

HISTORY
OF THE
AMERICAN
OTOLOGICAL SOCIETY, INC.

1868 • 1968



FIVE SCORE YEARS
OF PROGRESS

PUBLISHED BY THE SOCIETY
TO COMMEMORATE ITS ONE HUNDREDTH ANNIVERSARY

CONTENTS

Officers of the Centennial Year 1968	<i>Page v</i>
History Committee	<i>Page vi</i>
Foreword EDMUND P. FOWLER, M.D.	<i>Page vii</i>
The Founding Fathers and The Early Decades EDMUND P. FOWLER, M.D. 1868-1899	<i>Page 1</i>
The Old Order Passeth MOSES H. LURIE, M.D. 1900-1919	<i>Page 31</i>
The Science of Otology Audiometric Threshold and Above Threshold Measurements Research Fund of the Society (Central Bureau of Research) PHILIP E. MELTZER, M.D. LAWRENCE R. BOIES, M.D. 1920-1939	<i>Page 37</i>

Sulfonamides, Penicillins and "Mycins" Fenestration and Stapes Surgery LAWRENCE R. BOIES, M.D. 1940-1959	<i>Page 74</i>
Better Understanding of Surgical Rehabilitation of Hearing More Accurate Diagnostic Tests BEN H. SENTURIA, M.D. 1960-1967	<i>Page 91</i>
Personal Memories of Presidents and Honorary Members	<i>Page 106</i>
The Second One Hundred Years Musings and Dreams of Things to Come EDMUND P. FOWLER, M.D.	<i>Page 125</i>
Recipients of Award of Merit	<i>Page 130</i>
Guests of Honor	<i>Page 131</i>
Present and Past Members	<i>Page 132</i>
Past Officers and Sites of Annual Meetings	<i>Page 142</i>

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1968

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Meeting at
Hollywood Beach Hotel • Hollywood Beach, Fla.
April 18-19-20, 1968

FOREWORD

EDMUND P. FOWLER, M.D.

HISTORY COMMITTEE

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*Dr. Fowler died October 7, 1966.

†Dr. Meltzer died March 7, 1967.

After four-score years and ten it seemed high time that a history of the world's senior Otological Society should be written.* To this end at the annual meeting, 1959, in Hot Springs, Virginia, the then President, Moses H. Lurie, appointed the following active members to comprise a committee with him to accomplish this task: Lawrence R. Boies, Philip E. Meltzer, and, as Chairman, Edmund P. Fowler, all past presidents of the Society. Later, at the suggestion of the Chairman, Ben. H. Senturia, our Editor-Librarian, was added to this committee.†

All sixteen then living past presidents were invited to contribute some of their memories of interest, either strictly scientific or otherwise. Last but not least, the available honorary members were asked to participate in making our history complete.

Thus, from the records and from many members, not only the high points but maybe some of what might be considered the low points in our long history have been woven into our tale, making it somewhat different from the recordings usually found in medical society historiographies.

The first eight meetings of the society were held in Newport, Rhode Island, and for many years all meetings were in the Eastern States. Gradually they extended, first to New York City in 1876, then to Newport, New York City, Boston and Philadelphia. Later they were held in the South and West, in Canada in 1915, and on the West Coast in 1950. No minutes were found for 1870, and there was no quorum in 1877 because of a railroad strike. In addition to the annual meetings, five special meetings were called.

*It was not until 1900 that Sir William Dalby, Otologist to St. George's Hospital (appointed in 1872), founded the Otological Society of the United Kingdom which became the Section of Otology of the Royal Society of Medicine in 1907.

†After the deaths of Doctors Edmund Fowler and Philip Meltzer, Dr. Boies was made Chairman and Doctors Victor Goodhill and George Shambaugh, Jr. were appointed members of the committee. (Ed.)

Until 1940, the place of meeting was largely determined by the wishes of the President. Thereafter, it was selected by mutual agreement with the ear, nose and throat societies. In this history the early meetings will be reported quite fully; the twentieth century meetings will be summarized in less detail.*

The names of the officers, past and present, the titles of the papers, their authors, and the discussions are published each year in the Transactions; to include these would be redundant. Your committee, therefore, thought it advisable to tell of the available particulars of the formation and early years of the Society, the personalities of some of the members, and especially some of the discussions at the early meetings. These discussions reveal the remarkably comprehensive and scientific quality of the presentations and the high level of knowledge concerning the science and art of otology, even in the early days. Some of the later meetings will also be discussed in considerable detail. "Lest we forget; lest we forget."

To obtain the latest scientific information, many of the early members journeyed to London to see Joseph Toynbee, or to Vienna to see Adam Politzer and E. Zaufal and to examine Hartmann's tuning forks, the Galton and Edelmann whistles, special cures and other new instruments, so as to bring back their knowledge and instruments to "the States."

Remember, in the early days there were no efficient local anesthetics, only ice and salt freezing solutions, but ether, chloroform, and "laughing gas" were in use. There were then no so-called antibiotics or biochemicals, no x-rays, and no radium (at least the patients were safe from fall-out, burns, sterilization, and usually even from divorce), no properly plated or stainless steel surgical instruments, no electric hearing aids or audiometers, and none of the present elaborate facilities. However, in spite of no income tax, no inheritance tax, or any other taxes that amounted to much, they seemed to have had some financial difficulty even in the old days.

A few years before the founding of the American Otological Society, during the latter stages of the Civil War (called the "rebellion" up North), surgeons were well experienced in the laudable pus, in amputation for compound fracture type of surgery, and in the use of carbolic

*The history of the various periods is presented, with some editing, as written by the assignees.

and other acids, iodine, bromine, and bichloride of mercury, and other irritating concoctions. These and other antiseptics did much good, but also on occasion much harm. Many surgeons suffered from the "anti-novelty reaction" having seen so many fads flower for a while and fade away.*

A few years after the Civil War and the founding of the American Otological Society, the germ theory dramatically changed our treatments. Routine bleeding, starving, and purging patients for fever gradually ceased; cupping, leeching, acupuncture, and the use of setons† also faded away. Even uncomplicated mastoiditis was a major surgical problem and until World War II otitic meningitis was almost always fatal, as was brain abscess.

The first civilian ambulance service was organized in 1869 by Bellevue Hospital, New York. There were no telephones and no electric lights, only gas, kerosene, the sun and candle light were available, the latter particularly in house visits. Yes, there were house visits in those days. The expensive and often lazy habit of shunting every patient into a hospital had not evolved. With two exceptions, the Massachusetts Eye and Ear Infirmary, established in 1825, incorporated in 1827, and in 1880 a definite division of the two services; and the New York Eye and Ear Infirmary, established in 1820, special hospitals were just a gleam in the eye of their founders-to-be. The Manhattan Eye and Ear Hospital was established in 1869. The evolution of specialty hospitals and special services was slow. There were no otological departments in general hospitals. They were first organized by men who were primarily ophthalmologists. It was not until later that hospital otolaryngological departments were firmly established in the cities of the land, and even until today the eyes (eyes) have it; the nose (noes) are in the minority and the ears are even further from being with hi-fidelity attuned to the future.

In the 1860s and '70s office fees were one to three dollars, and sometimes less, particularly in the smaller towns. In the larger cities, charges for house visits were thought to be exorbitant, though only three to five dollars. The doctor made his calls in his gig or buggy and in the larger cities in his "little coupe," and as the song goes, he "had something to

*No "bugs" or "viruses" were known as causes of disease. It was not until 1904 that the spirochete was proved to be the cause of syphilis.

†"A skein of silk or cotton passed under the true skin and the cellular tissue underneath to maintain an artificial issue (a drainage)."

say." He wore with dignity a frock coat, striped trousers, a silk hat, and often carried a gold headed cane (which accoutrements were later adopted by undertakers, later called morticians). He brought to the bedside his little narrow black bag which contained every drug, instrument, and apparatus he might require, and sometimes a surprising assortment of bacteria. Unless he possessed an acceptable "bedside manner," he was doomed.

In their offices the "aurists" used the Argand burner and later the Welsbach mantle light, surrounded by a metal bullseye chimney which got as hot as hell and smelled to high heaven.

But we must never forget that there were expert surgeons in the old days despite the lack of laboratories and many medical and mechanical aids commonplace today. They had to be good to surmount their drug and mechanical handicaps. Let us be humble in the light of their prowess.

When rubber gloves were introduced by William S. Halsted, many surgeons, particularly otologists, refused to use them until well into the twentieth century (some do not use them at this late day). In spite of these handicaps, many lives were saved and much hearing preserved. Later, although tonsillectomy and stapes surgery never attained the "social status" of appendectomy, they certainly became "the vogue" for many years.

One of the deterrents to a high standing for otologists was the fact that the general surgeons were jealous of their pristine or prestigious prerogative of operating on any and every part of the body, and especially the mastoid, and upon the remunerative tonsils and adenoids. Unfortunately, in some hospitals even today this attitude tends to prevail, and concerning tonsils and adenoids, how about the pediatricians?

The first doctors and otologic society members to really limit their practices to otology were Clarence J. Blake of Boston and Albert H. Buck of New York City. This was resented by some and deemed rather an ostentatious gesture, the rhinolaryngologists especially, thinking that they were in some way being degraded by this "superspecialization."

Three of the early members of the American Otological Society were my professors in the College of Physicians and Surgeons, Columbia University. They were Robert F. Weir, general surgery; Herman

Knapp, ophthalmology; and Albert H. Buck, otology. All three were members of the American Ophthalmological Society and all but one founders of the American Otological Society. Dr. Knapp published the Archives of Otology and was its editor for many years. Later, for a while, this journal was published in conjunction with the Archives of Otolaryngology.

During its first one hundred years, the American Otological Society will have had sixty-nine presidents; fifty will have served one year; eleven, two years; four, three years; three, four years, and one, five years. Since 1916, no president has served more than one year except during World War II when there were no meetings (1943 and 1945). In 1877, because of a railroad strike, there was no quorum at the tenth meeting. Therefore, there were three years in which there was either no called meeting of the society or no quorum present.

Until 1966 all but four of the secretaries of the Society were eventually elected President of the Society. Dr. Thomas J. Harris was the only Secretary who, after being elected President, again served as Secretary (Secretary 1920-25 and 1928-40; President 1926). Dr. Isidore Friesner was the only man who served as Secretary only after serving as President (President 1939; Secretary 1941-45).

The largest number of active members was in 1944, when there were 119. The annual meeting attendance increased in the second fifty years and reached a total of 92 active members and 263 guests in 1960, totaling 355, and in 1964, 87 active members and 278 guests, a total of 365.

THE FOUNDING FATHERS AND
THE EARLY DECADES

1868-1899

THE FIRST MEETING THROUGH
THE THIRTY-SECOND MEETING

EDMUND P. FOWLER, M.D.

According to the preface to the first volume of the Transactions of the American Otological Society (1868-1874), the American Ophthalmological Society, which was founded in 1864, considered amending its constitution so as to admit "aural" subjects to their discussions because a large majority of its members were engaged in the practice of both ophthalmology and otology. From time immemorial throughout the nation and the world, the science and art of otology had been neglected by the medical profession. It was a stepchild of ophthalmology. Particularly in Ireland and the United States, treatment of diseases of the eye and ear were regularly grouped together.

THE FIRST MEETING

On July 22, 1868, nine members of the American Ophthalmological Society gathered together at the Ocean House, Newport, Rhode Island, where they were attending a meeting of that society. Their purpose was to organize the American Otological Society. This they did.* This was

*On page 77 of Dr. Maynard Wheeler's publication, "The American Ophthalmological Society: The First Hundred Years," it is stated that ". . . the meetings of the American Ophthalmological Society and the American Otological Society were planned contiguously by a combined committee of the two Societies, each Society meeting for two days."

not a called meeting of the American Otological Society because there was no American Otological Society until after it had been established. These gentlemen were:

C. R. Agnew, New York	O. D. Pomeroy, New York
F. J. Bumstead, New York	C. E. Rider, Rochester
John Green, St. Louis	C. A. Robertson, Albany
H. D. Noyes, New York	D. B. St. John Roosa, New York
E. Williams, Cincinnati	

No scientific business was transacted at the organization meeting but Dr. E. Williams was elected Chairman, Dr. C. E. Rider, Recording Secretary, and a constitution and by-laws were adopted. No limitations as to sex, color or creed were imposed.

The following additional gentlemen were then elected members:

J. H. Dix, Boston	S. S. Ludlum, New York
S. L. Frank, Baltimore	W. W. Moreland, Boston
J. O. Green, Boston	J. F. Noyes, Detroit
C. E. Hackley, New York	F. Simrock, New York
W. F. Holcombe, New York	R. F. Weir, New York
E. L. Holmes, Chicago	A. D. Williams, Cincinnati

The President appointed Dr. Roosa a committee of one on the "Progress of Otology," and for many years at each annual meeting one of the members (or a larger committee) presented a comprehensive review of what was going on in otology throughout the world. One is amazed at the high state of knowledge extant in the last third of the nineteenth century. Two great contributions to surgery in the nineteenth century were anesthesia and antiseptis, followed by bacteriological and immunological advances. A year before the founding of the American Otological Society, Lister first experimented with sterilized ligatures. The year the American Otological Society was founded, Claude Bernard began his epoch-making discoveries in the secrets of life. The era of biochemicals and antibiotics was not to arrive until much later.

THE SECOND MEETING

The second meeting (the first annual meeting) of the American Otological Society was held at the Atlantic Hotel, Newport, Rhode

Island on July 20, 1869. Nine members were present:

J. H. Dixon, Boston	E. L. Holmes, Chicago
John Green, St. Louis	H. D. Noyes, New York
J. Orne Green, Boston	C. E. Rider, Rochester
W. F. Holcombe, New York	D. B. St. John Roosa, New York
R. F. Weir, New York	

All of these gentlemen practiced ophthalmology and Dr. Weir also general surgery.

Some thought that the birth of the American Otological Society was premature, as evidenced by its neo-natal struggles for existence. It survived because of the devoted efforts of the small group of men who joined it earlier.

In the absence of the President, Dr. Dix was elected pro tem, and Dr. Herman Knapp of New York was invited to take part in the scientific session. Dr. Knapp was very positive in his opinions and I remember well an assertion he made many years later while operating upon an eye, when he inadvertently dropped an instrument on the floor and picking it up, proceeded to use it. When one of his students said that the instrument was not sterile he said, "Oh, the tears are antiseptic." And in this instance they appeared to be sufficiently so.

Drs. Holmes, Holcombe, Roosa, J. Orne Green and Rider were appointed a Committee of Membership, and upon the recommendation of the committee the following eight gentlemen were elected, bringing the membership up to a total of twenty-nine:

F. Abbott, Buffalo	H. G. Newton, Brooklyn
C. J. Blake, Boston	J. S. Prout, Brooklyn
H. Knapp, New York	W. W. Seely, Cincinnati
J. W. Lawton, Syracuse	H. S. Shaw, Boston

It will be noted that with one exception all of these gentlemen resided in the East.

Dr. Roosa possessed a dynamic personality and dominated, at least for many years, most of the societies and hospitals to which he belonged, especially those he had played a major part in founding. Naturally, some did not agree with his ideas, and whenever he was on the scene many

exciting debates and discussions ensued. There were other so-called "giants" in those days, and they enjoyed "animated" discussions; they pulled no punches at the meetings.

Dr. Roosa's progress report at this first scientific meeting was twenty-four pages in length and reviewed the otological advances made during the past year or year and a half. He stated that otologists might be said to be in a new era dating from the introduction of a practical method of examining the membrana tympani (Tröltzsch) and a simplification and improvement of means for ventilating the Eustachian tube (Politzer). He also remarked that, as regards the diagnosis and treatment of diseases of the outer and middle ears, the otologists were "in a position as fully advanced as that of any other department." However, he realized that they were sadly in need of more perfect means for differential diagnosis of infections of the middle and inner ear as well as positive knowledge as to the treatment of diseases of the nervous apparatus of hearing. In considerable detail, he discussed his subjects under the following headings which show the meticulous work then in progress and how, with the passing years, the basic problems of otology have not markedly changed.*

Auricle	Otitis Neonatorum
Aspergillus	Exostosis
Rivian Foramen (Notch)	Diffuse Inflammation of Meatus
Eustachian Tube	Membrana Tympani (Blood Supply)
Petrosal Mastoid Canal	Affections of the Middle Ear
Paracentesis of Tympanic Membrane	Voluntary Contraction of the Tensor Tympani Muscle

First Otological Congress

A paper by William W. Moreland of Boston, read by the Secretary, was on "Deafness in Connection with Pregnancy and the Puerperal Condition."

"Mrs. K., 38 years old, a stout, healthy looking woman, of strumous diatheses, although not very marked, consulted me some time since in relation to a deafness which, with certain remissions to be specified, had continued for thirteen years. It first came on immediately after her first miscarriage, thirteen years since. She has since miscarried five times.

*A lengthy abstract of this report was prepared but is omitted only because it took up too much space; however, it is most interesting reading.

On several of these occasions she flowed dangerously. The miscarriages have been at various periods, from six weeks to six months."

"During her pregnancy she always hears perfectly, sometimes, indeed, too acutely. Immediately after miscarriage or delivery, the hearing is again almost completely lost. During menstrual periods she is more deaf than at other times. For the last four years she has grown much more deaf. A noteworthy fact is that she had a sister affected in very much the same manner. Immediately after confinement with a child, at full term, she entirely lost her hearing. When the child was nine months old the mother died, so that no opportunity was afforded for observing whether the alternation of the presence and absence of the sense of hearing would occur, as in the patient's case. It is presumable, however, that it would have so occurred."

"The ears, in this patient, are almost wholly normal. There was slight redness of the meatus observed, but nothing of consequence. The membrana tympani were healthy in both ears. The bodily functions were all well performed. There was no headache."

"The phenomena are interesting in themselves, and seemingly mainly dependent upon the different states of the circulation existing during the pregnant condition, at the miscarriages, and at parturition. The nervous power was, of course, greatly affected by the above conditions; yet we hardly need resort to the undesirable and too often meaningless term, 'nervous deafness' to explain the circumstances. Anemic deafness would, perhaps, be a more proper designation; yet the phenomena occurred several times when there had been no more than the ordinary loss of blood in labor."

"Similar cases are noticed by standard authorities, although not precisely the same. The fact of the alternation mentioned, from almost total loss of hearing to recovery of the full power of the sense is not, so far as I have been able to examine authorities, noted."

Similar conditions reported by others and the sometimes accompanying symptoms of flushing of the face and tinnitus aurium were discussed.

Dr. Herman Knapp thought that there may be cases of deafness after parturition caused by anemia (anoxia), and analogous to anemic amblyopia under like conditions.

"A Case of Purulent Otitis Media Caused by the Nasal Douche, and Showing the Symptom of Double Hearing with Both Ears" was the title of Dr. Knapp's presentation. The dangers of the Weber nasal douche were set forth and its proclivity to cause purulent inflammation of the middle ear. One case reported was "remarkable for an accompanying symptom, not much known as yet, viz., double hearing with both ears." It was not stated in any of the cases reported which ear perceived correctly the natural tone, nor whether the pseudo-tone was higher or lower in pitch. The only well analyzed case of double hearing on record is that of Professor Von Wittich who himself suffered this phenomenon and stated that following a severe acute purulent otitis, he heard all tones in the middle octave of a piano half a tone higher with the discharging ear than with the healthy ear. His explanation is "that exudate in the tympanic cavity had, by altering the pressure in the fluid in the labyrinth, changed the tuning of the terminal filaments of the auditory nerve." The author states, "I suppose this symptom which, in analogy to diplopia, may best be termed diplacusis binauricularis, will be more frequently observed than has been the case hitherto, if our attention be turned to it. It may not only be of physiological interest, but may guide our prognosis and treatment by demonstrating that, in the respective cases, the labyrinth is either primarily affected or participates in some other disease."

THE THIRD MEETING

We have been unable to find minutes of the third meeting, which was in 1870, but it is certain that one was held because at the fourth meeting the name of Dr. A. H. Buck of New York appears and he read not only the report on the "Progress of Otology" but presented a case of horny growth from the auricle. It seems probable, therefore, that he was elected at the third meeting as also were Charles Laigh of New York, H. N. Spencer of St. Louis, and J. Pardee of New York, as all of these gentlemen read papers at the fourth meeting.

THE FOURTH MEETING

The fourth meeting was held at the Ocean House, Newport, Rhode Island, July 19, 1871. "There were seven members present." In addition to the papers mentioned above, at this meeting R. F. Weir presented a paper on "Unsuccessful Treatment of a Case of Nervous Deafness," and reported a case, "Tumor of the Cavity of Tympanum with Otitis Media Serosa."

Dr. W. W. Seely discussed "Some Cases of Polypus and Their Treatment." Dr. C. J. Blake exhibited anatomical and microscopic specimens, and Dr. R. L. Moorhead presented a case of abscess of the cerebellum. Dr. O. D. Pomeroy, Dr. H. D. Noyes and Dr. J. Orne Green also presented papers or apparatus. Dr. Pomeroy's paper was entitled "Results of the Aural Examination of Sixty Lunatics. . . ."*

All of these papers were erudite and penetrating and in many instances foretold what was to develop in the future.

The details of the business session are printed in Volume I of the Transactions and as with the following meetings, we will not repeat in detail these business sessions unless something occurred which we think would be of special interest to the reader.

THE FIFTH MEETING

The fifth meeting was held at the Ocean House, Newport, Rhode Island on July 17, 1872. There were six members present and the Nominating Committee reported favorably upon the names of J. Solis-Cohen, Charles H. Burnett and George Strawbridge, all of Philadelphia, and the first two, being present, took their seats as members immediately.

A bulletin of the papers to be read was submitted by the Executive Committee. Beginning with this meeting, and subsequently, we will not list all the papers because there was published in 1929 an index of all of the papers and their authors from 1872 to 1928 inclusive. There were verbal communications by Drs. R. L. Moorhead and J. Orne Green.

"A vote of thanks was passed to Dr. C. J. Blake for the very interesting and laborious report presented by him on the 'Progress of Otology'."

Dr. Blake remarked that the increase in otologic contributions during the past year was less than formerly. He attributed this largely to the influence of the late Franco-German War, and particularly because Germany was preëminently the country to which we had to look for important contributions to our specialty. He noted the increased perfection in the means and methods of examination with each succeeding

*It would appear that maybe our clientele has not changed so much from the old days. It would also appear that there were more than seven members present because ten are noted as participating in the meeting.

year, particularly in such departments as microscopic anatomy and pathology. It is to this class of contributions in otology that the papers of Doctors Gottstein, Newell and Hasse belong.

The embryology of the different bony and membraneous structures in the cochlea was discussed at length in these papers and differences of opinion occurred between Doctors Gottstein, Boettcher, Hensen, Deiters, Henle and other investigators.

Dr. Blake's report is too lengthy and detailed to abstract in this history; it covers 38 pages in the Transactions printed in Volume I. The bibliographical record for this covers two pages of fine print. It should be read, as it shows the meticulous and inspired work then in progress and the remarkably thorough understanding of the anatomy and physiology of the cochlea, even in 1872.

Dr. Blake mentioned a new edition of Henle, and an enlarged edition of Professor Roser's (of Marburg) book on general surgery including especially diseases of the external and middle ear and their treatment. He also mentioned the fourth edition of Vierordt's Physiology (1871), Chapter 18, in which 32 pages were devoted to the sense of hearing. This volume contained a short dissertation on "the value of the tones in the human voice and the acoustic characteristics of the vowel sounds." There was also a section discussing the "simultaneous perception of different tones," "the perception of tones nearly in unison," "consonant and dissonant tones," and "tones in combination." About ten pages were devoted to the physiology of the ear and how it receives and conducts sound vibrations. Other books by foreign authors are mentioned. He reported Gottstein's method of using a solution of chromic acid or hyperchromic acid to prepare his specimens for study of the minute structure and development of the cochlea. "To obtain a good preparation of the whole acoustic apparatus, especially of the lamina reticularis, Gottstein recommends the use of chloride of palladium, one part to 1,000," first hardening the preparations in one percent chloride of palladium solution for 24 hours followed by 24 hours in absolute alcohol before embedding. Gottstein's observations differed from those of Boettcher regarding the development of the osseous capsule, and also from both Boettcher's and Deiters' in regard to the reticulated connective tissues surrounding the neural elements in the modiolus and lamina spiralis ossea. His investigation of the lamina spiralis, membranacea crista spiralis and lamina basilaris led him to differ from the opinions of other writers. The opinions of Hensen, Deiters, Henle, Boett-

cher and Gottstein as to the origin, structure and function of the crista are discussed at length. The controversies over the radiating and longitudinal fibers of the auditory nerve are set forth in detail, as are the investigations of Rüdinger.

It would appear that O. D. Pomeroy and C. J. Blake pretty well dominated this meeting in spite of the presence of D. B. St. John Roosa, who presented two clinical papers: one on the severe deafness effects from quinine and one on impacted cerumen.

THE SIXTH MEETING

The sixth meeting of the Society was held July 16, 1873, in Rice's Rooms, Thames Street, Newport, Rhode Island. The President was H. D. Noyes. There were eighteen members present at this meeting.

