be no valid reason why analogous section teaching in therapeutics cannot be carried out. If the section teaching is restricted to a discussion of what drug is to be selected for the condition present, its usefulness is quite limited. Of greatest importance is the study of the effects of the drug on the patient. If this study is carried out in a manner corresponding to that in which a pharmacological laboratory experiment is conducted, with attention to the conditions present, with thorough observation and recording of the effects produced, with interpretations and conclusions concerning these, the educational results should be of the greatest value. It is not implied that a course of this sort should be given by a pharmacologist. But the instructor should have a sound knowledge of Pharmacology and preferably have some association with the pharmacological department.

Heads of departments of Medicine generally realize the shortcomings of the teaching of therapeutics. Some of them also realize the advantage of closer relationship with the department of Pharmacology and have taken some steps to bring this about. As random examples may be mentioned Cornell, where an hour a week is given to a therapeutic conference attended by the clinical clerks and the teaching staff in Medicine and Pharmacology. Here therapeutic measures are discussed from all angles. At Johns Hopkins there have been appointed two Fellows who divide their time between Medicine and Pharmacology and given an elective course in practical therapeutics to fourth year students. At Stanford a full-time man is assigned to the department of Pharmacology for the teaching of therapeutics and carrying out research in the medical wards. These and other examples which might be cited are steps, but only steps, in the right direction.

The outstanding example of an intimate association between a preclinical and clinical department is seen in Pathology. This association, which began with the department of Medicine, has been remarkably developed, and extended to other clinical departments. Considering the importance of Pathology in the diagnosis and understanding of disease, this was to be expected and there can, of course, be no question of the value of the relationship. But it may well be asked whether the emphasis placed on Pathology has not drawn attention away from the need of a corresponding relationship with Pharmacology. If this is so, it is definitely detrimental to the education of the student, for no one will deny that in the practice of medicine the care of a patient may be of equal importance to the diagnosis. An intelligent and rational use of drugs and a much desired advance in therapeutics can occur only if based on pharmacological training and knowledge. The contention of the pharmacologist is that pharmacological knowledge should be drawn on as freely as is that of Pathology, even if this means some curtailment of the time given the latter. It is recognized that the acceptance of this idea by the clinical divisions can be brought about only gradually. In the meantime, however, efforts should be made to establish closer relations between Pharmacology and clinical subjects.

The pharmacological department may request that its representatives be invited to attend seminars or conferences held by the other departments. The mere presence of such representatives draws attention to therapeutic problems. The pharmacologist may arrange to act as a consultant to each of the clinical departments, giving suggestions as to possible improvement in therapeutic procedures, information concerning new drugs worth study, suggestions concerning the formulary in use, offers of such facilities for research as his department has. It is highly probable that any definite plan for associations such as those mentioned would be favorably considered by every clinical department. If accepted, its success would depend chiefly on how well the pharmacologist carried out his part.

In this rather general review of the subject of its report the Committee has considered mainly the status of Pharmacology as one of the premedical sciences. It has stated the objectives in instruction and has pointed out the common failure to make use of pharmacological methods and teaching in courses in Therapeutics. What suggestions it has made for closer relationships with other departments have undoubtedly occurred to the members of the Society and many of them have already been put into effect. Reiteration, however, is often useful and a discussion of the points brought out may aid materially in clarifying the pharmacologist's ideas of how to increase the usefulness of his department.

H. G. Barbour
V. E. Henderson
E. K. Marshall, Jr.
G. B. Wallace, Chairman

CHAPTER 3

Publications

CHAPTER 3

PUBLICATIONS

Maurice H. Seevers

Journal of Pharmacology and Experimental Therapeutics

THE LAUNCHING of the *Journal of Pharmacology and Experimental Therapeutics* was woven inextricably with the founding of the American Society for Pharmacology and Experimental Therapeutics, John J. Abel being the dominant figure.

In an address to the Society on April 21, 1949, Sollmann recounted the early days:

> The founding of the Society was the first step in Abel's plans to strengthen pharmacology—the second was the Journal. We did not have an angel like Herter (who endowed the Journal of Biological Chemistry) but Abel interested Mr. Passano of the Williams and Wilkins Company to undertake the venture, under the condition that Abel would be the owner of the Journal, to be passed to the Society when its success was firmly established. It was his Journal, in every sense of the word; as always, the rest of us followed his lead—because it was always good, wise, unselfish, and idealistic.

Handwritten letters from Abel to Edmunds', the first on January 14, 1909, 18 days after the organization meeting on December 28, 1908, amply confirm Sollmann's statement. At this time the "Society" consisted of a 7-man Council (including Abel as President and R. Hunt as Secretary) and 16 other members of the organizing group. When the Society adopted a constitution,

' Several years ago, Mrs. Charles W. Edmunds turned over to the writer a letter file containing the correspondence and records of Dr. Edmunds during his term as Secretary of the Membership Committee during the organizing period of the Society, Dec. 28, 1908 to Dec. 29, 1909. This file contained correspondence, mostly handwritten, between Abel and Edmunds, some of which is reproduced here; letters by Sollmann, Meltzer, Edmunds (the original Membership Committee); letters from nearly all the charter members voting on the first list of prospective members circulated by the Membership Committee; and the letters in response to these invitations to membership by those approved by the organizing group.

The writer takes this opportunity to express publicly to Mrs. Edmunds the gratitude of the Society for preserving these invaluable records and to assure her that they will be housed permanently in the central offices of ASPET, currently at Beaumont (Milton 0. Lee Building), Bethesda, Md.

elected officers, and became an official organization on December 29, 1909, a year later, the first 3 numbers of the *Journal of Pharmacology and Experimental Therapeutics* had already been published. From the following letters it is evident that Abel considered the Society and its Journal to have one and the same objective.

Baltimore, January 14, 1909

Dear Edmunds:

Should we not reconsider our decision about inviting Pfaff as a member of the Editorial Board of the Journal? I understand that he is going back to work. His earlier work was good. Let me know whether you will vote for him.

The Journal scheme is well underway, but the details take time. Please give the exact title of a paper that could be published in one of the early numbers—for announcement in the prospectus. Hope to get out a number in March—not later than May.

Yours sincerely,
John J. Abel

Stewart has a good paper in progress on haemolysins. I think that we should ask him on. What do you think?

Baltimore, March 11, 1909

Dear Edmunds:

Thank you for your letter of present date. I am afraid that I am getting tangled up in this matter of *members.* Let me state first that I have decided to take on a number of foreign collaborators, also native, like Howell for example, and put these at the head of the list on the inside of the cover, just as Harrison has done in the Journal of Experimental Zoology. Have written to Cushny, C. R. Marshall, Arantois, Fraser and a few others. Of course this is my affair as editor and I can manage all right, but in regard to the membership I may get into trouble unless you keep me straight.

I have been anxious to have a decent number of collaborators for our number and I think we now have. Sorry that we have been so slow about getting this together, as I wish to send out a sample of *cover* with the announcements, but could not do this in the present state of uncertainty as to members, so I have told W & W to go ahead next week and send out their prospectus anyway—a sample of cover can follow later. I hope that you can help me out with the list in the way that I have suggested.

Yours ever,
John J. Abel

On March 16, 1909, the original contract for the publication of the Journal was signed between John J. Abel, President of the Journal of Pharmacology and Experimental Therapeutics Society, Inc. (original members were Abel, Voegtlin, and Hunt; later changed to include Marshall and Geiling) and Edward B. Passano, President of Williams & Wilkins Company, a publishing

firm. Abel's qualities of leadership convinced Passano to publish the *Journal of Pharmacology and Experimental Therapeutics* as his company's first venture into the periodical field, an event that was to color all future relationships between the Society and Williams & Wilkins. An unusual clause in the first contract attests to the fact that this agreement was de facto between two individuals rather than between two organizations. "In the event that the management of Williams and Wilkins Publishing Company passes out of the hands of the present President, E. B. Passano, authorized signer hereunto for the party of the second part, the above agreement may be cancelled by the party of the first part by giving 60 days notice in writing to the successor or successors of the said E. B. Passano, in the business of the said Williams and Wilkins Publishing Company."

On the same day Abel wrote to Edmunds regarding the additional members and the Journal. The original letter and its transcript should serve as an inspiration to all pharmacologists of North America.

Dear Edmunds:

I do not know as we can take our stand on the position that the Council should elect for this year if we are going to take on as many men as you plan to do-75. I had supposed that we should not go above forty or forty-five say before the next meeting. All those that I had written and who have since accepted should be counted as charter members, I think. Then those that we considered in our Council meeting here and a few others especially those that you have mentioned in recent letters could be elected by the Council. That is how we managed in the early days of the Bio. Chem. Soc.

There is no doubt in my mind that we can find about 70 men in the country whom we shall be glad to have in the Society. The only question at issue is this: how are they to be elected, and I have given my ideas on that point. Of course I am speaking only as an individual, the members of the Council and of the Committee on Membership may not agree with us. Let me say that I appreciate your work for the Society very much indeed; its success and that of the journal are of great importance to us all.

Yours ever,
John J. Abel

Sign the contract this P.M.!

Has Novy anything good for the first number? I need more MSS. See what you can do for me. Could wait about 8 days or so if I know that he had something. You'd better send on yours.

J. J. A.

In a publisher's foreword to its monograph *John I. Abel, M.D., Investigator, Teacher, Prophet, 1857-1938,* Baltimore, 1957, Williams & Wilkins makes the following statement:

Dr. Abel was instrumental in bringing a publishing house into existence, one that has not been without importance to American science; at least it did pioneer in a field which, in the early years of the century, was anything

JOHNS HOPKINS UNIVERSITY.
DEPARTMENT OF PHARMACOLOGY.
WASHINGTON AND MONUMENT STREETS.

BALTIMORE, March 16 1909

Dear Edmunds:

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J.J.A.

Abel's Letter to Edmunds dated March 16, 1909

> but attractive to business entrepreneurs. To be sure, Dr. Abel did not work alone. But without his interposition and inspiration, nothing would have been done. Many others must have deplored the lack of publishing facilities as he did. But he had the percipience to look a little more clearly into the future and confidence that enabled him to make others share his vision. Probably Dr. Abel himself would not have accounted the establishment of a publishing business among his achievements. Yet it is certain that he planted the seed from which one grew and equally certain that he read the future correctly.

In spite of Abel's hopes, the first issue of JPET did not appear until June 1909. The first list of Associate Editors was limited to Americans: Crawford, Edmunds, Edsall, Flexner, Hatcher, Herter, Hunt, Loevenhart, Meltzer, Pfaff, Richards, Sollmann, Stewart, Wallace. It is evident from the letter of January 14, 1909, that Abel consulted with others, possibly the Council, in the selection of the original Board of Associate Editors.

For some unknown reason, Abel's plans to add foreign collaborators to the Board did not materialize until 1912, the original Editorial Board, with the exception of Herter, serving meanwhile.

The immediate success of the Journal with Abel's prowess as Editor is apparent in volume 1. Some of the articles were basic and prophetic of things to come, for example, the classical structure-activity study of choline derivatives by Hunt and Taveau, "Some of the compounds with which we work are so extraordinarily active physiologically (0.0000001 grams of acetylcholine per kilogram of animal, for example, causes a fall in blood pressure) and yet is not very toxic . . ."; and Stewart's paper on the mechanism of haemolysins, a pioneer in the study of membrane permeability.

Other papers demonstrated the importance of collaboration between the laboratory and the clinic: the introduction of the phenol sulphonphthalein test for kidney function by Rowntree and Geraghty; and the demonstration in animals and in human cretins that diiodotyrosine is not the active principle of the thyroid gland by Strouse and Voegtlin. C. F. von Pirquet, who was Professor of Pediatrics at Hopkins for a short time, published his famous paper on the cutaneous tuberculin reaction in this first issue.

Abel's success in attracting laboratory-clinical papers must have gone a long way to allay the fears of those in the organizing group who agreed with Alsberg (among them H. C. Wood, Jr., a clinician), "I beg to say that the list of names submitted (for membership) justifies the fears I expressed at the organization meeting in my remarks in opposition to the mention of experimental therapeutics in the Society's title or name: my fear that anyone connected with internal medicine might be eligible."

In 1912, 10 foreign collaborators, all Scots or Britons, were added to the Editorial Board and Abel invited Cushny of the University of London to become joint Editor-in-Chief, an arrangement that continued until the death

of Cushny in 1926. Dixon of Cambridge then took his place and served in this capacity until Abel relinquished the editorship to E. K. Marshall in 1932. At this time Gunn of Oxford replaced Dixon as joint Editor.

The title page of volume 29 (1926) of JPET reads: "Dedicated by Friends and Pupils of John J. Abel on the Occasion of the Fiftieth Anniversary of the Founding of The Johns Hopkins University." This volume contains a list of titles and papers by Abel and 40 contributions by eminent foreign and American physiologists and pharmacologists.

In 1934 Marshall assumed the sole editorship and official recognition was given on the title page to the long-standing British collaboration by publishing: "In association with the British Pharmacological Society, represented by J. A. Gunn, Sir Henry Dale, and A. J. Clark." This arrangement continued under three Editors: Lamson (1938-40); Schmidt and MacNider (1940-44), and Wallace (1945-46).

When the British Pharmacological Society established its own publication, *The British Journal of Pharmacology and Chemotherapy,* in 1946, the Journal under the editorship of Cattell became again, after 35 years, an exclusively American publication.

In the foreword to the first issue of the British journal, Sir Henry Dale, referring to the early leaders of pharmacology in England and Scotland, stated:

> To all these the launching of the Journal of Pharmacology by Abel had provided a much-needed outlet for pharmacological papers in the English language. The earlier volumes of that Journal bear witness to the fact that, from the outset, it offered effective hospitality to papers by British workers. Their opportunities of publication had otherwise been almost limited to the weekly medical journals and the Journal of Physiology; and the editor of the latter, the late J. N. Langley, was showing a steadily increasing reluctance to accept papers which could be regarded as pharmacological. I well remember going in 1911 to consult Cushny about a difficulty created for me by Langley's refusal of a paper of mine, for the reason that Pharmacology was encroaching unduly on his space. I suggested to Cushny that, while we were all grateful to Abel's Journal for what it was already doing for us, we would feel happier if, though still published at Baltimore, it could be recognized as having a wider, English-speaking interest and editorial responsibility. The upshot was a friendly negotiation leading to a joint editorial control of the Journal by Abel and Cushny, assisted by advisors of whom several were now to be British. The arrangement lasted in that form till Cushny's premature death in 1926, and then, with successors in due course to Abel as well as to Cushny, till the present time. It has served British Pharmacology well, and we have abundant reason to be grateful to our American colleagues for these 35 years of association and shared responsibility. We may regard it, perhaps, as an early, spontaneous and limited example of that wider collaboration between the scientists of the English-speaking nations which in the recent war became so intimate and so efficiently organized.

At the time of the 24th Annual Meeting of the Society in Cincinnati, Ohio, Abel appeared before a special meeting, called for this purpose or

Sunday, April 9, 1933, to outline the operations of the Journal and to present details of the existing contract with Williams & Wilkins. The Society minutes read: "Dr. Abel put very strongly to the Society the present and agreeable relationship between the publishers and the Editing corporation, and that the Society was in a sense morally, but not legally, bound to deal with the company or settle with them for the deficit." He indicated that the Journal of Pharmacology and Experimental Therapeutics Society, Inc., was quite willing to turn over all its rights, privileges, and anything else it had to the Society, and he hoped the organization would accept.

E. K. Marshall, Editor of the Journal, strongly advocated acceptance by the Society and Dr. Hooker, Editor of the *American Journal of Physiology,* an invited guest, assured the Society that it would not suffer financially by taking the Journal over.

C. W. Edmunds expressed on behalf of the Society the affection with which Abel was held by the Society and suggested that Dr. Abel's name be placed on the title page of the Journal, where it remains today to do him honor.

President MacNider appointed a special committee—Edmunds (Chairman), Hanzlik, Voegtlin, Geiling, and Auer—to consider with the Council what obligations would be entailed in taking over the Journal. They worked diligently and had several conferences with Mr. Passano on Monday, April 10, but were unable to make arrangements that were acceptable to the committee. Before returning to Baltimore, Abel urged the Society not to accept a contract that would at any time commit the Society to a payment to Williams & Wilkins to wipe out a deficit or in lieu of equity.

At a second business meeting on April 11, the President read a telegram from Abel, who had traveled back to Baltimore with Mr. Passano, stating that he had made a satisfactory financial arrangement with Williams & Wilkins.

At a third business meeting on April 12, Abel, again in Cincinnati, presented a letter from Mr. Passano addressed to President MacNider waiving any equity that the Company might have in the Journal and also relieving the Society from any guarantee with respect to a possible deficit or with respect to compensation to the company for services rendered.

Abel's integrity and deep devotion to pharmacology, in 1933 as in 1909, had convinced his friend Passano to give science precedence over business. The Society approved the transfer of the Journal from the Corporation to the Society and the execution of a new contract with Williams & Wilkins. To legalize these transactions, the Society incorporated on June 19, 1933, and executed a new contract with Williams & Wilkins on October 19, 1933.

During the 1930's American pharmacology was in the doldrums. The older generation was discouraged; the field was unattractive to young men and few were trained; those who were contemplated moving to more promising fields; industrial pharmacologists were excluded from Society member-

ship; important chairs were being filled by people from other disciplines. In short, pharmacology was the weakling of the medical sciences.

In the latter part of the decade, two important events occurred: the development of the sulfonamides and the recognition of their tremendous biological and clinical importance; and the enactment of the Food and Drug Amendments of 1938. These gave promise of fresh winds. Predictably, these events could create a demand for new pharmacologists and more publication facilities, not only in the basic but in the clinical area.

Since 1950 the size and scope of the Journal have steadily increased. The complexity of the subject matter has necessitated that the editing be placed largely in the hands of field editors who are responsible to the Editor-in-Chief for papers in their own area of competence.

TABLE 13. Journal of Pharmacology and Experimental Therapeutics

Volume	*Years*	*Editor(s)*
1-3	1909(6)-1912(7)	John J. Abel
4-26	1912(9)-1926(1)	John J. Abel and Arthur R. Cushny
27-44	1926(2)-1932(4)	John J. Abel and Walter E. Dixon
29	1926	Dedicated to Abel
45-50	1932(5)-1934(4)	E. K. Marshall, Jr. and J. A. Gunn
51-62	1934(9)-1938(3)	E. K. Marshall (for the Society)
63-68	1938(5)-1940(4)	Paul D. Lamson
69-82	1940(5)-1944(12)	Committee: W. deB. MacNider and Carl F. Schmidt
83-87	1945(1)-1946(8)	George B. Wallace (Managing Editor)
88-99	1946(9)-1950(8)	McKeen Cattell
100-107	1950(9)-1953 (4)	H. B. van Dyke
108-119	1953(5)-1957(4)	W. Clarke Wescoe
120-133	1957(5)-1961(9)	Lawrence Peters
134-146	1961(10)-1964(12)	N. C. Moran
147-160	1965(1)-1968(5)	J. B. Kahn
161-	1968(6)-date	Marion deV. Cotten

Numbers in parentheses are months.

On July 3, 1939, a special meeting of the Council was held in Chicago to consider two proposals:

1) By A. L. Tatum, that a board of publications trustees be created to handle editorial and financial affairs of the Journal (or journals) of the Society.

2) By M. H. Seevers, that a special effort be made to provide more publication space for papers in experimental therapeutics. Suggested alternatives were: a new journal; division of JPET into two sections, pharmacology and experimental therapeutics; expansion of JPET with a major effort to solicit good papers in therapeutics.

The Council voted to submit the first proposal to the membership at

the next meeting and to leave handling of the second proposal to the new publications board, if and when appointed. Neither proposal was implemented. Instead a constitutional amendment providing only for the publication of other journals by the Society failed to pass.

The Society and its Editorial Board were not yet ready for a change. The ghosts that haunted Alsberg were still around. The attitude of the Society and the admission of the weak position of pharmacology are clearly expressed in a letter from Editor Lamson, which was read at the Chicago Council meeting:

> You have met for the purpose of considering the rather general interest of members in making our Journal, of which I happen to be Editor, one to deal with applied or practical therapeutics, in spite of our Society, as well as the Journal, already carrying the name Experimental ;therapeutics. If the Society wished to cooperate with some other group on *equal* terms, as Schmiedeberg did with Naunyn in the publication of *Archl[y] fur experimentelle Pathologie and Pharmakologie*, that would be one thing, but for us to go clinical is, to my mind, as disastrous as to remain as we are.

Little change in Society policy or publication activities occurred during World War II, but the prodigious wartime expansion in the chemical and biological fields made it imperative that pharmacologists, individually and collectively, meet the new demands for their knowledge and skills or find the field preempted by others. Fortunately, a new generation of pharmacologists, largely a wartime product, emerged and met this new challenge.

During the period from 1946 to 1947, a committee of the Council had explored plans for strengthening the publication activities of the Society with the primary objective of publishing a review journal.

Pharmacological Reviews

On May 21, 1947, the Society, acting on a recommendation of the Council, directed President Seevers to appoint a Temporary Board of Publications, one member of which would be the present Editor-in-Chief, to consider details for publication of a review journal and include in their report the presentation of possible alternate plans of publication, with details of financial arrangements and an amendment to the constitution to cover their recommendations.

This Temporary Board of Publications—Welch (Chairman), Cattell, Geiling, Knoefel, and Pfeiffer—submitted a constitutional amendment to the Society with the following provisions: establish a three-man Board of Publications Trustees with the editors of all journals to serve as additional ex officio members but without vote on the editorship of their respective journals.

The function of this Board would be to 1) administer the finances of the journals, 2) establish publication policies, 3) elect a managing editor for each of the journals of the Society.

They also recommended the establishment of a review journal within the framework of the JPET, to become a separate publication when conditions justified.

A constitutional amendment establishing a Board of Publications Trustees was approved by the Society on March 16, 1948, and by separate motion the Society recommended that the establishment of a review journal, *Pharmacological Reviews (PR),* be considered by the newly created Board.

TABLE 14. Board of Publications Trustees

Chairmen: Schmidt (1949); Seevers (1950-60); Krayer (1961); Beyer (1962-64); Riker (1965—present).