Dr. John Green proposed an amendment to the by-laws, changing some of the verbiage. He also gave notice of an amendment making the annual meetings "at such time and place as might be agreed upon each year." Fourteen papers were read and referred to the publishing committee.

A most comprehensive report on the "Progress of Otology" (55 pages) was read by C. H. Burnett of Philadelphia. He noted an increase in the amount of new work over that of the previous year, and subtended to his report an extensive bibliography. He was, however, unable in the time at his command to carefully review many of these interesting papers. He noted publication of a new textbook by Dr. Roosa and called attention to the translations of the works of Rüdinger on the labyrinth and Waldeyer on the "Cochlea and Acoustic Nerve" in the last part of Stricker's "Manual of Histology." He reported that Dr. Hasse of Würzburg had recently published a new work on "Comparative Morphology and Histology of the Membranous Auditory Apparatus of the Vertebrates, together with remarks on the Comparative Physiology of the same." He mentioned that there was a treatise on "Tinnitus Aurium" by Delstanche, of Brussels, and one on "Progressive Hardness of Hearing" by Weber-Liel (F. E. Weber) of Berlin. He also mentioned several other books by French, English and German writers, particularly Helmholtz's work translated by A. H. Buck and Normand Smith.

In a letter dated April 13, 1873, Professor A. Politzer of Vienna informed the President of his forthcoming volume on the anatomy of the

ear with plates 70 centimeters long by 50 centimeters high with a proportionate magnification of various parts of the organs of hearing. The President suggested that the amount of literature was increasing so rapidly that the Society should appoint two members instead of one to prepare the annual report on the "Progress of Otology."

This year he endeavored to take up each point in order but some papers were mentioned in the bibliography only because of lack of time to give a full review.

The minutes of this meeting cover over 126 pages and as in the Transactions of subsequent years, is too long to discuss in detail in this history; however, your Committee on History urges you to peruse these papers. You will learn much that many of us have forgotten existed long before we were born.

At this meeting there were several papers on middle ear surgery and two papers by Dr. C. J. Blake, the first on the reaction of the auditory nerve to the galvanic current, and the second on the diagnostic value of high musical tones.

THE SEVENTH MEETING

The seventh meeting was held on July 15, 1874, at the Aquidneck House in Newport, Rhode Island. The Vice-President, C. J. Blake, presided. Thirteen members were present and by invitation, Doctors Dixon and Arnold.

After the Executive Session the thanks of the Society were given to Drs. C. H. Burnett and Blake for the very successful manner in which they had performed their duties as the Committee on Otology. C. S. Merrill of Albany was elected a member and the resignation of Robert Weir was accepted.

The report on the "Progress of Otology" was divided into three parts: Anatomy and Physiology; Pathology and Therapeutics; Reviews and Book Notices. As usual, a bibliography was appended to the report. This report covered 74 pages and meticulously discussed all aspects of the art and science of otology as reported in the literature during the past year.

A. H. Buck advanced a new theory on the mechanics of hearing and an explanation of the function of the semicircular canals. The whole report is most informative and many of the experiments, ideas, and observations foreshadow future discoveries by many years. A complete index to the three parts of the report is printed in the Transactions.

Following the presentation of this report in the Scientific Session, eleven papers were read.

THE EIGHTH MEETING

The eighth meeting, like the seventh, was held at the Aquidneck House, July 21, 1875. The President, Dr. D. B. St. John Roosa, was in the chair. Of the total number of fifty-one members, nineteen were present, and by invitation, Dr. Wheeler of Newport, Professor George F. Baker of Philadelphia, and Dr. William R. Hall of the United States Army.

It was resolved that the next meeting be held in New York City on September 15, 1876, and this was subsequently followed by a resolution "that the Committee on an International Congress be empowered by this Society to issue a call for an International Otologic Congress at such time and place as they shall see fit."

Dr. C. J. Blake reported that the Social Science Association desired to obtain the results of the examinations of the ears of school children and advised that blanks should be furnished all applicants to the Association.

The resignations of Dr. C. E. Hackley and Dr. J. Solis-Cohen were accepted, and Dr. George T. Stevens of Albany was elected to membership.

On motion of Dr. Blake, it was "voted, that Dr. Roosa be requested to write out his remarks urging the necessity of submitting acute diseases of the ear to treatment."

Dr. E. Williams called attention to the fact that the Western States felt themselves somewhat neglected in the selection of the place for the meetings of the Society, and understandably this feeling was to continue for some time into the future. However, as a beginning to move

in a westerly direction, it was resolved that the next meeting should be held at Put-in-Bay, Ohio.

The report on the "Progress of Otology" was presented in two divisions: Part I, Anatomy and Physiology, and Part II, Pathology and Therapeutics, by Drs. Blake and Mathewson respectively. This report consisted of fifty pages including the bibliography of the papers forming the basis of the report.

THE NINTH MEETING

The ninth meeting was held in Chickering Hall, New York City, on September 15, 1876. The President, Dr. D. B. St. John Roosa, was in the chair. Of the forty-seven members in the Society, only seventeen attended this meeting; eleven from the New York area and one from each of the following cities: Boston, Milwaukee, Chicago, New Bedford, Philadelphia, and Providence. The Secretary-Treasurer, Dr. J. Orne Green, was prevented from attending because of ill health.

It would seem that the men attending the meeting were those more otologically minded than the other members of the Society and this tendency to gradually separate otology from ophthalmology increased throughout the years until in the twentieth century only two or three members seriously practiced ophthalmology.

During the routine business session, Dr. Roosa declined renomination for President and C. J. Blake was elected to this office. A. H. Buck was elected to the Vice-Presidency and J. Orne Green was reelected Secretary-Treasurer. The resignations of Drs. O. D. Pomeroy, H. G. Newton and Williard were accepted.

Dr. Buck declined to serve on the Committee on the Progress of Otology, and Drs. Sexton and Spencer were appointed.

It was noted that the expenses of the hall and clerk amounted to fifty-two dollars for the day (think of that!). This was paid by the American Otological Society alone and not in part by the International Otological Society.

Drs. Herman Knapp, C. J. Blake and Pinknew were appointed a committee on organization of the International Otological Congress.

It was then moved and carried that the Society adjourn to meet in 1877 at the same time and place as the next meeting of the American Ophthalmological Society (we were still the step-child).

THE TENTH MEETING

The tenth meeting was called to meet at the Cataract House in Niagara Falls on July 25, 1877. Dr. C. J. Blake presided and in the absence of the Secretary, Dr. John Green was appointed Secretary pro tem.

Only Drs. Blake, H. D. Noyes, J. F. Noyes and John Green were present. The cause of the small attendance at Niagara Falls was a general strike among the railroad employees of the country. There not being a quorum, the meeting adjourned until the next day.

Since there was a continued absence of a quorum on the following day, the members unanimously recommended 1) that the President call the next meeting of the Society at Newport, Rhode Island (back to the old stamping ground!) and 2) that the Secretary invite the members who had prepared papers for the meeting of 1877 to send them to him so that they could be published in the usual form, and in the place of the usual annual volume of Transactions.

"On account of the small number of papers offered, no Transactions were published for 1877."

THE ELEVENTH MEETING

The eleventh meeting was held on July 24, 1878 at the Aquidneck House in Newport, Rhode Island. There were eighteen members present and by invitation, four guests: Drs. E. E. Holt, Portland, Maine; S. S. Mitchell, Philadelphia; W. H. Brown, Syracuse; and Lewis Fisher, New York City. There were eleven papers presented at this meeting and in addition, the report on the "Progress of Otology" which occupied 113 pages including an index of six pages; Part I was presented by Dr. J. J. B. Vermyne and Part II by Dr. S. Sexton. The complete Transactions contained 176 pages. In the business session, "oral communications" were made on several subjects. Officers for the ensuing year were elected: President, A. H. Buck; Vice-President, C. H. Burnett; Secretary-Treasurer, J. Orne Greene. The meeting adjourned at 10:30 p.m.

The report on "Progress of Otology" covered the development of the auricle in the human embryo as described by Lowew. It gave the results of Dr. Hunt's (of Boston) investigations on the development of the ear in the pig and quoted Rüdinger as confirming the opinion of Zuckerkandl in regard to the development of the external osseous meatus from two points of the annulus tympanicus.

The studies of Urbantschitsch were set forth, especially concerning the development of the middle ear which he thought is not derived from the first branchial cleft "but its formation must be sought for exclusively in the lateral divisions of the common naso-oropharyngeal cavity." The same author is quoted in regard to his observations of the external meatus in the embryo and in the newborn. He thought in many classes of animals the external ear, at the insertion of the auricle, was for a certain period of time entirely closed off in different ways.

Gruber's opinion in regard to the development of stapes and Gegenbaur's analysis of Vrolik's treatise on its ossification were discussed at length, as was Teleostei's report on the cranial bones and especially the temporal bones in mammals, and reference was made to Politzer's investigation of the styloid in Blake's "Report on the Progress of Otology," made in 1875.

Moldenhauer is quoted as agreeing with Rüdinger in regard to the formation of the canalis facialis, and agreeing with Politzer as to the styloid process. Moldenhauer disagreed with the views of Wreden and Wandt in regard to the gelatinous mass which fills the middle ear in the fetus and the new-born infant.

There were several papers on the defective development of the organ of hearing and many cases were discussed in detail. Burkner's statistics showed that the differences in the defect in the sexes was striking. It occurred fully twice as often in females as in males. He believed this was further proof of the congenital character of the defects.

C. H. Burnett's treatise on the ear was especially clear and concise in his treatment of the anatomy and physiology, giving the latest views of the best authorities. It was pointed out that the external auditory meatus is generally tortuous in whites; in the negro it is so straight that usually no speculum is needed to view the membrana tympani or even to require reflected light.

Moldenhauer's communications on comparative histology of the tympanum was discussed and sixteen conclusions set forth.

It is interesting that "Gowers, in a paper in the British Medical Journal of March 10, 1877, on diagnosis and treatment of auditory nerve vertigo, agrees with Goltz, Mach, and Breuer, that a variation in the pressure of the endolymph, which fills the labyrinth cavity, is the cause of the phenomenon."

Nowadays, we use the more intriguing term "hydrops of the labyrinth," and imagine that we have better described our hypothesis as to the cause of "auditory vertigo."

Many of the physiological and patho-physiological contributions and discussions were, in these long ago times, remarkably like those we hear in the sixth decade of the twentieth century meetings.

Extensive quotations from the reports of Lord Rayleigh were set forth, particularly concerning binaural and monaural hearing and paracusis loci. Urbantschitsch's experiments with tuning forks heard by bone conduction were reported. The conclusion was that "the perception of vibration of tuning forks depends not only upon the point of application, but also upon the height of the tone."

The theories of Dennert and Helmholtz and others regarding combination tones and difference tones were discussed at some length; also, the upper and lower tone limits which, in spite of no satisfactory audiometric determination were remarkably accurate in procuring data and the conclusions therefrom.

Professor Tyndall's experiments in fog signals and other matters covered by his report noted some of the most important inventions in the dominion of sound. The members of the Society were reminded that they should be familiar "with the experiments conducted by Blake and Graham Bell, while investigating the manner in which articulate sounds were produced, in which the human membrana tympani was used as a phonograph, tracing on smoked glass the curves produced by different vibrations. A suggestion by Blake in regard to the means, whereby an electric current could be thrown into complex waves by communicating complex vibrations from a membrane, like the membrana tympani, to the armature of the magnet, gave the clue to the invention

of an instrument which has already gained great reputation and has been put to many practical uses. We mean the electric telephone of Graham Bell."

The English medical journals discussed these findings, especially as to their application in medicine, and Kirk Duncanson, in the British Medical Journal of March 9, 1878, published a paper on "the electric telephone as a means of testing or measuring the hearing power." Blake lectured on "Sound and the Telephone" before the London Society of Telegraph Engineers. It should be mentioned that Edison's phonograph, or talking machine, was suggested by the vibrations of the metal plate of the telephone. These years indeed witnessed the birth of many inventions which were to revolutionize human living.

"The phonograph shows that the majority of articulated sounds are producible without aid of the peculiar resounding cavities of the mouth and nose, and some experiments conducted by Jenkin and Ewing may prove that the theory of Helmholtz, that vowel sounds are due to the prominence of notes of absolute high pitch, is not tenable."

Dr. J. J. B. Vermynne quoted the following introduction from an editorial review on "Recent Science" in the "Nineteenth Century": "With the invention of the phonograph, following hard upon that of the telephone, it might be fairly assumed that acoustic science had spent itself, and that it could afford for a while to lie fallow." Needless to say, it did not lie fallow; the science of acoustics progressed with leaps and bounds. The wonderful thing was that it was now possible by means of the microphone to magnify feeble sounds, even those which were inaudible to the unaided human ear, until they could be heard with almost painful intensity at a receiving station miles away. Professor D. E. Hughes did not claim this as an invention but as a discovery. By means of his inventions, the delicate rubbing of a feather or the walk of a fly could be intensified so as to be almost painfully loud. Diagnostic uses for the microphone were explored, particularly for auscultation of the heart and lungs.

Dr. Samuel Sexton reported Part II, "Pathology and Therapeutics," and quotes from the contributions from various parts of the world. The dentist's drill is mentioned as useful in bone surgery, and in December, 1872 (the year I was born) the Fowler family dentist, Dr. D. H. Goodwillie, constructed a machine using the dental engine for the removal of necrosed bone of the mouth and nares and recom-

mended it to otologists for bony growths in the meatus and for trephining the mastoid. Both knives and burrs could be used in these dental machines (over 90 years ago).

References are made particularly to syphilitic affections of the ear and it was believed by one author that, next to scarlet fever, inherited syphilis "may be regarded as the most fruitful cause of deaf-mutism" in children, and Sexton agreed with this conclusion.

Dr. W. R. Gowers' series of articles on the diagnosis of auditory vertigo, Ménière's vertigo, "were discussed and also 'gastric vertigo'."

A multitude of otological problems were set forth and most of them are still with us in varying degrees. This report by Sexton was most informative and thorough.

Reference was also made to several books on otological problems published during the year. The Transactions of this meeting are printed in Volume II.

THE TWELFTH MEETING

The twelfth meeting of the Society was held at the Aquidneck House in Newport, Rhode Island on July 23, 1879; the President was A. H. Buck. The Society now contained forty-six active members and of this number, eighteen attended this meeting. In addition, the following five invited guests were present: Drs. J. A. Andrews, Staten Island, New York; E. Hutchinson, Utica, New York; S. Theobald, Baltimore, Maryland; A. C. Heyl, Philadelphia, Pennsylvania; E. E. Holt, Portland, Maine. Dr. Lucien Rowe of Buffalo was elected to membership and the following nominations for membership were made: Drs. E. T. Ely, New York; R. E. Brandeis, New York; Samuel Theobald, Philadelphia; J. A. Andrews, Staten Island; Read McKay, Wilmington, Delaware; E. E. Holt, Portland, Maine, and for Honorary Membership: Professor Alexander Graham Bell, Cambridge, Massachusetts.

Following the business meeting, the report on the "Progress of Otology" was given by Drs. J. J. Vermynne and D. Webster. This was the last one to be given as it was determined at this meeting to dispense with such reports.

There were verbal communications especially concerning the use of chromic acid for polypi, hydrobromic acid, and the bromide salts for tinnitus aurium. Dr. J. S. Prout showed a punch for making an artificial drum membrane and a pair of forceps for applying it.

Papers were read on the pathology of the temporal bone, Menière's disease, trephining the mastoid and anomalies of development. There was exhibited a cochlea discharged from the ear of a child two years old. There were also several clinical reports.

It should be noted that the American Journal of Otology made its first appearance in January of this year. In this journal, a very prominent position was given to physiological acoustics; it contained an excellent review of the current literature on anatomy, physiology and acoustics. This review and extensive articles on the progress of otology by Steinbrugge, Wolf and Lowew appeared (printed in English) in the Archives of Otology, as did a synopsis of otological literature.

An index to the articles mentioned in this report was arranged alphabetically in the order of the authors' names.

THE THIRTEENTH MEETING

This meeting was held in the Masonic Building in Newport, Rhode Island, on July 21, 1880. Since both the President and Vice-President were absent, the Secretary, J. Orne Green, called the meeting to order and he was elected President pro tem. Only sixteen members of the total of forty-eight were present, and in addition by invitation, Drs. W. H. Carmalt, W. R. Birdsall, S. B. St. John, and A. G. Heyl.

At the business meeting, the active and honorary members nominated at the prior meeting were elected. Six men were proposed for active membership.

Following the business session, there were verbal communications and exhibitions of pathological specimens, and an exhibition of instruments. Papers were read by Dr. H. Knapp on bone conduction, and by Dr. C. J. Blake on a specimen of dead bone containing portions of the cochlea, labyrinth and semicircular canals, and on exostoses in the external meatus of the crania of the mound builders. There was discussion of papers on the following subjects: aneurism of the middle

meningeal artery, osteosclerosis of the mastoid, ear affections of inherited syphilis and branchial fistulae of the external ear.

At this meeting, it was determined that the next meeting of the Society would be held at the same place as that of the American Ophthalmological Society but preceding the latter by one day. It was thus evident that the American Otological Society was gradually becoming independent of the organization whose members gave it birth.

THE FOURTEENTH MEETING

The fourteenth meeting was held in the Masonic Building in Newport, Rhode Island on July 26, 1881. The President was J. Orne Green. Of the fifty-one active members of the Society, eighteen were present, and by invitation, Dr. Gorham Bacon and Dr. N. H. Brown, both of New York. The following members were elected: Drs. W. H. Carmalt, New Haven; F. B. Loring, Washington; S. B. St. John, Hartford; and R. A. Reeve, Toronto, bringing the active membership up to fifty-five.

At the morning and afternoon sessions, there was extensive discussion of the papers on treatment of suppurative otitis, the value of operations with tympanic membrane incision, the tuning fork in diagnosis, and several other subjects, particularly sudden deafness in mumps, and on the selection of test words according to their logographic value.

The report of this meeting with a complete index is the last contained in Volume II of the Transactions of the Society.

Volume III of the Transactions contains the account of the five meetings held from 1882 to and including 1886. It will be noted that the percentage of the active members attending these annual meetings was not large. This may have been due in part to the fact that there were still many members who were more interested in the eye than in the ear; in other words, the "ayes" still had it, and the voice of the "noes" was not heard in the land, hence there was no mention of the term "allergic rhinitis."

During these five years, the Society gradually grew in active membership, in the attendance at meetings, and in the number of members whose primary interest was otology.

For several reasons it will be necessary for the writer of this period of the history to report the subsequent meetings in less detail, the chief reason being the avoidance of making the history too voluminous. However, the advent of important discoveries in the anatomy, physiology, and pathology of the hearing apparatus and the etiology, management and treatment of its disorders will be noted.

THE FIFTEENTH MEETING

The fifteenth meeting was held in the Fort William Henry Hotel, Lake George, New York, on July 24, 1882; J. Orne Green was in the chair. Nineteen members attended.

At this meeting, E. E. Holt read a paper on "Boilermaker's Deafness," and "Hearing in a Noise," and on attempts to devise efficient ear stoppers to prevent acoustic trauma. There were several papers on the extension of ear disease to the brain and its membranes, in some instances the symptoms being delayed for a year subsequent to the primary otitis.

Dr. Polley, in discussing the treatment of aural polyps, thought there was danger in removing them because doing so might result in extending the inflammation to the brain. Instances were reported of acute exacerbation of the purulent otitis and death from meningitis following polyp removal. The use of caustics, antiseptics, and other treatments was extensively discussed at this meeting.

THE SIXTEENTH MEETING

The sixteenth meeting of the Society was held at the Hotel Kaaterskill, Catskill Mountains, New York, July 17, 1883. Twenty-three members and six invited guests were present. Four new members were elected, bringing the total active membership of the Society to sixty-one. President J. O. Green congratulated the members on the state of the organization. He called attention to the fact that three papers were on mastoid disease, and that as the discussions usually drifted toward the subject of brain complications, he would call for the reading and discussion of these papers in sequence.

The scientific program at this meeting showed evidences of expanding in scope, and in the participation of more members in the discussion than in previous years. A lively discussion was held upon the

advisability and efficacy of poulticing and as to whether it affected anything but the superficial tissues, not the mastoid bone. The effects of a pre-incision over the mastoid process perhaps supplemented by leeches was also discussed at some length. The statistics presented by the different men varied greatly.

Dr. C. H. Burnett stated he was generally against the mastoid operation but that after leeching and perhaps "Wilde's incision" had been made and other measures had been adopted without relief, he then operated, and that "certainly 70 per cent recover (*i.e.*, heal) and no more than 10 per cent die." He thought this showed the operation was not a very dangerous one and that "we should not throw up our arms and hands against it."

THE SEVENTEETH MEETING

The seventeenth meeting was held in the New Grand Hotel, Catskill Mountains, New York, on July 15, 1884, the Vice-President, J. S. Prout of Brooklyn, New York presiding. Twenty-three members attended plus three invited guests.

Dr. A. H. Buck opened the discussion on the two papers on acute and chronic mastoiditis. He also read a paper on the use of large doses of potassium or sodium iodide in cases of rapid loss of hearing supposed to be due to syphilitic disease.

Dr. S. Sexton of New York City exhibited photographs of various ear diseases and malformations and the technique for reattachment of the auricle after its almost complete severance from the head with stenosis of the meatus. He also spoke on the influence of dental irritation on the ear, and showed an instrument for removing the tonsils. He further discussed the use of peroxide of hydrogen in ear disease.

Several papers were referred to the Committee on Publications. These dealt with necrosis of the labyrinth with facial paralysis and partial recovery, reflex aural phenomena from nasopharyngeal catarrh, brain tumors and destruction of the labyrinth, tinnitus aurium, optic complications such as neuritis; other subjects included meningitis, hematomas, devices for treatment of nasal and postnasal inflammations, and the possibility of regaining hearing power by auditory training of deaf mutes. Several improvements in instruments were exhibited.

At this stage of progress in otology, it was not so much the complete evisceration of the mastoid cells which engaged the attention but rather "trepanning" and perforating the diseased mastoid, the choice of timing for the operation and the relative risks and advantages of evacuating the pus through the tympanum and posterior wall of the external meatus, or by perforation of the mastoid cells externally.

Dr. Buck discussed at some length the difficulties of determining whether or not, in some instances, a tuning fork was actually heard by bone conduction or felt as a vibration.

A paper by W. W. Seely of Cincinnati, Ohio on the "jequirity" treatment of suppurative otitis media elicited considerable discussion. A powder made of fresh jequirity seeds was used in South America for the cure of granular eye lids and appeared to depend upon a ferment. There appeared to be considerable variation in the reactions obtained from this, not only in ophthalmology but in otological practice.

THE EIGHTEENTH MEETING

The eighteenth meeting was held in the Pequot House, New London, Connecticut on July 14, 1885. C. H. Burnett of Philadelphia was in the chair. Twenty-seven members attended and in addition an honorary member, Professor Alexander Graham Bell; also by invitation, six guests.

Dr. S. Sexton read a paper on a "conversion tube" for the oral instruction of deaf mutes. Professor Bell addressed the Society, calling attention to the large number of deaf mutes in institutions who still had a certain amount of hearing and, therefore, should be judged as hard of hearing people and not as deaf mutes. There was a voluminous discussion following the paper of Dr. Charles Kipp, who exhibited the work of Retzius on the anatomy of the organ of hearing of vertebrate animals; also on cocaine in deadening the pain of acute otitis media, and on the paper of Dr. Burnett on the relation between "chronic catarrhal otitis media" and "chronic catarrhal rhinitis."

In the evening session, Dr. H. Knapp discussed the desirability of adopting a uniform method of recording the results of examination of the acuteness of hearing. It was proposed that Dr. Knapp present his methods to the meeting of the German naturalists at Strasbourg in

1886 and that a committee be appointed to report in 1886 on a uniform system of recording the hearing power.

The following amendment to the constitution was offered and adopted: "To add to III, Members, the following paragraph: 'Candidates for membership shall have been engaged in the practice of aural surgery for at least five years, shall have given evidence of satisfactory scientific attainments, and shall have conducted themselves in conformity with the ethical rules of this Society'."

THE NINETEENTH MEETING

The nineteenth meeting was held at the Pequot House, New London, Connecticut, July 20, 1886 with Dr. J. S. Prout presiding. There were twenty-six members present and by invitation, five. Six applicants were elected to membership in the Society.

After the reports of the various officers and chairmen of committees were read, two interesting papers were given by Dr. S. Sexton of New York. The first was entitled "The Diagnosis and Treatment of Acute and Chronic Purulent Inflammations of the Middle Ear Tract and Their Complications," and the second, "A New Operation for the Radical Cure of Chronic Purulent Inflammation of the Middle Ear Tract." Of his 20,000 cases, 2,366 were selected for operation; 12 of the patients died. The anatomy of children's and adults' ears was described. Treatment appropriate to the type of inflammation and the complications was discussed in detail. Case histories were reported at length and various procedures and instruments were described for obtaining proper drainage of the middle ear tract. Indications for operation were discussed.