Members: Cattell (1949-51; 1952-54); Schmidt (1950); Seevers (1949); Welch (1949-52); Goodman (1949-53; 1955-60); van Dyke (1951-53); Dragstedt (1952-54); Krayer (1954-60); Wescoe (1954-56); Beckman (1956-58); Peters (1957-63); Beyer (1961); Koelle (1959-62; 1964-66); Moran (1961-64); Riker (1962-64); Kahn (1965-68); Goldstein (1966-67); Acheson (1963—present); Bain (1965—present); Modell (1966—present); Talalay (1968—present); deV. Cotten (1968—present).

At this meeting, President Dragstedt appointed Schmidt (Chairman), Seevers, Welch, Cattell (JPET), and Goodman (PR) as members of the first Board of Publications Trustees (BPT). An early meeting of the Board was held in Baltimore on September 21, 1948, to consult with Williams & Wilkins on financial matters, but especially to consider the establishment of the review journal. After a series of BPT meetings in 1949, Seevers was appointed Chairman of a Board subcommittee to investigate further suggestions that a toxicology supplement to JPET be later established as a separate journal. At the Society Fall Meeting, November 19, 1950, the Board presented its decision not to segregate toxicology papers from the Journal at this time. This met with considerable debate by those who expressed a need for a medium for publication of toxicology data.

In April 1949, the Society adopted a BPT-recommended amendment to the constitution: "All publication funds shall be kept in a separate account subject to control of the Board of Publications Trustees except that none of these funds may be diverted from the support of publications of the Society except by consent of the Council of the Society." The wisdom of this act is apparent today in the state of Society publications and their financial stability.

At the 1949 Fall Meeting of the Society, President Schmidt asked to be retired as Chairman of BPT and appointed Seevers to succeed him in this capacity.

By 1955 the financial condition of the journals was adequate to support the publication of an index to 100 volumes of JPET prepared by Robert Eisenberger of Kansas.

The first joint meeting of the Board of Publications Trustees and the

Council, not convened during a national meeting, was held at Ann Arbor in January 1958. The principal objective was to explore the financial feasibility of establishing and maintaining an executive secretary in Beaumont House to handle general and publication affairs of the Society. Two rooms had already been reserved for this purpose; others might be made available.

The BPT Chairman reported that very favorable contracts had been renegotiated with Williams & Wilkins for publication of JPET and PR. The generosity of their President, E. F. Williams, and Vice-President, R. S. Gill, in this matter was undoubtedly conditioned by the facts referred to above concerning the initial publishing of WET. It was pointed out that by increasing the subscription rates of the journals, estimated publication profits should yield approximately 60% of the projected costs of establishing an office in Beaumont House, the remainder to be raised by an increase in Society dues.

The decision to proceed with the Beaumont House project and to conclude the contract with Williams & Wilkins was passed by this group without dissent.

At this meeting three new journals were considered: a journal of human (clinical) pharmacology; a journal of psychopharmacology with the possible support of an NIH grant, as suggested by Jonathan Cole; and a journal of toxicology. A committee was appointed to consider the toxicology journal, but no action was taken on the other proposals. At the next regular Society meeting in the spring of 1958, the joint BPT and Council Committees met with an Advisory Committee of the *Journal of* Toxicology, a prospective Academic Press publication. As in the previous case in which publication of a toxicology journal was considered in 1949, Society interest was expressed, but the project was never implemented.

Redaction of JPET and PR was initiated in the Editorial Offices at Beaumont House in 1958. The financial feasibility of this plan came under Society scrutiny several times in succeeding years. In September 1965, the BPT decided in the interests of economy to return this operation to Williams & Wilkins, where it remains today.

On April 9, 1933, when Abel presented JPET to the Society, he pointed out that he believed a review journal should be founded and would be valuable. Fourteen years elapsed before his suggestion was considered seriously by the Society. Its establishment was to be the first major project of the newly established Board of Publications Trustees, who accepted the suggestion made to the Society by the Temporary Board of Publications to publish PR initially in conjunction with JPET.

An American Board, with Goodman as Editor and Comroe, Dragstedt, Eagle, Gilman, Harvey, Krayer, Pfeiffer, and Tainter as Associate Editors, was appointed. What was to become volume 1 of *Pharmacological Reviews* was first published as part II of the April, August, and December issues of volume 95 of JPET under the banner, "Pharmacological Reviews." Its enthusiastic re-

ception dispelled any doubts of financial success and beginning with volume 2, 1950, it became a new journal.

In February 1949 Gaddum, representing the British Pharmacological Society, outlined plans for a tentative review journal in pharmacology to be published as a joint venture with the Scandinavian and American societies. In view of the prior mandate from the Society, the fact that the first issue of *Pharmacological Reviews* was to appear in April 1949, 2 months later, and that some of the material had been obtained through the courtesy of the Editorial Board of *Physiological Reviews,* the Board of Publications Trustees felt it must go ahead with its own plans. However, when *Pharmacological Reviews* was established as a separate journal, beginning with volume 2, the two European societies were invited to participate in its editorial functions. Gaddum and Weatherall, representing the British, and Jacobsen, of the Scandinavian Pharmacological Society, became members of the Editorial Board, thus initiating a plan that is still in operation.

The first PR Board established a high standard of excellence, searching throughout the world for exciting subjects and for competent and critical reviewers, a pattern maintained by all its successors.

Goodman served as Editor-in-Chief through six volumes (1949-53); in 1955 Krayer became Chairman of the Editorial Board, a title still in use for this Journal, and served until 1960. He was succeeded in turn by Koelle (1960-62) and Acheson (1960–present).

Two symposia on catecholamines were edited and published by *Pharmacological Reviews.* The First Symposium on Catecholamines, held at the National Institutes of Health in Bethesda, Md., October 16-18, 1958, was edited by Krayer with the assistance of Koelle and published in *Pharmacological Reviews* (11: 241 –566, 1959). The Second Symposium on Catecholamines was organized by ASPET with financial support from NIMH and the pharmaceutical industry and was held at the Istituto de Ricerche Farmacologische "Mario Negri" in Milan, Italy, July 4-9, 1965. This was edited by Acheson with the assistance of members of the Organizing Committee and published in *Pharmacological Reviews* (18: 1 –804, 1966).

The Pharmacologist

In the spring of 1959 another Society publication, *The Pharmacologist,* was issued as an experiment. The first number was prepared by its strong advocate, Chauncey D. Leake, and its success was immediate: "Its primary purpose is to keep the members informed about Society affairs and other matters of professional interest to pharmacologists. It also serves as the medium for the publication of abstracts of papers to be presented at the annual Fall Meeting of the Society."

Since its inception it has been issued semiannually for the Society by

its present Editor, E. B. Cook. Originally designed to be nonarchival, literature quotations from abstracts became so numerous that it became desirable to change its status. In 1962 the JPET recognized The *Pharmacologist*[2] as a legitimate reference, the final step in achieving the archival status it enjoys today.

Molecular Pharmacology

The first issue of a new Society-sponsored journal, Molecular *Pharmacology,* appeared in July 1965. Designed to be international in scope, it was edited by Avram Goldstein with a 30-man Editorial Board of Americans and an equally impressive Advisory Board of foreign scientists. It is published for the Society by Academic Press. The statement of purpose in the first issue reads:

> "Molecular Pharmacology" will publish the results of investigations that elucidate mechanisms of drug action or of toxicity at the molecular level. The term "drug," is defined broadly, to include any chemical agent that selectively modifies biologic function.
>
> Suitable papers are those which describe applications of the methods of biochemistry, biophysics, genetics and molecular biology to pharmacologic or toxicologic problems. Also suitable are reports of fundamental investigations which, although not concerned with drugs, nevertheless provide an immediate basis for further study of the molecular mechanism of drug action. Observations of phenomena, that shed no light upon underlying molecular interactions, are not regarded as appropriate for publication.

[2] The following gem appears in the publisher's announcement in *The Pharmacologist,* a quarterly journal of Materia Medica, Pharmacy, and Therapy, volume 1, number 2, 1897, published by Frederick Kimball Stearns of Detroit, Michigan:

> It is with great pleasure that we have noted the comments of leading members of the medical and pharmaceutical professions regarding the first number of The Pharmacologist. As we said in our first announcement, The Pharmacologist will be devoted to the consideration of drugs from scientific and commercial points of view, and will be divided into two general departments accordingly. This division has been truly pronounced unique and valuable because it gives the opportunity for the publisher to be interested in both the commercial and scientific success of the journal without being charged with the prostitution of the scientific department for commercial ends.
>
> It is regretted that any such division has to be made in medical literature between scientific and commercial, yet such a distinction exists in fact, and should be recognized in practice or else our medical literature will be filled with advertisements which may be valuable from a commercial point of view, but cannot be accepted as scientific matter. There is a vast deal of difference between scientific truth and commercial honesty in literature. While the former demands the publication of the truth, the whole truth, and nothing but the truth, the latter is satisfied with the statement of the favorable side only.

In spite of, or because of, this idealism; the penetrating and prophetic editorials of F. E. Stewart, M.D., Ph.G., Editor; the guaranteed circulation of 10,000; and an annual subscription rate of 25 cents, only 4 issues (vol. 1) were published, 1897-98. The issue quoted above was presented to the writer by Dr. Glenn Kiplinger some years ago and is available in the Beaumont Office of the Society. The National Library of Medicine and other medical libraries have all issues.

Three issues (vol. 1) appeared in 1965 and six issues (vol. 2) in 1966 and thereafter. Beginning with volume 4, July 1968, Paul Talalay replaced Goldstein as Editor-in-Chief.

Clinical Pharmacology and Therapeutics

It was 58 years before the Society decided to capitalize on its scientific franchise to the "Experimental Therapeutics" portion of its name.

Beginning with volume 8, number 1, January-February 1967, *Clinical Pharmacology and Therapeutics* became an official organ of ASPET. This journal, owned by C. V. Mosby Company, since its inception has been, and will continue to be, the official publication of the American Therapeutics Society. Walter Modell will continue to serve as Editor of the Journal, as he has in the past, with a large Editorial Board of academic, government, and industrial scientists and physicians.

Pharmacology for Physicians

In January 1966 ASPET joined the American Physiological Society in sponsoring an official monthly publication, *Physiology and Pharmacology for Physicians,* a publication originally established in 1963 as *Physiology for Physicians* by the American Physiological Society. This publication consisted of a series of monthly monographs by experts on timely subjects designed to present to the practicing physician the physiologic or pharmacologic basis of dysfunction or disease.

Division of responsibility between physiology and pharmacology so reduced the number of monographs that could appear annually in each field that it was considered unsatisfactory. Consequently, after one year of joint effort, *Physiology for Physicians* was reactivated and is currently published in the *New England Journal of Medicine.* With volume 1, January 1967, *Pharmacology for Physicians* became a separate monthly publication of ASPET, edited by Walter Modell with a five-man Editorial Board and published by W. B. Saunders Company.

CHAPTER 4

Membership

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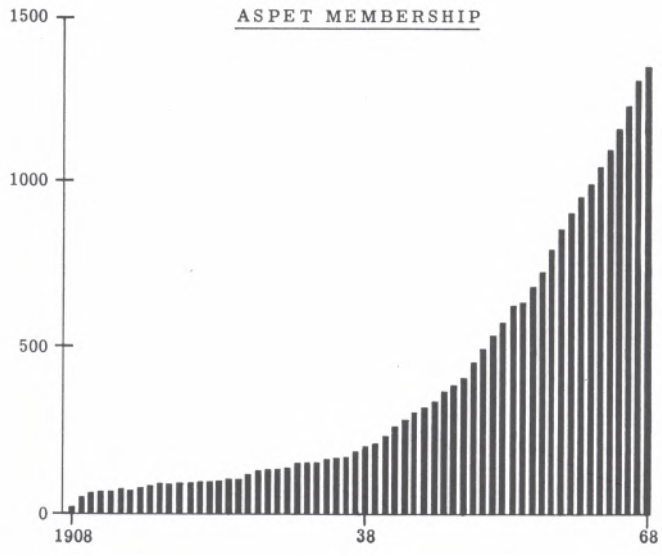
MEMBERSHIP

K. K. **Chen**

Active Members

FROM THE beginning the membership committee, Council, and members of ASPET have accepted as active members applicants who have conducted and published meritorious original investigation in pharmacology. This qualification is not as easy as it sounds, because the committee and Council judge by high standards. When elected or appointed to any positions, active members willingly discharge their duties in order to better the organization. The growth of ASPET in exact numerical figures is shown in Chapter 5. Counting the 18 founders in 1908 as the nucleus, the membership of ASPET increased approximately 11-fold in 1938 and 78-fold in 1968. The rate of growth in the last 30 years has been 7 times as fast as in the first 30 years.



Graphic Growth of ASPET Membership

The research interests of individual ASPET members are broad and diversified. Among these are the development of anesthetics, hypnotics, anticonvulsants, analgesics, local anesthetics, autonomics, vitamins, hormones,

Ranting and Best with the first dog to be kept alive with insulin

sulfonamides, antibiotics, antiparasitics, chemotherapetitics against neoplastic diseases, oxytocics, digitalis glycosides, and diuretics--all benefit humanity and alleviate suffering and some cure specific diseases. Other pharmacologists explore theories and basic concepts of mechanisms of action, metabolism, enzymatic catalysis, toxicology, and oxidation-reduction systems and study cellular and subcellular structures by isotopic techniques.

Society members have not limited themselves to pharmacology alone. Among the founders and charter members J. J. Abel and C. Voegtlin were equally competent in biochemistry, J. A. English Eyster and C. J. Wiggers were better known as physiologists, and W. deB. MacNider could be called a toxicologist. V. E. Henderson was respected by anesthesiologists, G. W. Crile was a surgeon, L. G. Rowntree, an internist, and S. Amberg, a pediatrician. J. Auer set a good example in teaching. Later members continue to show scientific competence and new talent. Some have fertile imaginations and the ingenuity to unfold new knowledge. Their published investigations win them recognition, such as the Nobel Award, and bring honor to the Society.

Nobel Laureates

Frederick G. Banting was known for his discovery of insulin for the treatment of diabetes mellitus. His meditation took him almost 6 months, but his experimental results with Best proved his point in less than 4 months-depancreatectomy, the ligation of the duct, and the injection of extracts of islets of Langerhans in depancreatized dogs. This lightning speed was documented in both Banting's Nobel lecture and Best's reminiscences of their joint work (Can. *Med. Assoc. J.* 47: 398, 1942). The picture of the first surviving dog, reproduced here, not only pleased the discoverers, but undoubtedly still inspires later investigators in pharmacology. Readers may be amused to learn that Banting purchased a few animals for the experiments with money from the sale of his automobile, since research grants were scarce in the early twenties. Their objective was definitely aimed at the treatment of diabetes and they were constantly discussing large-scale methods of insulin production.

Banting was born in Alliston, Ontario, Canada, in 1891; he was killed in an airplane crash in 1941 on his way to England at the age of 50. He earned his medical degree in 1916 from the University of Toronto, served as a part-time assistant on the medical faculty of Western University, London, for a year, and returned to the University of Toronto as a lecturer in pharmacology in 1921, although his insulin research was carried out in the Department of Physiology. He shared the Nobel Prize in 1923 with *J.* J. R. Macleod, Director of the Department of Physiology. They divided the prize equally with their co-workers Best and Collip. Banting was elected to ASPET membership in 1922, a year before he received the Nobel Award.

Numerous well-deserved recognitions were bestowed on him: he was

Professor of Banting and Best Department of Medical Research and honorary consultant at the Toronto General and Toronto Western Hospitals, and he was awarded the Starr Gold Medal, John Scott Medal of Philadelphia, Rosenberger Gold Medal of the University of Chicago, Cameron Prize of Edinburgh, Flavell Medal of the Royal Society of Canada, and Apothecaries' Medal of London. He was knighted in 1934.

Banting was a member of the Canadian Medical Association, Association of American Physicians, American Association for Cancer Research, and Imperial German Academy of Sciences; a licentiate of the Royal College of Physicians; a fellow of the American College of Physicians and Royal College of Physicians; an honorary member of the Norwegian Medical Society; and a foreign correspondent of Academie royale de médecine de Belgique, La Societ^{a} medico-chirurgia de Bologna, and the Royal Medical Society of Budapest.

Before his untimely death, Banting was investigating silicosis, royal jelly, and cancer. He enjoyed painting and wood carving for recreation. He sponsored several Canadian members for ASPET membership and was known for his kindness to younger investigators.

Herbert S. Gasser was born in Platteville, Wisconsin, in 1888. He graduated A.B. in 1910 and A.M. the following year at the University of Wisconsin. There he studied more physiology under Erlanger before he moved to Johns Hopkins Medical School, where he obtained his M.D. in 1915. After another year in pharmacology at the University of Wisconsin, he went to Washington University, St. Louis, rejoining Erlanger for research and becoming Professor of Pharmacology in 1921. In that very year he and H. S. Newcomer devised a cathode-ray oscillograph; during the next decade he and Erlanger, jointly and then separately, differentiated sensory and motor nerve impulses, leading to an important advance in neurophysiology. In 1944 Gasser and Erlanger shared the Nobel Prize in Physiology or Medicine.

In 1931 Gasser was appointed Professor of Physiology at Cornell Medical College, New York. In 1935 he became the Director of the Rockefeller Institute for Medical Research, where he remained until his retirement in 1953. While there he continued research in his own field and encouraged younger workers to demonstrate their originality, leading them as one of the investigators rather than as an administrator. He died in 1963.

Gasser was a member of Alpha Omega Alpha, APS, ASPET (1924), National Academy of Sciences, Philosophical Society, Association of American Physicians (Kober Medallist); he was also an honorary or foreign member of several learned societies, including Physiological Society and Asociación Medica Argentina. Twelve universities conferred honorary degrees on him. A more complete and inspiring account of his life appears in Experimental Neurology (Suppl. 1, 1964).

Carl F. Cori was born in Prague, Czechoslovakia, in 1896. He entered the German University of Prague and completed the M.D. degree in 1920, spent a year at the University of Vienna, and a year in pharmacology at the University of Graz.

After graduation he married Gerty T. Radnitz, a classmate in the same University. In 1922 they migrated to the United States and became naturalized citizens in 1928. For a quarter of a century they carried out biomedical research as a team, first at the State Institute for the Study of Malignant Diseases in Buffalo, New York, then at Washington University in 1931, where he was Professor of Pharmacology. They first investigated the fate of sugar in the animal body and the effects of epinephrine and insulin. Their most significant work was on carbohydrate metabolism in the whole animal, isolated tissues, and tissue extracts. Their pivotal compound was glucose-1-phosphate, known as the "Cori ester," and they demonstrated the activity of the enzyme phosphorylase, which was finally crystallized. This enzyme catalyzes the degradation or synthesis of polysaccharides (glycogen and starch). Their brilliant thinking and meticulous experimentation resulted in universal acceptance of their conclusions and won them jointly the 1947 Nobel Prize in Physiology or Medicine.

Carl F. Cori is a member of ASBC (President, 1949), ASPET (elected in 1934), National Academy of Sciences, American Philosophical Society, and Royal Society. He presided over the Nth International Congress of Biochemistry at Vienna in 1958. He has received honorary degrees from Western Reserve, Yale, Boston, and Cambridge Universities. He is currently Visiting Professor at Harvard Medical School, Massachusetts General Hospital.

Gerty T. Cori was born in Prague in 1896. In 1914 she enrolled in the medical school of the German University of Prague; in 1920 she received her M.D. and married Carl. After 2 years as assistant at the Carolinen Children's Hospital in Vienna, she joined her husband to go to the State Institute for the Study of Malignant Diseases in Buffalo; and in 1931 she accompanied him to the Washington University School of Medicine. Their joint work on the metabolism of carbohydrates won them the Nobel Prize in Physiology or Medicine in 1947. She delivered Part 2 of the Nobel lecture at Stockholm.

Gerty was appointed Professor of Biological Chemistry in 1947 at Washington University. She was a member of ASPET (elected in 1934), ACS, ASBC, Harvey Society (N.Y.), National Academy of Sciences, and American Philosophical Society. She served on the Advisory Board of the National Science Foundation, and she received the Squibb Award in Endocrinology, 1947, and Sugar Research Prize, NAS, 1950. She died in 1957.

Corneille Heymans was born in Ghent, Belgium, in 1892. He obtained his M.D. from the University of Ghent in 1920. In his postdoctoral travels in Europe and the US, he came in contact with E. Gley, H. H. Meyer, E. H.

Louise Pearce
1885-1959

Gerty T. Cori
1896-1957

Janet G. Travell
White House Physician

Frances Oldham Kelsey
Director, Division of
Scientific Investigations,
Food and Drug Administration

Starling, and C. J. Wiggers. He succeeded his father as Professor of Pharmacology in his alma mater.

Heymans's studies on the reflex control of respiration (by perfusing a dog's head by means of a donor dog in order to liberate or inhibit chemoreceptors) won him the Nobel Prize in 1939. His investigations were numerous, and his laboratory was a mecca for pharmacologists and physiologists. No less than 800 publications appeared from the institute named after his father, J. F. Heymans. His scholarly presentations merit wide reading *(Ann. Rev. Phys.* 25: 1, 1963). He was the Editor-in-Chief of *Archives Internationales* de *Pharmacodynamie* et de *Therapie* for many years.

Heymans delivered the Herter Lecture at New York University in 1934 and the Dunham Lecture at Harvard and Hanna Lecture at Western Reserve in 1937. He was an active member of ASPET from 1951 to 1963 and was elected honorary member in 1969 posthumously. He was a member or honorary member of many scientific societies, including the Pontificia Academie Scientiarum, the Academie des Sciences de Paris, and the Royal Society of Arts of Great Britain, and was a recipient of 15 honorary degrees. He was decorated by the Belgian government and several organizations. He presided over the XXth International Congress of Physiological Sciences at Brussels in 1956. Heymans displayed a democratic attitude to all pharmacologists and he enjoyed telling witty stories. He died in 1968.

Severo Ochoa was born in Luara, Spain, in 1905. After he obtained his M.D. from the Madrid Medical School in 1929, he spent 5 years in Germany and Great Britain. Although appointed to a responsible position in his alma mater, he returned to Germany and England in 1936 for more postdoctoral training. In 1941 he came to the US and joined C. F. Cori as a research associate in the Department of Pharmacology, Washington University School of Medicine. A year later he accepted an offer from the New York University School of Medicine, first as an assistant professor of Biochemistry, then as Professor of Pharmacology (1946-54), and Professor and Chairman of Biochemistry. Ochoa and A. Kornberg were jointly honored in 1959 with the Nobel Prize for their discovery of the mechanism in the biological synthesis of RNA and DNA. Despite the fact that Ochoa has been connected with departments of pharmacology in two universities he only belongs to ASBC of FASEB. His modesty has prevented him from applying to ASPET, but pharmacologists solicit his advice when the occasion arises.

Women Pharmacologists

ASPET is fortunate to have many women as members; a few are mentioned here.

Louise Pearce was born in Winchester, Massachusetts, in 1885. She graduated from Stanford University with an A.B. and earned her M.D. from

the Johns Hopkins University in 1912. She was house officer, Johns Hopkins Hospital, 1912-13, and accepted an invitation in 1914 to join the Rockefeller Institute for Medical Research, where she spent 38 years—successively as fellow, assistant, associate, and associate member.

Among her endeavors was her joint work with W. H. Brown and W. A. Jacobs in developing Tryparsamide for the treatment of African sleeping sickness (for G. W. Corner's vivid description see A *History* of the *Rockefeller Institute,* 1964, p. 145). The Institute sent her to the Belgian Congo for field trials in 1920, and the results were convincing *(The Treatment of Human Trypanosomiasis* was published by the Institute). In recognition of her success in Africa, she received the Order of the Crown of Belgium, the King Leopold II prize of $10,000, and became an officer of the Royal Order of the Lion.

Pearce was visiting Professor of Medicine at Peking Union Medical College, Peking, China, 1931-32. She was elected a member of the Board of Corporators of the Women's Medical College of Pennsylvania and became its President in 1946.

She is a member of ASPET (elected in 1915), Phi Beta Kappa, Alpha Omega Alpha, SEBM, New York Academy of Medicine, American Association of Pathologists and Bacteriologists, American Association for Cancer Research, Pathological Society of Great Britain and Ireland, Royal Society of Tropical Medicine and Hygiene, and Societe beige de Medicine tropicale. She received the Elizabeth Blackwell award, and she held honorary degrees from Wilson College, Bucknell University, Skidmore College, Beaver College, and Women's Medical College of Pennsylvania. Her influence in the advancement of women in professional and educational fields was felt all over the world.

Gerty T. Cori's biography appears in the preceding section, but her photograph is here, next to Louise Pearce.

Janet G. Travell was born in New York City. She earned her B.A. from Wellesley College and her M.D. from Cornell University Medical College in 1926. She served as House Physician in Medicine for 2 years at the New York Hospital, Cornell Division, and has been a diplomate of the National Board of Medical Examiners since 1928. She held a fellowship at Bellevue Hospital, N.Y., 1929-30, and joined the faculty of Pharmacology, Cornell University Medical College, advancing from instructor to associate professor of clinical pharmacology, 1930-61. Although in private practice, she retains her hospital appointments.

In the Department of Pharmacology she shared the responsibility of teaching, participated in "Cornell Conferences on Therapy," and conducted investigations with digitalis, hypnotics, nicotine, and other drugs. She and her associates have published more than 110 papers in leading journals.

More than 25 years ago Travell interpreted the relation of somatic pain

to various trigger areas and discovered the relief from such suffering by local block with the spray of ethyl chloride and fluoromethane mixture. She also designed special chairs to abolish neuromuscular pain as an adjunct. In 1955 John F. Kennedy made his first visit to her New York office for the back pain sustained from his injuries during World War II. She prescribed a well-proportioned rocking chair, which enabled him to do a day's work with much more comfort and confidence. When President Kennedy was inaugurated in 1961, he asked her to be White House Physician. After the tragedy in 1963, Lyndon B. Johnson persuaded her to remain in the White House. This is the first time a woman physician, a clinical pharmacologist, served two presidents of the US in succession. Her autobiography (Office Hours: Day and Night, World Publishing Co., 1969) is an account of her experiences during these years. She is now practicing medicine in Washington, D.C., and since 1961 has served as associate clinical professor of medicine, George Washington University School of Medicine and Hospital.

She is a member of ASPET, SEBM, AMA, New York Academy of Medicine, American Rheumatic Association, American College of Clinical Pharmacology and Chemotherapy (Founder), American Medical Women's Association, American Association for the Study of Headache, and North American Academy of Manipulative Medicine (Founder and President).

Ever since undergraduate days, Janet has been receiving awards and honors: Durant Scholar, Wellesley College, 1921 and 1922; elected to Phi Beta Kappa; and recipient of the J. M. Polk Prize for highest academic standing in the class for 4 years in medical college (1926). The Woman's Medical College of Pennsylvania conferred on her the D.M.S. in 1961 and Wilson College, the D.Sc., in 1962.

Frances O. Kelsey was born in Cobble Hill, Vancouver Island, B.C., Canada, and is a naturalized citizen of the US (her maiden name is Oldham). She obtained B.S. and M.S. degrees at McGill University, Montreal, and earned her Ph.D. in 1938 and M.D. in 1950 from the University of Chicago. She married F. E. Kelsey in 1943; ASPET members shared her grief at his early death in 1966.

Frances Kelsey served on the Medical Faculty of the University of Chicago as instructor and assistant professor of pharmacology (1938-50). She was an editorial associate of the AMA (1950-52); house officer at the Sacred Heart Hospital, Yankton, S.D. (1953-54); associate professor of pharmacology at the University of South Dakota (1954-57). She was in general practice of medicine at Vermillion, S.D. (1957-60). She then joined the FDA, Bureau of Medicine, progressing from Medical Officer to Chief of Investigational Drug Branch and Director of the Division of Oncology and Radiopharmaceuticals; she has been Director of the Division of Scientific Investigations since 1960.

At Chicago her research interests were principally concerned with the

hormones of pituitary gland and with antimalarials. She is senior author of *Essentials of Pharmacology.* In South Dakota she studied radioiodine in the diagnosis of thyroid dysfunction. In Washington, D.C., she continues to contribute to the medical literature. She has written more than 50 papers, and her recent address on "The Evolution of New Drug Legislation" is authoritative. In reviewing new drug applications she exercises her judgment, utilizes her experience, and weighs the evidence of benefit and harm. The reward of such practice was clearly shown by her firm decision to withhold the release of Thalidomide, a synthetic product manufactured and distributed by a German firm (Chemie GruThenthal) as a hypnotic for pregnant women. The chemical has a teratogenic effect on the human fetus. When deformed babies were born in other countries after pregnant women had taken Thalidomide, there was great public appreciation of Kelsey in the US.

The President's Award for Distinguished Federal Civilian Service was presented to her in 1962. This was promptly followed by awards from 8 national organizations; the Gold Key Award, University of Chicago Medical School; Gold Medal Award, Graduates' Society of McGill University; and Parents Magazine Medal. She received citations from 15 medical centers, schools, societies, and clubs. She was voted "Woman of the Year" by 5 associations and general assemblies. Honorary degrees were conferred on her by Hood College, Frederick, Maryland, 1963; Western College for Women, 1964; University of New Brunswick, 1964; Middlebury College, Middlebury, Vermont, 1966; and Wilson College, Chambersburg, Pennsylvania, 1967.

Frances is a member of ASPET, SEBM, American Cancer Society, American Medical Women's Association, Congenital Anomalies Research Association of Japan, Royal Society of Medicine, American Medical Writer's Association, and the Teratology Society. She is a competent pharmacologist, a devoted scientist, and a strong public servant.

Extraordinary Members

There are a few established pharmacologists who, later in their careers, have discharged responsibilities in areas far broader than the discipline of pharmacology.

A. **Newton Richards** (1876-1966), a charter and honorary member of ASPET, took his Ph.D. from Columbia University. After preliminary appointments at Columbia and Northwestern Universities, he was associated with the University of Pennsylvania School of Medicine for half a century.

Among his numerous investigations during the first 30 years the most outstanding was the mechanism of caffeine leading to the discovery of glomerular ultrafiltration. As Vice-President in charge of Medical Affairs (1939-48) he effected a close relationship between basic science departments and clinical medicine and raised the standards of the Medical School to new

heights. During World War II, he was Chairman, Committee on Medical Research, OSRD, and he channeled penicillin, blood plasma, and sulfonamides to the Armed Forces.

Richards was the 15th President of the National Academy of Sciences. He received 14 honorary degrees, including 2 M.D.'s, and 11 gold medals and innumerable awards. He was elected honorary member of many foreign societies and academies and was decorated by the British Empire. An intimate account of his life has been given by Schmidt *(Pharmacologist* 8: 95, 1966).

James A. Shannon was born in Hollis, New York, in 1904 and graduated from New York University, with an M.D. (1929) and a Ph.D. (1935). After his internship at Bellevue Hospital, he was a member of the Department of Physiology, New York University, 1931-41, and directed clinical research on antimalarials at the Goldwater Memorial Hospital, 1940-45. After serving as Director of the Squibb Institute for Medical Research for 3 years, he entered the Public Health Service in 1949.

While in the Department of Physiology, New York University, his investigative work covered the secretory mechanism of the renal tubule, renal control of water and electrolyte balance, measurement of glomerular filtration, and functional aspects of renal disease. He is both a competent physiologist and a clinical pharmacologist.

At the USPHS in Bethesda, Maryland, he was Associate Director, NIH, in charge of research (1949-52); Associate Director, NIH, for development of the Institutes' direct research program (1952-55); and later Director of NIH and Assistant Surgeon General. The last post carries a special responsibility for the formulation of broad national research policies and the coordination of research activities. In less than 8 years Shannon succeeded in having the Congress appropriate about 1 billion dollars for medical and health-related research. More than 14,000 grants have been awarded annually to individuals working in 400 colleges and universities. The NIH complex of 9 institutes with a Clinical Research Center has become a mecca for 2500 investigators, 1500 of whom have doctoral degrees. This level of federal support has been sustained until lately, but now there is Executive pressure for a cut-back. In any event, Shannon's recommendations were presented before he retired' in 1968. A more complete biography has been written by R. H. Grant *(Federation Proc.* 28: 1, 1969).

With so many contributions to his credit, it is not surprising that he has received 13 honorary degrees from American and European universities, 7 gold medals, including the President's Medal for Merit, and the Distinguished Federal Civilian Service Award.

Shannon is a member of Alpha Omega Alpha, APS, ASPET, NAS American Society for Clinical Investigation, Association of American Physicians, and other scientific societies.

W. Clarke Wescoe was born in Allentown, Pennsylvania, in 1920. He earned his B.S. from Muhlenberg College and his M.D. from Cornell Medical College in 1944; undergraduates and graduates elected him a member of Phi Beta Kappa and Alpha Omega Alpha. He served as house officer and assistant resident at New York Hospital (1944-46), and joined the Department of Pharmacology, Cornell Medical College, as instructor, assistant professor, and Markel Scholar (1946-51). The University of Kansas School of Medicine called on him to be Professor of Pharmacology in 1951 and appointed him Dean the year after (1952) and Chancellor of the University in 1960.

Before leaving New York Clarke had already established himself as a mature pharmacologist, working in the neuromuscular transmission field. He was elected a member of ASPET in 1949. He was appointed Editor of JPET, 1953-57, and conscientiously edited 11 volumes. Then he was elected Chairman of the Membership Committee. His homecoming address to ASPET at the 1963 annual dinner tells us how quickly a pharmacologist becomes a chancellor *(Pharmacologist* 5: 137,1963):

> When I was a lad I served a stint
> As Fellow in a small departament.
> I fed the mice and I cleaned the rats
> And I roamed the streets at night in search of big, fat cats.
> I searched the streets for cats so successfully,
> That now I've come to rule a university.
> He searched the streets for cats so successfully
> That now he's come to rule a university.

Indeed, Wescoe is one of the youngest university presidents. His wisdom in academic decisions is well known in educational circles. His advice is sought by medical organizations and corporations: President, China Medical Board, 1969; Chairman, Council on Medical Education, AMA; and Director, Trader's National Bank, and Sterling Drug, Inc.

Honorary Members

By amendment of the original Constitution, foreign and American pharmacologists of distinction have been elected honorary members. These authorities impart stimulation to our membership and in some cases give us academic assistance. The 17 men named in the following serve as our source of inspiration:

Name *of Honorary Member*	*Date of Election*	*Location*
Henry H. Dale	1928	Deceased
Rudolf Magnus	1928	Deceased
Hans H. Meyer	1928	Deceased
Walther Straub	1928	Deceased

Name of Honorary Member	*Date of Election*	*Location*
Johannes G„Dusser de Barenne	1932	Deceased
Karl Koller	1934	Deceased
Ramnath N. Chopra	1938	Drug Research Laboratory Jammu-Tawi, Kashmir, India
Otto Loewi	1940	Deceased
A. Newton Richards	1959	Deceased
Torald Sollmann	1959	Deceased
Carl Voegtlin	1959	Deceased
Eli K. Marshall, Jr.	1962	Deceased
Francis P. McGrath	1965	Deceased
Linus Pauling	1966	Department of Chemistry, University of California at San Diego, La Jolla, California
Irvine H. Page	1967	Cleveland Clinic, Cleveland, Ohio
Corneille Heymans	1969	Deceased
Arthur Stoll	1969	Sandoz, Inc., Basel, Switzerland

Corneille Heymans was an active member of ASPET, 1951-63; his sponsors for honorary membership in 1950 did not succeed, because there were 5 men recommended at that time and the Membership Committee believed that was too many. Heymans was again nominated before he died, and was elected posthumously.

We wish longevity for our contemporary honorary members so that we can continue to have the benefit of their advice.

Corporate Associates

The original Constitution of ASPET barred from membership pharmacologists in the employ of the pharmaceutical industry. The founders and charter members were probably afraid that industrial pharmacologists might be engaged for unethical practices. Time and experience convinced the membership that this restriction was not justified. Intelligent managements realize that such exploitation of their scientific personnel does more harm than good to their organizations. Members of the Pharmaceutical Manufacturers Association, especially, cannot afford to have their prestige downgraded.

Today there is no difference between academic and industrial pharmacologists. Pharmacology needs industrial organizations in order to develop effectively. Otto Krayer initiated the Corporate Associate program in 1958. A recent issue of The *Pharmacologist* (10: 77, 1968) shows an imposing roster of Corporate Associates. The drug firms have set examples for testing labora-

tories, animal industries, and publishers. On other occasions they support ASPET either individually or collectively (PMAF) for mutual benefit.

The pharmaceutical industry finds it necessary to have the services of basic or clinical pharmacologists as investigators, directors, or officers. They are just as indispensable as chemists. The close interplay between these scientists has been a vast source of medical progress.

CORPORATE ASSOCIATES

Abbott Laboratories
Alcon Laboratories, Inc.
Allergan Pharmaceuticals, Inc.
The Ames Laboratories, Inc.
Arnar-Stone Laboratories, Inc.
Astra Pharmaceutical Products, Inc.
Atlas Chemical Industries, Inc.
Ayerst Laboratories
Baxter Laboratories, Inc.
Bristol Laboratories
Brocades-Stheeman & Pharmacia
Burroughs Wellcome & Co. (U. S. A.), Inc.
Carworth, Inc.
The Charles River Breeding Laboratories, Inc.
Ciba Pharmaceutical Company
Cutter Laboratories
E. I. du Pont de Nemours & Company
Endo Laboratories, Inc.
Farbwerke Hoechst AG
C. B. Fleet Company, Inc.
Food and Drug Research Laboratories, Inc.
Fuller Pharmaceutical Company
Geigy Chemical Corporation
Gillette Research Institute, Inc.
Hazleton Laboratories Incorporated
The Hine Laboratories, Inc.
Hoechst Pharmaceuticals, Inc.
Hoffman-La Roche Inc.
Human Health Research and Development Laboratories of the Dow Chemical Company
International Research and Development Corporation
Johnson & Johnson
Knoll Pharmaceutical Company
Lakeside Laboratories, Inc.
La Wall and Harrisson Research Laboratories, Inc.
Leberco Laboratories
Lederle Laboratories
The Lilly Research Laboratories, Eli Lilly and Company
Arthur D. Little, Inc.
Mallinckrodt Chemical Works
McNeil Laboratories, Inc.
Mead Johnson Research Center
Medics Pharmaceutical Corporation
The Merck Company Foundation
The Wm. S. Merrell Company
Miles Laboratories
Minnesota Mining and Manufacturing Company
The National Drug Company
North American Rockwell Corporation
The Norwich Pharmacal Company
Ortho Research Foundation
Parke, Davis & Company
S. B. Penick & Company
Pergamon Press, Inc.
Chas. Pfizer & Co., Inc.
Pharmacology Research, Inc.
The Proctor & Gamble Company
The Purdue Frederick Company
Riker Laboratories
A. H. Robins Company, Incorporated
Rosner-Hixson Laboratories, Inc.
Sandoz Pharmaceuticals
Schering Corporation
G. D. Searle & Co.
Smith, Kline & French Laboratories
Smith, Miller & Patch, Inc.
South Mountain Laboratories, Inc.
The South Shore Analytical and Research Laboratory, Inc.
The Squibb Institute for Medical Research
Sterling Drug, Inc.
Sterling-Winthrop Research Institute
Winthrop Laboratories
Strasenburgh Laboratories
Syntex Corporation
Union Carbide Corporation
The Upjohn Company
U.S. Vitamin & Pharmaceutical Corporation
The Vitarine Co., Inc.
Wallace Laboratories, Division of Carter Products, Inc.
Warner-Lambert Research Institute
Warren-Teed Pharmaceuticals Incorporated
White Laboratories, Inc.
Wyeth Laboratories, Inc.

CHAPTER 5

Growth

CHAPTER 5

GROWTH

Allan D. Bass

Expansion and Change of Direction of the Discipline

JUST AS the origins of pharmacology are difficult to clearly establish at this point and time, it is very hard to specifically identify the factors that have caused pharmacology, as it is now known in the US, to evolve into the present multifaceted discipline. The impact of the early botanist-physician and the chemist is indelibly imprinted on the character of our discipline in 1968. The impact of the chemist in recent years, however, has overshadowed the influence of the botanist. Although there are still many natural products employed in the therapy of man, society depends to an increasing extent on the synthetic chemist to develop new potent remedies. It is interesting that John J. Abel, the father of American pharmacology, combined the interest of a scientist who looked for therapeutic agents from natural sources with that of a chemist who attempted to identify chemically in a very precise and skillful way the configuration and chemical structure of the products isolated.

As tools for studying the physiological effects of drugs evolved, the pharmacologist was quick to adapt these techniques to a study of the mechanism of action of drugs. Later, with the introduction of biochemical methodology, pharmacologists trained in the era of these developments began to pursue with care and diligence the effect of drugs on cellular mechanisms. Indeed, some 10-15 years ago, it was possible to broadly characterize pharmacologists as physiologically oriented or biochemically oriented. With the growth of biophysics, which actually began as a subspecialty of physiology, new research tools and methodology were available to the pharmacologist for pursuing studies of mechanisms of drug action at a cellular level. Indeed, many pharmacologists began to concentrate their effort on the actions of drugs on membranes, including synaptic membranes, nerve sheaths, muscle membranes, etc.

Some within the field of pharmacology took a particular interest in the toxic manifestations produced by chemical agents. Although all pharmacologists, to some extent, have an interest in toxicology, this branch of the discipline has become so specialized and has developed to such a level of importance that a separate society of toxicology was established in 1961.

Pharmacology has always been intimately associated with therapeutics (indeed, our Society still bears the imprint of that interest in its title). Recently we have accorded additional recognition of the specialized problems relating to drugs in man and have established a Division of Clinical Pharmacology (1967). A new dimension in the evolution of our discipline has been added by the development of the pharmacologist well trained in its basic principles and equipped with the skills of the clinician. The development of clinical pharmacology has not only contributed to a more intensified investigation of the action of drugs in man, but it has contributed significantly to new educational dimensions in the medical school curriculum. Many divisions of clinical pharmacology now exist that are staffed by well-qualified scientists who have appointments both in departments of pharmacology and one or more of the clinical departments. Such divisions form an effective bridge between the teaching of basic science and the clinical instruction in the area of pharmacology and therapeutics. It is anticipated that within a few years, no school of medicine will feel that it can satisfactorily present an educational program in pharmacology without such an interdisciplinary group of educators and scientists.

Just as specialization has occurred in the area of human pharmacology, so specialization has been required to expand more effectively our knowledge of drug action at a molecular level. There is emerging a new and important area of pharmacology now known as molecular pharmacology that has as its goal the exploration of the mechanism of drug action at subcellular and molecular levels. This development will greatly extend our knowledge of the mechanism of drug action. For the optimum development of molecular pharmacology, the interdisciplinary ties with chemistry, physical chemistry, and mathematics will undoubtedly be strengthened.

Although pharmacologists have been concerned for many years with the action of drugs on specific organs and organ systems, an area of subspecialization called psychopharmacology has come into prominence in the last 5-10 years. Here the classical approaches of the pharmacologist have been combined with those of the physiological psychologist and experimental psychiatrist to investigate the action of drugs on the central nervous system as they relate to the behavior of both experimental animals and humans. This is a subspecialty of pharmacology in which great progress can be expected.

It is not feasible to identify all of the areas in which pharmacologists find expression for their interests and talents. However, with the increased specialization in science, more individual pharmacologists find that their full attention is devoted to specialized areas of research, such as the effect of drugs on the fetus, on lipid synthesis and metabolism, or on cellular transport.

With the increasing importance of pharmacology to the practicing physician and to the public, there has been a growing emphasis on the teaching of pharmacology to medical students, pharmacy students, nursing stu-

dents, and others. Pharmacology departments that were traditionally very small, consisting of perhaps no more than two members, now are frequently equivalent in size to departments of physiology, microbiology, and biochemistry. This has also occasioned an increase in the time allotted for teaching pharmacology in the medical curriculum.

As the role of pharmacology has expanded, the impact of the pharmacologist in the pharmaceutical industry has been increasingly more important. Indeed, in recent years, an increasing number of pharmacologists are to be found in dominant positions in the pharmaceutical industry. The increasing visibility of the Food and Drug Administration (FDA) in the life of the American citizen has considerably strengthened the involvement of the pharmacologist at the interface between scientist and the public.