Having noticed a number of cases where the transmitting mechanism had been entirely destroyed by disease and a spontaneous cure had followed, it occurred to Dr. Sexton that the curative action of nature might be imitated with advantage. He, therefore, removed the drum and the contents of the middle ear cavity. The first operation was done during the previous year and to avoid the danger from the gas light illumination in connection with the administration of ether, *he used an electric light attached to a head-band*. He first tried nitro-oxide gas but stated that the spasmodic movements that usually took place when this agent was used made it necessary to abandon the agent.

The first operation and a number of similar operations were successful in effecting a cure. Several new instruments useful in the operation were described. A lengthy discussion followed, particularly as to which cases were more suitable for his operation and which were more suitable for opening by way of the mastoid cortex.

There were two verbal communications: one by Dr. J. S. Prout on the use of adhesive plaster in a case of perforation of the membrana tympani, and one by Dr. Theobald on the use of apparatus for rarifying and condensing the air in the external meatus.

THE TWENTIETH MEETING

The twentieth meeting was held at the Pequot House, New London, Connecticut, July 19, 1887. Of a total of sixty-seven active members, twenty-five were present plus six invited guests. Four new members were elected.

During the business meeting, Dr. H. Knapp reported for the Committee on "The Examination of the Power of Hearing and How to Record its Results," and the Committee was discharged with thanks. The human voice, the watch, Politzer's Acoumeter, tuning forks and the Rinne test were advised.

Papers on the removal of an exostosis from the external auditory meatus by Dr. C. H. Burnett, the differential diagnosis between infections of the middle ear and those of the labyrinth by Dr. D. St. John Roosa, and the use of powders and an efficient powder blower by Dr. E. E. Holt were presented. Also, on the last subject, there was a paper read by Dr. S. Theobald.

THE TWENTY-FIRST MEETING

The twenty-first meeting was held July 17, 1888, for the fourth consecutive time at the Pequot House in New London, Connecticut. Out of the listed seventy-six members, only twenty-seven attended. There was no notation of the cause for this number of absentees (they should have recovered from the big blizzard of March 12 by then!). Four new members were elected.

At the morning and afternoon sessions, among others, the following papers produced considerable discussion: one by Dr. Burnett on Menière's disease relieved by excision of the membrana tympani and the malleus; a paper by Dr. A. H. Buck, "Reflex Influences in the Production of Naso-pharyngeal Catarrh." Dr. Buck also exhibited specimens from the ear of an elephant and reported a case of false drum membrane. Dr. C. Kipp reported three cases of transient bilateral horizontal nystagmus in connection with purulent inflammation of the middle ear.

In addition to routine matters, it was voted that the meeting "to be held in Washington in September be considered a special meeting and that it be devoted exclusively to the consideration of scientific subjects." This meeting was held at the Arlington House, Washington, D. C. and was part of the first triennial meeting of the Congress of American Physicians and Surgeons. Eighteen members attended.

The sessions were declared open to the profession and the following gentlemen took part in the discussions: Drs. R. M. Ray, Beverly Robinson, R. Tilley and R. F. Weir.

THE TWENTY-SECOND MEETING

The twenty-second meeting was held at the Pequot House, New London, Connecticut on July 16, 1889. Of the seventy-nine listed active members, only twenty-nine attended and, by invitation, three. Five new members were elected.

Among the excellent papers presented there was one by S. O. Richey on the "Functions of the Intra-Tympanic Muscles."

THE TWENTY-THIRD MEETING

The twenty-third meeting was held at the Hotel Kaaterskill, Catskill Mountains, New York, July 15, 1890. Of eighty-three listed active members, twenty-two attended (little more than one-quarter), and in addition, five invited guests. Five men were elected to membership.

The American Otological Society meetings were still being regularly held preceding the regular meetings of the American Ophthalmological Society and at the same place.

Several interesting papers were read, particularly those by Dr. A. H. Buck, Dr. H. Richards, and Dr. O. D. Pomeroy.

THE TWENTY-FOURTH MEETING

The twenty-fourth meeting was held in the Arlington House, Washington, D. C., September 22, 1891 in connection with the Second Congress of American Physicians and Surgeons. Of a total of eighty-five active members, twenty-seven were present plus six invited guests. President G. Bacon announced that invitations had been extended to a number of foreign otologists but all had refused because of distance or the lateness of the season. Three new members were elected.

Several papers on acute mastoiditis were read, and the possible prevention of deaths from meningitis was discussed.

Dr. H. Richards read a concluding report on the anatomy of the elephant's ear and discussed in detail some of the most unexpected and peculiar formations in the ear of this animal. Four new illustrations were shown to clarify what had been set forth in the two papers on this subject already given to the Society by Drs. A. H. Buck and H. Richards.

THE TWENTY-FIFTH MEETING

The twenty-fifth meeting was held in the Fort Griswold House, New London, Connecticut, July 19, 1892. Of eighty-six active members, thirty-three attended and nine other otologists by invitation. Three new members were elected.

During the business session, a uniform nomenclature was proposed by Dr. E. D. Spear of Boston and, with the endorsements of Drs. C. J. Blake and J. Orne Green, was referred to the Business Committee for report. This nomenclature had been used at the Massachusetts Eye and Ear Infirmary in Boston.

Purulent mastoiditis with the techniques of operation was discussed in several papers. Dr. F. L. Jack reported a remarkable improvement in hearing by removal of the stapes and Dr. Blake on middle ear operations. These papers were discussed at length and instruments were shown (think of this, seventy-five years ago!).

A temporary loss of the use of the right hand obliged Dr. Blake to place the greater part of the operative work of his clinic in the hands of Dr. Jack, who thus had an opportunity to demonstrate the feasibility of the operation of stapedectomy on a human subject in a larger number of cases than had as yet been recorded anywhere. These operations were carried out at the suggestion and with the valuable advice of Dr. W. S. Bryant.

THE TWENTY-SIXTH MEETING

The twenty-sixth meeting was held at the Fort Griswold House, New London, Connecticut, on July 18, 1893. There were twenty-nine active members present and four invited guests. Five men were elected to active membership, which made that list total eighty-nine.

Seven papers were read in the morning. Those of Dr. A. H. Buck on "The Strongly Counter-Irritant Effects of the Usual Mastoid Operation," papers by Dr. T. Pooley and Dr. H. Knapp on brain surgery, and one by Dr. Emil Gruening on "A Case of Fatal Thrombosis of the Lateral Sinuses, with an Autopsy," were particularly interesting. Dr. C. J. Blake made a report on the Aural Clinic of the Massachusetts Eye and Ear Infirmary for the quarter ending July 1, 1893.

In the afternoon, among the presentations was one by J. Orne Green, who presented and discussed a valuable collection of pathological specimens, and among the papers read was one by Dr. Blake on "Stapedectomy and other Middle Ear Operations," and one by Dr. Jack on "Further Observation on the Removal of the Stapes." Dr. Burnett's paper on "Surgical Treatment of So-called Menière's disease (Aural Vertigo)" was read by title. Several ingenious instruments were presented by the members.

THE TWENTY-SEVENTH MEETING

The twenty-seventh meeting was held at the Arlington House, Washington, D. C., May 29, 1894, in connection with the Third Triennial Congress of American Physicians and Surgeons. Only twenty-five active members were present and seven invited guests. Seven men were elected to active membership in the Society at this meeting, making the total of active membership ninety-six.

Among the subjects discussed in the papers presented at this meeting were: brain abscess; death following suppurative otitis; chronic purulent otitis; surgical relief of Menière's disease by "liberation of the stapes;" the improvement of hearing by middle ear operations; mastoid operations with complications; successful operations on sinus thrombosis; lateral sinus phlebitis; remarks by Professor J. C. Gordon of the National Deaf-Mute College and references to the working of the "Volta Bureau."

It was moved and carried "that it is the sense of this Society that at each Institute for the Deaf there should be a competent aurist to make careful examination of the condition of the ears of the inmates." Up to the present, this had not been customary in institutions for the deaf.

THE TWENTY-EIGHTH MEETING

The twenty-eighth meeting was held at the Pequot House, New London, Connecticut, July 16, 1895. There were thirty-two active members present and three invited guests. Four candidates were elected to membership at this meeting.

The following addition was made to the Constitution: "That all members elected hereafter shall bear the title of Associate until they shall have attended three annual meetings of the Society, when they shall, ipso facto, become full members."

In the morning, there was a demonstration of pathological specimens and seven papers were read on mastoid disease, one paper on foreign bodies in the external auditory canal, one on cartilaginous exostoses of the ear, and one on sarcoma of the neck causing deafness.

Among the nine items in the afternoon session, there was an exhibition of instruments and photographs of the tympanic membrane with a plea for more frequent cadaver surgery in teaching. Middle ear inflammations and foreign bodies were discussed.

THE TWENTY-NINTH MEETING

The twenty-ninth meeting was held at the Pequot House, New London, Connecticut, July 14, 1896. Of one hundred and six active and associate members, only twenty attended this meeting and, by invita-

tion, seven non-members. No reason was given for the sparse attendance. Possibly it was because fewer ophthalmologists were now attending otological meetings.

At the morning session, there were four papers on suppurative otitis media and its complications, four on brain involvement, a case of facial paralysis from caries of the Fallopian canal without involvement of the mastoid cells, an analysis of 114 cases of mastoiditis, and a case of erysipelas following opening of a mastoid abscess.

At the 3:00 p.m. session, Dr. C. J. Blake discussed the use of drills for the mastoid operation.

At the 5:00 p.m. session, Dr. E. Gruening proposed for honorary membership Sir William Macewen of Glasgow. This was seconded by Dr. Blake and subsequently favorably recommended by the Committee on Membership and passed by the Society.

In the afternoon session, Dr. B. A. Randall exhibited stereopticon illustrations of anatomical photographs of the ear, both pathological and non-pathological.

The number of ophthalmologists attending meetings was now gradually diminishing and the number of otolaryngologists was increasing.

THE THIRTIETH MEETING

The thirtieth meeting of the Society was held in Washington, D. C. on May 4, 1897, in connection with the Fourth Triennial Session of the Congress of American Physicians and Surgeons. Thirty-two active members were present, thirteen being from New York; also, ten invited guests. Four were elected to membership. Dr. C. J. Blake read a paper on the relationship of otology to general medicine before the meeting of the Congress; also, a paper on "Goutiness in its Relation to Diseases of the Ear."

Among other papers read was one by Dr. E. B. Dench on "The Differential Diagnosis between Diseases of the Sound-conducting and Sound-perceiving Apparatus." Dr. G. Bacon read a paper on the most important symptoms indicating operation in mastoid disease, and another paper on extreme deafness with great improvement in the hear-

ing following the use of pilocarpine. Dr. Tansley's paper was on "Deviated Nasal Septa in Ear Diseases, with a New Operation for their Correction."

THE THIRTY-FIRST MEETING

The thirty-first meeting was held at the Pequot House, New London, Connecticut, July 19, 1898. Of ninety-seven active and associate members, forty were present plus eight invited guests. Eight new members were elected at this meeting.

One of the most interesting papers was read by Dr. H. Knapp on "The Functional Examination of the Ear With an Exhibition of Bezold's Continuous Tone Series."

THE THIRTY-SECOND MEETING

The thirty-second meeting was held on July 19, 1899 at the Pequot House in New London, Connecticut. It will be noted that the custom of meeting at the same time and place as the American Ophthalmological Society was still maintained, although the number of men who were also ophthalmologists in the Otological Society was gradually diminishing.

Of a total of ninety-seven active and associate members, thirty-two were present, plus seven invited guests. Three recommended candidates were elected and the names of three candidates were, upon request, carried over until the next meeting.

With three exceptions all of the papers were on mastoiditis, its complications or operative techniques.

Dr. C. J. Blake proposed that through a committee appointed for the purpose, there be co-operation between the American Otological Society and a committee of the National Association of Teachers of the Deaf and Dumb in order to secure systematic otologic, rhinologic and laryngologic examinations of pupils in deaf-mute schools.

THE OLD ORDER PASSETH

1900-1919

THE THIRTY-THIRD MEETING THROUGH THE FIFTY-SECOND MEETING

MOSES H. LURIE, M.D.

At the meeting of the American Otological Society on May 1, 1900, in Washington D. C., there were thirty-nine present from its membership of one hundred. Twelve were associates.

The program was a typical one of the Society. The following seven papers and their authors are listed:

1. Herman Knapp, who introduced the use of cocaine in this country: Extensive caries of the mastoid and petrous portions of the temporal bone. Operation: Recovery with restoration of perfect hearing and preservations of the external ear canal and the tympanic cavity.
2. Hiram Woods: "A Fatal Case of Sinus Thrombosis with Metastatic Abscess."
3. Edward B. Dench: "A Case of Sinus Thrombosis, Complicated by Cerebellar Abscess."
4. Edward Friedenber: "Pneumococci Perisinusitis."
5. Gorham Bacon: "A Case of Chronic Purulent Otitis Followed by Abscess in the Temporosphenoidal Lobe and Also on Abscess in the Cerebellar."
6. Charles H. Burnett: "Chronic Ear Vertigo: Its Mechanism and Surgical Treatment."

7. B. Alexander Randall: "The Clinical Anatomy of the Eustachian Tubes."

It is of interest that all the papers except one were on surgical problems, the complications and the treatment of them. One was on anatomy.

The men presenting the cases were leaders in their speciality and represented the specialty practiced in New York and Philadelphia. The large majority of the members were from the Atlantic Eastern states, that is, New York, Pennsylvania, Massachusetts, Maryland and Washington. The Society at this time had a number of otologists who were known not only in the United States as leaders but also in Europe. For those who might be interested, Politzer's History of Otology, Volume II, will testify to the standing of the members.

All were teachers in the various medical schools and hospitals. They were all prolific writers on various aspects of otology. That a number of them were a little ahead of their time can be seen by further examination of their work.

W. Sohler Bryant, in 1904, demonstrated a phonographic acoumeter for the testing of hearing, a device using Edison's phonograph for the source of sound which tested the hearing both monaural and binaural. This was an attempt to put the testing of hearing on a physical basis, but it was not until the advent of the IA audiometer that this was accomplished.

Eugene Crockett reported on the removal of stapes and destroying the labyrinth through the middle ear by way of the oval window for Menière's disease. He reported thirty cases with failures in two, in which the stapes were not removed. This technique was forgotten and renewed fifty years later.

Clarence Blake led the great controversy that ran for years through the Transactions on the blood clot method of healing mastoid operations.

Drs. Edward Dench and Fred Whiting reported their treatment of brain abscess. The otologist in the early half of the twentieth century treated the brain complications secondary to ear disease.

As the period progressed toward 1910, physiology, bacteriology, and blood determinations began to creep into the reports of the members. The use of the lumbar puncture for diagnosis of meningitis was reported. The controversy about ligation of the jugular veins in septicemia, incising, and draining of the lateral sinus runs steadily through the Transactions.

George E. Shambaugh worked on the circulation of the labyrinth and his embryological reports occur regularly in the Transactions of the Society.

By 1909, the younger men, who were associate members for a year before becoming full members, began to make themselves felt in the Society and in the progress of otological skills.

Drs. Jack, Randall, and Gruening still played important roles and were Presidents of the Society.

In 1908, the Society had its first symposium on otosclerosis: Thomas J. Harris on Etiology, Sohler Bryant, Pathology and Prognosis, and George E. Shambaugh on Symptoms and Diagnosis of Otosclerosis. The three papers were discussed by E. B. Dench, Arthur B. Duel, during the discussion, brought up the question of inheritance. He mentioned "the Abbot of Burgn (Mendel) who died about twenty-five years ago and dabbled in science and published some papers on the crossing of peas and hawk weeds occurring in his garden." He brought up the question of preventing intermarriage of those who have otosclerosis.

At the same meeting, Dr. Edward Friedenbergh presented a summary of the non-acoustic functions of the labyrinth. This was a rather complete summary of what was known about the vestibular apparatus up to that time.

In 1909, the physiology of the vestibular apparatus was again presented by Dr. Friedenbergh. Dr. Bryant presented his theory of tone perception in the cochlea. He stated that: a) anatomical and histological structures of the scala media are incapable of sympathetic vibrations; and b) complicated resonance theories are unnecessary for explanation of phenomena of sound perception.

Dr. Shambaugh discussed the paper and called attention to the fact that it was a revival of the Rutherford theory.

The papers are of significance for they show that the members of the Society were meeting not only to exchange surgical ideas concerning the treatment of diseases, but were becoming interested in the basic approach to otological physiology, pathology, and bacteriology.

By 1911, a group of new members, who were to play important roles in the Society, were elected: Max Goldstein, St. Louis; H. P. Mosher, Boston; John D. Richards, New York; and Phillip Kerrison of New York.

These men were destined to carry the Society to new heights in the practice of otology. All became famous for the different roles they played in the advance of otology: Dr. Goldstein for his handling of deaf children; Dr. Mosher with his great teaching ability; Drs. Richards and Kerrison for their development of otological techniques and operations.

In 1910 and 1911, the Society meetings seemed to be concerned chiefly with intracranial otitic complications, meningitis and sinus thrombosis. S. MacCuen Smith, reported on intracranial lesions complicating acute aural disease. John B. Rae and F. J. Blodgett discussed sinus thrombosis and the question of tying the jugular vein, opening of the lateral sinus, and obtaining free bleeding.

The problem of prevention of deafness was presented by G. Hudson-Makuen in 1913. The question of inherited deafness and acquired deafness was discussed.

Brain abscess of otitic origin, meningitis, and labyrinthitis were discussed and regarded by the members as the main problems of the treatment of complications from ear infections.

Dr. W. Sohier Bryant presented his protective mastoid operation as an operation of choice, to prevent future complications and preserve the hearing of patients.

T. J. Harris discussed the recent views regarding otosclerosis which were now beginning to interest the otologist.

Drs. Plummer and Mosher discussed and presented a summary of the Heath operation which Dr. Heath demonstrated in Boston during the International Otological Congress in 1912.

In 1914, Dr. E. Crockett reported on the after-results of the removal of the stapes for relief of auditory vertigo, and ended his remarks with the following: "I always felt that my three papers on this subject have not met with much enthusiasm and have had very little discussion, and I have not known of the operation being done elsewhere. This is also a painful shock to one's vanity. It seems to me it is a very simple procedure for a very troublesome disease. I believe it is just as efficacious as the very severe labyrinthine operation advised by surgical writers and followed by many imitators all over the world." It took about fifty years to revive Crockett's work.

Edgar Holmes discussed aural complications in thyphoid fever, a condition which seems practically unknown today.

In 1915, J. Gordon Wilson gave his opinion concerning the differential diagnosis of lesions of the labyrinth and cerebellum. B. Alexander Randall and Isaac H. Jones read papers on the ear tests of Barany in locating cerebellar and other encephalic lesions. They also reported the establishment of a neuro-otological department at the University of Pennsylvania. Dr. Emil Amberg discussed the x-ray in the diagnosis of mastoiditis. This was one of the first of the Otological Society's reports on x-ray as a diagnostic tool.

The meeting in 1916 was concerned largely with discussions of brain abscess, meningitis, and infections of the streptococcus capsularus (pneumococci).

Dr. Law demonstrated the importance of x-ray in mastoid diagnosis; Dr. Goldstein of St. Louis stressed the psychological study of the deaf child; and Dr. Wilson discussed the relation of the ear to the central nervous system.

In 1917, Dr. Wilson reported on injury to the ear from high explosives.

Meningitis and its treatment still commanded a great deal of attention as was obvious from the reports and recurring discussions on otitic meningitis.

Drs. B. Alexander Randall and Isaac H. Jones gave papers on the kinetic labyrinth and on the physiology of the vestibular labyrinth.

World War I activities took up most of the 1918 meeting in discussions of organization of the otolaryngological service. Dr. E. R. Lewis presented the otological problems from the standpoint of the aviation service, with discussion by Robertson on the effects the ear produced on the aviator. Charles W. Richardson presented a paper on ear protectors to prevent injury to the ear from acoustic trauma. Dr. Bigelow presented his classification of the mastoid cells by use of x-ray, and Dr. L. Fisher wrote on methods of analysis in Barany tests.

During the 1919 meeting, Drs. L. W. Dean and C. C. Bunch presented their pitch range audiometer and discussed its use in otology. Modern audiometric methods of testing were beginning to supplant the old.

G. L. Tobey gave a summary on lateral sinus thrombosis with a plea for simple ligation of the internal jugular vein. Otherwise, most of the meeting was taken up with reports of the work done in the military services.

Thus, the years from 1910 to 1919 were taken up chiefly with the complications of ear infections and their treatment. In this period were formed the basic concepts of the handling of these complications on which future treatments were developed.

Radiology of the mastoids was being evaluated and was correlated with the clinical findings in infections of the middle ear and mastoiditis. This fundamental correlation became very useful in the later decades.

The functions of the vestibular apparatus were studied more intensely, and its relation to aviation became very important during World War I.

The studies on deafness and otosclerosis began to play an important role with the otologists. Hearing tests were improved and the electric audiometer was about to be introduced. Thus, in the years from 1900 to 1919, a firm foundation was laid for future otologists upon which to build. Operations which were tried during this period and discarded were again revived with better results as new techniques, scientific studies, and the correlation of the basic sciences with otological problems came more into use.

THE SCIENCE OF OTOLOGY

AUDIOMETRIC THRESHOLD AND ABOVE THRESHOLD MEASUREMENTS RESEARCH FUND OF THE SOCIETY (CENTRAL BUREAU OF RESEARCH)

1920-1939

THE FIFTY-THIRD MEETING THROUGH THE SEVENTY-SECOND MEETING

PHILIP E. MELTZER, M.D.

LAWRENCE R. BOIES, M.D.

It is evident in reading the Transactions of the American Otological Society for the years before 1920 that the members were quick to adopt the advances made in surgical and medical procedures, not only in the treatment of ear disease and its complications, but in all branches of medical science applicable to the specialty of otology. When one considers the deficiencies of equipment in the era before 1900 as compared with present day equipment, it is indeed remarkable that these pioneer members of the American Otological Society were so skillful in the diagnosis and treatment of ear disease. There were then, as now, the ultra-conservative members who never seemed to encounter the complications commonly seen by other otologists, yet claimed that they were able to get amazing cures with minimal or no surgical interference.

Hearing was tested by tuning forks, the acoumeter, Galton whistle, monochord and steel rods from the earliest years of otology and these continued to be the devices for testing hearing until the audiometer was perfected and standardized in the mid-1920s. The 2A clinical

audiometer made by the Western Electric Company did much to get the audiometer established as a means of testing hearing by the otologist.

Although each decade was replete with new surgical developments, it can be truthfully stated that the years from 1920 on were the years during which the science of otology was advanced, and it is with great pride that the Society acknowledges the great contributions of its many members.

After the first World War, it was only natural that aviation medicine, a completely new field, would be one in which the otologist would be very much interested. Dr. Issac Jones and his associate, Dr. Lewis Fisher, did extensive studies on this subject.

Dr. Fowler's presentation of his loudness-recruitment phenomenon was a most important contribution in this period, and this test continues to be one of the most efficient tests for the diagnosis and differentiation of cochlear from retrocochlear nerve deafness. For the detection and care of deafness in children, the Society can proudly point to the influence it had upon national legislatures in getting laws passed that provided early and repeated examination of the hearing in school children.

Also in the early 1920s, members of the Society had the foresight to recommend a specific educational and training program for the preparation of the resident in otolaryngology.

Pursuant to resolutions made by the American Otological Society, the American Laryngological, Rhinological, and Otological Society, the American Academy of Ophthalmology and Otolaryngology, and a section of the American Medical Association, the representatives of these associations met on November 10, 1924, at the request of George E. Shambaugh, and created an organization called the American Board of Otolaryngology. Representing the American Otological Society and to serve for five years were T. H. Halsted and H. W. Loeb. A constitution and by-laws were adopted, and the following officers were elected; H. P. Mosher, President; R. F. Spencer, Vice-President; and H. W. Loeb, Secretary and Treasurer. The American Board of Otolaryngology was incorporated on January 6, 1925, under the laws of the State of Missouri.

In 1921, a committee had been authorized to consider the scope and plan of an investigation of the subject of otosclerosis. Norval H. Pierce was appointed chairman of the Committee on Otosclerosis. In 1923, he made specific recommendations (that were finally formulated in 1924 by Arthur B. Duel) in which he outlined a complete plan of investigation of otosclerosis from a financial and administrative point of view. This plan called for a Research Fund Committee empowered to collect a permanent fund, the interest from which was to be administered by the committee, to support research pertaining to otosclerosis and related problems.

In 1924, it was at the instigation of Dr. Duel and other members of the Committee on Otosclerosis that the Central Bureau of Research of the American Otological Society was established at the New York Academy of Medicine, New York City. The Central Bureau of Research was to be under the direction of Dr. Duel. This Bureau was to collect all correspondence and records dealing with otosclerosis, as well as anatomical material that would be submitted for microscopic study (and as clarified later, was to consist of the secretariat of the Board of Trustees of the Research Fund of the Society).