In summary then, it may be stated that pharmacology is a multifaceted discipline that has gained strength and vitality from its dependence on and relationship to other disciplines as they have grown and developed. The strength that comes from interdisciplinary effort has long been recognized by the pharmacologist, although only in recent years has this been comprehended to a similar extent in a number of other disciplines. Although pharmacology has not yet completely matured, it certainly has successfully weathered its adolescence and is ready to take its full share of responsibility in the advancement of biological and medical science. The importance of pharmacology in medical education, industrial research, government deliberations, and biomedical research has become increasingly apparent. Whereas at one time many pharmacology departments were not independent entities but were combined with other medical school departments, usually with departments of biochemistry or physiology, there is now only one major medical school with a combined department, and it plans to establish pharmacology as an independent discipline within the next 3 or 4 years.

The membership of the American Society for Pharmacology and Experimental Therapeutics has grown in a manner parallel to that of the other associated disciplines in the federated societies. In the past 10 years the number of predoctoral trainees has more than doubled.

Pharmacologists in the US have now joined with their counterparts in other nations to conduct their own international congresses. Publications in the field have so increased that there was a need for establishing new journals in the areas of molecular pharmacology, biochemical pharmacology, clinical pharmacology and therapeutics, and toxicology. The increased activities of ASPET created the need for the establishment of a central office in Washington to facilitate the handling of Society affairs.

Even with the rapid growth of the discipline, the numbers of well-trained pharmacologists still fall far short of those needed to fill the many positions open. Since pharmacology is still in a period of rapid growth there

is every indication that it will enjoy an even greater position of influence in the scientific community in the years ahead.

Increase in Membership

John J. Abel in a letter to Abraham Flexner made the statement, "let one pharmacologist be more of a chemist, another more of a physiologist, another more of a clinician." Although the climate in the pharmacological community is modified somewhat from time to time, Abel's philosophy has persisted. Indeed, it was only when pharmacology escaped from the scientifically sterile limitations of materia medica and developed an interdisciplinary approach that it became attractive to brilliant young men who continue to make modern pharmacology a viable and exciting career. Although the growth in membership of the Society, as shown in Table 15, is impressive and indicates the vitality of the discipline at the present time, even more important evidence of growth is represented by the expansion of the concept of pharmacology as expressed in Abel's statement.

The interdisciplinary base on which modern pharmacology firmly rests has, with the passing of time and the growth of the sister disciplines, made it appropriate to paraphrase Abel's original statement somewhat as follows: let one pharmacologist be more of a physiologist, let another be more of a biochemist, another more of a medicinal chemist, another more of a psychopharmacologist, another more of a neuropharmacologist, and another more of a clinical pharmacologist. This increasing trend to specialization has developed out of necessity and is a response to the rapid expansion of knowledge not only in the area of pharmacology but in the sister disciplines. Because

TABLE 15. ASPET Membership Growth, 1908-1967

Year	*Active*	*Retired*		*Honorary*		*Losses**	*Total*
		New	Total+	*New*	Totalt+		
1908	18						18
1909	34						51
1910	6					1	56
1911	6						62
1912	9					3	68
1913	4					2	70
1914	3						73
1915	11					1	83
1916	5					1	87
1917	3						90
1918	4					1	93
1919	3					1	95
1920	2					1	96
1921	7					3	100

Year	Active	Retired		Honorary		Losses*	Total
		New	Total+	New	Total+		
1922	4					1	103
1923	5						108
1924	10						118
1925	7					3	122
1926	2					1	123
1927	9					1	131
1928	7			3	3	2	139
1929	7			0	3	4	142
1930	4			1	4		147
1931	14			0	4	2	159
1932	7			0	4	5	161
1933	8			0	4	8	161
1934	11			0	4	4	168
1935	6			0	4	5	169
1936	5			0	4	1	173
1937	21			0	4	3	191
1938	18			1	5	5	205
1939	20			0	4	10	215
1940	20			0	4	2	233
1941	33			1	5	4	263
1942	25			0	5	5	283
1943	33			0	5	6	310
1944	0	15	15	0	3	5	305
1945	18	0	15	0	3	5	318
1946	23	2	17	0	3	2	339
1947	35	1	17	0	3	3	371
1948	32	1	16	0	3	9	394
1949	26	2	18	0	3	2	418
1950	45	3	21	0	3	5	458
1951	48	0	19	0	3	5	501
1952	41	0	18	0	3	5	537
1953	47	0	16	0	3	4	580
1954	38	16	30	0	3	12	606
1955	38	1	30	0	3	5	639
1956	48	0	29	0	3	6	681
1957	60	3	32	0	3	9	732
1958	69	7	37	0	3	4	797
1959	69	5	37	3	6	4	862
1960	57	6	40	0	5	17	902
1961	60	9	46	0	4	8	954
1962	53	5	48	1	5	16	991
1963	67	5	49	0	5	10	1048
1964	65	11	57	0	5	19	1094
1965	106#	6	60	0	4	17	1183
1966	106#	8	62	1	3	18	1272
1967	101#	13	73	1	4	9	1365

* Deaths, resignations, dropped, etc.

\+ Accumulated total.

\# Numerators represent number of new members elected at Spring Meeting, denominators represent number of new members elected at Fall Meeting: 1965, 79/26 (discrepancy caused by reinstatement of Richard Li);-1966 59/47; 1967, 49/52.

of the applied nature of pharmacology there is perhaps no discipline that has as effectively and spontaneously responded to the needs of society. Both the academic and the industrial pharmacologist have, in general, responded in a very responsible way as more and more drugs and new chemicals have become not only important therapeutic triumphs but also important threats to society. An example of such a response has been a rather unprecedented growth of scientists trained more specifically in the area of toxicology. Indeed, this area of pharmacology is becoming more clearly identifiable as a sister specialty.

Another response of pharmacologists to specific academic and social needs is expressed in the rapid growth of clinical pharmacology. Indeed, the rapid growth of this subdiscipline has resulted in the formation of three competing groups representing overlapping areas of clinical pharmacology. One of these groups finds its primary affiliation in ASPET and is recognized as a division within the Society, the first recognized division since the Society's initial formation in 1908. The clinical pharmacologists with the strongest academic orientation are primarily represented by the Division of Pharmacology within ASPET. It is to be hoped that the current efforts being made to develop strong liaison among the three groups will be successful, as it would be unfortunate if this exciting and important area were to fall short of its optimum growth and development.

In many American medical schools, pharmacology departments had tended to move away from clinical interests. With the establishment of clinical pharmacology as an identifiable academic necessity, pharmacology departments are again in a position to reestablish important and meaningful relationships with clinical investigators. Not only will this strengthen pharmacology as a discipline, but it will encourage more investigations on drugs in humans and form that very important educational and scientific bridge between the basic sciences and clinical medicine.

The expansion of the activities of ASPET is described in other chapters of this history. The scope of interest expressed by the membership today indicates the changing philosophy of our Society's objectives. That the Society still exists primarily as a channel for scientific communication is unquestioned. However, there is clearly increasing evidence that through the Society individual members can relate more effectively to medical and graduate education, to the role of the scientist in society, and to industrial and governmental agencies. Many of these more recent activities of the Society are discussed in detail elsewhere.

In his letter to Flexner, Abel also made the statement that "the scope of this branch of medical knowledge has increased so enormously in the last 50 years, not only in respect to the classes of drugs just outlined, but also to a vast list of substances whose action is less along curative lines and in the direction of alleviating troublesome and annoying symptoms of disease." He

goes on to say that the scope of this domain of pharmacology is so large that there is ample opportunity for individuals to work in physiology, pathology, and other medical sciences without ousting the pharmacologist or subordinat= ing him to some other field. He also clearly indicated in this letter that pharmacology should be established as a separate discipline and not be subsidiary to physiology, as had been the previous custom in many institutions. He expressed the opinion that physiology had its own problems that either may or may not interlock with pharmacology. He also felt that the preeminence of other disciplines was the result of the fact that they had independent status and had been allowed to develop their science freely in the most appropriate direction.

The position Abel took concerning the development of pharmacology in the 1920's is no less pertinent today. Almost without exception, medical schools have established independent departments of pharmacology, and the importance of pharmacology in the pharmaceutical industry is a matter of common knowledge. Indeed, pharmacology is furnishing its share of leaders in the fields of academic medicine, pharmaceutical industry, governmental institutes, and governmental agencies. It is, however, still a matter of some concern that pharmacologists are not admitted as representatives of their discipline in the National Academy of Sciences, although a few members of ASPET were nominated and elected by representatives of sister disciplines. This is a situation that needs to be rectified in the near future.

In summary, it can be stated that pharmacologists have increased in number in proportion to the increase in scientists in its sister disciplines. It has expanded training activities so that the output of pharmacologists with primary training in pharmacology has more than doubled in the past 10 years. Because of its interdisciplinary nature and in part as a result of the strength it has drawn from its dependence on physiology, biochemistry, and medicine, it has retained a dynamic position of leadership in the scientific community with an impact that is considerably greater than would be expected from the official membership roster. This is in part reflected in Federation meetings, at which registrants with an interest in pharmacology indicate their choice, showing that for every member attending the Federation meeting, two nonmembers interested in the field of pharmacology are registered. Whereas at one time pharmacologists were primarily either physicians who returned to the basic science areas or chemists who took additional training in biological sciences, today an increasing number of pharmacologists are receiving their basic training as graduate students in departments of pharmacology throughout the US. There is unquestionable evidence that pharmacology has now passed through its adolescence and is clearly approaching maturity as a discipline in its own right.

Considerable emphasis has been placed on the growth of pharmacology as a discipline because this growth has been directly reflected in the

increasing membership in ASPET. That the requirements for membership have been maintained at a high level is indicated by the fact that there are approximately nine scientists who consider themselves to be pharmacologists for every one member of the Society. Although the Society is considering for membership scientists with a wider spread of interest in drugs than was the case some years ago, there has been no relaxation in quality of scientific performance required. New members are admitted at the Fall and Spring Meetings of the Society. This has assured that adequate attention of the Membership Committee can be given to the review of the qualifications of each nominee.

Establishment of Society Office at Beaumont and Appointment of Executive Officer

Beaumont House as a home for the Federated Societies was the inspiration of M. O. Lee and the Federation Board of 18 men. During the time Chen was Chairman of the Federation in 1954, it became obvious to him that the Federation must have a permanent headquarters. Chen and Milton 0. Lee, who in 1947 became the Executive Director and Officer of the Federation, not only discussed extensively the financial possibilities of this development but spent several days looking for appropriate locations in Washington and vicinity. Chen presented to the Federation Board his recommendation that a Federation headquarters be established and that the Hawley estate in the Bethesda area be selected for that purpose. The 18 officers of the 6 societies received the report with favor and unanimously approved the purchase of the estate, which is just north of the National Institutes of Health (NIH) and the Naval Medical Research Institute (NMRI).

On the suggestion of W. F. Hamilton the headquarters was named after William Beaumont, the U.S. Army surgeon of the last century whose work on the gastric juice and physiology of the digestion is a biomedical classic. Space in Beaumont House was initially employed by ASPET for the purposes of furnishing the editors of our journals with redactory services.

It was not until October 1961 that the permanent Executive Officer of ASPET was selected. Ellsworth B. Cook was appointed and he took over his responsibilities after his retirement as Commander MSC USN. Commander Cook received his Ph.D. with a major in pharmacology from Tufts Medical School in 1951. He had previously studied in the fields of physiology, neurophysiology, and psychology at Clark, Duke, Harvard, and Yale Universities and had published or contributed to over 60 scientific articles. While stationed at the Naval Medical Research Institute in Bethesda, he had served on the first NIH Study Section on Cancer Chemotherapy and then transferred to the Study Section on Pharmacology and Experimental Therapeutics when that panel was established. He had had wide experience in editing, lecturing, and in liaison

Ellsworth B. Cook
The First Executive Officer
of ASPET (1961—present)

and contact work, including the organization of conferences. As Executive Officer of the Society he was charged with ongoing managerial affairs previously delegated particularly to the Secretary and Treasurer. The responsibilities of these officers of the Society henceforth became more of a supervisory and advisory function.

By the spring of 1962 it was reported in The Pharmacologist that the Society was occupying approximately 800 square feet of space on the second floor of Beaumont House and that the staff consisted of the Executive Officer, two copy editors, and two secretaries. Since then arrangements for the editing of the Society's journals have been removed from the Beaumont House Office, but many new responsibilities have been added. Here all abstracts of papers are processed and programed for the Spring and Fall Meetings, preliminary arrangements are made for members recommended as session chairmen by the Program Committee, general mailings on the meetings are prepared and distributed to Society members, nominations for membership in the Society are processed, mail ballots are tabulated, preliminary drafts of Society budgets are prepared, a host of services are provided to the expanding committee work on the Society, and material for The Pharmacologist is collected, prepared, and distributed. To a large extent the functions of the Secretary of the Society have been taken over by the Executive Officer. The Treasurer's responsibilities have been considerably reduced and now consist primarily of serving as Chairman of the Finance Committee of the Society and advising the Council on all fiscal matters.

The presence of a full-time Executive Officer at Beaumont House has brought about a more effective working relationship with the Executive Officer of the Federation and with representatives of the other societies who have space at Beaumont. In 1965 increased space was required for the activities of the Society and the Pharmacology Office was moved into the new Lee Building, a building that had become necessary as additional facilities were required by an ever-expanding program. At present the Pharmacology Society

occupies 1525 square feet in the Lee Building and has a permanent staff of seven people.

At the time the Society established a central home office and an Executive Officer at Beaumont, many members had considerable misgivings. However, through the loyalty and dedication of E. B. Cook, this office has lived up to the most optimistic expectations.

As the functions of the Society have increased and as it has taken on new responsibilities in the area of educational affairs, public relations, etc., the home office has become not only a valuable asset but indispensable.

Financial Matters

There were no dues from 1908 to 1909. The Treasurer collected $1 from 1910 to 1921—chiefly for postage. The annual assessments were increased to $2 from 1922 to 1940, except for 2 years (1933-34) in which the Council and Membership voted for $3. After WET was transferred to ASPET in 1933, the Treasurer was required to keep two accounts, the Journal Fund and the General Fund. In 1939 ASPET sustained losses of $10.85 from the closing of the First National Bank and $348.79 from the closing of Farmer's Loan and Trust Co., both at Iowa City. In 1941 FASEB was in deficit, and each member was therefore assessed $1, making the dues $3 again. This lasted until 1946 when they were raised to $4, to $5 in 1948, to $10 in 1957, to $15 in 1959, and to $25 in 1964. The Journal Fund met a crisis in 1949 because of the overuse of pages. After the occupancy of two rooms at Beaumont in 1958 it soon became apparent that an annual budget must be set in order to operate within means *(Pharmacologist* 1, no. 2: 26). Estimates of deficit were rectified by an increase in dues *(Pharmacologist* 4: 113, 1962; 5: 101, 1963; 6: 71, 1964). For the first time ASPET was budgeting in the black for 1965 (7: 53, 1965). Although there is a reserve fund (9: 166, 1967), it is very easy to have expenditures exceed income (10: 42, 138, 1968).

The Founders, succeeding Councils, and the membership of ASPET have had no intention to make a profit from any activity, but they are very careful not to let the treasury run in the red. The Executive Officer and other employees at Beaumont must be protected for their safety and security. The budgetary system, closely watched, is the best means to keep the society free from debts.

Surveys

According to the constitution, the object of the Society is to promote pharmacology. Until the presidency of Louis S. Goodman, this had been interpreted as a promotion of the discipline in a scientific context only. The first Educational Affairs Committee was established in 1954 by Goodman with Allan

Bass as Chairman. The members of this first committee agreed that a brochure outlining the objectives and scope of pharmacology should be prepared to encourage more young people to undertake graduate study in departments of pharmacology. At this time there was by no means unanimous agreement among members of the Society that an educational affairs activity was indeed a proper or desirable undertaking. Accordingly, through its own efforts the committee raised the funds from the pharmaceutical industry to publish the first career brochure.

It became apparent very early that there were no data on which to base reliable estimates of the number of departments offering graduate education, the number of trainees in residence, or the potential need for more pharmacologists. To remedy this, the committee decided to conduct a survey including schools of dentistry, pharmacy, and veterinary medicine in addition to medical schools. This first undertaking was completed in 1959-60 by Klaus Unna and Edward Pelikan. A second survey was conducted in 1964-65, and an analysis of both the growth in departments of pharmacology and in the graduate programs was reported in The Pharmacologist (8: 98, 1966). In this 9-year period, the total faculty in medical school departments of pharmacology increased 188%, and the total full-time faculty increased 205%. An even greater increase, 239%, occurred in the case of the numbers of faculty members participating in graduate education. This survey clearly indicated the impact of NIH training grants; the annual increase in the number of faculty members engaged in graduate training during the 10-year period 1955-56 to 1964-65 averaged 0.62 faculty members per year. In contrast, the increase in schools without training grants was 0.25 faculty members per year per department.

In schools of pharmacy and veterinary medicine, the relative increase in faculty was 104 and 91%, respectively, and was less than the corresponding increase in schools of medicine (139% increase in faculty engaged in graduate training). In schools of dentistry, the mean number of faculty per school engaged in graduate training was 0.5 in 1960-61 and 0.7 in 1964-65. The mean rate of increase during the 10-year period was 0.1 faculty members per school per year. During the decade between the two surveys, there was an increase in the number of degrees awarded. When the two 5-year periods (1955-56 through 1959-60 and 1960-61 through 1964-65) were compared on the basis of degrees awarded per year per 100 schools, the Ph.D's awarded by schools of medicine with training grants went from 63 to 102. The Ph.D.'s awarded in schools of medicine without training grants dropped from 49 to 44.

A complete summary is not in order here. Only enough data are presented to indicate that the output of Ph.D.'s in pharmacology roughly doubled in a 10-year period and that this growth was greater in schools of medicine than in schools of pharmacy, dentistry, and veterinary medicine.

An attempt was also made to determine the need for future pharma-

cologists. Although such data are only of a very qualitative nature at best, they clearly indicated that the need for pharmacologists was not being met even by the increase in the growth of graduate programs. It is pertinent, however, to indicate that the growth of the membership in the sister societies within the Federation over the past 10 years has closely paralleled the increase in the amount of federal funds made available for research through NIH.

Another significant observation was that as increasing numbers of academic pharmacologists were being trained by pharmacology departments, there was less dependence by pharmacology departments' on scientists from other disciplines. The results of these surveys, showing both the limited number of young people being trained in pharmacology and the large unmet need for pharmacologists, contributed significantly in supporting NIH efforts to obtain research training grant funds. Although some have been of the opinion that the surveys only gave in a quantitative fashion what was already known in a qualitative sense, nonetheless the results of these surveys gave the discipline of pharmacology a clear picture of what it was accomplishing and the rate of progress it was making in the area of graduate education. It was obvious that the progress was highly commendable. An optimal output of trainees was still a goal for future development. This is all the more true when one recognizes that 10% of the budgeted full-time faculty positions are as yet unfilled *(J. Am. Med. Assoc.* 206: 2009, 1968).

Grants

GOVERNMENT GRANTS

Since the establishment of the Division of Research Grants, NIH, US Public Health Service (USPHS) research grants have regularly been awarded to academic pharmacologists. Peyton Stapp (private communication) provided the data for the last 7 years shown in Table 16. They do not include medicinal chemistry, which usually requires pharmacological investigations. The figures for career awards and fellowships have also been omitted.

The life blood of any discipline is its recruitment of outstanding young men and women who vigorously, and with purpose, pursue its objectives. Until some 10-15 years ago, there were very few scientists trained specifically in pharmacology. Scientists who came into the field had usually completed their medical training or were recruited after having received their initial training in biochemistry, physiology, or some other discipline.

Recruitment of young people directly into pharmacology has been difficult for a number of reasons: the limited number of departments equipped to offer superior graduate training, inadequate funding for trainees during their predoctoral period, inadequate information to attract college students to pharmacology, and the feeling on the part of certain leading pharmacologists that it is better to obtain predoctoral training in some other discipline

TABLE 16. Number and Dollar Amounts of Approved USPHS Research Grants

Year	*Discipline*	No. *of Applications*	*Dollars in Thousands*
1962	Pharmacology	280	6491
	Toxicology	66	1574
1963	Pharmacology	298	5752
	Toxicology	75	1430
1964	Pharmacology	255	4660
	Toxicology	87	1625
1965	Pharmacology	268	5180
	Toxicology	88	2194
1966	Pharmacology	221	5378
	Toxicology	93	2236
1967	Pharmacology	190	5186
	Toxicology	116	2723
1968	Pharmacology	177	4861
	Toxicology	109	2762

and to graft pharmacology training on this base in the postdoctoral period.

Nonetheless, an increasing number of pharmacologists were quite concerned about the limited number of young people being trained in pharmacology departments, particularly when this scientific discipline was destined for an unprecedented growth. This growth was inevitable because of the increasingly rapid introduction of new and more potent therapeutic agents; the growing importance of toxicology both as it pertains to therapeutic agents and to such areas as insecticides, food additives, and air and stream pollution; and significant expansion in areas of molecular and clinical pharmacology.

In 1957 Harry Beckman, then President of ASPET, took on himself the responsibility of approaching NIH to enlist their support in helping solve this problem of trainee deficiency in pharmacology. He was told by Fred Stone, General Medical Sciences Division of NIH (now NIGMS), to present evidence from pharmacologists throughout the nation that a crisis indeed existed in the training of pharmacologists. This Beckman was able to do. The questionnaire he sent on January 30, 1957, to all chairmen of departments of pharmacology throughout the nation, elicited remarkable enthusiasm for trainee support. At least partially as a result of this effort on the part of the President of the Society, funds were made available by NIH to initiate new training programs and to strengthen existing programs of graduate training throughout the US. Departments wishing to obtain training grant funds were evaluated by a committee of their peers, using the same procedure that had been so successfully employed in distributing research funds.

The information in Table 17 is available through the courtesy of George J. Cosmides. The total number of trainees consists of predoctoral, postdoctoral, and special students.

TABLE 17. Research Training Programs in Pharmacology Supported by NIGMS

Year	*No. of Programs*	*Total Dollars*	*Total No. of Trainees*
1958	4	139,546	17
1959	20	576,550	104
1960	32	1,279,440	214
1961	45	2,413,988*	356
1962	47	2,268,245	425
1963	50	2,840,793	373
1964	50	2,990,978	487*
1965	53	3,183,433	unavailable
1966	54	3,373,594	unavailable
1967	51	3,116,153	unavailable

* This does not include 2 or 3 clinical pharmacology training grants awarded since 1965.