In 1925, a member of the Carnegie Corporation assured the Committee on Otosclerosis that he would recommend the granting of funds in the amount of \$25,000 for five years. In order to receive such funds, the American Otological Society had to become incorporated, and did so in June, 1926.

In the later 1920s, Wever and Bray discovered the startling phenomenon that was later given their name. For the first time in history, because of their investigations, measurement of the action potentials in the cochlea of animals was possible. The importance of the work of Wever and Bray was immediately recognized by the members of the Society, and funds provided by the Board of Trustees of the Research Fund helped to support many neurophysiological investigations made possible by their discovery.

During the latter part of the 1920s, Sir Charles A. Ballance, with the assistance of Dr. Duel and his associates, began the monumental research on the anatomy and physiology of the facial nerve. The culmination of this work was the presentation of a surgical procedure for the relief of facial nerve paralysis.

By 1930, the anatomy of the petrous portion of the temporal bone had been intensively studied in the hope that disease in this area could be surgically approached. One of the earliest investigations supported by the Research Fund, and one that has continued to the present day, was that of Theodore Bast and Barry Anson and their associates. Their detailed descriptions of the relation of the membranous structures in the perilympathic space to the oval window has been most helpful in the prevention of trauma to these delicate structures in the surgery of stapedectomy for improvement of hearing in otosclerosis.

In the era of 1930, the surgical treatment for Menière's disease by evulsing the membranous labyrinth through an opening made in the lateral semicircular canal was being practiced. It was in this period also that Dr. Dandy, a neurosurgeon at the Johns Hopkins School of Medicine, gave his report before the Society of cases wherein he sectioned the vestibular branch of the eighth nerve leaving the cochlear division intact in the hope of maintaining the residual hearing.

Prontosil, the first of the chemotherapeutic agents, was introduced for otologic use in 1935. Then came the sulfonamides, which turned out to be the long-awaited fulfillment in the quest for something other than palliative drugs and surgery to use in the woeful struggle against bacteriological disease.

R. Barany, upon making an opening into the lateral semicircular canal, had noted the immediate improvement in hearing in a patient suffering from chronic deafness. G. Holmgren, aware of Barany's observations, tried repeatedly to improve hearing in otosclerosis by creating a permanent opening into the lateral canal, but met with continued failure, owing to rapid closure. In the early 1930s, Maurice Sourdille, observing Holmgren's work, devised a brilliant but complicated technique that, for a while, improved hearing and in some cases a permanent improvement. His procedure never caught the fancy of otologists. In 1938, the one-stage fenestration technique of Julius Lempert of New York was presented to the Society in a paper read by Dr. Samuel Kopetsky. The Lempert procedure patterned after Sourdille's operation for the improvement of hearing in otosclerosis was revolutionary in its concept.

Middle-ear and mastoid infections with their complications continued to plague otologists in the period between 1920 and 1940. The younger American-trained otologists had now come upon the scene to

follow in the footsteps of their European-trained preceptors. Surgical techniques also had improved immensely with time, which is quite understandable. The simple mastoidectomy and radical mastoidectomy were generally well performed in most otological centers. The treatment of the complications, however, still continued to be a controversial subject. One of the controversies was whether to skin graft the radical cavity immediately or wait until after the blood supply had improved, or whether to let nature epithelialize the cavity by natural ingrowth. This was a subject for frequent discussion and never was answered conclusively.

The management of sinus phlebitis and sinus thrombosis was another topic of frequent discussion. One group of surgeons advocated immediate ligation of the jugular vein with incision of the lateral sinus; another group advocated ligation and excision of the jugular vein with incision of the lateral sinus; and still another group believed in no ligation of the jugular vein unless there were no symptomatic indications. All surgeons advocated incision and drainage of the lateral sinus; fortunately, this complication is rare now and rarely is a subject for discussion.

The modified radical mastoidectomy, as introduced independently by H. B. Blackwell and C. Heath, for the conservation of residual hearing after the eradication of the diseased tissue, was advocated and practiced sporadically for several years. This procedure met with little acceptance purely because the surgical techniques at that time were inadequate. This operation, which actually was the forerunner of the procedures independently developed by Fritz Zöllner and Horst Wullstein, was revived and more completely and thoroughly performed only because of Dr. Lempert's advanced technique and introduction of greater illumination, and the use of loupe magnification in temporal bone surgery. This led to the revival of the operating microscope by G. Shambaugh, Jr. for the fenestration operation (first utilized by Nysten and Holmgren for early operations for otosclerosis). Thus was established the era of microsurgery for all types of restorative operations for conductive hearing losses.

THE FIFTY-THIRD MEETING

The fifty-third meeting was held at the Copley-Plaza Hotel, Boston, Massachusetts on May 31-June 1, 1920.

The Committee on the Deaf Child, composed of members from the specialty section of the American Medical Association, and by representatives from the American Otological Society, namely, Charles W. R. Richardson, J. Harris, and Max A. Goldstein, recommended the following:

1. Deafness should be made reportable.
2. Methods should be standardized for examination of children in schools and for teaching of the deaf child.
3. Classification of type of deaf child.
4. Schools for the deaf be established.
5. Medical cooperation.

This was a truly extensive and farsighted program in early detection and management of an acknowledged serious problem.

L. W. Dean and C. C. Bunch reported on one year's use of their Pitch Range audiometer in the otological clinic. The audiometer used had a range from 30 to 7000 db. Charts were presented to show the accuracy and reliability of records in comparison with other clinical tests. They asked the adoption of these more scientific means of testing the hearing.

Norval H. Pierce discussed "The Normal and Pathological Pneumatization of the Temporal Bone," and summarized Wittmaack's theory of pneumatization on which a treatise had been published in 1918.

In "Popular Fallacies in the Practice of Otology," by George E. Shambaugh, there was such a wise statement: "We all are creatures of habit. This may have its advantages but it also has its disadvantage. One of the disadvantages is the perpetuation in the practice of methods of treatment which an increasing knowledge has long since shown to be illogical and useless."

"The Education of the Vestibular Sense," by Fred J. Martel and Isaac H. Jones, was a study restricted entirely to physiological and anatomical pathways of the eighth nerve fibres with their association with other cranial nerve nuclei. Dr. Isaac Jones did much for Ameri-

can otology in interpreting vestibular function, particularly when applied in aviation. Very little was actually known about the vestibular function in aviation.

THE FIFTY-FOURTH MEETING

The fifty-fourth meeting was held at Hotel Chelsea, Atlantic City, New Jersey on June 1-2, 1921. A report was given by Charles Richardson, Chairman of the Committee on the Deaf Child. The principal work before this committee was to codify and tabulate the laws existing in the various states of the union relating to education of the deaf child. Their aim was to have a standardized law and make the laws as uniform as possible. He presented a list of the states and indicated what they do for the deafened child and adult. The following resolution was proposed: "Resolved: The Committee recommends exclusively oral instruction of the deaf child and that oral teaching of the congenitally deaf child and the acquired deaf child be made part of a department of the public school system in all larger cities."

Norval H. Pierce moved that the President appoint a committee to consider the scope and plan an investigation of the subject of otosclerosis, to report at the next meeting of the Society. The President appointed Doctors John G. Wilson, George Shambaugh, Henry P. Cahill and James G. Dwyer, with Dr. Norval H. Pierce as chairman. B. Alexander Randall, Chairman of the Committee on the training of Otolaryngologists, proposed the following:

1. That students preparing for the practice of otolaryngology be graduates of a Class A medical school and complete one year internship prior to specialization.
2. The minimum training should consist of eighteen months full time, with the first year in one institution and the last six months continued in that institution or in another approved institution, and, during the first year, half of the time should be devoted to clinical studies and the other half to fundamental sciences and laboratory work.
3. All of this work must be on the basis of graduate instruction and under proper supervision.
4. Fundamental science should be taught in properly equipped laboratories and the clinical work should be carried out in well organized clinics or special hospitals.

5. Provision should be made for special courses and assistantships. Three years were recommended for these studies.

Dr. Pierce moved that the President appoint a committee to consider the standardization of tuning forks. Dr. Dench was thereupon appointed chairman, with Doctors Wilson, Dean and Randall as other members of the committee.

"Operative Treatment of Suppurative Meningitis," by President Wells P. Eagleton, was probably the longest presidential address ever given at a meeting of this Society. It was the summation of a lifetime of work in his effort to cure otitic meningitis. It was highly lauded by the membership.

"Operative Procedures upon the Internal Jugular Vein in Cases of Sinus Thrombosis of Otitic Origin," by Edwin B. Dench, was a clinical paper discussing an experience with 97 cases of lateral sinus thrombosis.

"A Study in Otosclerosis," by Henry P. Cahill, presented the theory that otosclerosis resembles a neoplastic growth, probably activated by infections and metabolic changes, with an inherited factor also. This paper provoked the longest and most favorable discussion of the meeting.

THE FIFTY-FIFTH MEETING

This meeting, held at Hotel Raleigh, Washington, D. C. on May 1-3, 1922 was of historical interest. Dr. E. P. Fowler and R. L. Wegel, Ph.D. of the research laboratory of the American Telephone and Telegraph Company and Western Electric Company gave a paper entitled: "Presentation of a New Instrument for Determining the Amount and Character of Auditory Sensation." This instrument introduced the use of the pure tone range throughout the frequency scale from 64 to 16,000 cycles per second with an intensity scale range from below audibility to where sound is painful. The instrument was called an audiometer and the philosophy of audiometry was that it would ultimately be the method for the accurate evaluation of hearing threshold. The authors suggested that hearing tests could be universally comparable when standards could be adopted. Dr. Fowler recognized the fallacies of interpretation of bone conduction at this introductory stage of the audiometer and asked that we preserve an open mind in the interpre-

tation of an audiogram. He had great faith in its value in diagnosis of hearing deficiencies. His insight and foresight as regards the possibilities of this instrument were prophetic.

Doctors Dean and Bunch, working at the University of Iowa, had originated an instrument called the "Pitch Range Audiometer." It had a continuous sweep from the lowest to the highest audible tone by the turning of a lever. The pitch range audiometer determined a point by varying simultaneously both frequency and intensity while Dr. Fowler's audiometer maintained a definite frequency but with the ability to vary the intensity, just as the present day audiometer does.

"Skiagraph Studies in Ear Disease with Relation to the Degree of Pneumatization of the Mastoid" were reported by Norval H. Pierce. The purpose of these studies was to ascertain the degree of pneumatization of the mastoids on a series of patients with deafness due to middle ear disease other than chronic suppurative otitis. He gave an excellent presentation of the Wittmaack theory and then presented types of pneumatization as described by Wittmaack.

"Review of our Knowledge of the Blood Vessels Supplying the Internal Ear," by George E. Shambaugh, brought the members up to date. The subject was not only of scientific interest, but also of great practical bearing on clinical otology.

Samuel D. Ingham and Isaac H. Jones presented a paper on "Certain Neuro-otologic Problems." The labyrinthine investigations by Barany had instigated a world-wide interest in neuro-otology. It was actually relatively new to otologists.

Two items from the business meeting are noteworthy: The Council recommended the establishment of a special journal dealing with otolaryngology. Dr. Shambaugh stated that the trustees of the American Medical Association would favorably consider the editing of such a publication if a request and endorsement were received from the three societies, the American Otological Society, the American Laryngological Association, and the American Laryngological, Rhinological and Otological Society. The American Medical Association would assume financial and editorial responsibility. This was apparently the origin of the Archives of Otolaryngology.

Dr. Herbert S. Birkett proposed that an amalgamation of the American Otological Society and the American Laryngological Associa-

tion be considered. A committee was appointed to meet with a committee representing the American Laryngological Association.

THE FIFTY-SIXTH MEETING

Several important committee reports were given at this meeting which was held at the Ambassador Hotel, Atlantic City, New Jersey on May 14-15, 1923. The committee consisting of S. M. Smith, F. Z. Jack and J. F. McKernon appointed previously to consider the affiliation between the American Laryngological Association and the American Otological Society, reported as follows:

"Your committee appointed by the President at the last annual meeting of the Society to consider and report upon the advisability of an affiliation between the American Otological Society and the American Laryngological Association, beg to report as follows:

1. The American Otological Society was the first special society formed in the world having for its objective the advancement and study of diseases of the ear.

2. Being the oldest Society, it would be regrettable to submerge its identity in that of another, however kindred, and further we believe it unwise because with affiliation of two such active societies as the American Otological Society and the American Laryngological Association not enough time and attention could be given to a subject as broad and far-reaching in its ramifications as modern otolaryngology.

3. We recommend that whenever possible the meetings of the two societies correspond as to time and place.

4. When time and place correspond, that the meetings of the society be held on consecutive days.

The following report of the Committee on Otosclerosis was given by Norval H. Pierce:

"As the cause of otosclerosis is unknown and treatment futile, and as the pathology of otosclerosis has been investigated by several otologists and opinions of the investigations diverge greatly, and for several other relevant reasons, the committee makes the following recommendations:

1. That a systematic course of research and investigation be inaugurated and carried on for a number of years; the American Otological Society to have supervision of the work of investigation and research.

2. An endowment of \$100,000 or a yearly grant of \$5,000 for a term of years shall be procured, or one of the endowed institutions may be approached with a view of taking over that portion of the laboratory and other work which requires expenditure of money.

3. A pathologist specially trained in bone pathology and in histologic technique for the preparation of the ear sections shall be secured.

4. Representatives appointed by the American Otological Society and other societies, resident in the various large centers, shall constitute a working committee who are to collect specimens of otosclerosis from large institutions such as poor houses, public sanatoria, large hospitals and from private sources. To these representatives shall be entrusted the collection of histories and clinical diagnosis of cases, during the lifetime of the patients whenever possible. These representatives shall see to it that the temporal bones are properly removed from the bodies, placed in suitable fixing solution and forwarded to the center of investigation.

5. The Center shall be determined by the Society, the determination being contingent on the fulfillment of the above recommendations."

The following remarks by Dr. B. A. Randall, in view of the present day diagnosis of otosclerosis, are most interesting: "I rise as a skeptic. This disease may be widespread but it is very thinly spread. I have seen perhaps thirty cases that I should consider otosclerotic. If you accept the Bezold triad as marking otosclerosis, we shall have them by the thousands, but I don't think these are true cases of otosclerosis." Dr. Randall was never willing to accept this report. He felt that this activity would be a waste of time and money.

Dr. L. W. Dean, knowing what the expense would be for such an investigation, indicated that a sum of \$5,000 per year as suggested by the committee, would be completely inadequate and suggested that if a foundation were to be approached for money, at least \$20,000 would be needed. Dr. Edward B. Dench felt the Society members must make

an effort to raise money first before approaching the Rockefeller Foundation. He suggested that the Society should assess members a small amount to raise the first funds. He said, "If all the societies do that and then go to the Rockefeller Foundation and ask for further help, they will see that we are in earnest with our pocketbooks as well as our ideas."

It is of utmost interest that Dr. Pierce saw the need of getting otosclerotic temporal bones, well documented histories—all examined by specially trained pathologists—and centralizing the information. If the societies could have done at that time what the organizers of the present day Centurion Club of The Deafness Research Foundation later did, then they would have had \$70,000 or more each year to fund the investigation of otosclerosis.

Among the papers read at this meeting was "The Department of Otolaryngology in the University School of Medicine," by George E. Shambaugh, Chicago. This was a farsighted plan of what such a department should consist of:

1. Undergraduate teaching and graduate teaching.
2. Fostering of research.
3. Adequate out-patient departments.
4. Establishment of fellowships.

"The Public Day School for Deaf Children," by Miss Carrie Wallace Kearns of New York City. This was a discussion of methods of educating the deaf child.

"Lip Reading for the Hard of Hearing," by Miss Elizabeth Helm Nitchie, New York City. The writer was one of the pioneer teachers of this method.

"The Pathology of Deafmutism," by L. S. Fraser, Edinburgh, Scotland, was a well presented discussion of the subject, from every standpoint, with excellent illustrations.

THE FIFTY-SEVENTH MEETING

The fifty-seventh meeting was held at Hotel Raleigh, Washington, D. C. on June 4-6, 1924. George E. Shambaugh, as Chairman of a committee, spoke in behalf of a national examining Board of Otolaryngology. The Board would be formed to examine otolaryngologists who

wished to be recognized as to their qualifications to practice otolaryngology. Two members of each of the other national societies had been appointed to serve on the committee. He asked and received approval for this Board.

The members of the Society also approved the publication by the American Medical Association of a new Journal of Otolaryngology.

Dr. John S. Frazer, the eminent English otologist, was elected an honorary member of the Society as were Professor D. C. Miller and R. O. Wegel, Ph.D.

T. J. Harris, the Secretary, announced that the dues were raised to \$25, ten dollars of which was to be put into a fund for research pertaining to otosclerosis. The fund amounted to \$1,000.

As no action was taken by the Society on Dr. Pierce's committee report for the investigation of otosclerosis, discussion was postponed until after Arthur B. Duel read his paper in which he was to discuss the problem of otosclerosis and present a plan for handling the entire subject from an investigative, financial and administrative standpoint.

Of greatest importance was the presentation by Dr. Duel, "Otosclerosis: How Shall We Solve the Problem?" Every angle of the subject was briefly and effectively discussed but the highlight of his paper was his thoroughly organized and planned procedure for getting the investigation of this problem started. Some of his remarks bear repeating. "For success the study of otosclerosis must be intensive, continuous, and correlated. Time must not be considered, for the success of such an effort depends on the sympathy and active co-operation of otologists as a body." This was the plan proposed:

1. That the Society sanction the solicitation of a fund for otological research for the eradication of otosclerosis.
2. That this fund be solicited by and be placed under the direction of some well organized institution which has a self-perpetuating body which would administer it in an effective way. Adequate laboratory facilities should be provided and an advisory board selected from scientists throughout the country working along any line of research which might bear upon the subject.

3. That a report of progress be made in writing to the Council of the Society at each annual meeting, and at their discretion to be read in whole or in part before the Society.

4. That discoveries of great value be published so that the world may reap the benefit.

To carry out this work in an unhampered way, a fund of \$500,000 should be raised. Should this not be forthcoming at once, it might be inaugurated by a fund from subscribing members from whom a small yearly subscription might be solicited to carry on the work and who in turn might receive such bulletins as the administrators might publish.

Dr. Duel in his wisdom and farsightedness, stated, "A century from now eugenics may hold such sway that otosclerosis along with insanity, epilepsy, and many other transmissible defects may be wiped out. If this plan is sanctioned, it would be to the glory of no individual but to the American Otological Society."

In the discussion that followed it was decided that the research and the personnel would be under the supervision of a committee appointed by the Society. Dr. Harris stated that this proposal if adopted would undoubtedly be the biggest step undertaken by the Society. Thereupon a motion was made by Dr. Dench, which was carried, that the matter proposed by Dr. Duel be referred back to the Committee on Otosclerosis, with power to act.

Two papers, "Conservative Treatment of the Chronic Suppurative Ear," by Henry Haskins, New York City, and "The Operative Treatment of Chronic Otorrhea," by John R. Page, New York City, provoked more discussion than all the others combined. There was more logic evolved in these discussions than could be gleaned from any one paper.

In "Dynamics of the Cochlea," by Edmund P. Fowler, New York City, there was further evidence of his immense knowledge and understanding of the mechanics of hearing. It is no surprise that his studies should ultimately lead to his "loudness balance phenomenon" and its significance in differentiation of cochlear and retro-cochlear deafness.

The fifty-eighth meeting was held at Hotel Raleigh, Washington, D. C. on May 4-5, 1925. Some important and significant committee reports were made in the business meeting. The following is a report of the Committee on Otosclerosis by Norval H. Pierce:

"Your Committee as a whole has held two meetings during the year, one in New York and one in Washington, D. C. The Chicago members have held five informal meetings, discussing various phases of the subject, the conclusions being reported to the Committee at its called meetings and otherwise.

A general plan of procedure was drawn up:

A. It was decided that a circular should be sent to otolaryngologists of the United States, soliciting material for pathological study. In this circular it was pointed out, first, the difficulty of acquiring such material; second, sources: a) tuberculosis sanatoria, insane asylums, poor houses, old people's homes, soldier's homes, deaf and dumb asylums, general and special hospitals; b) members of the League for the Hard of Hearing should be solicited to bequeath temporal bones to the Committee. It should also be attempted by otologists to have their private patients bequeath their organs of hearing to the Committee.

B. The disease of otosclerosis should be defined in the circular, together with a synopsis of a) its pathology, and b) diagnosis. It should be pointed out that otosclerosis is probably a hereditary disease, and therefore a history of each case is essential. A brief summary of tuning fork reactions should be submitted, together with the importance of inspection and auscultation. The aid of the x-ray should also be recommended. Instructions for removal of tissue from the body, together with methods of preservation and best means of shipment.

C. Central control: It was deemed advisable that a central office be established which would serve as a) control center where a card index and follow-up system might be maintained, and where all records should be preserved, and b) a yearly report to the American Otological Society should be made of the work done by the Committee. The So-

*Dr. Meltzer's contribution had not been completed at the time of his death. The following highlights of the annual meetings from 1925-1939 were compiled by Lawrence R. Boies, M.D.

ciety should transmit a copy of this report to the other American and foreign special societies and investigators, and to the Federation of Leagues for the Hard of Hearing.

D. Research: a) This should consist of the examination of the material acquired. b) Experimental research, under which heading comes complete review of the literature, checking other experiments, animal experimentation, and the advanced study of the histogenesis of bone. c) Biochemistry—under this heading comes research into the metabolism of otosclerosis. A few careful observations in this domain should be made, but in all probability a few cases carefully analyzed and controlled will give us all the information that it is possible to acquire in the present status of chemical analysis. It would be difficult to centralize this portion of the research and it is desirable that several centers should be maintained for this service, in order that one group might serve as a check upon the other. d) The relation of the various endocrine organs, with especial reference to the thyroid, parathyroid and pituitary; bone changes, such as occur in rickets, osteomalacia and dysosteogenesis, should be especially stressed. e) The relation of fluorine to bone chemistry is a field which might prove fruitful in discovering the cause of otosclerosis and other halistoritic bone changes.

Your Committee was informed that a representative of the Carnegie Corporation would meet the Committee for the purpose of hearing a statement of the problems involved in research in otosclerosis, with a view of securing a grant from the Corporation. This meeting was held, at the conclusion of which the representative of the Corporation expressed himself as impressed with the great importance of the problem, and your Committee was assured that he would recommend the granting of the fund of \$25,000 a year for five years. A formal statement was drawn up for presentation to the Board of Trustees, a copy of which is herewith submitted.

Although this grant has not been made at the time this report was written, your committee entertains a lively hope that it will be forthcoming in the near future. It is especially desirable that we receive the Carnegie Grant at an early date, not only because we can start our active campaign of research and investigation, but because definite promises of considerable sums toward the establishment of a permanent fund as soon as the project receives the endorsement of the Corporation. It is recommended, therefore, that the Society proceed with its work in the investigation of otosclerosis. As a first step the Commit-

tee advises the printing and distribution of the circular A, a copy of which is herewith presented.

It may well be a matter of discussion as to whether such an investigation may be carried on under one head or in charge of one institution or, granted that funds be available, under such a Committee as your Society has elected. It is the opinion of your Committee that the American Otological Society through its Committee can secure the best results by the careful supervision of the problem and by allocating the funds wherever the best chances of fruitful results of original investigation and research may exist at any time. It will assume continuity and co-ordination of endeavor, through as long a period of time as is necessary to discover the cause and let us hope the cure of otosclerosis."

On motion, duly seconded, this report was ordered received and placed on file, and the committee made a permanent committee for 5 years, with power to replace any vacancies which might occur.

Dr. Thomas H. Halsted, for the Board of Otolaryngology made the following report: Pursuant to resolutions of the American Otological Society, the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the Academy of Ophthalmology and Otolaryngology and the Section on Laryngology, Rhinology and Otology of the American Medical Association, the representatives of these associations met on November 10, 1924, at the call of Dr. George E. Shambaugh and effected an organization. The following were the sponsoring organizations and elected members of the first Board:

American Otological Society—Dr. T. H. Halsted and Dr. H. W. Loeb.

American Laryngological Association—Dr. H. P. Mosher and Dr. Ross H. Skillern.

American Laryngological, Rhinological and Otological Society—Dr. B. R. Shurly and Dr. F. R. Spencer.

Section of Laryngology, Rhinology and Otology of the American Medical Association—Dr. J. C. Beck and Dr. R. C. Lynch.

American Academy of Ophthalmology and Otolaryngology—Dr. W. P. Wherry and Dr. T. E. Carmody.

A constitution and by-laws were adopted and the following officers elected:

Dr. H. P. Mosher, President; Dr. F. R. Spencer, Vice President; Dr. H. W. Loeb, Secretary and Treasurer. The association was incorporated on January 6, 1925 under the laws of the State of Missouri, governing corporations organized for quasi-public purposes and not for profit.

In accordance with the action of the Board, invitations to apply for certificates without examination were sent to certain members of the organizing associations and 354 have made such application to the board. In addition 201 sent in their application for examination.

The first examination was held in Atlantic City, at the Medico-Chirurgical Hospital, Philadelphia, on Monday, May 25, the second at Chicago during the meeting of the American Academy of Ophthalmology and Otolaryngology.

Doctors Charles W. Richardson, Thomas J. Harris and Max A. Goldstein presented the following report of the Committee on the Deaf Child:

"Your Committee has the honor to report that its work has been continuous and progressive. Last year through the efforts on the part of your Committee a survey of the Deaf Institutions of the United States was undertaken under the auspices of the National Research Council. It is too early as yet to give you an idea of what this is going to reveal; the work is in its active stage at present; it is being conducted along administrative, pedagogic, economic and medical lines. The reports are just coming in—it will take some time to tabulate them. One of the Amer. L. R. and O. National Societies has been wise to incorporate a Committee of the Hard of Hearing and fuse it with the permanent committee on the Deaf Child, same to be called the Committee on the Deaf. It is suggested that a committee of four be added to the committee, giving it the function of not only the deaf child, but also the impaired in hearing. A syllabus has been prepared for the work of several lectures in the four year class medical school, this has been prepared with great care and circumspection and will be offered for your consideration and presentation for the Medical Schools."

On motion, duly seconded, this report was ordered received and placed on file, and the recommendation as to the enlargement of the

committee adopted, adding the President's name to the additional members of the committee after consultation with the Secretary.

Drs. D. Harold Walker, Joseph A. Stucky and Isaac H. Jones were appointed by the Chair to serve on the Committee on the Deaf Child.

In the scientific sessions brain abscess of otitic origin, neuro-otological examinations in cases of brain tumor in children, and vestibular testing were the prominent subjects discussed.

In addition, Dr. Harvey Fletcher presented a scholarly exposition on "Some New Methods and Apparatus for Testing the Acuity of Hearing and their Relation to the Speech and Tuning Fork Methods."

THE FIFTY-NINTH MEETING

This meeting, held at the Mount Royal Hotel, Montreal, Canada on June 2-3, 1926 featured a joint session with the Triological Society to listen to a presentation by Professor R. Magnus of Utrecht, Holland, entitled, "On the Cooperation and Interference of Reflexes from Other Sense Organs With Those of the Labyrinths." This was followed by a paper by Professor John Tait of McGill University on "Ablation Experiments on the Labyrinth of Frogs," and then a learned and illuminating discussion by Dr. J. Gordon Wilson on the two papers.

Another informative paper "On the Occurrence of Otosclerosis in the Etiology of Progressive Deafness" by Dr. George E. Shambaugh and Dr. Jacob Holderman reported the findings on 362 patients who had consulted Dr. Shambaugh in the year 1924 because of ear symptoms, and in this group he felt that in 113 otosclerosis was the only logical diagnosis. The following summary of his findings is interesting because of the similarity of his interpretations to current ones more than 40 years later:

"1. Of a total of 113 patients diagnosed as otosclerosis, in 92 the drum membrane was quite normal. In 15 there was a distinct pinkish glow from the promontory. Twenty-one patients showed some alterations in the membrana tympani. In 105 the functional tests demonstrated fixation deafness. In 8 patients the functional reactions were those of primary nerve deafness. Paracusis Willisii was recorded in 64 patients. Complaints of vertigo were obtained in 6 patients.

2. The clinical recognition of this pathological entity is limited for the most part to those cases where the process is a primary lesion, that is, where it is not preceded by any tangible evidences of a previous tubo-tympanic inflammation.

3. The type of otosclerosis which is usually diagnosable clinically is the type causing fixation of the stapes and where there exists no evidences of previous tubo-tympanic trouble.

4. The recognition of otosclerosis as the cause for stapes fixation can often be made even where tangible alterations exist in the drum membrane indicative of an old tubo-tympanic process since the two do not usually run the same clinical course.

5. Otosclerosis develops also with the symptoms typical of nerve deafness, that is, where stapes fixation is absent. The diagnosis of this type is obviously more difficult.

6. It seems not unlikely that because of this difficulty in making a diagnosis, further autopsy findings may prove that spongifying of the labyrinth capsule in the absence of stapes fixation may be responsible for the occurrence of primary nerve deafness more frequently than we now suspect.

7. An associated degeneration of the nerve as evidenced by the defect at the upper end of the tone scale develops more and more as otosclerosis producing stapes fixation progresses.

8. Otosclerosis without fixation of the stapes, beginning with the symptoms typical of nerve deafness, may as time goes on develop stapes fixation with the typical Bezold triad superimposed upon the previously existing nerve deafness.

9. A pinkish glow from the promontory when present is pathognomonic of otosclerosis.

10. The symptom of paracusis Willisii is rarely found except in cases of otosclerosis with stapes fixation.

11. Skiagraphy of the mastoid does not appear to be of any particular assistance in fixing the diagnosis of otosclerosis. Normal pneu-

matization can be anticipated where all evidences of a previous tubo-tympanic process gathered from examination of the drum membrane are absent. Arrested pneumatization has the same significance as palpable alterations in the drum membrane. Both are indicative of an earlier inflammatory middle ear disease. The presence of arrested pneumatization, just as the existence of alterations on the drum membrane, can hardly be expected to interfere with the subsequent development of the spongifying of the labyrinth capsule."

The following reports and motion are of such historical importance that these are quoted in their entirety. The "Report Of The Committee On Otosclerosis" was presented by Dr. Norval H. Pierce. "The Carnegie Foundation has granted a subsidy to the American Otological Society for five years, for the purpose of research and investigation on otosclerosis. The amounts available are to be as follows:

\$25,000 for the first year;
20,000 for the second year;
20,000 for the third year;
15,000 for the fourth year;
10,000 for the fifth year.

In addition to this your Committee has entered into a movement to collect a permanent fund of \$500,000 or more, the income from which is to be available for research and investigation of problems relating to the ear and allied branches of medicine, scientific, chemical and economic. A report on this fund will be made at this meeting by the Committee's Treasurer, Dr. Arthur B. Duel.

The income from the Carnegie Fund for the present year has been allocated as follows:

\$5,000 to Harvard University; \$5,000 to the Embryological Institute of Johns Hopkins University; \$5,000 to Professor C. Wittmaack of Hamburg, Germany; and \$12,000 to a Central Bureau.

The policies which shall govern your Committee have been developed to a point where this definite statement may be made at this time. The Committee is distinctly of the opinion that, at least as regards administration, the Carnegie Fund must be administered and dispensed by the Committee. The majority of the Committee are further of the opinion that the expenditure would be best attained by

a committee, in contradistinction to its administration by an individual or single institution.

The money allocated to Harvard will be under the direction of Dr. Eugene Crockett, for the anatomic and histologic study of the labyrinthine capsule (a) in later fetal life; (b) in early adult life; (c) in adult life. A collection of otosclerotic material from the hospitals from patients on whom the diagnosis of otosclerosis has been made during life, or of other forms of progressive deafness will be made. They will probably also take up the histologic examination of the otic capsule in several forms of animal life—rats, guinea pigs, rabbits, dogs, apes. In this way we may establish a type which may be used for comparison in the experimental animal of changes that occur following the production of artificial otosclerosis, or other changed conditions of the otic capsule by infection, by operative measures, such as ligation of blood vessels which supply the otic capsule.

We are anxious to make an agreement with the Embryological Institute of Johns Hopkins University to carry on a study of the embryology of the otic capsule, as this Institute is one of the foremost in the country in this line of work.

Five thousand will be allocated to Professor Wittmaack of Jena, to enable him to continue his research on the artificial production of otosclerosis in the higher apes. Otosclerosis occurs in relation to a peculiar vascular distribution, different from that of the long bones. And it is this peculiarity of the vascularization that undoubtedly occasions some of the characteristics of otosclerosis. The Committee feels that while nothing is absolutely assured in this very difficult investigation and research on otosclerosis, yet it is amply justified in giving to Professor Wittmaack, who is one of the foremost investigators in the world in this field, this pittance, the want of which deters him from his study on the higher apes.

Twelve thousand dollars have been allocated for a Central Bureau for your Committee and Society. The Bureau shall have charge of and shall produce the translation into English of all foreign literature on otosclerosis. This shall be available to the Society and workers of the Committee. The translator shall give full time to the Committee and shall act as the individual in charge of the Bureau, keeping records of the Committee, taking charge of the card index. Dr. Wilson is to write and present to intelligent otosclerotics a card questionnaire. The

identity of these persons will be found by the American Federation of the Hard of Hearing. This questionnaire will go minutely into the family history of such individuals. This is in the line of the investigation being carried on in Vienna by a Committee on otosclerosis. There is no reason why this fund should not cover the expenditures necessary for accumulation of material from the human being of otosclerotic temporal bones. We shall have to have as research workers, young men who will gain access to public institutions, tubercular sanatoria, hospitals, charity hospitals, and who will make a diagnosis of other forms of progressive deafness during the life of the patients and who will make arrangement to secure the temporal bones of such patients who die. Such material will be allocated by the Central Bureau to the best source for study.

You will note by the Treasurer's report, which will follow mine, that the fund, under the leadership of Dr. Duel, is accumulating rather rapidly. This is a distinct fund from the Carnegie fund and will be used for a wider field of investigation. As this fund may grow to enormous dimensions, it is the opinion of the Committee that a Board of Trustees should supplement the work of the Committee, a simple scientific Committee not being sufficient to control financial affairs. We must have laymen on this Board for several reasons; first that the financial administration of the fund may be most wisely made. We have been unfortunate in losing one of our committee, Dr. Shambaugh. He has resigned because of pressure of other duties. The Committee has elected instead Dr. James F. McKernon."

Report of the Treasurer, Dr. Arthur B. Duel, New York: As temporary Treasurer of the fund that is being collected, I would say that, considering the fact that the circular was only sent out four months ago the response has been very generous and very encouraging. We have now in cash \$39,316.34 and pledges of \$5,785 making the sum of \$45,101.00 in the treasury. The responses have come from the Otological Society's members; 55 men contributed \$1,075; 28 members have pledged \$1,605. The Trilogical men have given \$350, from 35 members and one subscribed \$100, making \$450. We have pledges of \$790. The New England Oto-laryngological Society subscribed \$60 and pledged \$130. We confidently expect that a number of members of the Society who have wealthy patients, will get busy and interest them in the fund. I have received a communication from Dr. McKernon, which has great interest in this respect.

Dr. John B. Rae, New York: Several years ago the Society assessed the members and we collected \$1,000 which is invested. There is no need of this fund now. I move that the Society turn over this \$1,000 plus the interest, as the contribution from the American Otological Society.

Dr. Harris: The Chair wishes to bring to your attention the fact that the Treasurer has the sum of \$6,000, the gift of one of Dr. Duel's patients. The Society can authorize that this sum be turned over to the Committee.

It was moved, seconded and carried that these sums be turned over to Dr. Duel, to be added to the Research fund.

Report by Dr. McKernon: In talking over the matter of possible legacies with an old patient, I prevailed upon her to turn over to the American Otological Society, as soon as it was incorporated, a fund, the proceeds of which should be used for the study of otosclerosis or progressive deafness. I cannot tell you the amount of the fund, but I am told it is considerable. This bequest was made in February. Knowing that a good many slips take place we had a counsel and myself appointed trustees to hold the fund until incorporation of the Society, when it will be turned over. I had several talks with this donor. She has one child, a semi-invalid, and I asked her that in case that child died without issue, if she would leave her money in trust to the Otological Society for the study of otosclerosis. After several interviews she decided to do this. I was invited to come down and witness her bequest, in which it is stated that if her son dies without issue the money will be turned over to the Society. Again I cannot tell you how much this will be, but her attorney gave me to understand that the sum runs into millions. Her counsel tells me that in case this money comes to the Society that we should have a number of trustees appointed to disburse the fund, and of that I am heartily in favor.

In this connection, I think that all of us who are members of the Otological Society can do a great deal if they will interest wealthy patients. If also we will speak to our legal friends, who are in the practice of drawing wills and ask them to bear in mind what the objects of the Society are from the research standpoint, we may find that through this channel money will accrue to the Society.

The Chairman, Dr. Harris: These reports are the most momentous that have ever been presented before the Society. We are assuming a grave responsibility in guiding the Committee on Otosclerosis and acting upon the suggestions of Dr. McKernon. The Committee is prepared to take definite action in regard to appointment of a Board of Trustees to administer permanent funds.

Motion by Dr. Dench: I would like to make a motion in order to bring this matter to the attention of members and have them vote on it, namely: I move that a Board of Trustees be appointed, from nominations by the Research Committee, the Board to consist of 12 members, seven from the Society and five laymen who shall have charge of administration of funds.

In regard to the latter point, I would say that laymen would manage financial matters better than medical men and that donors of large sums would have more confidence in their management, but the determination of how funds shall be expended should be left entirely to the scientific committee.

After a prolonged discussion in which Drs. Dench, Goldstein, Richards, Harris, Packard, Richardson, Pierce and Shambaugh took part a motion was made and passed that the Board of Trustees should consist of 5 members of the Committee on Otosclerosis, 2 more members of the Society, and 5 laymen. It was decided that the practical arrangement of the duties of the Committee be left to the discretion of the Board."

THE SIXTIETH MEETING

This meeting, under the presidency of Dr. Arthur Duel, was held on May 20-21, 1927, in the building that housed the offices of the New York Academy of Medicine, and in which the Central Bureau of the Otological Society Research Fund was to have permanent quarters.

Featured on the program were talks by the President of the Carnegie Foundation, Henry S. Pritchett, L.L.D. and E. E. Brown, L.L.D., Chancellor of New York University. These apparently were after dinner speeches. Dr. Pritchett spoke on "The Problem of Progressive Deafness, The Hope of its solution by the Research Worker," and Dr. Brown on the same subject from "The Social and Educational Point of View." Dr. Edward B. Dench then presented "The Otological Point of View" in these discussions of the problem of progressive deafness.

Two reports on research sponsored by the Society were presented. Dr. Norval Pierce spoke on "The Relation of the Morphology of the Human Otic Capsule to Otosclerosis" and Professor T. H. Bast discussed "The Early Development of the Bony Capsule of the Human Ear."

This was the first meeting held after the Society had become incorporated. This had been accomplished because the Carnegie Foundation had a requirement that its gift of funds must go to a corporate body. Under this status, a Board of seven Directors were to be elected as officers of the Society, and then this group had to elect its president, vice-president and secretary-treasurer. This was the beginning of that practice.

Dr. Duel reported steady gains in contributions to the Research Fund.

THE SIXTY-FIRST MEETING

The sixty-first meeting was held at Hotel Raleigh, Washington, D. C. April 30-May 1, 1928. The Transactions for this year contained two reports from committees concerned with the same line of inquiry.

The first was a "Report of the Committee on the Study of Progressive Deafness" by Norval H. Pierce, Chairman.

This report consisted of statements emphasizing the need to adhere closely to laboratory investigations of the cause and prevention or cure of otosclerosis, and that funds should be awarded to individuals in institutions wherever there is talent for this research and not to a single institution.

The "Report of the Chairman of the Otosclerosis Committee" Arthur B. Duel followed. It contained these announcements:

1. "Twenty five hundred hospitals throughout the country have been circularized, requesting anatomical material. One hundred eighteen hospitals have responded favorably and to these have been sent the technique for the removal and preservation of the temporal bone. We have made an arrangement with the Hospital Supply Company of New York City, whereby it furnishes the operating apparatus for \$95. . . . The New York members of the Committee have been active . . . Dr. McKernon and Dr. Marvin Jones at the Post-Graduate and Lying-In-Hospitals have secured 62 temporal bones which have been sent

to Drs. Samuel J. Crowe and Stacy R. Guild at Johns Hopkins where all anatomical material from the Eastern Hospitals is being sent for preparation.

2. The subsidy from the Carnegie Corporation for the present year is \$20,000. The Committee has allocated \$4,000 to Dr. John G. Wilson for continuation of the work by Dr. Theodore Bast on 'The Early Development of the Bony Capsule of the Internal Ear.'

Three thousand dollars was allocated to Dr. Eugene Crockett for continuation of the work of Dr. Aub at the Massachusetts General Hospital on 'The Treatment of Otosclerosis by the Use of Parathyroid Extract and a Balanced Calcium Diet.'

Two thousand and fifty dollars was allocated to the George Williams Hooper Foundation for Medical Research at the University of California, San Francisco, California, for the study of 'Bone Conditions in Animals under change of Calcium Diet.'

Three thousand dollars was allocated to Dr. Duel for the 'Study of the Mendelian Aspect of Heredity of Otosclerosis' and a further \$3,000 in connection with the same study, to be expended by the Eugenics Record Office of the Carnegie Institution of Washington, at Cold Spring Harbor, Long Island, under the direction of Dr. Charles B. Davenport for the 'Study of the Family History of Otosclerotics Together with the Accompanying Morphological and Physiological Traits associated with This Disease.'

The Central Bureau was allocated \$6,500 for its activities embodying the collection, abstraction and translation of all the literature on otosclerosis which was expected to be completed in book form within the year. This book 'will be distributed at a loss, financially, but the committee expects to be rewarded by the interest which such a resume will excite.'

3. Permanent Research Fund. The gross collections including pledges, amounted to \$193,241.

Since then there have been additions, making a total of very nearly \$200,000 in this fund. Since then largely through the activities of Dr. Dench, Mr. Edward Harkness has promised \$100,000 provided the whole fund is completed by the first of next January. This means

that we have \$200,000 to get in order to insure the payment of that \$100,000.

As you will all recollect, the whole society as well as the Triological Society were circularized, making this statement and asking for additional activities on the part of every member to see if it would be possible for them to collect this \$200,000. A circular was sent out inviting every member to underwrite some amount which they would agree to give or get. One hundred sixteen notices were sent out, and twenty-one replies received. Not one of them offered to underwrite any amount whatsoever."

The scientific paper that apparently excited the most interest at this meeting was given by Dr. Theodore Bast on "The Ossification of the Labyrinthine Capsule."

THE SIXTY-SECOND MEETING

The sixty-second meeting was held at Hotel Shelburne, Atlantic City, New Jersey May 22-24, 1929. In a brief paper on "The Classification of Deafness" James Dwyer dwelt on the inadequacy of the present classifications and directed special attention to the category of chronic catarrhal otitis media. He recommended that the term "catarrhal" be dropped. A considerable discussion followed and emphasized the need for a more accurate terminology.

Further concern for programs of graduate instruction was emphasized by George Shambaugh in a paper on "Some Observations on Anatomical Instruction for Graduate Students who are Planning for Practice in the Field of Otolaryngology." Professor T. H. Bast presented a paper on fundamental ear anatomy entitled, "Osteogenesis of the Human Periotic Capsule."

Dr. L. W. Dean reporting for the American Board of Otolaryngology summarized the activities for the preceding year and stated that "up to date 1,386 Otolaryngologists had been granted certification" since the inception of the Board.

Dr. Arthur Duel gave a report for the "Committee on Progressive Deafness" and announced that the volume on Otosclerosis had been completed and was ready for distribution. He stated that it is the plan that a review of all literature on this subject will appear from year-to-

year as a supplement to this volume and that this may be published at three year intervals. Dr. Duel reviewed the progress in fund raising and noted that there was a deficit of \$40,000 short of the goal of \$500,000 but stated that "we have become very ambitious and we hope that we shall finally get two millions so that the work may be very much prolonged and enlarged."

In this report it was also noted that arrangements have been made at McGill University to review the work of Dr. Eugene Crockett on calcium diet as a factor in otosclerosis and on a definite program of extension of that work along the line of dietary methods and parathyroid therapy.

THE SIXTY-THIRD MEETING

The sixty-third meeting was held at the New Ocean House, Swampscott, Massachusetts May 20-21, 1930. Otosclerosis continued to be the focus on which several presentations were centered. A prominent one was a report by Moritz Weber, M.D. on the results of his three years of work at the George Williams Hooper Foundation of the University of California under the title, "The Bone Picture of Otosclerosis and the Theory of Its Experimental Reproduction." This was extensively discussed by Professor T. H. Bast and others who questioned Dr. Weber's ideas.

Dr. C. B. Davenport of the Carnegie Institute of Washington, reported on the investigation that he had supervised under the title, "Hearing in Children when both Parents Have Otosclerosis."

One of the highlights of this meeting was the scholarly report by Dr. D. E. S. Wishart of Toronto, on a "Five Year's Study of the Relation of Infection of the Ear and Intestinal Tract in Infants." His conclusion was that infection of the mastoid antrum is not the cause of acute intestinal intoxication in infants. The claim that it was had been the contention of a number of otologists and pediatricians in the United States.

At the business meeting, Dr. Norval Pierce reporting for the Committee on Otosclerosis noted that excerpts from the literature which appeared in a bound volume were not selling with the rapidity that was hoped.

Dr. Bast had finished the report on the ossification centers of the fetal labyrinth and capsule and was now engaged in studying the

blood supply of fetal bones; work was also being done on so-called cartilaginous remnants together with the interglobular spaces which are so intimately concerned in otosclerosis.

Dr. B. J. Hanson was studying the comparative anatomy of the capsule adjacent to the stapedia joint in Cozzolini's zone, the place where otosclerosis was most likely to occur.

Dr. Arthur Duel reporting on the financial research fund mentioned the initial support of \$100,000 given by the Carnegie Foundation five years previously, and since that time the goal of \$500,000 had been reached.

THE SIXTY-FOURTH MEETING

The highlight of this meeting, held at the Briarcliff Lodge Hotel, Briarcliff Manor, New York June 18-19, 1931 was the presentation of the work of Sir Charles Ballance and Arthur B. Duel in their paper on "The Operative Treatment of Facial Palsy by the Introduction of Nerve Grafts into the Fallopian Canal and by other Intra-Temporal Methods."

The report of the Committee on the Study of Progressive Deafness indicated that research funds had been allocated for the following: a continuation of the investigations of Dr. Bast; for the further study by Dr. Culler on the conditioned auditory reflex as a means of testing an animal's hearing; endocrine studies related to the ear and particularly on hearing, at McGill University; anatomical work by Drs. Isaac Jones and Edmund P. Fowler; and the activities at the Central Bureau in keeping the literature on otosclerosis up-to-date.

THE SIXTY-FIFTH MEETING

A feature of this meeting, held at Hotel Chelsea, Atlantic City, New Jersey May 17-18, 1932 was the presence for the first time of Dr. Lorente de Nó, previously of Madrid and then doing research at the Central Institute for the Deaf in St. Louis. He presented his "Researches on Labyrinth Reflexes."

Other scholarly presentations included: "Electrical Phenomena of the Auditory Mechanism" by Leon J. Saul, M.D. and Hallowell Davis, M.D.; "Is All Hearing Cochlear?" by John Tait, M.D. and "Physical Data and Physiology of Excitation of the Auditory Nerve" by R. L. Wegel, Ph.D.

The report of the Committee on Progressive Deafness listed Dr. Bast's continuing anatomical studies, a negative report from Dr. Eugene Crockett from his project on the influence of body calcium on otosclerosis and Dr. C. B. Davenport's report on the genetic study of otosclerosis. The latter's findings were inconclusive.

THE SIXTY-SIXTH MEETING

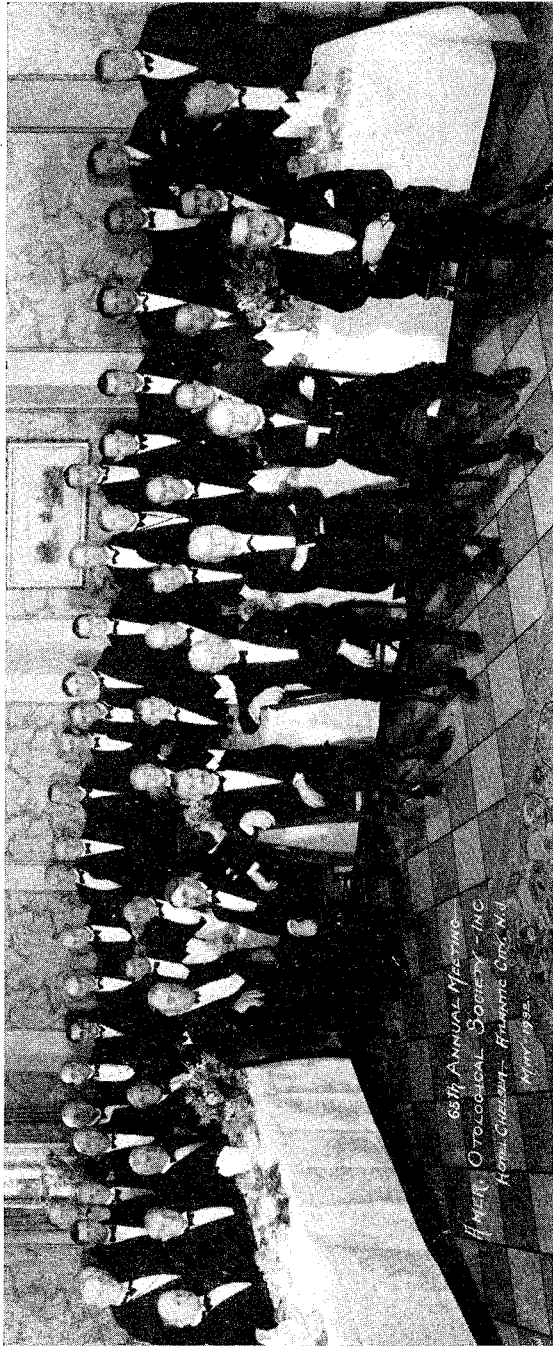
The sixty-sixth meeting was held at Hotel Raleigh, Washington, D. C. May 8-9, 1933. Dr. Arthur Duel in presenting the financial report for the Committee on the Study of Otosclerosis, stated that the income from the invested research funds had suffered in the previous year and that allocations had to be curtailed somewhat. Dr. J. Gordon Wilson commented on the anatomical investigations of Drs. Bast and Anson which had been supported, and the experimental work on hearing using conditioned animals in the Department of Psychology at Illinois and the Department of Physiology at McGill. Dr. John Tait reported in detail on the experimental work at the latter institution.