Today many pharmacologists feel that no other Federal health sciences program has been more important in the development of our discipline. The mechanism of training grant support has enabled many marginal departments to strengthen their faculties and thereby not only to make a greater impact on the training of pharmacologists but also to contribute more significantly to medical education and biomedical research.

The general training grant support concept was subsequently extended to support of training in specialized areas such as neuropharmacology, psychopharmacology, toxicology, and clinical pharmacology. Figures compiled by the Society in April 1968 indicate that there are approximately 96 academic science departments in American universities offering an M.S. or Ph.D. program in pharmacology (this includes one school in the Philippines). Of these departments 68 have had NIH training grants in pharmacology and 8 have NIH training grants in toxicology.

PRIVATE GRANTS

Burroughs Wellcome Fund took the lead in awarding on a competitive basis support of outstanding young scientists well trained in an area of human drug research. Initially (1958) funds were made available to support one young promising clinical pharmacologist per year. A grant of $75,000 was initially given to the sponsoring institution. The sum has been increased to $100,000. These funds were distributed in equal amounts over a 5-year period. To date, 15 clinical pharmacologists have received Burroughs Wellcome support: Kenneth R. Crispell, University of Virginia; Leon I. Goldberg, Emory University; Harris Isbell, University of Kentucky; Lawrence G. Raisz, University of Rochester; Daniel L. Azarnoff, University of Kansas; Paul Calabresi, Yale University; J. Richard Crout, University of Texas Southwestern Medical School; John

A. Oates, Vanderbilt University; William R. Wilson, University of Iowa; Jan Koch-Weser, Harvard Medical School; Kenneth L. Melmon, University of California, San Francisco; W. Walter Oppelt, University of Florida; Rubin Bressler, Duke University; Hershel Jick, Tufts University; and Charles Chidsey, University of Colorado.

Lederle Laboratories (Pearl River, N.Y.) initiated in 1953 the Lederle Medical Faculty Awards Program. The awardees received $10,000 a year for 3 years. To date 29 pharmacology faculty members of the medical schools of the United States and Canada have been so honored.

The confidence expressed by Burroughs Wellcome Fund in the future of clinical pharmacology has been a major contributing factor in the rapid expansion of this important and neglected area of pharmacology. In addition, the pharmaceutical industry has contributed in a limited but significant way to graduate education, both predoctoral and postdoctoral. One example is the Riker International Fellowships in Pharmacology initiated in 1952. "The purpose of the Riker International Fellowships is to provide the opportunity to work in laboratories abroad to young pharmacologists who show considerable early promise but who have not yet advanced to the point at which other sources of fellowship support are likely to be available to them. The fellowships may not be used to support work in a laboratory in the applicant's own country." Under this program, four fellowships are awarded each year for study in the United States and Canada, four for study in the United Kingdom, and one in Australia. Fellowship stipend in the United States and Canada is $4400 per year, and in England the stipend is approximately 1400 pounds annually.

A few years later (1965) Merck Company Foundation of Merck, Sharp & Dohme established an international fellowship program in clinical pharmacology. The four fellowships awarded each year carry a base stipend of $500 per month for a duration of 2 years for each recipient. Awardees must be citizens of countries other than the United States and each must plan to return to his homeland to contribute toward the advancement of clinical pharmacology in his own country.

The Pharmaceutical Manufacturers Association Foundation (PMAF) established a student traineeship in clinical pharmacology in 1967. The fellowship supports a medical student for a continuous 3-month period or its equivalent. The PMAF has also established fellowship awards in pharmacology-pathology. This program will support postdoctorates who are interested in combining training in fields such as pathology or cytology with pharmacology. Two or three such awards will be made yearly, beginning in 1969. These training programs are complemented by the PMAF faculty development awards offered to medical schools for salary support of full-time junior faculty positions in clinical pharmacology.

Limited support in which pharmacology has shared has been available

from private foundations such as the American Cancer Society, American Heart Association, and local state heart associations, and National Foundation for Infantile Paralysis, to name a few.

Several awards have been established to encourage young men in pharmacological research. These are discussed in another chapter of this book. Only one recent example is presented here: $1000 a year will be made available to the Society by Hoffman-LaRoche to stimulate pharmacological investigations in man. This ASPET award for experimental therapeutics was presented for the first time at the 1969 Spring Meeting of the Society.

Workshops

To encourage research in clinical pharmacology, three workshops and conferences on drug metabolism were sponsored by the PMAF. A grant of $18,000 was made in 1966 to Bert N. La Du, Chairman of Pharmacology, New York University, for a workshop in this field to be held in New York City. Because of the high degree of interest shown in this first workshop, the Foundation supported a second workshop on drug metabolism at George Washington University, Washington, D.C. In 1968 a third workshop on drug metabolism sponsored by PMAF was held at the University of California School of Medicine in San Francisco, under the directorship of E. L. Way. A workshop on principles of drug evaluation in man was held at the National Bureau of Standards, Gaithersburg, Maryland, June 9-13, 1969, under the direction of L. Lasagna.

After the success of these workshops on drug metabolism for postdoctorates, PMAF made a grant of approximately $176,880 to ASPET to establish an annual interinstitutional summer workshop program for graduate students in pharmacology. These workshops will begin in the summer of 1969. They will consist of four 3- to 6-week courses in advanced pharmacology for Ph.D. graduate students drawn from medical schools across the United States and Canada. The courses will be presented over a 4-year period (one course a summer) at appropriately selected medical schools. It is emphasized that the objective of this program is not necessarily to completely cover the subjects chosen but rather to supplement the basic pharmacology that the student has gained in his graduate school courses and research. Important fundamental aspects of each subject will be presented from an advanced standpoint and will cover recent significant developments in the field.

Public Relations

So that members of the Society could better discharge their responsibilities as both scientists and informed citizens, increased liaison has been established between other scientific groups and our own Society.

ACADEMIC

National Academy of Sciences–National Research Council Ever since 1918 when the National Research Council (NRC) became permanent, ASPET has appointed representatives to attend its Division of Medical Sciences, and this is now extended to Divisions of Biology and Agriculture and of Chemistry and Chemical Technology. Members have always accepted assignments at the sacrifice of their own work. For example, several members of ASPET have been serving on the Drug Research Board since 1963, and others, under the chairmanship of A. Gilman, are appraising drug efficacy of 3600 preparations. For more than 30 years several members of ASPET have served on what is now called the Committee on Problems of Drug Dependence. During war years many pharmacologists devoted themselves to urgent projects through the Office of Scientific and Research Developments (OSRD) led by A. N. Richards *(Federation Proc.* 5: 285, 1946). The latter served as the President of the Academy of National Sciences a few years later.

American Medical Association At the annual meetings AMA had a Section of Pharmacology and Experimental Therapeutics (1905-41). From 1942 to date it has been known as the Section on Experimental Medicine and Therapeutics. Invariably pharmacologists have been called on to serve as Chairman or Secretary.

American Association for Advancement of Science ASPET has been a member of AAAS for many years. At each annual meeting of the AAAS, the Society is represented by an appointed delegate. To assure a more effective continuity of representation, in 1967 the Council voted to make the Executive Officer the permanent representative to AAAS.

Members of our Society have been quite active in the affairs of the AAAS, as indicated by the fact that for 12 of the last 20 years the Secretary of the Medical Sciences Section N of AAAS has been a member of ASPET (Gordon Moe, Allan Bass). Both J. J. Abel and C. D. Leake have served as President of AAAS. This is one of numerous examples indicating that members of ASPET have contributed their time and effort generously to intersociety activities.

GOVERNMENT

The Society established in 1965 a Public Affairs Committee replacing an Ad Hoc Committee on Professional Affairs and Public Relations, which had functioned intermittently. This committee has been primarily concerned to date with legislation that affects the scientific community in general and pharmacology in particular. It has accepted as its responsibility the review of health science legislation as it affects the basic sciences and also the modification by appropriate means of legislation that would be detrimental to science. Such means include: meeting with congressmen and senators who

are particularly interested in health legislation so an appropriate dialogue can be established that would allow ASPET to present not only its point of view about proposed health legislation but also to advise the legislators on ways and means of improving such legislation. It is anticipated that through such communications congressmen may become acquainted with resource personnel within our Society who will be available to them as consultants in future legislative endeavors. It is anticipated that through the efforts of the Public Affairs Committee, ASPET as a Society and pharmacology as a discipline will become more visible to governmental agencies and to the public.

It should not be assumed that this committee is the only one that is attempting to improve our relationships with governmental agencies. The Clinical Pharmacology Committee has had several meetings with the representatives of the Food and Drug Administration (FDA) in an attempt to obtain a more liberal interpretation of food and drug laws that hamper optimal investigation on new drugs and also limit the use of old drugs or natural products in experimental situations. The liaison, to date, has proved very profitable.

In other unofficial ways, our Society members do have input into FDA activities. For example, currently two members of our Society are members of the Medical Advisory Board of the FDA.

The scientific community, including pharmacologists, has been slow to interpret its activities in a meaningful way to either the public in general or to governmental agencies. ASPET's commitment as a Society for many years was interpreted as one concerned primarily with scientific communication. Only within the last 10 years has the Society accepted the responsibility, in an official way, for sponsoring educational programs.

With the increasing interdependence of biomedical sciences on one another and with increasing dependence of biomedical science on government support in the last 4 or 5 years, it has become strikingly clear that the scientific community must become more intimately involved in the legislative and administrative processes of government. With an expansion of proposed legislation relating to the health professions, intelligent guidance of our legislators has become essential. The interest of legislators in the areas of animal care and regulation of drug availability on the basis of efficacy and toxicity are examples that clearly indicate the necessity for pharmacologists to take an active role in the governmental process.

ASPET has established as yet no effective way of bringing its activities before the general public. It is possible that this may be accomplished in part through a new Office of Public Affairs established by the Federation of American Societies for Experimental Biology, to the meetings of which ASPET sends a representative. Future officers of the Society will undoubtedly have to give increasing thought to the mechanisms of interpreting the role of the pharmacologist to the public *(Federation Proc.* 27: 844, 1968).

CHAPTER 6

Revisions of the Constitution and Bylaws

CHAPTER 6

REVISIONS OF THE CONSTITUTION AND BYLAWS

Ellsworth B. Cook

AT THE ORGANIZATIONAL MEETING of ASPET in 1908, four articles of agreement were unanimously accepted, and the Council was charged with the preparation of a constitution to be voted on at the first annual meeting. Before this meeting took place, a draft was apparently circulated among the Council members. The first two typewritten pages of this draft were among the documents in Edmunds' file (see Chapter 3), but the remaining pages are unfortunately missing.'

The minutes of the First Annual Meeting (Boston, December 1909) indicate simply that the constitutional draft reported by the Council was discussed in detail and, after amendment, adopted. No copy of that version is included in the bound records of the Society. However, it is reasonable to assume that the ASPET Constitution as published in the first Federation Yearbook (1914) is the first Constitution of our Society. The rationale for this belief is as follows. In the six years between the establishment of ASPET and the first publication of its Constitution, there is only one reference in the bound records of the Society to a constitutional change. The minutes of the 1913 Annual Meeting indicate the addition of a bylaw to authorize the Secretary to restrict members to the presentation of no more than two papers. Thus by implication, with the exception of Bylaw I, the ASPET Constitution as published in the 1914 Federation Yearbook is considered to be the original Constitution of our Society. Accordingly, throughout this chapter all mention of

Changes in pencil on the two typewritten pages of this draft have been identified by one of his former staff members as Abel's handwriting. These changes suggest that Abel preferred requiring a meritorious investigation as a qualification for membership rather than the two shown on the original draft. A new Section 2 to Article Ill (Membership) barred membership to persons in the permanent employ of a drug firm; it was inserted with the notation "from Loevenhart." The original wording of the new Section 3 (renumbered from 2), which had barred officers or members of the Membership Committee from proposing candidates for membership, was changed (again attributed to Loevenhart) so that this restriction applied only to members of the Council. This last change is quite understandable in view of the fact that the original membership consisted of only 18 persons.

the "original" Constitution refers to the 1914 published version. For the sake of historical interest, it is reproduced here as Appendix A. The present version of the Constitution was adopted in 1958; see Appendix B and the 1968 Federation *Directory of Members* (p. 32-37) for its provisions.

Changes in the Constitution and Bylaws

ARTICLE I—NAME

The name of the organization has remained unchanged except that the word "Incorporated" was added to the title in 1933 (the original articles of incorporation are given in Appendix C together with later amendments). It was decided to incorporate the Society at the time the *Journal of Pharmacology and Experimental Therapeutics* was taken over from Abel and his group.

Sollmann has indicated that the first choice of a name was simply "The American Pharmacological Society." But in 1908, that name was already preempted by a commercial group. The addition of "Experimental Therapeutics" emphasized the relation of chemotherapy; it was a tribute to the ideas of Ehrlich and a prophecy of things to come.'

In later years, when the shorter title preferred originally was no longer in use by another group, there were periodic proposals to utilize the simpler form. But the original name was firmly established and although unwieldy, it was held in affectionate regard, especially by older members of the Society. The last effort to shorten the name came at the 1961 Spring Meeting. E. M. K. Geiling, then Historian of the Society, disputed the impression that the inclusion of "Experimental Therapeutics" had been for reasons of expediency. He indicated his belief that Abel had considered this inclusion most appropriate. In any event, the amendment proposing adoption of a shorter name for the Society failed to pass.

ARTICLE II—OBJECT

The objectives of the Society retained substantially the original wording until 1958, when the phrase "and to issue publications for this purpose" was added.

ARTICLE III—MEMBERSHIP

The article on membership contained information on eligibility, procedures for candidates, election of members, and actions that would cause forfeiture of membership. It also established a Membership Committee to screen the qualifications of candidates proposed for membership.

[2] From "The Early Days of the Pharmacology Society," presented by Torald Sollmann at the Pharmacology Dinner in Detroit, April 21, 1949.

The only limitation originally placed on members sponsoring candidates was that members of Council could not serve as sponsors. In 1964, members of the Membership Committee were also prohibited from sponsoring candidates.

Initially, the Constitution was vague concerning whether all Council members must concur before a slate of candidates was to be presented to the Society. It merely stated "the names of candidates selected from those submitted by the Membership Committee and recommended for admission by the Council." In 1941 the phrasing was made much more specific: "candidates reported upon by the Membership Committee may be recommended by the Council only provided they have been unanimously approved by both the Membership Committee and the Council." This raised the question as to whether any one member of the Membership Committee or of the Council should be required to accept full responsibility for the rejection of a candidate. The required joint vote by these two groups was changed to four-fifths in 1946 and two-thirds in 1958. These more democratic procedures were intended to protect both the individual and the Society.

One feature of the article on membership that caused undue hardship was the provision that membership must be forfeited after absence from three annual meetings unless the offending member could satisfactorily justify such absence to the Council. As early as 1915 an amendment was offered to abrogate this section, but the restriction was not lifted until 1927.

Constitutional history is not an absorbing subject except to the most erudite. In the case of ASPET, however, the story is enlivened by the prolonged fight to attain equal status for industrial pharmacologists. Originally, any pharmacologist who was permanently employed by a drug firm was specifically barred from membership in the Society. Sollmann indicated (see footnote 2) that because of the small size of the organization, Abel felt it could quite easily become dominated by industrial pharmacologists. He stated that Abel feared this possibility because in his view drug houses had not yet attained the vision that Science is a jealous mistress and one totally unconcerned with quickly translating results into sales. In Sollmann's words, "We felt badly about it for some were good men and all were good fellows and we did not like to hurt their feelings by a holier-than-thou attitude. In fact, some of us never felt comfortable about it."

Although it is true that the original version of the Constitution was the work of Abel, Hunt, and Loevenhart, Sollmann's concept of the authorship of Article III, Section 2 and 4b (see Appendix A) may be questioned. So dominant a figure as Abel needs no defense, but circumstantial evidence makes it appear unlikely that it was he who originated the restriction. For one thing, consider the footnote on the first page of this chapter. For another, at the time of the Golden Jubilee of the American Society of Biological Chemists (ASBC), Shaffer credited Abel with preparation of the "Articles of Agreement"

that were unanimously adopted when organization of the ASBC was effected (1906).[3] Certainly, when Abel became President of ASBC in 1908, he did not propose such restrictions for its Constitution. In fact, in a letter to Abraham Flexner dated July 3, 1924, Abel wrote: "Almost without exception the German professors and associate professors of pharmacology were intimately connected, as expert advisors, with chemical establishments who were engaged in the manufacture of drugs. Sometimes pharmacologists left the university and entered the employ of such establishments. For instance, Dresser, who had been Professor-Extraordinarius under Schmiedeberg in Strassburg, left that university to direct the pharmacological laboratory of the great Farben Fabrik Hoest-am-Main."

In any event, the unusual restrictions against industrial pharmacologists in ASPET remained unchanged for 30 years. If a member of the Society accepted employment in the drug industry, he was automatically dropped from the rolls and was duly so informed by the Secretary. Some affected members courteously advised the Secretary of their industrial affiliations and voluntarily withdrew from membership. Others bitterly protested compulsory expulsion and submitted voluminous testimonials that their new status did not represent what in today's jargon we call "conflict of interest."

The problem was further complicated by several grey areas, for example, whether a member could serve as consultant to a drug firm without incurring the displeasure of the Society. Another problem was to determine just what scientific laboratories were "commercial" in the sense of the Constitution.

When a former ASPET member left a drug firm and returned to more gentlemanly pursuits, he was not automatically reinstated but, instead, again had to become a candidate for membership. The high regard in which the Society was held is attested by the fact that distinguished pharmacologists submitted to this "cleansing" procedure—galling though it must have been.

The first serious effort at constitutional revision to abrogate the inequity came in 1919. However, it was voted down at the 1920 Annual Meeting along with a related amendment providing for nonvoting associate membership for pharmacologists employed by drug firms.

In 1921 several distinguished members offered an amendment to drop Article III, Section 2. They felt that the section on forfeiture of membership was sufficient to protect the Society and serve as a deterrent to unethical conduct. Despite their plea that Section 2 worked disadvantageously to the public and the progress of pharmacology, it remained entrenched in the Constitution.

[3]From "Origin and Development of the American Society of Biological Chemists," presented by Philip A. Shaffer at the Golden Jubilee of ASBC; see *Federation Proc.* 15: 800, 1956.

The years that followed witnessed a bewildering array of amendments. Many died for lack of seconders; others won majority votes at annual meetings but failed to gain the four-fifths vote required for a constitutional amendment. Among those that lost out was an amendment by the Special Committee on the Constitution (1936) proposing admission of pharmacologists in full-time employment of drug firms but not connected with the commercial side of their organizations. The additional proviso that such candidates must have the unanimous approval of the Council and Membership Committee before presentation to the Society failed to salvage it. The same amendment was resubmitted in 1937, at which time it succeeded in securing the four-fifths vote required for passage.

Considerable discussion concerning further loosening of restrictions dominated Society meetings during the next few years. Finally, in November 1940, 24 distinguished members[4] of the Society submitted the amendment that Article III, Section 2, be dropped from the Constitution, and this amendment was ratified by the membership on April 17, 1941. Section 4, concerning forfeiture of membership if employed by a commercial firm in other than a consulting capacity, was also dropped. It took 6 more years for the Council to approve the ruling that "reinstatement of members be the original date of admission rather than the date of readmission."

In 1927 a new section had been added to Article III to establish the category of honorary membership for distinguished men of science who had made contributions to pharmacology. The category of retired membership was established in 1941 by a Society resolution, but it was not added to the Constitution until 1948 (Bylaw 4). The Constitution contained no mention of the propriety of electing members from foreign countries until 1958. Then, in a complete revision of the Constitution, membership was restricted to persons having legal residence in the US and its dependencies, Canada, and Mexico. The proviso was added that in special cases candidates from other areas could be presented by the Council or the Membership Committee and their election required the unanimous approval of both these groups.

The corporate associate program became part of the Constitution in 1960 (Bylaw II, Section 12), and the category of sustaining member was added in 1963 (Bylaw II, Section 13).

[4] Paul D. Lamson, Vanderbilt University; Owen B. Gibbs, University of Tennessee; Erwin E. Nelson, Tulane University; Clinton N. Thienes, University of Southern California at Los Angeles; M. L. Tainter, Stanford University; Chauncey D. Leake, University of California at San Francisco; Raymond N. Bieter, University of Minnesota; Arthur L. Tatum and Maurice H. Seevers, University of Wisconsin; Carl A. Dragstedt and C. W. Muehlberger, Northwestern University; C. W. Edmunds, University of Michigan; Torald Sollmann, Western Reserve University; Alfred E. Livingston, Temple University; Carl F. Schmidt, University of Pennsylvania; Charles M. Gruber, Jefferson Medical College; Henry G. Barbour, Yale University; John C. Krantz, University of Maryland; Theodore Koppanyi, Georgetown University; M. I. Smith, National Institutes of Health; and Herbert 0. Calvery, Food and Drug Administration.

ARTICLE IV—OFFICERS

This article originally vested management of the Society in a Council of five officers, consisting of the President, Secretary, Treasurer, and two additional members. The Membership Committee was to consist of three members who were not members of the Council. The constitutional revision of 1931 included the office of Vice-President in the management of the Society, added a Nominating Committee of five members, and prescribed that no two members of either the Membership or Nominating Committees could be from the same institution. The 1948 version of the Constitution changed the phrase "two additional members" to read "three Councilors-at-Large"; and the 1952 version added the immediate Past-President and President-Elect as members of the Council.

The constitutional revision of 1958 designated the Secretary-Elect or the Treasurer-Elect (alternate years) to serve on the Council. In this same year the Council was empowered to appoint an Executive Secretary to assist in carrying out the functions of the Society; this individual was barred from holding elective office in the Society. Although the basic duties of the Executive Officer have not changed since the original appointment in 1961, it was not until 1963 that the Constitution specifically indicated that he would serve as an ex-officio nonvoting member of the Council, Finance Committee, and other committees pertinent to the position.