A variety of subjects were considered in the scientific sessions: Two papers on the nature of otosclerosis, a study of the "Effects of Drugs on Vestibular Reactions" (Ross and Olsen), "Some Experiments on the Utricle" (McNally), "Further Analysis of Cochlear Activity and Auditory Action Currents" (Davis, Derbyshire, Lurie and Saul), "The Interpretation of Audiograms" (Guild), the "Phylogenic Development of the Cochlea" (Lurie), and a "Study of Muscle Spasm Occurring During Recovery from Facial Palsy" (Duel).

THE SIXTY-SEVENTH MEETING

There were several highlights in this meeting held at the Claridge Hotel, Atlantic City, New Jersey April 6-7, 1934. One was a discussion of the pathology of middle ear and mastoid infection leading to labyrinthitis and meningitis and the treatment of these complications. A number of essayists participated.

Three reports were presented on research activities supported in part by the Society's research funds: "The Electrical Activity of the Cochlea in Certain Pathological Conditions" (Lurie, Davis and Derbyshire), "A Modification of Auditory Theory" (Davis, Derbyshire and Lurie), "Hearing Tests in Normal and Operated Dogs" (David, Derbyshire and Lurie).



MEMBERS AND GUESTS ATTENDING THE OFFICIAL DINNER AT THE SIXTY-FIFTH ANNUAL MEETING

Standing, left to right: Bryan, Babbitt, Coats, Swain, Birkett, Dean, Goldstein, Fowler, Lorente de No, Harris, Page, Fenton, Duell, Parker, Berry, Bunch, Hill, Lurie, Hunter, Alden, Macfarlan, Proetz, Porter, Fisher, Sonnenschein, Ray, Lierle

Seated second row, left to right: Wilson, Shambaugh, Jack, Dench, Packard, Beck, McGinnis, Ross, — — Mullin, Beatty, Lewis, Charlton, Spencer

Seated front row, left to right: Powers, Hubby, Wegel, Kerrison, Carmody, Sauer, McMahan

Dr. Walter Dandy, a neurosurgeon, discussed his work on the treatment of Menière's disease by nerve section and Drs. Albert Furstenberg, Lashmet and Frank Lathrop presented their medical regimen of therapy which was to become a widely used form of treatment.

Dr. J. Gordon Wilson reporting for The Committee on Progressive Deafness felt that the work accomplished during the previous year had been "most satisfactory."

THE SIXTY-EIGHTH MEETING

The sixty-eighth meeting was held at the Royal York Hotel, Toronto, Canada May 27-29, 1935. Two symposia occupied most of the time of the scientific sessions. The first was on "The Function of the Apical Turns of the Cochlea and the Symptoms of a Lesion in this Location." Studies on human temporal bones, animal experiments, the point of view of the physicist and clinical observations were all considered.

The other symposium was concerned with "Certain Fundamentals in Regard to Suppuration of the Petrosal Pyramid." Essayists were heard on the normal and pathological anatomy of the petrous pyramid, the clinical picture and diagnosis of the various types of infection, and the fundamentals of therapy. There was considerable discussion.

THE SIXTY-NINTH MEETING

The sixty-ninth meeting was held at the Book-Cadillac Hotel, Detroit, Michigan May 28-29, 1936. A symposium on hearing by bone conduction occupied most of the scientific sessions of the meeting. The program was as follows:

- I. Introductory note
- II. Anatomical, Physiological and Pathological Observations
 - (1) Stacy R. Guild, Ph.D.
 - (2) Edmund P. Fowler, M.D. and Edmund P. Fowler, Jr., M.D.
 - (3) Leroy M. Polvogt, M.D. and John E. Bordley, M.D.
 - (4) Douglas Macfarlan, M.D.
 - (5) Hallowell Davis, M.D.
- III. Clinical Observations
 - (1) George E. Shambaugh, Jr. M.D.

- (2) William J. McNally, M.D.
T. B. Erickson, M.D., R. Scott-
Moncrieff, M.D. and D. L. Reeves, M.D.

IV. Report of the Committee on Methods of Testing the Hearing by Bone Conduction

V. Discussion

VI. Animal Experiments

- (1) E. G. Wever, Ph.D. and
Charles W. Bray, Ph.D.
(2) Heinrich Kobrak, M.D.
(3) E. H. Culler, Ph.D.
(4) Simon Dworkin, M.D.,
G. A. Hutchinson, M.D. and
J. D. Katzman, M.D.
(5) Walter Hughson, M.D.,
Eva Thompson and E. G. Whitting, Ph.D.
(6) Edmund P. Fowler, Jr., M.D. and
T. W. Forbes

VII. Discussion

Dr. J. Gordon Wilson in reporting as Secretary of the Board of Trustees of the Research Fund voiced the sorrow of the members in their great loss through the death of Dr. Arthur B. Duel. Dr. Duel's report on the research funds had been given by Dr. John B. Rae. Dr. Wilson reported at length on the continuing research of Drs. Bast and Anson and the physiological studies on the auditory mechanism at McGill and at Illinois.

THE SEVENTIETH MEETING

The seventieth meeting was held at the Lido Country Club, Long Beach, New York May 27-28, 1937. Symposia seemed to be looked on with increasing favor. Most of the scientific sessions of this meeting were concerned with a symposium on "The Neural Mechanism of Hearing." All aspects of this were discussed. A total of 28 papers were read and there were nearly double that number participating in the total discussion that followed. This probably was a record.

In 1933, Dr. George Tobey, then President, had proposed a Committee to study all aspects of otitic meningitis in the hope that progress

might be made in lowering the high and almost certain mortality from this complication of ear infection. The early activities of this committee were centered in New York City under the leadership of Dr. James Dwyer. Then this type of inquiry was activated in Chicago and in Boston. Reports in the interim, principally from Dr. Dwyer, indicated little progress in lowering the mortality until sulfanilimide became available. At the 1937 meeting, the report from Dr. Dwyer's committee indicated substantial progress in curing this complication by chemotherapy.

The Research Fund, whose investments had declined considerably in value in the previous several years, was bolstered by a gift from Mr. Starling W. Childs, a vice-chairman of the Board of Trustees.

Research continued on anatomical investigations by Theodore Bast and Barry Anson, on the psychophysiology of hearing in laboratories at Illinois, McGill, Madison and Harvard and on the effects of drugs on hearing. A new research activity was started on improvements of hearing aids by Professor Vern Knudson.

THE SEVENTY-FIRST MEETING

Two symposia featured this meeting held at Hotel Claridge, Atlantic City, New Jersey May 6-7, 1938. The title of one was: "What is Justifiable to Do in Otitic Meningitis?" Otolologists were concerned about the need to remove a focus for the meningeal complication such as might be in the mastoid, even though the value of sulfanilimide was becoming appreciated.

The other symposium was entitled: "What Can Be Done for Chronic Progressive Deafness?" The most important paper in this symposium was never published anywhere. It has been listed on the program under the title: "Rationale, Technique, Case Reports and Observations with Fistulization of the Osseous Labyrinth," by Dr. Samuel J. Kopetsky, Dr. Julius Lempert and Dr. Ralph Almour. This was the first presentation of the Lempert one-stage fenestration of the horizontal semicircular canal for improving hearing impairment caused by otosclerosis. The reason that this paper does not appear in the Transactions may be learned from accounts of Council Committee action and a resolution published on pages 229-230 of the 1938 Transactions.



MEMBERS ATTENDING THE OFFICIAL DINNER AT THE
SEVENTY-FIRST ANNUAL MEETING

Head table, left to right: Harris, Brown, Mosher, Friesner, Jack
 Left table, left: Potts, Grove, — Wood, Porter, Taylor, Wishart, Hubby, Tobey, Lierle, Goldstein, Coates;
 right: Day, Wilson, Jarvis, Meltzer, Rosen, Hill, — Lurie
 Right table, left: Mueller, Dean, Proetz, Maybaum, — — —; right: — Jones, Cumming, Shea, — — Fowler, —
 Babbitt, Wherry, Spencer

The seventy-second meeting was held at the Westchester Country Club, Rye, New York May 22-23, 1939. A large variety of otological subjects were considered at this meeting. Probably the one that made the greatest impact was a paper on the "Prevention of Deafness in Children" by Dr. Samuel J. Crowe. This started a large activity of irradiating nasopharyngeal lymphoid tissue that was to continue for several years before the concept for its use was largely abandoned.

The Report of the Board of Trustees of The Research Fund indicated that there was continuing support of the work of Dr. Theodore Bast and Dr. Barry Anson at Wisconsin, of Dr. E. P. Fowler and Dr. I. Jones in New York City, Professor Tait and his associates at McGill, Drs. H. Davis and M. Lurie at Harvard, Dr. E. H. Culler now of Rochester, N.Y., Prof. V. Knudson of Los Angeles, and Prof. Collip and his associates at McGill. The research of each was commented on in detail.

SULFONAMIDES, PENICILLINS AND "MYCINS"
FENESTRATION AND STAPES
SURGERY

1940-1959

THE SEVENTY-THIRD MEETING THROUGH
THE NINETY-SECOND MEETING

LAWRENCE R. BOIES, M.D.

The period of 20 years, 1940-1959, probably brought greater changes in otology than occurred in any equal period of time in the 100 year history of the American Otological Society.

At least six important developments contributed to these changes. The first, and apparently the most far reaching one, was the impact of the new antimicrobials on infection and its complications. Prontosil was first used in this country in 1935. Sulfanilamide became available to American medicine in 1937. This antimicrobial and others that followed were making a significant impact on otology by 1941. Penicillin came on the American scene in 1942 but military medicine was given a priority on it because the supply was limited at first. As the use of these anti-microbial drugs became more effective and new ones were developed, acute suppuration ceased to be as much of a problem and the opinion was voiced in some places that otolaryngology had become a "dying specialty." Today, it is realized that because of other advances in otology, this progress has been the principal vitalizing force to enlarge otolaryngologic activity in these two decades.

The second development became the wide-spread practice of fenestration surgery for improving the hearing impairment from otosclerosis. The one stage technique for this had been introduced in 1938. This improved and flourished in the 1940s.

Audiology was a creation of this period. It has been said that this title "did not come into general use until 1945 when R. Carhart, a speech pathologist recruited for the army aural rehabilitation work, and N. Canfield, an otologist who was serving as a consultant to the War Department, applied the term to the field which had been created through the joint efforts of the two fields of specialization that these men represented." Subsequently, the collaboration of otologists and audiologists refined audiometric testing and created some new tests.

Hearing aids became greatly improved because of electronic developments, notably the contribution of transistors.

A fifth development was the revival of stapes surgery by Samuel Rosen in 1953. Subsequently, contributions by others, principally the idea of stapes removal and its replacement with an artificial prosthesis, brought this to an acceptance, whereby the Lempert fenestration was practically replaced.

In the late 1950s functional repair of the middle ear damaged by chronic otitis media became a considerable otologic activity following the pioneering contributions of Fritz Zöllner and Horst Wüllstein of Germany.

During the 20 year period, the annual meetings in 1943 and 1945 were cancelled because of a shortage of transportation facilities related to World War II.

The following comment on each annual meeting lists what seemed to the writer to be the highlights. To be adequately informed one should review the Transactions of each meeting for the complete programs, the reports on the research activities sponsored by the Research Fund as well as important committee reports.

An important change in the constitution and by-laws when these were revised in 1947 enlarged the council by one addition which created a new office, that of Editor-Librarian. The first occupant of this position was Dr. John Lindsay who set a high standard of competence in editing the complete programs of the scientific sessions and the business meetings with the reports of the several important committees.

It is of interest to note that the attendance of non-members who registered as guests of the Society practically tripled during this 20

year period. This can be accounted for by the excellence of the scientific programs plus the fact that an arrangement had been made with the Triological Society to join with the American Otological Society and the American Laryngological Association to hold all three meetings together in a period of seven days in a rotating sequence.

THE SEVENTY-THIRD MEETING

The seventy-third meeting was held at the Westchester Country Club, Rye, New York May 30-31, 1940. As in the 1939 meeting, hearing impairment in children was the subject that highlighted the scientific sessions. Four papers were presented from the Johns Hopkins group with Dr. S. J. Crowe the first essayist on "The Recognition, Treatment and Prevention of Hearing Impairment in Children."

A panel discussion on lateral sinus thrombophlebitis covering five aspects of the problem probably was the last one held or ever to be held on this subject because of the impact of the antimicrobial drugs on ear infections and their complications.

Dr. D. Harold Walker in his new office as Chairman of the Board of Trustees of the Research Fund apparently had visited each scientist receiving a grant and presented an outline of the investigative work going on in each laboratory.

THE SEVENTY-FOURTH MEETING

The seventy-fourth meeting was held at Marlborough-Blenheim Hotel, Atlantic City, New Jersey May 26-27, 1941. An important paper presented at this meeting was entitled "The Evaluation of the Labyrinth Fenestration Operation For Chronic Progressive Deafness," by Dr. Edward C. Campbell. This was the first report on the Lempert fenestration to be made before this Society since the original presentation in 1938 (not published in the Transactions.) Dr. Campbell reported on an experience on 53 patients. It was a cautious report but indicated the belief of the essayist that the procedure held promise and should have further trial and study of the numerous problems associated with it. The paper was extensively discussed by several who were doing this surgery.

THE SEVENTY-FIFTH MEETING

The seventy-fifth meeting was held at Marlborough-Blenheim Hotel, Atlantic City, New Jersey May 28-29, 1942. Dr. Campbell re-

ported again on his follow-up of an additional year on the patients reported on in 1941 and added an additional experience with 23 patients who were eight months past their surgery. In answer to the question "Is the percentage of successful results in these operated cases sufficiently high to justify the operation?" he stated: "The answer is definitely yes, but it must be emphasized that to obtain a practical improvement requires great care in the selection of cases to be operated."

Dr. Henry L. Williams, Jr. and others from the Mayo Clinic reported the experience at their institution in treating otitic meningitis. They compared their results in a period five years before and five years since the introduction of chemotherapy. The recovery rate before the introduction of chemotherapy was 35 per cent. In the group of patients in which the indicated surgical procedures were employed, plus chemotherapy, the recovery rate nearly doubled—69 per cent. The drugs most commonly used were sulfanilamide and sulfapyridine.

THE SEVENTY-SEVENTH MEETING

Inasmuch as the annual meeting was cancelled in 1943 the officers continued for the year 1944. The scientific program for this meeting held at the Waldorf-Astoria Hotel, New York City June 5-6, 1944 was concerned with a variety of subjects. Four papers occupied a symposium on "The Future of Physical Therapy for the Deafened," and highlighted the status of the current aural casualties and their rehabilitation.

Twelve members of the Society were in military service as were a number of younger men who were to attain membership at a later date.

Research activities supported by funds granted by the Society diminished as might be expected because of the military activities of some of the investigators.

THE SEVENTY-EIGHTH AND SEVENTY-NINTH MEETINGS

The annual meeting scheduled for 1945 was cancelled because of transportation problems related to the war. A feature of the meeting held at the Drake Hotel, Chicago, Illinois May 31-June 1, 1946 was a "Symposium on Hearing Aids." This was a subject on which the President, Dr. Gordon Berry, was a practical expert, since he wore one. Another feature of the meeting was a "Symposium on Noise."

Dr. Barry Anson gave a paper on "Development of the Auditory Ossicles," the first of a number of papers on some aspect of the anatomy of the temporal bone that he presented over ensuing years.

Dr. John Lindsay added to the documented reports on "Labyrinthine Dropsy."

The second formal report by an otologic surgeon on his experience with the Lempert fenestration of the lateral semicircular canal before the Society was made by Dr. Theodore E. Walsh. It was entitled "Diagnosis and Evaluation of Fenestration." S. R. Silverman, Ph.D. collaborated in the hearing evaluation. Their viewpoint was expressed in the opening paragraph. "In spite of the skepticism with which his first reports were received, Lempert's results and those of others who followed his technique have proved the value of the fenestration operation as the treatment of choice for clinical otosclerosis. The operation is here to stay. The question now is not whether this operation is of value but in which case should it be successful and can the results be evaluated objectively."

There followed a presentation of "objective diagnostic and evaluative techniques which employ scientifically constructed articulation tests to assess cochlear function and to evaluate results in terms of restoration of the patient to social adequacy."

Dr. D. Harold Walker reported for the Board of Trustees of the Research Fund and summarized the activities of those to whom funds had been allocated.

A proposed revision of the Constitution and By-Laws was presented by a Committee that had been previously appointed, with a vote to be taken on this at the next annual meeting.

Some resolutions relative to the Central Bureau of Research of the American Otological Society, Inc., were adopted. It was stated "That said Board of Trustees shall continue to be designated and known as 'Board of Trustees of the Research Fund of the American Otological Society, Inc.'" and "That the designation 'Central Bureau of Research of the American Otological Society, Inc.' heretofore applied to the central office or secretariat of the Board of Trustees be and is hereby approved and confirmed and its continuance is hereby authorized."

THE EIGHTIETH MEETING

The eightieth meeting was held at the Hotel Statler, St. Louis, Missouri April 21-22, 1947. Dr. Henry L. Williams read a paper on "Endolymphatic Hydrops without Vertigo." The importance of his observations have become increasingly significant in recent years.

A one-half day session was devoted to a "Symposium on Fenestration of the Labyrinth." Most of the participants were those with a large experience with this type of surgery. The success and the causes for failure were thoroughly discussed. It was obvious that fenestration surgery was a widespread activity and that success demanded special training and experience in the selection of the patient for this operation.

Another half day session was occupied with a "Symposium on Vertigo."

The proposed revision in the constitution and by-laws was voted on favorably. Probably, the most important change was the provision for an additional member of the Council in the person of an Editor-Librarian.

Dr. D. Harold Walker presented his usual detailed report on the work for which grants had been allocated from the Research Fund.

THE EIGHTY-FIRST MEETING

The eighty-first meeting was held at The Homestead, Hot Springs, Virginia April 12-13, 1948. Dr. E. P. Fowler presented as a research report his observations on "Estrogen Bone Metabolism and Otosclerosis" and advanced the thesis that "estrogen is so closely associated with calcium and bone metabolism that it is permissible to assign to it a part in the etiology of otosclerosis, at least in people with receptive heredity backgrounds; and perhaps it plays a major part in the changing activity of otosclerosis lesions."

Six presentations were concerned with conservation of hearing programs and present methods of testing auditory function. Dr. Gordon Berry, himself a wearer of an aid, gave a very comprehensive paper on "The Valuation and Practicability of Hearing Aids."

Dr. Bernard McMahon, the President, proposed and received approval for a subcommittee to establish an "Award of Merit" which could be presented to "any individual working in the field of Otology . . .

One single scientific contribution of peculiar and far-reaching import; or many smaller contributions whose sum becomes of especial significance; or outstanding leadership in surgery or teaching or research in this field—any or all of these attributes in a candidate may find him worthy of consideration by the Committee.” “A fitting certificate or medal” was to be designed.

THE EIGHTY-SECOND MEETING

The eighty-second meeting was held at the Hotel Biltmore in New York City May 18-19, 1949. Dr. John E. Bordley and Dr. William E. Hardy presented a paper that was to inaugurate a widely practiced method of determining the hearing in two groups of patients: young children and those with psychogenic deafness. The paper was entitled, “A Study of Objective Audiometry with the use of a Psychogalvanometric Response.”

Dr. Barry J. Anson and Dr. Theodore H. Bast reported their research on “The Development of the Otic Capsule in the Region of Surgical Fenestration.”

Four essayists contributed to a “Symposium on the Various Methods used to Prevent or Improve Hearing Impairment in Children.” This stimulated a lot of discussion.

Dr. John Page in presenting the “Report of the Board of Trustees for the Research Fund,” noted the fact that some of the work supported seemed to have little relation to otosclerosis, studies of which were intended as a principal objective. He urged every member of the Society to be on the watch for a young, well qualified and motivated investigator who might be induced to concentrate his energies toward otosclerosis. Reports of the research being subsidized were outlined in written form and discussed.

The first Award of Merit was presented to Dr. George M. Coates but a description of the medal or the citation was not included in the Transactions for 1949.

THE EIGHTY-THIRD MEETING

The eighty-third meeting was held at the Mark Hopkins Hotel, San Francisco, California May 21-22, 1950. There were some outstanding presentations at this meeting. Among these were:

“Recent Investigations of Sound Conduction”.

Part I. “The Normal Ear” by Merle Lawrence, Ph.D.

Part II, “The Ear with Conductive Impairment” by Ernest Glen Wever, Ph.D.

“Postnatal Growth and Adult Structure of the Otic (Endolymphatic) Sac” by Professor Theodore H. Bast.

“Vasomotor Labyrinthine Ischemia” by Dr. Jerome A. Hilger.

“The Nerve Deaf Child: Significance of Rh Maternal Rubella and Other Etiologic Factors” by Dr. Victor Goodhill.

“The Otologic Concept of Bell’s Palsy and Its Treatment,” by Joseph A. Sullivan, M.B.

The report of the Board of Trustees of the Research Fund indicated that the investigations supported in part by allocations from the research fund have with few exceptions continued along the lines formerly pursued.

The Award of Merit Committee thought it appropriate to again call attention to a resolution adopted by the Board of Trustees of the Research Fund, pertaining to this award.

“BE IT NOW RESOLVED: That this Board appropriate a sum annually of not to exceed two thousand dollars for the cost of the medal and for an honorarium to be awarded in the discretion of the Award Committee of the parent Society, for the purpose of recognizing outstanding service in research in Otology and in the interest of encouraging research in the problems of impaired hearing.”

It was further explained by the Committee: “There are three medals which we have at our disposal. There are the gold medal, the silver medal and the bronze medal. There is also the honorarium, which as the resolution states may amount to as much as \$2000. These medals are given for varying degrees of excellence of work, but it has to be of a research nature. Also, the honorarium can be awarded with which-ever medal is bestowed and/or separately without a medal being given at all.”

THE EIGHTY-FOURTH MEETING

The eighty-fourth meeting was held at the Hotel Claridge, Atlantic City, New Jersey May 11-12, 1951. Professor Dr. Luzius Rüedi of the University of Zurich presented "Some Experimental Findings on the Functions of the Inner Ear."

Six essayists participated in a "Symposium on Audiology."

Drs. Barry Anson and Theodore Bast presented some research studies on "Development and Adult Structure of the Otic Capsule in the Region of the Vestibular aqueduct."

Dr. Howard House gave an "Analysis of Five-Year Fenestration Results."

Dr. E. P. Fowler, gave a detailed report on the research activities supported in part by allocations from the Research Fund. With one exception this was continued along the lines formerly pursued.

A Silver Award of Merit Medal and an Honorarium of \$500 were bestowed on Dr. Barry Anson and on Dr. Theodore Bast.

THE EIGHTY-FIFTH MEETING

The eighty-fifth meeting was held at the Royal York Hotel, Toronto, Canada May 18-19, 1952. The President, Dr. Gordon Hoople, in a brief paper brought to the attention of otologists the existence of "Unilateral (Clinical) Otosclerosis."

Dr. John Lindsay et al. presented research studies on "The Effect of Obliteration of the Endolymphatic Duct and the Cochlear Aqueduct."

Drs. Joseph Hawkins and Moses Lurie described their investigation of "The Ototoxic Action of Streptomycin, Dihydrostreptomycin and Neomycin."

Dr. Henry Williams et al. discussed "The Problem of Synkinesis and Contracture in Hemifacial Spasm and Bell's Palsy."

Dr. E. P. Fowler, presented a summary of the research activities supported in part by the Central Bureau. One new investigator had

been added to the team at Columbia in the person of Dr. Anderson Hilding.

In addition to being the Guest of Honor, Dr. Fowler received the Award of Merit Medal.

THE EIGHTY-SIXTH MEETING

The eighty-sixth meeting was held at the Roosevelt Hotel, New Orleans, Louisiana May 1-2, 1953. A paper that was destined to be extensively quoted in the ensuing years was presented by Stacy R. Guild, Ph.D. under the title: "The Glomus Jugulare. A Nonchromaffin Paraganglion in Man."

Some reports of research studies included:

"Inner Ear Pathology in Children Following Maternal Rubella" by Dr. John R. Lindsay et al.

"Development and Adult Structure of the Cochlear (Round) Window and of Related Portions of the Otic Capsule" by Barry Anson, Ph.D. and Theodore Bast, Ph.D.

"Theoretical Considerations of the Transmission of Sound Vibrations from the Perilymph to the Organ of Corti," by Anderson C. Hilding, M.D.

"Tissue Culture Techniques for the Study of the Isolated Otic Vesicle" by Merle Lawrence, Ph.D. and Donald J. Merchant, Ph.D.

An important clinical paper by Dr. Philip E. Meltzer was on "Unrecognized Cholesteatosis in Children."

The Award of Merit Gold Medal and a Scroll were presented to Dr. Julius Lempert.

THE EIGHTY-SEVENTH MEETING

Reports on basic and clinical research studies were again a feature of this meeting held at the Hotel Statler, Boston, Massachusetts May 23-24, 1954. These included:

"The Development and Adult Structure of the Malleus, Incus and Stapes" by Drs. Theodore Bast and Barry Anson with the assistance of Shafik F. Richany, M.D.

"Capillary Areas of the Membranous Labyrinth" by Catherine A. Smith, Ph.D.

"Some Electro-Mechanical Properties of the Organ of Corti" by Georg von Békésy, Ph.D.

"The Excitation of Nerve Impulses in the Cochlea" by Hallowell Davis, M.D.

"Electrical Responses from the Auditory Nervous System" by Walter Rosenblith, Ing. Rad.

"Different Types and Degrees of Acoustic Trauma by Experimental Exposure of the Human and Animal Ear to Pure Tones and Noise" by Luzius Rüedi, M.D.

"Positional Nystagmus" by Terence Cawthorne, F.R.C.S.

"Observations from a Control Study on the Effect of Nasopharyngeal Irradiation in a Group of School Age Children" by William G. Hardy, Ph.D. and John E. Bordley, M.D. This can be considered a follow-up on the presentations of the effect of nasopharyngeal irradiation as first presented by Dr. S. J. Crowe and the Johns Hopkins group before the Society in 1940, and in subsequent meetings. It became a controversial subject. There is so much detail in the paper that anyone concerned should read it in its entirety.

The Award of Merit Silver Medal and an Honorarium of \$1000 was presented to Stacy Guild, Ph.D.

THE EIGHTY-EIGHTH MEETING

The eighty-eighth meeting was held at the Hollywood Beach Hotel, Hollywood, Florida March 17-19, 1955. A "Symposium on Blood Circulation" as it relates to the inner ear was a feature of this meeting. Six essayists participated and an extended discussion followed.

Other highlights of the meeting were these presentations:

"Auditory Fatigue and Adaptation in the Differential Diagnosis of End-Organ Deafness" by J. D. Hood, Ph.D.

"Chemodectomas of the Glomus Jugulare (Non-Chromaffin Paragangliomas) with Especial Reference to Their Response to Roentgen Therapy" by Dr. Henry L. Williams et al. This was a review of 13 cases treated at the Mayo Clinic.

"Problems Related to the Use of Speech in Clinical Audiometry" by S. Richard Silverman, Ph.D. and Ira J. Hirsh, Ph.D.

In the business meeting, approval was voted of the Council's recommendation to change regulations pertaining to the Award of Merit. As altered, these regulations provided that hereafter the Award would consist of "A suitable scroll and a gold medal for outstanding accomplishment and distinguished service in the field of Otology." The matter of an honorarium would be a decision of the Board of Trustees of the Research Fund which in the past had provided the honorarium as well as paying all expenses associated with the award.

THE EIGHTY-NINTH MEETING

A feature of this meeting held at the Seignior Club, Montebello, Canada May 11-12, 1956 was a "Symposium on the Utricle" which was introduced by the President, Dr. William McNally. Four other essayists contributed.

Other outstanding presentations were:

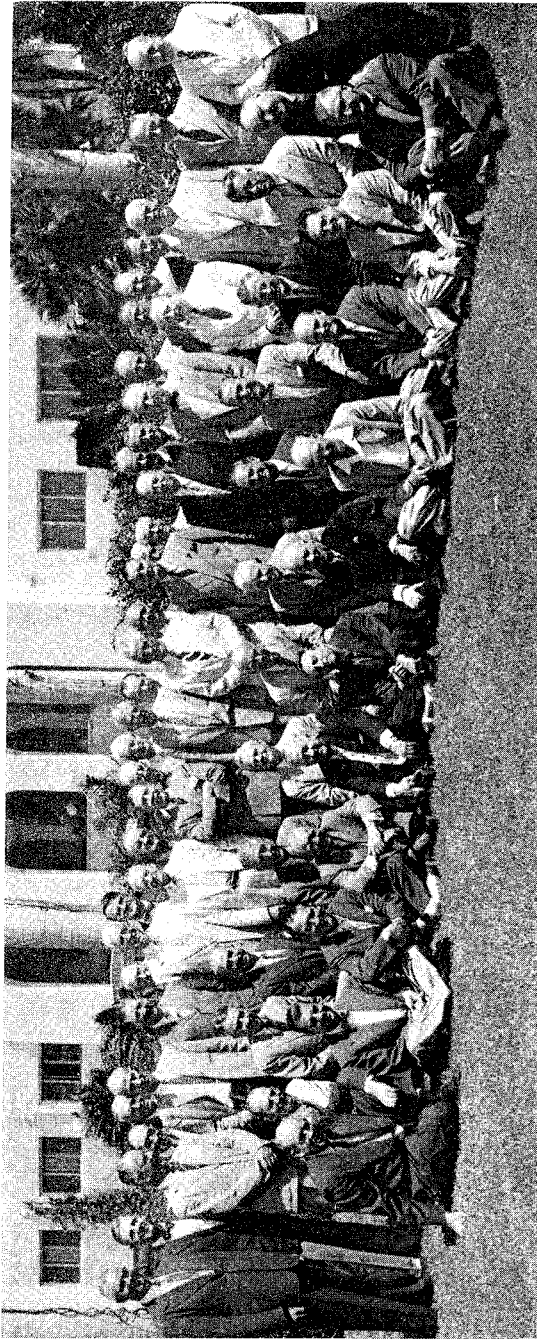
"Autoradiographic Studies of the Intimate Structures of the Inner Ear," by Dr. Leonard F. Belanger.

"Hearing." The address of the Guest of Honor, Stacy Guild, Ph.D.

"Some Recent Experiments on the Neurophysiology of Hearing" by Dr. Robert Galambos.

"The Structure of Bone and Cartilage" by Dr. Robert A. Robinson.

"Functional Repair of the Middle Ear in Chronic Otitis Media" by Professor Horst Wüllstein of Germany.



MEMBERS ATTENDING THE OFFICIAL DINNER AT THE
EIGHTY-EIGHTH ANNUAL MEETING

Second row standing: Burrage, Weille, Maxwell, Pattee, Schall, Taylor, McMann, Croushore, Shuster, Cody, Sutherland, Morrison, Baron, Periman, McNaught, — Fernandez

First row standing: Simonton, Walsh, Day, Canfield, Hoople, Fowler, Cambrelin, Hill, Wishart, McNally, Wendel, Motley, Proetz, Guild, Schenck, Robb

Second row seated: Senturia, Bordley, Druss, Lindsay, Lurie, Furstenberg, — Dixon, Alfaro, Davis, Campbell, Silverman

First row seated: Knisely, Goodhill, McLaurin, Kos, Boies, Lempert, Sullivan, Williams, Hilger, Pastore, Juers

The ninetieth meeting was held at the Hotel Statler, Washington, D. C. May 4, 1957. This program was limited to one day preceding the opening of the Sixth International Congress of Otolaryngology which was convening in the United States for the first time. President J. R. Lindsay chose papers on basic science research except for the presentation of Mr. Terence Cawthorne of England and Dr. Fritz Zöllner of Germany so that there would be no duplication with the International Congress program.

Three essayists contributed to a "Symposium on Neurophysiology":

Walter A. Rosenblith, M.D. spoke on "Some Uses of Electric Computers in the Study of the Auditory Nervous System."

Robert Galambos, M.D., presented "Microelectrode Studies on the Auditory Nervous System."

William D. Neff, Ph.D. discussed "Behavioral Studies of Auditory Discrimination."

Two other papers completed the basic science part of the program. These were on:

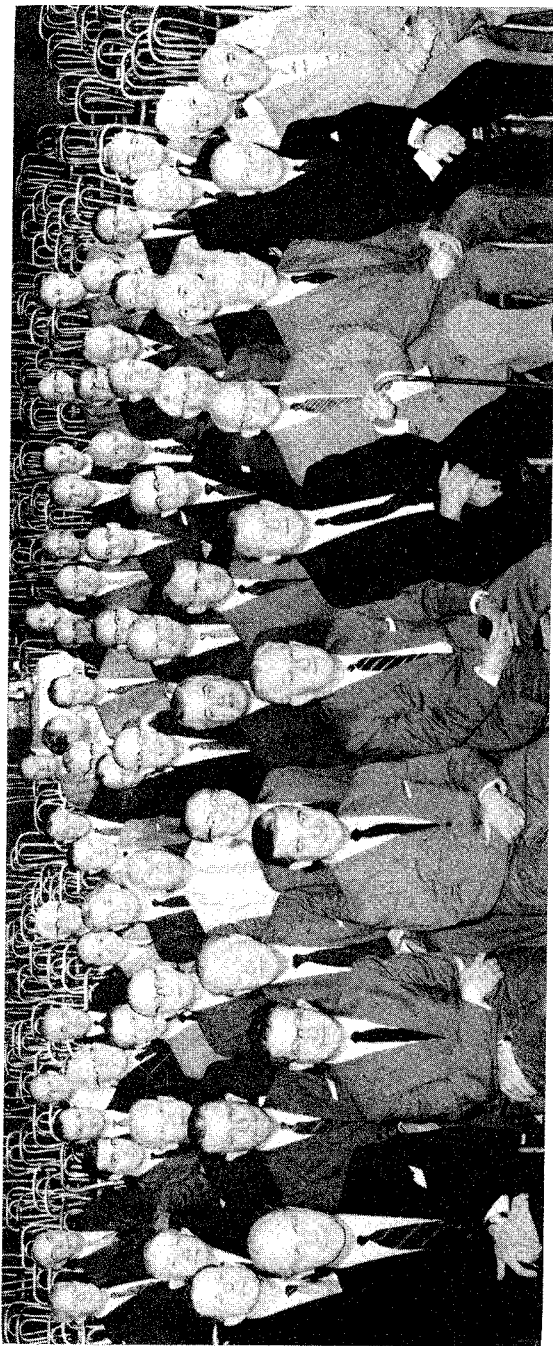
"The Structures of the Stria Vascularis" by Catherine A. Smith, Ph.D.

"Experimental Obstruction of Venous Drainage and Arterial Supply of the Inner Ear" by Dr. Henry B. Perlman and Robert S. Kimura, B.A.

Mr. Terence Cawthorne of London spoke on "Adventures with the Stapes."

Professor Fritz Zöllner of Germany discussed "The Meatoantrotomy—A Special Approach for Plastic Procedures" and demonstrated his technique with a motion picture.

A gold medallion, a scroll, and an honorarium of \$1000 was presented to Dr. Georg von Békèsy for his research contributions to otology.



MEMBERS ATTENDING THE OFFICIAL DINNER AT THE
NINETY-FIRST ANNUAL MEETING

Sixth row: Calloway, Hilger, Schenck, McMahan, Campbell, Tremble, Schuknecht, Rosen, Brown, Kelemen, Croushore, Martin, Peitman
 Fifth row: Bellucci, Hoople, Weille, McNally, Simonton, Work, Lathrop, Tolan, Henner, Lederer
 Fourth row: Shambaugh, Jr., Rambo, McLaurin, Guilford, Derlacki, Alfaro, Senturia, Day, Walsh, McNaught
 Third row: Blassingame, Williams, Rosenwasser, Rosenberger, Davison, House, Sellers, Fowler, Jr., Hilding, Lindsay
 Second row: Cody, Singleton, Cumming, Dysart, DeWeese, Baron, Hill, Meyer, McCaskey, Kinney
 First row: McHugh, Pohlman, Goodhill, Botes, Lierle, Fowler, Sr., Lurie, Sullivan, Meltzer

The ninety-first meeting was held at Hotel Fairmont, San Francisco, California May 17-18, 1958. The address of the President, Dr. Dean Lierle, was a scientific treatise on "The Effect of Tractor Noise on the Auditory Sensitivity of Tractor Operators." Scott Reger, Ph.D. collaborated in this study. It showed that "tractor noise is sufficiently high in intensity to produce high frequency hearing losses in tractor operators with noise susceptible ears if exposed over a period of several years."

Professors Barry Anson and Theodore Bast spoke on "Anatomical Structure of the Stapes and the Relation of the Stapedial Footplate to Vital Parts of the Otic Labyrinth."

Dr. Harold Schuknecht presented a film on "The Technique for Removal and Preparation of Temporal Bones for Anatomical Surgical Dissection and Pathologic Study."

Dr. Hallowell Davis presented "A Mechano-Electrical Theory of Cochlear Action."

Among other outstanding papers were:

"Functional Changes in Inner Ear Deafness" by Merle Lawrence, Ph.D.

"Observations on Temporary Auditory Threshold Shift Resulting from Noise Exposure" by Aram Glorig, M.D., Anne Summerfield, Ph.D. and W. Dixon Ward, Ph.D.

"Differential Diagnosis Between Otosclerosis and Congenital Footplate Fixation" by Dr. Howard P. House.

The ninety-second meeting was held at The Homestead, Hot Springs, Virginia March 13-14, 1959. So many excellent papers were presented at this meeting that it was difficult to point out any highlights. Among those resulting from basic science studies were:

"The Cochlear Potentials and Their Relation to Hearing" by E. Glen Wever, Ph.D.

"An Interpretation of the Mechanical Detector Action of the Cochlea" by Dr. Hallowell Davis and Dr. Donald H. Eldredge.

"Sampling Auditory Responses at the Cortical Level. A Routine for EER Audiometric Testing" by A. J. Derbyshire, Ph.D. and J. C. Farley, Ph.D.

"An Experimental Study of the Dynamic Circulation of the Labyrinthine Fluids of Living Mammals" by Dr. Francis L. Weille, Dr. John Irwin, et al.

"Cochlear Blood Flow in Hypothermia" by Dr. H. B. Perlman, Robert Kimura, B. A., and Robert Butler, Ph.D.

"Experimental Observations on Postural Nystagmus in Cats" by Dr. Cesar Fernandez, Dr. Rene Alzate, and Dr. John R. Lindsay.

Some of the papers resulting from clinical research were:

"Ototoxicity of Kanamycin" by J. E. Hawkins, Jr., Ph.D. and Dr. Jan Wersäll.

"Long Term Results from Surgery for Otosclerosis" by Dr. Theodore Walsh.

"Sudden Deafness and Bell's Palsy: A Common Cause" by Dr. William H. Saunders and Dr. William Lippy.

"Certain Problems in Tympanoplasty" by Dr. Fred R. Guilford.

"The Surgical Treatment of Facial Paralysis and Conductive Deafness in Fractures of the Temporal Bone" by Dr. Hollie E. McHugh.

The Award of Merit Gold Medal, a scroll and an honorarium of \$1000 were presented to E. Glen Wever, Ph.D. in recognition of his major contributions to otologic research. In presenting these, President Lurie dwelt in considerable length on the impact the "Wever-Bray" phenomenon had on the development of research in otology.

BETTER UNDERSTANDING OF
SURGICAL REHABILITATION OF HEARING
MORE ACCURATE DIAGNOSTIC TESTS

1960-1967

THE NINETY-THIRD MEETING THROUGH
THE ONE HUNDREDTH MEETING

BEN H. SENTURIA, M.D.*

THE NINETY-THIRD MEETING

The 1960s started off auspiciously with a rugged, conservative President from California at the head of the Society. President Robert C. Martin, at the meeting held at The Deauville, Miami Beach, Florida March 13-14, 1960 described this period as one of "change and progress" but decried change for change's sake. He expressed the hope that the meeting would produce "both constructive ideas and healthy skepticism."

In this outstanding scientific program there was much emphasis on the anatomy and embryology of the middle and inner ears and on the electrical measurements of the cochlea. There continued to be avid interest in all aspects of otosclerosis and stapes replacement surgery. Papers emphasizing striking differences in basic surgical techniques were presented and discussed with enthusiasm. Much discussion at the business meeting revolved about a seal for the Society and many of us learned to differentiate between the wand of Aesculapius, the symbol of medicine, and the Caduceus, the symbol of commerce. A drawing for the seal was accepted which shows a seated man inscribing his-

*Titles of papers and names of the authors were not included in this section on specific instructions from Dr. E. P. Fowler, the Chairman of the Committee (Ed.)

tory and a younger one holding the light of knowledge with the wand of Aesculapius in the background. For the first time in the history of the Society, a certificate of membership containing the embossed seal was approved and made available to the membership.

THE NINETY-FOURTH MEETING

Dr. Henry Williams accepted the Presidency in 1961, and arranged a program entitled "At the Advancing Frontier of Otology." The emphasis in his scientific program held at The Lake Placid Club, Lake Placid, New York May 26-27, 1961 was centered on the inner ear and included papers dealing with anatomy, innervation, labyrinthine circulation and pressure; other contributions dealt with the effects of age, intense sound, hypoxia and irritating drugs. The problem of conduction deafness received its usual attention in the form of stapes and labyrinthine anatomy. Increasing concern with human and animal histopathological findings following the use of polyethylene tube inserts was manifest in some of the papers.

THE NINETY-FIFTH MEETING

In 1962, Dr. Lawrence R. Boies assumed the presidency and demonstrated his customary administrative skill in assembling an outstanding scientific program at the meeting held at the Sheraton-Dallas Hotel, Dallas, Texas April 29-30, 1962. He pointed out the increasing emphasis being placed on research in our scientific programs, but expressed confidence that the clinical aspects of training were not being neglected. As Guest of Honor that year, Philip Meltzer gave an inspiring talk on the "Heritage of our Society." Although the Nobel Prize winner, Dr. Georg von Békèsy, was unable to be present, his paper was read for him and was an example of outstanding, tangible and significant research in the area of electroacoustics. Some members were of the opinion that we heard an important "break-through" dealing with the coding system of the ear. Other excellent contributions dealt with screening of infants, the pathology of Menière's disease and presbycusis in a noise-free population.

THE NINETY-SIXTH MEETING

In 1963, the Society was honored by having as its President, Senator Joseph A. Sullivan and as Guest of Honor, Sir William J. McNally, two of Canada's outstanding sons, both of whom had made significant scientific and teaching contributions to otology. This meeting was held at the Hollywood Beach Hotel, Hollywood, Florida April 26-27, 1963.

In his timely address the Guest of Honor, Sir William J. McNally, delineated the characteristics of the Ideal Director of a Department of Otolaryngology. This was timely since in the United States we anticipated the imminent retirement of a number of the Directors of key teaching and research departments and there remained many unfilled medical school Chairs of Otolaryngology. Active efforts were being made to attract superior men into teaching positions in our specialty by providing excellent research and clinical facilities.

Much thought and effort was being given to some preparation for the prevention or treatment of Menière's disease and sensorineural deafness. There was presented an optimistic report of the experience with a lemon bioflavonoid complex combined with ascorbic acid and Vitamin B, but the discussion carried an overtone of scepticism.

Experimental studies to clarify the function of the various components of the inner ear continued in increasing number and scientific quality. It was shown clearly in cats that there existed normally a flow of fluid from the subarachnoid space to the perilymphatic scali by way of the cochlear aqueduct, but its significance could not be established. A system of fluid channels connecting the scali tympani with the organ of Corti was nicely demonstrated.

Further excellent and conclusive studies were reported on the inhibitory control of the olivo-cochlear bundles and beautiful studies were performed in cats in order to study the effects of cortical ablation and artificial tumor implants upon the central oculo-vestibular system. The relation of individual susceptibility to acoustic damage and individual variability of middle-ear muscle acoustic reflex in cats was measured. Those with better than average reflex contraction showed less sound damage. Attempts were made to determine the function of the utricular and saccular maculae.

The investigators continued to be interested in anomalies of the first branchial cleft. Diagnosis was difficult and contrast media studies were not found satisfactory as a diagnostic procedure. An understanding of the embryological development of these anomalies was considered essential to early diagnosis and successful treatment.

Function of the Eustachian tube continued to be studied, this time with the use of fluorescein solutions. Emphasis was placed on gravity and ciliary function of the tube in clearing of fluid from the middle ear.



MEMBERS ATTENDING THE OFFICIAL DINNER AT THE
NINETY-SIXTH ANNUAL MEETING

Fourth row: Canfield, Robb, Hough, Tabb, Hallberg
 Third row: Harrill, Motley, Fox, Davis, Davison, McGovern, H. Boyd, Hoople, C. Smith, Daly, House, Sellers,
 Bradley, Lederer, Tremble, Morrow, Woodman, Brown, Goldman, Tomndorf, Sataloff
 Second row: Work, Rosen, Goodhill, Kelemen, Ireland, Rosenwasser, Croushore, Altman, Sutherland, Bellucci,
 Baron, Hilding, Sooy, Lawrence, Guilford, M. Lewis, McAskile, D. Lewis, B. Smith, McLaurin, Alfaro,
 McHugh, Hilger, Hill, Weille, Senturia
 First row: Kos, Martin, DeWeese, Juers, Fowler, Jr., Moore, Williams, Walsh, Cawthorne, Sullivan, Fowler, Sr.,
 McNally, Botes, Lathrop, Lurie, Meltzer, Day, McNaught

Stapedectomy for rehabilitation of hearing continued to be of major interest. A summary of experiences with complications was presented: the most important problem was further cochlear loss; there also occurred occasional disturbances of equilibrium and temporary facial paralysis. Perilymph leakage always stopped spontaneously, and occasional otitis media was controlled satisfactorily.

Problems related to the facial nerve continued to interest the membership and an outstanding symposium was presented. This included presentations dealing with the anatomy, experimental and clinical studies of the central neural relationships, management during operation on the parotid gland, surgical repair of intratemporal and petrous lesions, and clinical control of Bell's palsy.

THE NINETY-SEVENTH MEETING

Dr. Theodore E. Walsh presided at the 1964 meeting which was held at the St. Francis Hotel, San Francisco, California April 5-6, 1964. He chose for his Guest of Honor, Dr. Kenneth Day, who spoke of the declining art of otology and the prospect of increasing automation and "production line type of practice." He noted with a feeling of sadness the neglect of conservative therapy for some ear problems and the failure to provide the nerve deafened patient with enough information and assistance.

The Scientific Program began with a comprehensive study of the very complex problem of bone conduction. Much interest was aroused by a study of the pattern of the internal vascular anatomy of the stapes, incus and malleus since it had important implications in stapes surgery. Then a clear and convincing study was presented which demonstrated that good hearing results could be obtained in patients with obliterative otosclerosis if proper care was taken with the surgical approach. In an effort to understand the alteration in middle ear functions, studies were reported in which cochlear microphonics were compared following stapedectomy and replacement by wire-fat grafts and Teflon® pistons.

Some intriguing and original observations on the secretion and absorption of endolymph in pigeons were excellently described and illustrated. Further experimental work dealing with the function of the middle ear muscles revealed the complex role of these muscles, which goes far beyond that of simple protection against noise.

An effort was made to gain some insight into audiometric patterns found in preclinical stapes fixation. The most consistent pattern was shown to be a small air-bone gap at the lower frequencies. A review of the subject of the treatment of chronic otitis revealed that many surgeons agree that all patients with chronic suppurative otitis media do not require radical ear surgery. It was suggested that the surgical procedures have undergone so much evolution and are so complex, that the average otolaryngologist who does not limit his practice to otology might have trouble obtaining the best surgical results.

Much interest continued in the myogenic and cortical potentials; it was reported that two responses were present: 1) a short-latency response which was myogenic mediated via the vestibule; and 2) a longer latency response which was cortical in origin and mediated through the cochlea. Two excellent papers were presented on glomus jugular tumors, with important diagnostic and follow-up data on the results of therapy, and remarkable contrast-media retrograde jugulography.

A most important long term animal study of middle ear prostheses and subcutaneous implants was described. Steel alloy and Teflon were best tolerated while polyethylene and control silk produced more fibrous reaction in the middle ear, but no tumors occurred. Around a small number of subcutaneously implanted Teflon discs and polyethylene struts, tumors did occur. This study re-emphasized the importance of the surface area of the implant as related to carcinogenesis.

One of the most important presentations dealt with the historical background, pros and cons, doubts, difficulties and possible misinterpretations of the international reference zero level (ISO) which was approved by the Society. A most important illustration published in the paper provided the reader with a comparison of ASA and ISO levels and percentage impairment of hearing, calculated according to rules adopted by the Committee on Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology for cases involving compensation.

The meeting ended with a comprehensive symposium on vestibular testing and included a report on animal studies examining the mechanism of vestibular suppression, a description of caloric tests and their interpretation, and the testing and interpretation of positional nystagmus.