ARTICLE V—MEETINGS

The original wording of the Constitution on meetings was that the annual meeting would be held between December 25 and January 1 at a place to be designated by Council. There were additional provisos that special meetings could be held at such times and places as determined by Council and that members must be notified of the time and place of the annual meeting at least four weeks in advance. In 1917 the phraseology was altered to indicate that the annual meeting would be held at a time and place to be determined by the Council in consultation with the Executive Committee of the Federation of American Societies for Experimental Biology. The constitutional revision of 1958 added to the bylaws many additional details related to meetings, e.g., arrangement of the program, and so forth. It simplified rules on the submission of papers by the statement: "Council shall establish regulations governing the presentation of papers at scientific sessions. These regulations shall be sent to each member at least three months before any meeting at which they are to apply "(Bylaw IV, Section 3). Thus as needs change, the Council has the authority to change regulations without requiring a constitutional amendment.

ARTICLE VI—FINANCIAL

In the original Constitution this article indicated, in essence, that the annual assessment was to be determined by majority vote at the annual meetings on the recommendation of the Council, that no money could be disbursed beyond the ordinary expenditures required by routine business save by authority of the Council, and that the Treasurer would make an annual report to the Society.

This article remained unchanged until 1935, at which time an additional section was added to indicate that any profits resulting from the *Journal of Pharmacology and Experimental Therapeutics* at the end of the fiscal year were to be held in a special account (after deduction of Society expenditures for the conduct of the Journal) and to be subject to the order of the Council on recommendation of the Editorial Board.

The wording of this additional section was changed in 1949 to read: "All publication funds shall be kept in a separate account, subject to the control of the Board of Publications Trustees except that none of these funds may be diverted from the support of publications of the Society except by consent of the Council or the Society. A financial report shall be made by the Board at each annual meeting."

ARTICLE VII—QUORUM

The number of members that constituted a quorum for the transaction of business was originally set at 10. This remained unchanged until 1958, when the constitutional revision set 50 as a more reasonable number.

ARTICLE VIII—BYLAWS

This article stated simply that bylaws could be adopted at any meeting by a two-thirds vote of ballots cast. The first bylaw adopted (December 1913) empowered the Secretary to accept only two papers from each member if the program appeared too crowded. In 1946 it was revised to limit members to one oral presentation per program.

Bylaw 2 (1932) added the requirement that the title and abstract of papers must be sent to the Secretary and assigned him the responsibility for editing and publishing this information.

In 1934 Bylaw 3 was added to tighten the admission procedure for candidates for membership by requiring that applications were to be accompanied by a copy of as many of their reprints as possible.

Bylaw 4 was adopted in 1948 to establish that a member could be relieved of payment of dues after 30 years as an active member on retirement for disability or age. Originally this privilege was attainable on notification to the Treasurer, but in 1958 the wording was changed to require Council approval.

No additional bylaws were added from 1948 until the complete revision of the Constitution in 1958. At that time many details were transferred from the articles of the Constitution (amendments requiring four-fifths vote) to the bylaws (amendments requiring two-thirds vote). This resulted in an 11-section bylaw on members, a 10-section bylaw on nominations and elections, a 6-section bylaw on officers and committees, and a 6-section bylaw on meetings.

In 1960 Section 12 was added to Bylaw I (Members) to establish the corporate associate program and Section 7 was added to Bylaw III (Officers and Committees) to designate the three ASPET representatives on the Federation Board and the Federation Advisory Committee. Then in 1963 Section 13 was added to Bylaw I to establish the category of sustaining member through a contribution in support of the Society.

ARTICLE IX—AMENDMENTS

The last article of the original Constitution stated simply that proposed amendments must be sent to the Secretary at least one month before the date of the meeting at which they were to be considered and must be endorsed in writing by at least three members, that the Secretary must give due notice of proposed amendments to all members, and that a four-fifths vote of the members present was required for the adoption of an amendment.

This wording remained until the constitutional revision of 1958, which stated that proposed amendments must be in the hands of the President at least two months in advance of Society consideration and that all members must be notified of the proposed amendments and time and place for their consideration at least four weeks before the meeting.

ARTICLE X—JOURNAL

This additional article was added in 1935 to designate the *Journal of Pharmacology and Experimental Therapeutics* as the official publication of the Society. Two new sections were added to Article X in 1937 to specify the election of an Editor-in-Chief and to delineate his responsibilities.

Then in 1948 Article X was retitled "Official Publications." Section 1 provided for the appointment of a Board of Publications Trustees and the election by them of a Managing Editor for each official journal of the Society. Section 2 required the Board to meet at least once annually and outlined rules for terms of office. Section 3 delineated the special functions of the Board, Section 4 concerned the Managing Editor and Associate Editors of the journals, and Section 5 called for a meeting of the boards of editors of the journals with their respective managing editors, preferably just prior to or during the regular meeting of the Society.

Renumbered Articles

The constitutional revision of 1958 contained a new Article V on Standing Committees, namely, the Membership Committee, the Nominating Committee, and the Board of Publications Trustees. The original Article V (Meetings) became Article VI, the original Article VI (Financial) became Article VII, the original Article VII (Quorum) became Article VIII, and the original Article VIII (Bylaws) and Article IX (Amendments) were merged to form the new Article IX. The material covered by Article X (Journal), which had been added in 1935, was divided up, some appearing under Standing Committees (new Article V) and some under Bylaw III (Officers and Committees).

Future Revisions

It is difficult to keep the Constitution and Bylaws up to date, and it takes a long time to revise them. Additional modifications have been under consideration for several years. In 1963 a new version was recommended in its entirety rather than as amendments to the present Constitution and By-laws. This version was discussed at a business meeting of the Society but was never brought to a vote.

At the present time (1968) an Ad Hoc Committee on Constitutional Revision (with Parkhurst A. Shore as Chairman and George H. Acheson, Theodore M. Brody, Murray Heimberg, and Dixon M. Woodbury as members) has the entire matter under consideration. It is planned to include in the new Constitution and Bylaws certain procedural changes already adopted by the Society, for example, provisions for specialized divisions of the Society, the election of new members at both Spring and Fall Meetings, the election of officers by mail ballot, and the establishment of an Election Committee consisting of three Past-Presidents to supervise mail ballot returns.

In the first business meeting at Atlantic City, April 15, 1969, the Society considered the proposed ASPET Constitution under the signature of Parkhurst A. Shore, circulated on March 7, 1969, and voted to drop the word "Annual" from the Bylaws, Article VI, Section 1.

Appendix A

CONSTITUTION OF THE AMERICAN SOCIETY **FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS**

(As published in the Federation Yearbook, 1914)

ARTICLE I. — Name

The name of this organization shall be the "AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS."

ARTICLE II. — Objects

The purpose of this Society shall be to promote these branches of science and to facilitate personal intercourse between investigators who are actively engaged in research in these fields.

ARTICLE III. — Membership

SECTION 1. Any person who has conducted and published a meritorious investigation in pharmacology or experimental therapeutics, and who is an active investigator in one of these fields, shall be eligible to membership, subject to the conditions of the other sections of Article III.

SEC. 2. No one shall be admitted to membership who is in the permanent employ of any drug firm.

SEC. 3. (a) Candidates for membership to this Society shall be proposed by two members who are not members of the Council. The names so proposed shall be sent to the Membership Committee (described under Art. IV, sec. 4) at least one month prior to the annual meeting.

(b) The Membership Committee shall investigate the qualifications of the candidates and report to the Council with recommendations.

(c) The names of the candidates selected from those submitted by the Membership Committee and recommended for admission by the Council, shall be posted by the Secretary not later than the day preceding the election of members.

(d) The election of members shall be by individual ballot; one opposing vote in every eight cast shall be sufficient to exclude a candidate from membership.

SEC. 4. Forfeiture of membership

(a) Any member whose assessment is three years in arrears shall cease to be a member of the Society, unless he shall be reinstated by a special vote of the Council; and it shall be the duty of the Treasurer to inform the Secretary, that he may notify the said delinquent of his right to appeal to the Council.

(b) Entrance into the permanent employ of a drug firm shall constitute forfeiture of membership.

(c) Absence from three consecutive annual meetings of the Society without an explanation acceptable to the Council shall constitute forfeiture of membership; it shall be the duty of the Secretary to notify members, who have been so absent, of their right to appeal to the Council.

(d) Membership shall be forfeited by knowingly publishing false statements on a scientific subject, or by other actions incompatible with the aims of the Society or with the standing of a scientist. Charges against a member shall be investigated by the Membership Committee, and shall be passed upon by the Council. The question of expulsion shall be voted upon on the recommendation of the Council at any annual meeting, and shall require three-fourths of the votes of those present.

ARTICLE IV. — Officers

SECTION 1. The management of the Society shall be vested in a Council of five officers, consisting of the President, Secretary, Treasurer, and two additional members; there shall be a Membership Committee consisting of three members who are not members of the Council.

SEC. 2. Members of the Council shall serve for one year, but they shall be eligible for re-election.

SEC. 3. The election of officers shall be held at the close of the first session of the annual meeting. In voting there shall be a ballot in regular order for each office to be filled, and the majority of the votes cast shall be necessary to a choice.

SEC. 4. Membership Committee—The election of the Membership Committee shall be held annually at the time when the election of officers occurs. At the first meeting of the Society, under this Constitution, one member shall be elected to serve on the Committee for three years, one for two years, and one for one year, and subsequently one member shall be elected each year to serve for a period of three years.

SEC. 5. Such vacancies as may occur in the offices and in the various committees in the interval between annual meetings shall be filled by a majority vote of the Council.

ARTICLE V. — Meetings

SECTION 1. The annual meeting of the Society shall be held between December 25 and January 1 at a place to be determined by the Council.

SEC. 2. Special meetings may be held at such times and places as the Council may determine.

SEC. 3. At least four weeks before the annual meeting the Secretary shall send to each member a notice of the time and place of such meeting, and shall make such announcements as the Council may direct.

ARTICLE VI. — Financial

SECTION 1. The annual assessment shall be determined by majority vote at the annual meetings, upon the recommendation of the Council, and shall be due in advance at the time of the meeting.

SEC. 2. Beyond the ordinary expenditures required by the routine business of the Society no money shall be disbursed save by authority of the Council or Society.

SEC. 3. The treasurer shall make an annual report to the Society.

ARTICLE VII. — Quorum

Ten members shall constitute a quorum for the transaction of business.

ARTICLE VIII. — By-Laws

By-Laws shall be adopted at any meeting by two-thirds vote of ballots cast.

ARTICLE IX. — Amendments

SECTION 1. Intended amendments shall be sent to the Secretary at least one month before the date of the meeting at which they are to be considered, and must be indorsed in writing by at least three members.

SEC. 2. The Secretary shall give all members due notice of proposed amendments.

SEC. 3. A four-fifths vote of the members present shall be required for the adoption of an amendment.

BY-LAWS

The Secretary is empowered to accept only two papers from one author when the program demands this restriction. If more than two titles are sent, authors should indicate their preference.

Appendix B

CONSTITUTION AND BYLAWS OF THE AMERICAN SOCIETY **FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS**

(Adopted 1958, amended 1963)

ARTICLE I. Name

The name of this organization is the AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, INCORPORATED.

ARTICLE II. Object

The purpose of this Society is to promote pharmacological knowledge and its use among scientists and to issue publications for this purpose.

ARTICLE III. Membership

SECTION 1. The Society shall consist of members and honorary members.

SECTION 2.A. Any qualified investigator who has conducted and published a meritorious original investigation in pharmacology shall be eligible for membership in the Society, subject to the conditions set forth in the bylaws.

SECTION 2.B. Distinguished scientists of any country who have contributed to the advance of pharmacological science shall be eligible for proposal as honorary members of the Society, subject to the conditions set forth in the bylaws.

SECTION 3. The Council, for appropriate reasons, may decide that it is for the best interests of the Society that a member or an honorary member be expelled. In this case, the member shall be notified and given an opportunity for a hearing before the Council. If a majority of the members of the Council favor expulsion, the Council shall so recommend to the Society. A vote of three-fourths of the members present at an executive session of the Society shall be required for expulsion. Subsequent reinstatement shall follow the course prescribed for candidates for membership.

ARTICLE IV. Officers

SECTION 1. The management of the Society shall be vested in a Council consisting of the President, the President-Elect, the immediate Past President, the Secretary, the Treasurer, the Secretary-Elect or the Treasurer-Elect, and three other Councilors.

SECTION 2. The President-Elect, either the Secretary-Elect or the Treasurer-Elect, and one other Councilor shall be elected at each annual meeting and shall become members of the Council on the following July 1.

SECTION 3. The President-Elect shall become President after one year as President-Elect, except as otherwise provided in Section 6.A. He shall continue to

serve as President until two years after having assumed office as President-Elect, at which time he shall become Past President for one year.

SECTION 4. The Councilors shall serve for three years.

SECTION 5. A Secretary-Elect and a Treasurer-Elect shall be elected in alternate years to serve for one year before taking over the post as Secretary and Treasurer, respectively, for a term of two years.

SECTION 6.A. If the office of President, Secretary or Treasurer becomes vacant, the corresponding officer-elect shall succeed to office.

SECTION 6.B. Vacancies on the Council or elected committees shall be filled in one of two ways, as determined by the Council: Candidates nominated by the Nominating Committee either may be elected at the next meeting of the Society or in the interim by majority vote of the Council.

SECTION 6.C. A nominee selected by the Council to maintain its number, when vacancy is created in the office of either the Past President, President, President-Elect or Councilor, shall be designated a Councilor. He shall serve until the vacancy is filled by election at the next meeting of the Society.

The Council, in accordance with Section 6.B., may designate a Secretary, Secretary-Elect, Treasurer or Treasurer-Elect to serve for the unexpired term of the vacated office. A Secretary-Elect or Treasurer-Elect so chosen shall succeed to the corresponding office.

ARTICLE V. Standing Committees

SECTION 1. There shall be a Membership Committee consisting of three members of the Society who hold no other elective office in the Society. One shall be elected at each annual meeting and serve for three years.

SECTION 2. There shall be a Nominating Committee consisting of five members who hold no other office in the Society. The member receiving the highest number of votes shall act as Chairman and remain on the Nominating Committee as a member in the second year to provide continuity. The other members, to be nominated and elected at each annual meeting, shall serve for one year.

SECTION 3.A. The President, after consultation with the Council and subject to approval by the Society at its next executive session, shall appoint one member of the Board of Publications Trustees each year and shall designate the Chairman of the Board.

SECTION 3.B. The Board shall elect an Editor for each official journal of the Society. Each Editor shall act as an additional voting member of the Board in all its activities except election of Editors of the journals.

SECTION 3.C. The Board shall be vested with full power from the Society to control and manage, both editorially and financially, all publications of the Society. The Chairman of the Board shall be an ex officio member of the Council without vote and shall keep the Council informed of the major activities of the Board. He shall report annually to the Society at an executive session.

SECTION 3.D. The Editor of each journal may nominate Associate Editors for election by the Board.

SECTION 3.E. The members of the Board and the Associate Editors shall serve for three years, are eligible for reappointment, and may hold office concurrently in the Society.

SECTION 4. There shall be a Finance Committee consisting of five members of the Society. The elected Treasurer of the Society shall serve as Chairman of this Committee. The Treasurer-Elect shall be a member of the Committee. As vacancies arise, the other members shall be appointed by the President, subject to approval of the Council. The term of office for all appointed members of the Committee shall be five years, except that the initial appointments shall be for varying terms so staggered as to establish the proper rotation.

ARTICLE VI. Meetings

Except as provided in the bylaws, the annual meeting or other meetings of the Society shall be held at times and places determined by the Council. At least four weeks before such meetings, notice of their time and place shall be sent to each member of the Society.

ARTICLE VII. Financial

SECTION 1. Beyond the expenditures required by the ordinary activities of the Society, no money from the general Society account shall be disbursed save by authority of the Council or the Society.

SECTION 2. The annual assessment shall be determined by majority vote at an executive session of the Society, upon recommendation of the Council. It shall become due on the following July 1 unless another time is recommended by the Council and approved by the Society.

SECTION 3. The Treasurer shall give a financial report at the annual meeting.

SECTION 4. All publication funds shall be kept in a separate account, subject to the control of the Board of Publications Trustees. No publication funds may be diverted for other than publication purposes without the approval of the Society upon joint recommendation of the Board and the Council. The Board shall make an annual financial report to the Society at an executive session.

ARTICLE VIII. Quorum

Fifty members shall constitute a quorum for the transaction of business.

ARTICLE IX. Amendments

SECTION 1. Intended amendments to the Constitution, or certificate of incorporation, may be acted upon at any executive session of the Society, provided that each proposal is endorsed in writing by at least three members and is placed in the hands of the President not less than two months before the meeting. At least four weeks before the meeting at which amendments are to be considered, the proposed amendments and notice of the time and place at which they will be considered shall be sent to each member. A four-fifths vote of the members present shall be required for the adoption of an amendment to the Constitution or certificate of incorporation.

SECTION 2. Adoption, alteration, or repeal of bylaws may be moved at any executive session of the Society. Their passage shall require a two-thirds vote of the members present in each of two executive sessions of the Society on separate days.

BYLAWS

(Amended 1964)

I. Members

1. Except as hereinafter provided, after 1958 only persons having legal residence in the United States, its dependencies, Canada, and Mexico shall be eligible for election as members of the Society.

2. In special cases, candidates for membership from areas other than those described in Bylaw 1.1. may be proposed by the Membership Committee or by the Council. These candidates must be unanimously approved by the Council and the Membership Committee; their election by the Society shall follow the rules prescribed for members.

3. Nominees for membership shall be proposed by two members of the Society who are not members of the Council or of the Membership Committee at the time of the initial nomination. Nomination forms shall be provided by the Executive Officer. Nominations shall be submitted by July 1 for action at the following Spring Meeting and by January 1 for action at the Fall Meeting.

4. The Membership Committee shall investigate the qualifications of the candidates for membership and report to the Council at least four months prior to the annual meeting.

5. The Council may recommend for election as members the candidates reported to them provided they have been approved by two-thirds of the combined members present of the Membership Committee and the Council.

6. The names of the candidates recommended for admission by the Council shall be posted not later than the day preceding the election of members.

7. New members shall be elected at the annual meeting. The election shall be by individual, secret ballot. One opposing vote in every eight cast shall be enough to exclude a candidate from membership.

8. Nomination and election of honorary members shall follow the rules prescribed for members.

9. Honorary members shall have the privilege of membership but are not subject to the annual assessment.

10. Any member of the Society who has been a member for thirty years, or who has retired because of disability or age, may upon approval of the Council be relieved from the annual assessment. He shall retain the privileges of membership.

11. Any member whose assessment is three years in arrears shall cease to be a member of the Society, unless he is reinstated by a vote of the Council. The delinquent shall be notified of his impending disqualification and informed of his right to appeal to the Council for reinstatement.

12. Any firm, association, corporation or institution, or one or more subdivisions thereof, desiring to support the Society may be invited by the President of the Society to become a Corporate Associate. Multiple enrollments are permissible. A Corporate Associate shall be a nonvoting member of the Society.

13. Any member of the Society may become a Sustaining Member through a contribution in support of the Society.

II. Nomination and Election

1. Only members shall be eligible for election or appointment to the Council and Standing Committees of the Society.

2. No person who has served as President more than three months is eligible for reelection as President-Elect.

3. Persons elected as Councilors shall not be eligible for immediate reelection on expiration of their term of office.

4. The Executive Officer shall not hold elective office in the Society.

5. No two members of the Membership Committee shall be from the same institution at the time of election. None shall be eligible for immediate reelection.

6. No two members of the Nominating Committee shall be from the same institution at the time of election. Members of the Nominating Committee are eligible for reelection for only one additional consecutive term.

7. The Nominating Committee shall make at least two nominations for each elective office except the Nominating Committee. At least four weeks before the annual meeting, these nominations shall be sent to each member together with notification of the time and place of the election.

8. Additional nominations may be made from the floor at the annual meeting, during the session at which the election occurs.

9. At least ten nominations for members of the Nominating Committee shall be made from the floor during the session at which the election occurs. The five nominees who receive the highest number of votes shall be declared elected.

10. At the first executive session of the annual meeting, each member present shall be given a printed ballot showing the nominations by the Nominating Committee and providing spaces for adding nominations made from the floor. A preliminary vote will be made from these ballots, and the tellers, appointed by the President, shall as soon as possible post a list showing the two nominees for each office who have received the highest number of votes. A final vote between these pairs of candidates shall be taken at the close of the first executive session of the annual meeting. A majority of the votes cast shall be necessary for election. Both of the said votes shall be by secret ballot.

III. Officers and Committees

1. The Council may appoint and compensate an Executive Officer to assist it in carrying on the functions of the Society, including receipt and disbursement of funds under the direction of the Council. The Executive Officer shall be an ex officio member of the Council without vote, and shall serve in the same capacity on the Finance Committee and other committees pertinent to this position.

2. That member of the Membership Committee who has served the longest current consecutive period shall be the Chairman of the Committee.

3. The member of the Nominating Committee elected by the highest number of votes shall be the chairman.

4. The Board of Publications Trustees shall meet at least once a year. Three members shall constitute a quorum for the conduct of business.

5. Only members of the Society are eligible as Editors or Associate Editors of the Society's journals, except that foreign nonmembers may be Associate Editors of international journals of the Society.

6. Nonmembers of the Society may be appointed to editorial advisory committees in connection with the activities of the Society's journals.

7. The three representatives of the Society on the Federation Board are the immediate Past President, the President and the President-Elect. The particular President-Elect who is elected every third year is the representative of the Society on the Advisory Committee. He serves on the Advisory Committee for three years concurrently with his term of office on the Federation Board.

IV. Meetings

1. The annual meeting of the Society shall be the meeting held in conjunction with the Federation of American Societies for Experimental Biology.

2. The Council shall designate one or more of its members to arrange the scientific programs and may appoint a Program Committee to assist in this task.

3. The Council shall establish regulations governing the presentation of papers at scientific sessions. These regulations shall be sent to each member at least three months before any meeting at which they are to apply.

4. Executive sessions of the Society may be held at any of its meetings.

5. The Council shall insure that only members attend and cast votes in the executive sessions of the Society.

6. The rules contained in 0. Garfield Jones', *Parliamentary Procedure at a Glance,* Appleton-Century-Crafts, Inc., New York, 1949 edition, shall govern the conduct of the executive sessions of the Society when they are applicable and not inconsistent with this Constitution and Bylaws or with special rules of order adopted by the Society.

Appendix C

CERTIFICATE OF INCORPORATION OF AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, INCORPORATED

(Adopted 1933; amended 1964)

THIS IS TO CERTIFY:

First: That we, the subscribers, William DeB. MacNider, whose post office address is University of North Carolina, Chapel Hill, North Carolina, Arthur L. Tatum, whose post office address is University of Wisconsin, Madison, Wisconsin, Velyien E. Henderson, whose post office address is University of Toronto, Toronto, Canada, Oscar H. Plant, whose post office address is University of Iowa, Iowa City, Iowa, George B. Roth, whose post office address is George Washington University School of Medicine, Washington, D.C., and Charles M. Gruber, whose post office address is The Jefferson Medical College of Philadelphia, Philadelphia, Pennsylvania, all being of full legal age, do, under and by virtue of the General Laws of the State of Maryland authorizing the formation of corporations, associate ourselves with the intention of forming a corporation.

Second: That the name of the corporation (which is hereinafter called the Corporation) is:

"AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, INCORPORATED."

Third: The purposes for which the Corporation is formed and the business or objects to be carried on and promoted by it are as follows:

To promote the advancement of the sciences of pharmacology and experimental therapeutics, and to facilitate personal intercourse between investigators who are actively engaged in research in those fields, and to publish a journal on pharmacology and experimental therapeutics and such other publications upon said subject matters as may from time to time be deemed advisable, and to receive gifts, bequests, donations or other contributions of money or property for the furtherance of those ends; and, especially, to take over and carry on the work which has heretofore been conducted by the unincorporated society represented by the incorporators under similar name, which society it is intended shall become incorporated hereunder.

Fourth: The post office address of the place at which the principal office of the Corporation in this State will be located is No. 710 North Washington Street, in Baltimore City, Maryland. The resident agent of the Corporation is Dr. E. Kennerly Marshall, Jr., whose post office address is also No. 710 North Washington Street, Baltimore, Maryland. Said resident agent is a citizen of the State of Maryland and actually resides therein.

Fifth: The Corporation shall have six directors known as the members of its council, and the above named William DeB. MacNider, Arthur L. Tatum, Velyien E. Henderson, Oscar H. Plant. George B. Roth and Charles M. Gruber shall act as such until the first annual meeting or until their successors are duly chosen and qualified. The number of directors may be changed in such lawful manner as the bylaws may from time to time provide.

Sixth: Said Corporation being organized for scientific and charitable purposes shall have no capital stock.

Seventh: That the meetings of the members of said Corporation may be held without the State of Maryland as well as within said State.

IN WITNESS WHEREOF, we have signed this Certificate of Incorporation on June 5th, 1933.

Witness:

W. M. Summerville	as to	Wm. DeB. MacNider
M. S. Seevers	as to	A. L. Tatum
A. Naiolaw	as to	Velyien E. Henderson
I. H. Pierce	as to	Oscar H. Plant
David L. Weinstein	as to	George B. Roth
John T. Brundage	as to	Charles M. Gruber

STATE OF NORTH CAROLINA, ORANGE COUNTY, to wit:

I HEREBY CERTIFY, that on June 5, 1933, before me, the subscriber, a Notary Public of the State of North Carolina, in and for the County aforesaid, personally appeared William DeB. MacNider and acknowledged the foregoing Certificate of Incorporation to be his act.

WITNESS my hand and notarial seal, the day and year last above written.

(Notarial Seal)
My Commission Expires June 20, 1933.

W. 0. Sparrow,
Notary Public.

STATE OF WISCONSIN, DANE COUNTY, to wit:

I HEREBY CERTIFY, that on June 5, 1933, before me, the subscriber, a Notary Public of the State of Wisconsin, in and for the County aforesaid, personally appeared Arthur L. Tatum and acknowledged the foregoing Certificate of Incorporation to be his act.

WITNESS my hand and notarial seal, the day and year last above written.

(Notarial Seal)
My Commission Expires July 29, 1934.

Leo G. Schmelzer,
Notary Public.

DOMINION OF CANADA, YORK COUNTY, to wit:

I HEREBY CERTIFY, that on June 13th, 1933, before me, the subscriber, a Notary Public of the Dominion of Canada, in and for York County, aforesaid, personally appeared Velyien E. Henderson and acknowledged the foregoing Certificate of Incorporation to be his act.

WITNESS my hand and notarial seal, the day and year last above written.

(Notarial Seal)

A. B. Fennell,
Notary Public.

STATE OF IOWA, JOHNSON COUNTY, to wit:

I HEREBY CERTIFY, that on June 8, 1933, before me, the subscriber, a Notary Public of the State of Iowa, in and for the County aforesaid, personally appeared Oscar H. Plant and acknowledged the foregoing Certificate of Incorporation to be his act.

WITNESS my hand and notarial seal, the day and year last above written.

(Notarial Seal)
My Commission Expires July 4, 1936.

M. E. Hamilton,
Notary Public.

DISTRICT OF COLUMBIA, CITY OF WASHINGTON, to wit:

I HEREBY CERTIFY, that on June 6th, 1933, before me, the subscriber, a Notary Public of the District of Columbia, in and for the City of Washington aforesaid, personally appeared George B. Roth and acknowledged the foregoing Certificate of Incorporation to be his act.

WITNESS my hand and notarial seal, the day and year last above written.

(Notarial Seal)
My Commission Expires March 22, 1938.

Helen Swanson,
Notary Public.

STATE OF PENNSYLVANIA, COUNTY OF PHILADELPHIA, to wit:

I HEREBY CERTIFY, that on June 15, 1933, before me, the subscriber, a Notary Public of the State of Pennsylvania . in and for the County aforesaid, personally appeared Charles M. Gruber and acknowledged the foregoing Certificate of Incorporation to be his act.

WITNESS my hand and notarial seal, the day and year last above written.

(Notarial Seal)
My Commission Expires Mar. 7, 1935.

Madeleine Gottsman,
Notary Public.

Certificate of Incorporation of "AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, INCORPORATED", received for record June 19, 1933, at 10:45 o'clock A.M., and approved by the State Tax Commission of Maryland June 19, 1933, as in conformity with law and ordered recorded.

Jesse D. Price,
A. LeRoy McCardell,
Commissioners.

Recorded in Liber 116, folio 393, one of the Charter Records of the State Tax Commission of Maryland.

Capital NONE Bonus tax paid NONE Recording fee paid $10.00

Venable, Baetjer & Howard,
Baltimore, Maryland

Amendments to the Certificate of Incorporation

It was recommended to the Council by the Society's legal advisor that certain amendments to the Certificate of Incorporation executed after the 24th Annual Meeting, June 19, 1933 (see Chapter 2), were needed to comply with revisions of the tax exemption regulations pertaining to nonprofit organizations. Accordingly the legal advisor was requested to submit a draft of the indicated revisions, which were carefully considered by the Council at the June 24, 1963, meeting at Beaumont House, and it was recommended that they be submitted to vote by the membership at the 1964 Spring Meeting.

In accordance with Article IX, Section 1, of the Constitution, these amendments were formally sponsored by three members: Sidney Udenfriend, Albert Sjoerdsma, and Irwin Weiner. The proposed revisions as published below were submitted to the Society in the Gold Room of Pick-Congress Hotel in Chicago, Illinois, on Tuesday, April 14, 1964, and were adopted by the affirmative vote of two-thirds of all the members present at the meeting.

1. Change the period at the end of the last sentence of Paragraph Third to a comma and add immediately thereafter the words "provided, however, that neither this grant, nor any other provision of the Certificate, shall be construed to allow this Corporation to engage in any activities which are not in themselves in furtherance of activities of an association or corporation qualifying as, nor to engage in activities whch would constitute activities prohibited to, a corporation having any exemption under the provisions of the Internal Revenue Laws of the United States. This corporation shall not engage in substantial activities aimed at influencing legislation."

2. Add to end of Paragraph Sixth the following: "Should this Corporation ever be dissolved, by operation of law, or otherwise, all its assets shall be delivered to a nonprofit organization or organizations having an exempt status under the Internal Revenue Laws of the United States, and similar aims and purposes to this Corporation, who are not members of this Corporation."

The resident agent of the Corporation is Dr. Ellsworth B. Cook, whose post office address is 9650 Rockville Pike, Bethesda, Maryland 20014. Said resident agent is a citizen of the State of Maryland and actually resides therein. His appointment as resident agent by the Council has been effective since October 1, 1961.

CHAPTER 7

Awards Administered By ASPET

CHAPTER 7

AWARDS ADMINISTERED BY ASPET

K. K. Chen

Abel Award

IN 1942 the Lilly Research Laboratories (Eli Lilly and Company, Indianapolis, Ind.) offered through President E. K. Marshall, Jr., $1000, a bronze medal, and travel and hotel expenses to be awarded to a young pharmacologist as an expression of appreciation of the work done by the members of ASPET, as exemplified by J. J. Abel *(Federation Proc.* 3: 107, 1944; *Science* 104: 393, 1946). In making the award the Lilly management wished to provide an incentive for excellence by having one Abel winner each year and left the award procedure completely to the Society. The proposal was accepted by the Council in 1944 and by the membership in 1946. Since the FASEB Meetings were canceled during the war years the first award was postponed until 1947.

At present the Council has set the following rules:

1) The award shall be made on the basis of published reprints, manuscripts ready for publication, and a two-page summary, which will be judged by a committee appointed by the President of the Society.

2) Candidates shall not have passed their 36th birthday on April 30 of the year of the award and shall have accomplished research in the field of pharmacology and/or experimental therapeutics. The research is not to be judged in comparison with the work of more mature and experienced investigators.

3) Any member of ASPET may nominate a candidate, but not more than one. A person who has previously received another award sponsored by the same donors (Pharmacodynamics of APhAF) is not eligible.

4) Nominations are routed through the Executive Officer and the award is presented to the recipient in person at the Annual (Spring) Meeting.

Up to 1969 there have been 23 Abel Award winners, as shown in Table 18. Their research projects have varied considerably, and their positions at the time have ranged from fellow to professor. It is obvious from the FASEB Directory of Members for 1968 that the Abel Awardees are outstanding individuals of the biomedical community.

TABLE 18. John J. Abel Award Winners

Year	*Name*	*Position*	*Institution*	*Work for Award*
1947	George Sayers	Professor	University of Utah College of Medicine	Studies on the pituitary adrenal system
1948	J. Garrott Allen	Instructor (Surgery)	University of Chicago	An anticoagulant responsible for certain hemorrhagic states
1949	Mark Nickerson	Associate Professor	University of Utah College of Medicine	Pharmacology of the (3-haloalkylamines, a new class of adrenergic blocking agents
1950	George B. Koelle	Chalfant Fellow	Johns Hopkins University School of Medicine	Anticholinesterase drugs
1951	Walter F. Riker, Jr.	Associate Professor	Cornell University Medical College	Studies on the pharmacology of neuromuscular function
1952	David F. Marsh (deceased)	Professor	West Virginia University Medical Center	Recent observations with *d*-tubocurarine derivatives
1953	Herbert L. Borison	Assistant Professor	University of Utah College of Medicine	Neuropharmacologic studies on the brain-stem functions of emesis, respiration, and circulation
1954	Ellen Eva King (Mrs. Killam)	Instructor	University of Illinois College of Medicine	Drug action of mono- and polysynaptic motor pathways in the central nervous system.
1955	• Theodore M. Brody	Assistant Professor	University of Michigan Medical Center	Uncoupling of oxidative phosphorylation as a mechanism of drug action
1956	Fred W. Schueler (deceased)	Associate Professor	University of Iowa College of Medicine	Activity-structure relationship and drug metabolism
1957	Dixon M. Woodbury	Associate Research Professor	University of Utah College of Medicine	Relationship between brain excitability and electrolyte composition of brain intracellular fluid

1958	H. George Mandel	Professor	George Washington University School of Medicine	Metabolism of salicylates and carcinostatic agents
1959	Parkhurst A. Shore	Head, Section on Biochemistry of Drug Action	National Heart Institute	Biochemical mechanism of drug action
1960	Jack Leonard Strominger	Professor	Washington University Medical School	Mechanism of action of antibiotics
1961	Don W. Esplin	Assistant Research Professor	University of Utah College of Medicine	Peripheral pathways concerned with the reflex control of motor activity
1962	John Paul Long	Professor	University of Iowa College of Medicine	Action of hemicholinium on the peripheral nervous system
1963	Steven E. Mayer	Associate Professor	Emory University School of Medicine	Passage of drugs into central nervous system and metabolism of catecholamines
1964	James R. Fouts	Associate Professor	University of Iowa College of Medicine	Microsomal drug metabolism of the liver
1965	Eugene Braunwald	Chief, Cardiology Branch	National Heart Institute	Development of cardiovascular techniques in animals and human beings
1966	Lewis S. Schanker	Head, Cellular Pharmacology, Laboratory of Chemical Pharmacology	National Heart Institute	Hepatic uptake and biliary excretion of drugs
1967	Frank S. LaBella	Associate Professor	University of Manitoba	Cellular pharmacology and biochemistry, particularly on collagen and elastin
1968	Richard J. Wurtman	Associate Professor	Massachusetts Institute of Technology	Catacholamine storage and metabolism, particularly as affected by pregnancy and labor
1969	Ronald G. Kuntzman	Head, Biochemical Pharmacology	Wellcome Research Laboratories	Hydroxylation of drugs and steroids by liver microsome enzymes

Torald Sollmann Award

In 1960 Wyeth Laboratories (Philadelphia, Pa.) established the T. Sollmann Award to commemorate his pioneer work in the fields of pharmacological investigation and education. It consists of $2500, an appropriate medal, a certificate, and travel and hotel expenses. The recipient is determined by a Sollmann Award Committee consisting of the Council of ASPET and the Senior Councilor, the Chairman of the Committee. The following rules apply:

1) All scientists working in the field of pharmacology shall be eligible for the award.

2) The decision of the Sollmann Award Committee shall be based on originality and uniqueness of approach as well as the development of new concepts, theories, and techniques that constitute a definite, mature, and significant contribution to the extension and advancement of contemporary pharmacological knowledge sustained over a period of years.

3) The award may be made every third year, but there shall be no obligation if, in the sole opinion of the said Committee, there is no qualified recipient.

4) Any member of ASPET may nominate a candidate, but not more than one. Nominations for the award may also be accepted by the Committee from members of other scientific associations, both domestic and foreign, and should be processed through the Executive Officer of ASPET.

5) Presentation of the award is made to the recipient in person at a meeting of the Society by the Chairman of the Sollmann Award Committee, and at the discretion of the President the recipient may deliver a Sollmann oration. To date three awards have been made.

Date	*Name*	Oration
August 31, 1961	Otto Krayer	Accidents in the Pursuit of Knowledge (*Pharmacologist* 4: 68, 1962)
August 13, 1963	Bernard B. Brodie	Of Mice, Microsomes and Man (*Pharmacologist* 6: 12, 1964)
July 16, 1966	Arnold D. Welch	Biochemical Mechanisms (*Pharmacologist* 9: 46, 1967)

ASPET Award for Experimental Therapeutics

Hoffmann-La Roche Inc. (Nutley, N.J.) in 1968 donated to the Society the ASPET Award for Experimental Therapeutics consisting of $1000, a bronze medal, and travel and hotel expenses for the winner and his wife for the

purpose of stimulating outstanding basic pharmacological investigations in man.

The principal criterion is that candidates shall not have passed their 42nd birthday on August 30 of the year of the award and shall have accomplished outstanding research in the field of clinical pharmacology. The Council of ASPET will appoint a Special Selection Committee to decide on the best candidate. The first award was presented to John A. Oates, Vanderbilt University School of Medicine, Nashville, Tennessee, after the dinner on April 16, 1969. Among his research projects are basic and clinical studies on methyldopa and guanethidine in hypertension. He played a major role in establishing a Division of Clinical Pharmacology within ASPET, and he will be promoted to full Professor of Pharmacology and Medicine at Vanderbilt in the fall of 1969.

CHAPTER 8

Projection to the Future

CHAPTER 8

PROJECTION TO THE FUTURE

Maurice H. Seevers

IT WAS EASY in 1939 for the writer to portray to the Council of the American Society for Pharmacology and Experimental Therapeutics why, as a relatively young man, he contemplated deserting pharmacology for a more promising field. Survival of the subject as an independent discipline was at stake.

In 1947 the course of events had furnished the background for survival, but strong action was needed. It was not difficult as President of the Society to join with the survivors and the newer generation in the Rockefeller Foundation-sponsored Conference on Graduate Education in Pharmacology to chart a course that could assure pharmacology a respected place among the medical sciences.

In 1969 need for unusual action is not apparent. The corpus of pharmacology is strong and expanding rapidly. Few doubt its importance or despair for its survival. Excellent young men are entering the field. What more is there to say? Why, then, should one who will not participate in future developments in pharmacology attempt to project its future?

Torald Sollmann sensed the futility of such an exercise in his talk to the Society entitled "The Early Days of the Pharmacological Society," April 21, 1949:

> Besides I happened to have some part in the play—and, contrary to common opinion, I hold that the actors are rarely good critics or even good reporters of the inner play of history. Even when they overcome personal bias, which is rare, they see the action only from a particular angle. Although to participate constructively in the action, they must endeavor to understand all sides of the questions, appreciate and even sympathize with those who happen to be on the other side; but they must necessarily see their own side best or they will be forever sitting on the fence.

This appears to be as applicable to future projections as to a historical analysis. If, in keeping one eye on the past, squint has impaired my vision of the future, my only apology is that I have seen "my own side best."

With misgivings for having accepted this task, the writer hoped, with plagiary in mind, to find a precedent for "futures" in other historical accounts, but without success. However, a paragraph in the foreword to the *History of*

the American Physiological Society, Semicentennial, 1887-1937 by Walter J. Meek, one of my beloved preceptors, gave a possible clue to what was consciously or subconsciously in the minds of those oldsters, like myself, who have had this assignment:

> The American Physiological Society from its foundation has been an important factor in the scientific life of our country. It has become a notable American institution. It is a forum in which are presented the current researches in the physiological sciences. It is the owner and manager of two great journals. It is the mother of other societies. It is a vital, growing organization. Not only has its past been honorable and productive, but at the present moment it is more prosperous in point of number and scientific activity than any period of its history. There is every indication that its value and influence will continue to increase as the years go by.

Today many of Meek's statements about physiology apply equally well to pharmacology. They have been said comprehensively in a report by the Pharmacology and Toxicology Training Committee of the National Institute of General Medical Sciences, *Status of Research in Pharmacology and Toxicology, November,* 1966. They need no reiteration here.

This Committee has limited my task further by defining clearly and specifically the knowledge gaps in modern therapeutics that may constitute the areas of future research in general pharmacology. I have assumed therefore that the choice of one who has survived the rigors implies some qualifications for discussing the future in light of the past—a tacit admission that somehow the fears that plagued earlier generations of pharmacologists have not been entirely dispelled—or have others emerged to take their place?

I have attempted in what follows to evaluate and discuss certain fundamentals that have always confronted pharmacology and are important to its future, its scope as a science and its independence as a discipline, its relation to the other biomedical sciences and to clinical medicine, its importance as an interpreter of drug and chemical effects in the interests of the public health, and its evaluation of the effects of drugs on society as a whole. If this discourse appears to lack organization it is because of the interlocking nature of these problems.

From the beginning, pharmacologists, even Buchheim and Schmiedeberg, found it difficult to circumscribe a specific body of scientific knowledge and say, this is the substance of, and therefore belongs exclusively to, the science of pharmacology. Its very nature requires that pharmacology be dependent on the physical and biomedical sciences for concepts of normal cell and organ function and for methodology. In the early days, a majority of the leaders in the biomedical sciences viewed pharmacology as an applied branch of physiology or biochemistry, not worthy of recognition as an independent discipline. Some still do.

In 1924, when I began the study of pharmacology, my preceptor A. L.

Tatum was the only pharmacologist in a joint department with physiological chemistry. In those days the subject was commonly subordinated to physiology or physiological chemistry, scientifically and politically, or left alone to deal with materia medica and therapeutics, an ill-defined and lackluster castoff, below the dignity of most clinicians. In short, pharmacology was held in low esteem by scientists and clinicians alike and with more than a little justification. The few who arose in its defense had great difficulty in citing specific contributions of pharmacology on which to base their case. But in that same year, 1924, Abel made a gallant and worthy try in a letter to Abraham Flexner:

> ... all of these substances are drugs and constitute a great part of the proper field of the study of the pharmacologist. I am fully aware that they also constitute the field of study for the physiologist, the pathologist, and other medical scientists. The scope of this domain is so large that there is ample opportunity for all the above-named individuals to work without ousting the pharmacologist or subordinating him to some other field. . . . I care little for labels and names—you can extend the use of physiology to clinical medicine; you can call pathology abnormal physiology; you can call pharmacology applied physiology; and make otherwise use of this term. All of this, however, does not alter the fact that the increasing and steadily growing content of pharmacological science which is applying physics and chemistry in the most advanced and minute way to the problems of cell action, which is almost daily making new additions to our armamentarium of drugs, cannot be subordinated to physiology which has its own problems which may or may not interlock with pharmacology. . . . The science has its own problems and quite aside from achievements that are of immediate assistance to the physician, which are of fundamental character and allied to physiology, but in reality belong to the vast realm of experimental biology and medicine. To these problems, the pharmacologist brings his own viewpoints and methods, just as the biochemist or the physiologist may do. . . I have always maintained that the more varying types in the way of pharmacologists, physiologists, pathologists, and anatomists the better. Let one pharmacologist be more of a chemist, another more of a physiologist, another more of a clinician. The main thing, I think, is taking ability for granted, as this is the main requisite—that all of these men should be more than mere pharmacologist or physiologist or what-not, but that their interests should be broad, that they could be classed as students, or investigators in the broad field of experimental medicine and biology. . . . I hope that pharmacology will keep on accumulating, along with its practical discoveries, an increasingly great amount of such apparently for the moment useless knowledge.

Although this demonstrated Abel's breadth as a man, scientist, and physician, his effort did not alter the trend.

In the darkest days (the 1930's) pharmacologists, in dwindling numbers, found principal preoccupation with the question: What is the matter with pharmacology? Attempts were made to redefine the subject, give it a

different name, shift it from a biological to a physical science (pharmacy), and the like. Many deserted for fields that offered a better future. If documentation is needed, it is a matter of record that only 32 members attended the meeting of the Society on April 9, 1933, to hear Abel tender the JPET of the Society.

The development of the sulfonamides and the antibiotics, the coming of the atomic age, the great achievements in organic and physical chemistry and biophysics associated with World War II, and the phenomenal advances in the knowledge of cell and organ function in all of the biomedical sciences furnished the substance from which a new pharmacology was built. The passage of the Food and Drug Amendments of 1938 created a new demand for pharmacologists in industry and government; politicians, impressed by the effectiveness of large-scale wartime research efforts, furbished the funds not only for research but also for training—a most important need.

In 1940 Alan Gregg of the Rockefeller Foundation epitomized the situation, which, although vastly improved, is still critical today: "And the scarcity today of pharmacologists qualified for teaching, government appointments or industrial positions is lamentable, or exciting, if you don't think it is too late."

Today pharmacology no longer needs to be sharply circumscribed to find its place in the scheme of things. In this era of molecular biology defining pharmacology to encompass the action of all chemicals on all living matter is accepted with little debate. Even a few decades ago, such a definition would have elicited snorts of derision.

In spite of having survived some of the earlier fears—engulfment by clinical medicine or physiology or dominance by industrial scientists if they were permitted membership in the Society—some disquiet still exists among pharmacologists. For example, there are those who, viewing the current administrative trends in some medical schools, especially the appointment to important chairs of scientists who cannot qualify as pharmacologists, would again raise the specter of survival not for scientific but for political reasons. They point out that molecular biology finds no need for traditional lines of separation of the biological sciences, and they argue that the threat to pharmacology lies in the fact that the other biomedical sciences can also be defined in terms of the action of chemicals on living things. Ergo, merge them all into one unit, possibly under what is called today "biochemistry."

This specter I think should be laid to rest. If such a threat does indeed exist, it does not apply specifically or solely to pharmacology, and for practical reasons alone it seems improbable in the foreseeable future. However, defining pharmacology in terms of the universe creates some problems with which pharmacology must deal.

Any individual scientist in the physiological or biological sciences, or even in the social sciences, can identify as a pharmacologist by examining,

or even contemplating, drug-cell interactions. Very often such an individual has little, if any, knowledge of the principles that govern such interactions or the complexity of the biological systems with which he is dealing. The height of absurdity is reached when such persons extrapolate their data to human therapeutics. This makes a large contribution to the vast rubbish literature of pseudopharmacology, of which I shall speak later.

A second and very significant problem for pharmacology is created by those who, seeing their own side best, leave the impression that molecular pharmacology is the only thing that really counts. Without discounting the great importance of this facet of pharmacology, there is clearly a vast knowledge gap between the many theories and the few facts relating to conformation analysis of receptors, and the many facts concerning drug-enzyme interactions, for example, and the demonstrable action of drugs on the intact organism as a basis for the intelligent and safe use of drugs in man. Indeed, one can logically raise the question, If molecular pharmacology represents the basis of pharmacology, what is pharmacology?

Clearly a dichotomy in thinking existed among the current leaders of American pharmacology who prepared the report of the Pharmacology and Toxicology Training Committee. In the section on "General Pharmacology at Present" we find:

> Pharmacology as we know it today is little more than fifty years old. In this time, as any informed layman knows, its record of accomplishment is truly phenomenal. The advances in pharmacology in this century have constituted many of the familiar medical miracles. The medical practitioner today enters the sickroom backed by a therapeutic armamentarium that has been developed largely by the scientific methods of pharmacologic discipline.

Contrast the optimism expressed in this paragraph with the pessimism of the section on "Molecular Pharmacology":

> Biochemical pharmacology has suddenly gained importance, in fact is bound to replace "classical biochemistry" after decades of latency . . . The development of modern biochemical pharmacology demands great expertness in physical sciences, enzymology, and biophysics, requirements that are hardly met within "classical training" in pharmacology as visualized by empirically oriented proponents. Yet this trend is inevitable, and the other one (termed "classical training") will merely furnish raw material, incapable of dealing with its true problems. Society has the choice: to support costly, futile (empirical) hit-or-miss games, providing only temporary successes followed by greater confusions (new drugs vs. old drugs games), or to invest in the difficult but predictably successful scientific approach, which is bound to produce as hard realities as did the relativity theory in form of present-day nuclear chemistry.
>
> At the present, arguments in favor of abandoning "the old trend" are numerous (e.g. inability to solve cancer, old age as a disease, etc.), and true

> successes in molecular pharmacology are yet few (e.g., mode of action of antibiotics, contribution to genetic chemistry). But "lack of success" in the case of empirical pharmacology is in fact an overriding argument for turning to the novel enterprise.

It would appear to an old fossil that society also has the choice of whether to maintain the "status quo" as far as new drugs are concerned for an untold number of years or to pursue the "old trend" with reliance on the most modern pharmacologic technic until the "natural laws which permit 'coordination' of enzymes into biological functional processes" are discovered —clearly not an easy task with over 100,000 known organic substances and 700-800 enzymes.

Apparently the writer is not the only one who is confused about the use of the terms "molecular" and "biochemical" pharmacology. It would seem from the Statement of Purpose of our new Society journal, *Molecular Pharmacology,* that this term embraces about everything chemical, physicochemical, biochemical, or biophysical, theoretical or practical. This is somewhat difficult to harmonize with the statement quoted above, "true successes in molecular pharmacology are yet few (e.g. mode of action of antibiotics, contributions to genetic chemistry)." If molecular pharmacology encompasses everything chemical and is synonymous with biochemical pharmacology, it has been with us a long time and would not appear to need the hard sell.

In the summary of the Pharmacology and Toxicology Training Committee report we find a somewhat less forceful and more mature and meaningful appraisal of molecular pharmacology: "When one considers the number of drugs, it is clear that this important field is in its infancy, if not still in a gestation period." Evidently a majority hold that some growth must occur before this infant can fill adult apparel and that "molecular" is not synonymous with "biochemical" pharmacology.

Be that as it may, pharmacology might appear to be free of the paranoias of the past if the present generation is willing to challenge "classical" biochemistry and assume responsibility for the solution of cancer and old age.

The writer would not chew this bone unless he believed strongly that even the suggestion that "classical" pharmacology be abandoned represents a predictable risk in loss of perspective not only for pharmacology as a scientific and political entity but for the individual investigator as well. It would be a great disservice to pharmacology as a discipline if the scientists who followed the "classical" approach were relegated, even inferentially, to a category of second-class citizens, solely because their interests and skills did not utilize a biochemical approach.

In the area of central nervous system pharmacology, for example, most of the clinically proven drugs were discovered by scientists or clinicians who

were trained in observing and interpreting behavioral responses. In the few instances where their actions are clearly identified with enzymes as inhibitors or competitors, these attributes were determined secondarily and still serve largely as a means of screening new drugs for potential behavioral studies.

Who will acquire the facts needed to fill the knowledge gap between molecular pharmacology and the application of pharmacologic knowledge to human therapeutics or in the public health? This is a research area involving what was once called the physiological approach—information obtained by conventional physiological methods and/or direct observation and analysis of drug-induced behavior in the intact animal. This type of research may be less spectacular, but it is equally important and in some ways more difficult than molecular pharmacology.

Is this area to be relegated to those who do not qualify as pharmacologists either on the basis of their training or knowledge? It would seem unwise. To create such a vacuum would assure the usurpation of this vast area by the poorly trained and incompetent, a first step in the scientific and possibly in the political demise of pharmacology.

In a field of such scope as pharmacology any individual investigator may expect to make a significant contribution in only a very limited area of research. Wisdom would counsel that, other things being equal and having made his choice, the investigator persists in a limited area of research until he becomes a master. The history of biomedical research reveals that the advent of each new major advance in knowledge creates a "gold rush" of many investigators to apply these new findings to their own problem. A certain few with the proper background and good fortune may strike a rich vein; many with an inadequate academic stake, finding the work tedious, the competition tough, and the nuggets few, may become disenchanted and desert the entire field.

What then is pharmacology and what makes a pharmacologist? I cannot improve on the substance or perspective of paragraphs from the summary of the same Committee Report:

> Pharmacologists, guided by a set of principles which allowed them to organize their observations of the effects of chemical substances on living structures in a meaningful way, have brought many drugs of great usefulness for man's benefit to positions where they can be employed with maximum safety and effectiveness, *despite the fact that the intimate mechanisms of action of these drugs are not well understood.* (italics added)
>
> Many of these principles are so important to the proper examination of the effects of chemical substances on living systems or their components—whether these are being studied in the whole and exceedingly complex human in a clinical situation or at any point along the continuum of organizational levels down to submolecular events now being probed by a few molecular pharmacologists—that the principles themselves merit brief review in this summary. These principles concern: 1) the relationship between

> the concentration of a chemical compound (drug or poison) and the response of the living reactor or its components, 2) the time-action curve, 3) the factors of absorption, distribution, binding, biotransformation, and elimination, 4) chemical structure-biological action relationships, 5) bioassay in some instances, 6) factors of repeated drug use, such as tolerance, cumulative effects, chronic intoxication, habituation, addiction, and adverse reactions, 7) antagonism or enhancement of one chemical's effect by another, 8) the localization of the site of drug action within the living system or its components, and 9) most difficult of all, the mechanism by which the action is brought about.
>
> All pharmacologists and toxicologists must have a thorough understanding of these principles. This group of scientists is bound together by these common concerns, even though they may be widely separated along the spectrum of specialties required for working with the effects of chemicals on systems as complex in one direction as the submolecular events involved in the intimate action of a drug molecule on a single sensitive type of macromolecular component of a cell and as complex in the other direction as the subtle behavioral changes observable in a person who has ingested a relatively few molecules of, for example, a powerful hallucinatory drug.
>
> The extreme diversity of conceptual and technical capabilities required for an effective attack on the unsolved questions in these fields of pharmacology and toxicology makes it, in one sense, practically the most interdisciplinary of the medical sciences. The development of increasingly specialized research in these fields is, therefore, not at all surprising.

Like other biomedical disciplines, the subject matter of pharmacology has become so great that division into subspecialties with their own journals was inevitable. Some hold that pharmacology as an organized Society is poorer today for failing to have circumscribed chemotherapy, toxicology, and psychopharmacology and worry about further splintering of the subject.

Pharmacology as a broad discipline will suffer only if the organizations representing the subfields fail to support training in general pharmacology as a basis for their specialty programs or go their own way, failing to recognize the importance of the common functions and goals that unite pharmacology as a discipline.

I hope we would not become so interested in the anatomy of pharmacology that we lose sight of its function. Pharmacology as a political entity is more likely to survive because of its function than because of its substance. Without doubt the founders of the Society visualized its prime function in terms of establishing a scientific basis for therapeutics. Modern developments have broadened the scope to include all chemicals that affect the public health.

Seventeen of the 18 founders of the Society were physicians; many were full-time practitioners. The early identification of pharmacology with medicine and medical schools has colored its subsequent existence. In contrast with some other biomedical sciences, it has never flourished apart from a clinical

association. Although it is no longer necessary, nor desirable, that all pharmacologists be physicians, many should be--even some who may not follow clinical pharmacology as a specialty. It is important to pharmacology as a discipline that it be interpreted to the clinician by one who knows from experience how the problems of the clinic differ from those of the laboratory.

It may be of great importance for the future of pharmacology that physician-pharmacologists heed the precept of A. L. Tatum: remember you are a physician first, a pharmacologist second. It was his strong belief that the strength of pharmacology in medical schools comes in convincing the clinician that pharmacology has something unique to offer the medical student and the practitioner, something that is not forthcoming from other basic sciences or from the clinician himself. It was his equally strong belief, amply supported by historical events, that if pharmacology depended for its strength on biochemistry and physiology, it would remain an anemic weakling in the medical school hierarchy, if it survived at all.

Today medical educators seem to have finally solved the chicken-egg game with the basic sciences versus clinical medicine by concluding that both come first. The resulting curricular shifts, without altering subject content, have significantly left pharmacology, like all basic sciences, at' loose ends. Some of this restructuring will upgrade the educational process if it breaks down the long-existing artificial barriers between the basic sciences and the clinic. Some changes are wheel-spinning, others academic spelunking. Where such changes distort the relative importance of the essential elements that a physician needs to practice modern medicine—for example, submerging therapeutics to diagnosis—then pharmacology has reason to be concerned.

After 60 years we hear echoes of the cries from some of the charter members of this Society who objected to the use of "Experimental Therapeutics" in the Society name. Will pharmacology in medical schools be disenfranchised by clinical medicine?

Since preparing this discussion an article has appeared: "Pharmacology: Its Nature in Medicine" (Science 161: 443, 1968). Thomas H. Maren, the pharmacologist-author, discusses in detail and with good perspective the problems confronting pharmacology as an administrative and teaching unit in medical schools, emphasizing the chronic shortage of leaders in the field capable of filling the critical positions in universities, government, and industry.

Let me say this. If pharmacology is submerged it will be in institutions where the pharmacologist, even though medically trained, identifies pharmacology only in laboratory terms. It is not likely to happen where pharmacology occupies an important position in the basic and clinical teaching of medical students throughout their educational program; where clinical pharmacology conducts training programs at the postdoctoral level and is recognized as a bridge between general pharmacology and clinical medicine; where the clini-

cal pharmacologist is trained in both; where he is formally and physically associated with both; where he interprets laboratory findings in clinical terms and serves as a coordinator in all things of a clinical-pharmacological nature. In the long run, it may be that this type of cooperative activity will be a principal reason why general pharmacology as an independent discipline will survive in medical schools.

Pharmacology must be prepared to adapt itself to new and future developments in science and medicine: for example, to problems of the "strange" patients, those with transplanted organs or cardiac pacemakers, those with hereditary enzyme deficiencies, those with genetically determined sensitivity or resistance to drugs.

Unless pharmacology continues to assume the role of principal interpreter of the effects of chemicals and drugs in man, it will have abandoned its heritage, since this is its only function that is unique.

The biochemical pharmacologist fragments the organism in order to study its component parts; the organ-oriented subdivisions of pharmacology are engrossed with specific technics and interests; the clinical pharmacologist, while dealing with drug effects on man, is also a specialist; toxicology is too often identified only with small animal pharmacology.

In order to bring perspective to medical and public health problems concerning drugs, information from all sources, subcellular to the whole organism, must be evaluated with a minimum of bias. Often the pertinent information is found only in indigenous medicine. Often the picture must be constructed primarily from witnesses from the past. Competence for such reconstruction requires a broad background in the laboratory with more than a passing knowledge of the clinic, a "composite" pharmacologist, if you please.

This is pharmacology.

The broad nature of the subject matter of pharmacology lends itself with particular ease to encroachment by many kinds of pseudoscience and pseudoscientists. Unfortunately there is a substantial group of individuals, some scientists, even in "high places," practicing what, for lack of a better term, I will designate "pseudopharmacology." This includes those who lack the background or the desire to bring perspective to the problems of drug action. It includes the hypercritical as well as the uncritical and those who purposely distort facts to support what they consider a worthy end.

Many of the most difficult public health problems (alcoholism, drug dependence, tobacco smoking, air and stream pollution, pesticides, food additives, over-the-counter drugs), involving as they do the total population, become the special province of a whole array of "experts"—well-meaning but scientifically ignorant reformers; commentators and writers in communications media who misinterpret facts to fit their own bias or create spectaculars; politicians who find this a rich potential for popular appeal; scientists

who do not limit their pronouncements to their own area of competence, including even some pharmacologists.

I can best illustrate what I mean by pseudopharmacology as practiced by scientists by citing a few examples: inflation of inconsequential data by elaborate statistical treatment, masking poor design and inadequate data by disguising them as hypotheses, acceptance of data obtained with gadgetry even if they conflict with observations of behavior, extrapolation of data obtained by chronic administration of unrealistic doses in small animals to prediction of drug or chemical toxicity in man, ignoring long-time human experience in favor of arbitrary margins of safety in animals as a measure of safety in man, and many more. Pseudopharmacology of scientist or lay origin weakens the integrity, devaluates the importance, and dilutes the effectiveness of pharmacology as a biomedical discipline. It not only confuses the public but may glamorize the hazard it purports to expose. If pharmacology is to achieve its greatest stature in the future, pharmacologists in responsible positions must be willing as individuals to sacrifice their own private and research time to combat these hazards to pharmacology and the public health.

We are in an extraordinary time in history when change takes over on a wholesale basis. The research and development revolution is transforming nearly all aspects of our daily life. The explosion of knowledge, coupled with the obsolescence of knowledge, makes it impossible to predict future developments. Continuous automation and the computer have changed the machines and the skills required to operate them. Biologists are expected to keep pace.

It is extremely difficult to explain to the public, or even for biomedical scientists to bear in mind, that one machine remains the same—the most complex of all, the animal and the human body. It operates with remarkable efficiency and fidelity, yet we know comparatively little about how and why. The pharmacologist can speed it up, slow it down, in whole or in part, but cannot make it create any new function. He can take it apart and study the pieces, but he cannot reassemble it.

Clearly the scientific and medical facts that presently constitute the substance of pharmacology will expand greatly in the future; the need to acquire new facts about drug-cell interactions at all levels of biological organization will continue to accelerate; and although interpretations of drug actions may change remarkably, the need for the rational application of these facts and interpretations to the art and practice of medicine and to the public health will become even more important. Whether this body of knowledge and its interpretations remain in the hands of those who today call themselves pharmacologists depends on how well they take cognizance of the strengths and weaknesses of pharmacology as related to other scientific and medical disciplines.

The young man, intrigued with the glamor of medical science, who contemplates for the future, or has already begun, a life work in pharmacology might do well to consider the following.

Wisdom dictates an early decision to enter the field since proper qualification requires many years of dedicated effort. The scope of pharmacology is great. A broad as well as an intimate understanding of drug action requires a substantial knowledge of mathematics and the physical and biological sciences. Hopefully, he would superimpose this special training on a general education in the humanities and social sciences. With this background, he should seek the highest quality training in general pharmacology regardless of his ultimate goal as a research specialist. He must be a pharmacologist first. Abel, who was one of the founders of the Biochemical Society as well as the Pharmacological Society and more of a biochemist, said, "Let one pharmacologist be more of a chemist, another more of a physiologist, and another more of a clinician." He did not say, let one be a chemist, one a physiologist, and another a clinician.

Society expects returns on its training investment in terms of individual research achievements. Pharmacology pulls in many directions, but unidirectional research effort is usually more rewarding. It is to the advantage of the investigator to utilize the most advanced equipment and technology, keeping in mind, however, that none has been devised that compares with "a seeing eye to a thinking brain."

The ultimate goal of pharmacologic research is an understanding of the mechanism of action at the molecular level. While fascinating, worthy of extensive pursuit, and probably in the long run a most important approach, it is a very specialized area. Success requires an unusual training, a creative mind not hampered by convention, an interest in theory rather than practice, and other talents not possessed by all who would enter pharmacology. All need not, and should not, undertake it. In terms of the prime functions of pharmacology as a basis for rational therapeutics, and in the protection of the public health, the role of molecular pharmacology is no more and no less exalted than any other subdivision of pharmacology. It is not likely to yield many new drugs or contribute much to the public health in the foreseeable future.

With a solid foundation in general pharmacology, postdoctoral training in a specialized field is highly desirable. Serendipity favors the prepared mind.

Pharmacology is an interdisciplinary science. The advantages of division of labor in reaching major research objectives should be recognized early in the career of a pharmacologist. But he should know that cooperative projects are difficult and often require submerging individualism to a common goal.

Pharmacology attracts persons from all walks of science. Each may make an important contribution, whether in academic, industrial, or govern-

ment employ. The horizon of a pharmacologist will be expanded greatly if he works with individuals in these several areas, who may follow other routes to the same objective.

Like the art of medicine, there is also an art of pharmacology: the ability to make choices, decisions, and even projections from pieces of the whole.

Constantly aware of the prime function of pharmacology as a basis for therapeutics and in protecting the public health, one should always be cognizant of the weakness inherent in the extrapolation of data from lower forms to man; training in medicine, although not essential, may give him better perspective.

The proper interpretation of pharmacological data in the interests of the public health requires that the pharmacologist recognize his own scientific limitations, respect the opinions of other knowledgeable persons in other fields, even while disagreeing, and have disrespect for, and a willingness to stand out against, pseudopharmacology in all its forms. The ability of a pharmacologist to bring perspective to public health problems involving drugs or chemicals is one of his unique functions.

My search for an American whose career as a pharmacologist had not only a profound impact on pharmacology but also on medicine because he possessed many of these attributes was not difficult. Of all the pharmacologists of my acquaintance, none had human qualities more worthy of emulation, or more common sense, than Torald Sollmann. Joseph Seifter, his last student, said of him, "He did not base the future of pharmacology on spectacular discoveries, but on steady growth. He considered those engaged in his field as ordinary humans with a capacity for hard work, imagination, and self-development rather than possessors of unusual genius." In addition to his contributions to pharmacology and toxicology, his administrative duties as a medical school dean, and his scholarly pursuits as an artist and poet, he gave of his energies to matters of medicine and of the public health. He was a charter member of the Council of Pharmacy and Chemistry (now the Council on Drugs) of the AMA, serving continuously for over 50 years, more than 20 years as its chairman. Those of us who were fortunate enough to serve under him in this capacity never found him devoid of knowledge about drugs or men, or out of perspective, or failing in his concern for the future of pharmacology and its relation to medicine and the public health. Although past 90, always looking to the future, he was still revising his famous textbook, which was the "bible" of my student days. His advice to pharmacologists, present or future, is timeless:

> You younger men and women: keep your eyes on the mountains, but do not stop cultivating the plains. "All this is very fine, but let us cultivate our cabbages"—"C'la est bien dit, repondit Candide, mais it faut cultiver notre jardin"—Do not expect to be always dining on pheasant and arti-

chokes; do not make the mistake of despising corned beef and cabbage: they give you strength to scale those mountains, and the mountains cannot be scaled without them—ONLY--never rest *content* with humble results. Be not as he who digs eagerly for treasure and is happy when he turns up a fishworm.

"Mit gier'ger Hand nach Schatzen grabt
Und froh ist wenn er Regenwurmer findet"

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