Two resolutions approved by the Society at the business meeting were noteworthy: 1) adoption of the ISO Standard for audiometric measurements, to be effective January 1, 1965; and 2) recommendation that eligibility for teaching be a joint responsibility of otolaryngologists and audiologists, but that the diagnosis and prognosis of hearing loss was the responsibility of the otolaryngologist.

THE NINETY-EIGHTH MEETING

At the 1965 meeting, held at the Broadmoor Hotel, Colorado Springs, Colorado May 25-26, 1965, President Harry Rosenwasser reviewed the history of the Society and spoke of the communication gap between the investigator and the practicing otologist and the problem of keeping scientifically informed. His Guest of Honor, Senator Joseph A. Sullivan, spoke with much feeling and intimate knowledge of the problems associated with the "Medicare" program.

The opening paper of the Scientific Program dealt with some very fundamental studies regarding the interaction between the electrophysiological and psychological approaches to the study of inhibition as it related to time and spatial patterns of neural activity in sensory perception. It was shown that localization of a stimulus occurred in 1 msec for hearing, vibratory stimulation, taste and smell, and that inhibition must occur within a few msec. Further studies suggested that spatial patterns of neural activity are at least as important as the time patterns.

The fundamental neurophysiological approach was continued with good evidence of the concept that units in different parts of the cochlear nucleus had different discharge patterns which can be distinguished electrophysiologically. In general, it was suggested that this nucleus functions as a dispatcher, channeling information to other areas of the brain for further analysis.

Increasing interest was expressed in inner ear fluid balance changes obtained by localized recordings of endolymphatic potentials and cochlear microphonics under conditions of general anoxia and restricted injury of the stria vascularis. It was suggested that metabolic imbalance was responsible for a change in endolymphatic fluid volume as well as local hair-cell function disturbance.

A paper dealing with attributes of loudness recruitment as well as decruitment (negative recruitment) by Dr. Edmund P. Fowler was

summarized by Dr. von Békésy in Dr. Fowler's absence and then thoroughly discussed by the Nobel Prize recipient.

The second recorded case of Cogan's syndrome in which histopathological findings were available was reported. The otologic picture appeared to be that of a perilyabyrinthitis with extensive fibrous tissue and new bone formation and associated (or secondary) dilation of the cochlear duct and saccule.

A presentation that caused much excitement dealt with experimental, microscopic and intravascular occlusion of terminal branches of the internal auditory artery by implantation of plastic beads. Clear physiological and histopathological changes in the cochlear and vestibular systems were produced. Another well planned study compared the antibiotic concentrations in the blood serum, cerebrospinal fluid and perilymph of cats. It was demonstrated that soon after intramuscular administration of penicillin and streptomycin, the levels in the serum were well above that of the cerebrospinal fluid or perilymph. Penicillin levels in the perilymph rise at a rate nearly identical to those of the spinal fluid and are more sustained. Streptomycin levels in the perilymph were well above those of the spinal fluid.

In contrast to statements found in the literature, it was reported that viomycin was more toxic to the vestibular system than streptomycin, and that toxicity occurred more commonly among those who previously had ototoxic drugs. Cupulometry appeared to be more sensitive than caloric test in early detection of vestibular changes.

Following the presentation of a paper on the advantages and disadvantages of musculoplasty after mastoidectomy, there occurred an interesting discussion in which it was clear that many fundamental problems remained unsettled. For example, it was generally agreed that prior to musculoplasty, thorough exenteration of the mastoid cells was desirable but it could not be proven that it was possible to remove all the air cells present in the temporal bone. It was also pointed out that there are myriads of Type I tympanoplasties being performed without prior mastoidectomy and there do not appear to be undesirable sequelae.

Although cancer of the middle ear is a relatively rare neoplasm, it occurs often enough to present a serious problem. Thirty-six patients were reviewed and it was determined that the majority of these were males. The pathologic diagnosis was squamous-cell carcinoma and early

diagnosis and treatment was not achieved. The five year overall cure rate was 27 per cent, despite heroic temporal bone surgery and irradiation in the most advanced cases. However, good results were obtained in Class I cases, making the point for early diagnosis.

Congenital cholesteatoma remained an interesting and somewhat controversial subject. A historical review of pathogenesis and classification of lesions with documented cases was presented.

At the business meeting, it was pointed out that the ISO Standard which was accepted at the last year's meeting was encountering resistance from industry and insurance groups. It was suggested that some compromise might be necessary. The Society passed a resolution urging that the following recommendations be made to the proper committees of the American Standards Association:

- (1) That the issuance of new standards for audiometers be expedited;
- (2) That the ISO reference zero be included as the only or primary Standard;
- (3) That the Society would accept a compromise which would include both Standards during a transitional period.

THE NINETY-NINTH MEETING

The ninety-ninth meeting was held at the Americana Hotel, San Juan, Puerto Rico, April 18-19, 1966. President Howard P. House opened the memorable 1966 meeting with an appeal for the members to continue to emphasize scientific excellence, open-mindedness, intellectual independence and creative thinking. His Guest of Honor, Dr. Dean M. Lierle, then presented an intimate and detailed description of the development of audiology at the University of Iowa and the important roles of Dean Seashore, L. W. Dean and C. C. Bunch.

The President chose to arrange a program which was limited to "our knowledge of the sensorineural elements that may be present in and produced by labyrinthine otosclerosis." A beautifully illustrated paper on the blood supply of the human otic capsule provided important details not readily available elsewhere. It was concluded that the cochlear blood supply came from vessels predominantly cerebral and

meningeal. The cochlea appeared to be sealed off from the blood supply of the middle ear. Then some animal experiments on venous stasis of the cochlea were discussed. It was shown that there was a correlation between acute changes in cochlear blood flow, cochlear function and oxygen tension. Experimental occlusion of the vena aqueductus cochlea produced venous stasis and degeneration of the spiral ligament, stria and outer hair-cells.

A panel discussion on the pathological changes in the inner ear which could be caused by otosclerosis followed. The first panelist discussed her findings in 80 temporal bones obtained from 56 patients. Isolated stapedial or cochlear otosclerosis was seen rarely. The stapes was ankylosed in 37 per cent, the round window was involved in 20 per cent, and the internal auditory meatus in 3 per cent of the ears. Round and oval windows of the same ear were involved in 17.5 per cent. Cochlear involvement, deeper than the round window membrane, in the presence of stapes involvement occurred in 7 per cent of the ears.

Another panelist dealt with 78 ears with otosclerosis obtained from 43 patients. Twelve ears were known to have some degree of sensorineural deafness, and factors were noted which distinguished them from the other cases in the series. There was unusual activity of a single large focus or the presence of multiple foci or a diffuse distribution of foci throughout the capsule. In the ears with a single focus at the oval window region and a sensorineural component, the focus was consistently found to have extended through the endosteal layer of the cochlear capsule at the attachment of the spiral ligament; a layer of osteoid tissue was often present between the otosclerotic bone and the deeper cellular layer of the ligament.

The third report was a clear, concise study based on 34 temporal bones from 21 patients with otosclerosis and concluded that the hearing loss which accompanied otosclerosis was almost always caused by changes unrelated to the otosclerotic lesion. Four groups of bone were described; three groups were not believed to have lesions caused by the otosclerotic lesions. The fourth group contained a small number of ears in which the lesion resulted in sensorineural deafness. One entity was characterized by severe atrophy of the sensory and neural structures in the presence of lamellar new bone in the cochlea and the second resulted from rupture of the cochlear duct secondary to atrophy of the spiral ligament.

The next report reviewed 49 bones from 26 patients. Audiometrically recorded severe sensorineural deafness was found in three cases, in two of which the otosclerotic process was considered a contributing factor.

The fifth paper was a beautifully illustrated presentation which reviewed Dr. Stacy Guild's work and added recent cases. After restudy of the 81 ears, Guild's conclusions were reaffirmed; these stated that the mere presence of a histologic otosclerotic lesion in the otic capsule did not cause impairment of hearing. If on the other hand, as shown in two cases, the process involved the membranous cochlea, sensorineural hearing loss could be caused.

Forty-four temporal bones from 25 patients with a clinical diagnosis of otosclerosis were processed by the next panelist. A comparison was made of the bone conduction thresholds and the amount of endosteum of the inner ear involved by otosclerosis. It was concluded that there was a definite relationship between the amount of endosteum involvement and the degree of sensorineural loss.

The moderator, one of the world's acknowledged authorities on the temporal bone, in his summation stated that he felt the evidence did not present "a particularly strong argument for the fact that otosclerosis consistently produces a sensorineural hearing loss," or that there was a close relationship between the magnitude or duration of the otosclerosis and the severity of the hearing loss. On the other hand he felt that the panelists were agreed that "otosclerosis can create sensorineural hearing loss and probably when it does so, the loss is severe."

Some difference of opinion was expressed by discussants regarding the conclusions drawn by the moderator. It was felt by one discussant that cochlear otosclerosis might be proven to be "the greatest single cause of nerve deafness." Others felt that this point of view was unsupported by the available scientific evidence.

The meeting was privileged to hear a discussion of the present status of the knowledge dealing with the pathogenesis of sensorineural deafness in otosclerosis by Professor Luzius Rüedi. He reviewed his hypothesis which postulates that vascular shunts are formed in relation to the otosclerotic lesions. These result in congestion of the cochlear veins which in turn produce lamellar bone in the scala tympani, degeneration of spiral ganglia cells, atrophy of the stria vascularis, loss of

hair cells in the organ of Corti and increase of protein and potassium in perilymph.

The next speaker accepted as a proven fact that otosclerosis caused sensorineural deafness and concerned himself with the question of the manner in which this occurred. He stated that sparse evidence was available dealing with the influence of otosclerosis on the inner ear fluids and none to show how any chemical changes find access to structures within the organ of Corti. Recent evidence suggested that the barrier between the perilymph and the organ of Corti was not impermeable.

An interesting audiologic point of view dealing with this problem was then presented. It was pointed out that sufficient parallelism exists between the audiometric patterns of a group of cochlear otosclerotics and a group with sensorineural hearing loss of indefinite etiology "to support the hypothesis that cochlear otosclerosis is probably a common etiology within the latter group."

The radiologic contribution toward an early diagnosis of cochlear otosclerosis was then discussed. Although there was some strong dissent in the discussion, it was held that it was now possible to make a positive radiologic diagnosis of cochlear otosclerosis before the audiologic changes were manifest. An interesting possibility for therapy of otosclerosis involving the temporal bone was presented. Because of the reports describing the beneficial effects of large doses of sodium fluoride on otosclerosis and Paget's disease and tissue culture experiments, fluorides were prescribed for 46 patients with tomographic evidence of an otospongiotic lesion of the cochlear capsule. Preliminary clinical experience showed "a significant though inconstant promoting effect on recalcification of a spongy otosclerotic focus." It was noteworthy that in the discussion some comment was made regarding the difficulty of evaluating the influence of the fluorides on the otosclerotic foci and possible dangerous side effects.

The Society was then treated to a nostalgic paper dealing with otologic dreams. Selected anecdotes and some fulfilled hopes were reviewed. Finally, this knowledgeable speaker presented his own dream dealing with the diagnosis and eradication of otosclerosis.

In the general discussion and the summation, appreciation was expressed regarding free and open discussion that was possible at the

meetings of the Society. Great interest was expressed in the radiologic progress being made in visualization of the temporal bone and the confidence that a relationship between otosclerosis and sensorineural deafness would be established. One speaker with great enthusiasm expressed the estimate that there might be as many as 13.5 million people with otosclerotic foci in the United States, and "sounded a clarion call" for a concerted attack on the problem of otosclerosis.

At the business meeting there occurred an interesting discussion as to the role which the American Otological Society should play in the affairs of the Deafness Research Foundation. After expression of differing points of view, it was agreed that the Society should: 1) provide a list of professional men to the Trustees of the Deafness Research Foundation for their consideration for appointment to the DRF Board; and 2) recommend that the new chief executive, who will be invited to replace Mrs. Hobart C. Ramsey, be an otologist of stature in otology.

THE ONE HUNDREDTH MEETING

The hundredth annual meeting of the Society under the Presidency of Dr. James A. Moore, was held at the Seignior Club, Montebello, Quebec May 17-18, 1967, at the time of Canada's Centennial celebration. Dr. Lawrence R. Boies, the guest of honor, described the "changing image" and "landmarks of progress" in otolaryngology since 1929 when he came into the specialty. Some interesting thoughts and data were presented about the number of men limiting themselves to otology. The amount of support given for the study of disorders of hearing and equilibrium was contrasted with that given for disorders of speech and for studies of other higher central nervous system functions. The argument for subspecialty certification was reviewed.

The first part of the program was devoted to basic research. Progress was reported on the discovery of the nature of lipid globules in Hensen's cells of guinea pigs. Cholesterol esters, triglycerides and two phospholipids, sphingomyelin and cephalin were identified by thin layer chromatography and infra-red spectrophotometry. The next study dealt with levels of glycolytic intermediates and cofactors in the organ of Corti and stria vascularis under *in vivo* conditions and after short periods of ischemia using quantitative histochemical techniques. Rich stores of glycogen and glucose were found and were essentially untouched during brief ischemia. Within 30 seconds after ischemia the creatine-P content dropped precipitously in both tissues and after anoxia the ATP dropped sharply in the stria.

There was then presented an excellent preliminary report on the findings in the inner ear of the deaf white mink and these were contrasted with comparable normal-hearing mink. In all stages of development this species of mink appeared to be deaf. Excellent electron-microscopic photographs revealed an absence of mitochondria in the marginal cells of the stria vascularis at two weeks after birth and the stria became more degenerated as maturation progressed.

A most important study consisted of light and electronmicroscopic findings in guinea pigs who were allowed to survive for as long as 14 months after obliteration of the endolymphatic duct and sac. Endolymphatic hydrops was observed postoperatively in 61 guinea pigs but was not seen in the normal controls. Distention of Reissner's membrane and changes in the organ of Corti, stria vascularis and spiral ganglia were often seen at the apical turns. Evidence in this study favored the concept that blockage of the duct and sac caused cochlear hydrops.

A third excellent study of the inner ear was performed to ascertain the extent and progression of pathological changes in the organ of Corti of the guinea pig following mechanical rupture of Reissner's membrane in the fourth turn. This resulted in damage which remained localized, particularly to the outer hair cells and reached its maximum within one week. The tear healed within two weeks.

The last paper of the day dealt with a description of the procedure initiated at St. Michael's Hospital, Toronto, for rapid assessment of vestibular activity by the use of an electronic computer. Both digital and analog displays of the various eyeball movements resulting from both semicircular and otolithic stimulation were provided.

On the next day the essayists felt that labyrinthitis was still a relatively important disorder about which little had been written recently. Temporal bone findings and excellent illustrations were presented for two acute patients and eight with chronic meningogenic suppurative labyrinthitis. Pathological findings were reported in 32 animals in which labyrinthitis was produced experimentally. A discussion of pathogenesis and a suggestion as to the primary pathway for transmission were presented. This was followed by a paper dealing with eight patients in whom problems were encountered while attempting to use reconstruction techniques in dealing with chronic temporal bone diseases. It was concluded that it was unlikely that any one tympanoplastic operative technique could be recommended for all temporal bone

problems and it was urged that we return to basic medical and surgical principles.

A clinical and historical review of Paget's disease of the temporal bone and a clinical review of 17 patients was then presented. The hearing loss most frequently observed was the mixed type with a flat configuration and a high tone drop. It was observed that the VIIth nerve appeared to be resistant to damage by the disease, vertigo was not too common, and otosclerosis could co-exist with Paget's disease.

The next essayist utilized his extensive surgical experience to provide information on long term results in otosclerosis surgery. Data were presented on 195 patients, 5 to 13 years after stapes surgery and 6 to 25 years after fenestration. The stapes surgery included stapes mobilizations and partial and complete stapedectomies by several methods. Stapedectomy achieved a higher level of hearing than fenestration in the majority of cases but carried a risk of severe cochlear loss. The permanence of the hearing improvement after the classic fenestration procedure was noteworthy. Another otologist reviewed the current management of glomus jugulare tumors and compared this with earlier attitudes. He expressed conviction that surgery, if possible, was the treatment of choice; if surgery could not be performed then irradiation should be given. He expressed the opinions that newer diagnostic techniques will make earlier diagnosis possible and cryosurgical techniques may find a place in the treatment of this condition.

At the business meetings a full discussion of problems and obstacles to the acceptance of the ISO Standards took place and the Society re-affirmed its support. An excellent review was given of the activities of the Board of Trustees of the Research Fund of the American Otological Society (previously called the Central Bureau of Research). With much sadness the death of our very revered senior otologist was noted officially and the Society voted to establish an annual Edmund P. Fowler Lectureship.

PERSONAL MEMORIES OF PRESIDENTS
AND HONORARY MEMBERS*

D. Harold Walker, President, 1931

Dr. Walker replied to our request by saying that he had many, many treasured memories, that he would prefer not to put them down in writing but to discuss them with the members of the society at the meeting in Lake Placid (1961).

Edmund P. Fowler, President, 1937

So many memories have built up during the past fifty years that I can here record but a few. An outstanding characteristic of the American Otological Society has been, with few exceptions, the desire of the members to contribute, not merely to sit back and receive. In consequence, throughout the years our scientific programs have surpassed those of any other specialty society.

Several meetings are especially remembered: the one in 1922 when the 1A audiometer was demonstrated; the one in 1931 when Drs. Ballance and Duel demonstrated their facial nerve decompression and grafting techniques. At this meeting I set up 85 microscopes in order to exhibit and explain the otosclerosis slides my beloved son, Edmund, Jr., had obtained in Europe from Bruhl, Mayer, Weber, and Wittmaack; the one in 1936 when I again reported the "Loudness Recruitment Phenomenon" and demonstrated means for measuring it; the meeting at the Lido Country Club in 1937 when, as President, I had organized a symposium on the neural mechanism of hearing. It was at this meeting that "Loudness Recruitment" was really put on the map by the discussion of my paper by Lorente de Nó; the one at Toronto, Canada, in 1952 when, as Guest of Honor and unknown to the then President, Gordon D. Hoople, I was to be the recipient of the testimonial, medallion, and the monetary award; the time when I could not

*These are excerpts from letters sent to Dr. Edmund P. Fowler at his request by all the then living Past Presidents and Honorary Members (Ed.)

be present in 1965 and Georg von Békèsy pinch-hitted for me and gave such a marvelous discussion of my paper, "Some Attributes of 'Loudness Recruitment' and 'Loudness Decruitment'," that the Society elected me an Honorary Member.

There have been but few unpleasant or disturbing memories. One of these related to the questionable conduct of two prominent otologists, neither of whom had realized their transgressions. Another was the election of a man to honorary membership because it was feared he could not be elected an active member. Still another was the obnoxious "talking down" to their audiences by two visiting foreign otologists. There are several amusing memories which I hesitate to mention for fear of possibly offending the still living members involved.

I remember some of the funny stories of Wendell Phillips and Joe Beck, and several by Ted Hill, told with a down-East New England drawl, and Ken Day's obnoxious ribber, allegedly from Yugoslavia.

There are many, many more recollections, especially of the splendid dedicated men in the Central Bureau of Research and all of the others who contributed so much to the science and art of otology. They will be mentioned in the history.

George M. Coates, President, 1941

Dr. Coates recalls many personal memories of the following members of our Society, especially of:

Charles H. Burnett of Philadelphia (President, 1884-85), spoken of as the Dean of American otologists, a title later applied to C. J. Blake of Boston (President, 1877) and to E. B. Dench of New York (President, 1911-12).

B. Alexander Randall (President, 1903-05), a skillful operator but a poor speaker, and adept at putting his audiences to sleep.

Charles W. Richardson of Washington (Uncle Charlie) (President, 1915-16), who would announce that he would adhere strictly to the time rule and then would take up a good part of an hour for his address in spite of cat-calls and shuffling of feet.

Christian R. Holmes of Cincinnati (President, 1917), an outstanding figure at all meetings. He was a commanding officer of a Red Cross Base Hospital in France in 1918.

J. Mackenzie Brown is remembered especially for his papers on the massacre of the tonsils and turbinates.

Norval H. Pierce (President, 1918), handsome and well groomed, a successful grand opera singer before taking up medicine. He was always ready to sing at the dinner meetings of the Society, particularly "Mandalay" and "Danny Dever."

George E. Shambaugh (President, 1923), a truly great scientist who added greatly to our knowledge of the circulation of the inner ear and was the originator of the American Board of Otolaryngology although never officially a member of the Board himself.

There were my three close friends, Lee Wallace Dean of St. Louis (President, 1932), Joseph C. Beck of Chicago and Ross Hall Skillern of Philadelphia, all professors in their respective cities. Dean conducted extensive research on sinusitis and arthritis in children and of acute otitis media in the so-called cholera infantum syndrome. Joe Beck, one of the most popular of men, was a delightful companion with a great fund of stories which he enjoyed even when they were told against himself. Also, he was a severe but kindly critic.

Wesley C. Bowers, President, 1943-44

Dr. Bowers recalls especially that in December, 1942, our government requested that no meetings not directly connected with the war effort be held because of excessive demands on the railroads, and so it was decided to omit the 1943 annual meeting. He recalls that in his President's address in 1944 he called attention to the radical changes occurring in geography, politics, modes of living, in our personal lives, and in our approach to our profession. These have altered our concepts of the treatment of many diseases, increased knowledge of preventive medicine, and of the care of the injured.

Dr. Bowers remembers the dramatic effect of chemotherapy on otology. It was without doubt one of the greatest discoveries of the century in the field of medicine. The sulfa drugs have been in active

use in this country since 1941, but the last few years have added greatly to our knowledge of their value. Many heretofore hopeless conditions yield readily to their action. Given such a wonderful remedy, it seems a pity that by their injudicious use we should render patients sensitized to them so that they cannot be given them when really needed for a serious condition, such as pneumonia, mastoiditis, or meningitis. It is unfortunate that many commercial firms are still advertising extensively various combinations of sulfa drugs with vaso-constrictors, for use as a spray, or nose drops. Many patients may become sensitized and experience convinces me that, in most conditions, a spray used in the nose gives more trouble than pleasure.

The use of atabrine to replace quinine has not only saved many lives but actually made possible our offensive in the South Pacific.

Bernard J. McMahon, President, 1948

I consider the idea of writing a history of the American Otological Society excellent and timely. While I am only too happy to contribute my bit to your project, I regret to say that I cannot lighten the subject by "exposing any questionable and awful truths of our otological lives."

I remember that it was Dr. Fowler who made the motion to publish the rules governing the Award of Merit. I remember that the Council was in a quandary about what to do to establish a closer relationship with outstanding preeminent scientists who were contributing to our progress in otology by their achievements in the problems of the basic principles of hearing. Since these men did not practice otology, there was no place for them in our society under the then-existing by-laws. To solve the problem, we advanced the idea that the American Otological Society should establish an associate membership. This change in the by-laws was approved by the Council and accepted by the membership.

Philip E. Meltzer, President, 1950

To be accepted in the Otological Society was a great event in my life. Can you imagine the respectful awe that I exhibited when I attended the meetings and saw such men, in the flesh, as E. B. Dench, Wendell Phillips, E. P. Fowler, T. J. Harris, G. M. Coates, G. E. Sham-

baugh. I listened to their words as though they were the gospel. Their great diagnostic skills and surgical techniques impressed me greatly. The discussions on the floor were lively but "watered down" in the Transactions.

There were two meetings with a touch of sadness: Hans Brunner from Vienna gave a paper so brilliant that the audience gave him an ovation but before the meeting was over the enthusiasm for this young man waned considerably, not because his discussions were less brilliant but because of his know-it-all attitude. The second was the meeting in 1938 when Dr. Kopetsky read a paper on the fenestration operation. He, too, received an ovation. Then the President, Dr. Harris P. Mosher, called for Dr. Julius Lempert to be introduced, as it was his operation that Dr. Kopetsky was reporting. It is generally acknowledged that Lempert's contribution altered the course of otology, particularly the surgical treatment of otosclerosis and the chronic suppurative ear.

As I think back upon it, what impresses me are the statements that Dr. Edmund P. Fowler made in the early twenties which are now being acknowledged as being basic contributions in evaluating and differentiating hearing losses. I have in mind especially his loudness balance tests for recruitment.

Another milestone in my memory was the presentation of Sir Charles Ballance and Dr. Arthur B. Duel concerning their investigations of the seventh nerve in monkeys.

I cannot leave this short account of my memories without referring to the work of Wever and Bray which has been one of the most fruitful contributions concerning auditory function.

Kenneth M. Day, President, 1951

With the thought of enlivening the Otological Society banquet when I was President in 1951, I engaged the services of a nationally famous greeter and ribber, Luke Barnett. I had a precedent for this action since my father, when President in 1919, employed Luke as an obnoxious head waiter who nearly caused a small riot. His special target was Wendell Phillips.

On this second occasion we decided to have Luke pose as Dr. Koroko, the Minister of Health from Yugoslavia, who had been foisted upon me by the State Department as a dinner speaker.

The turmoil began during the reception before the banquet while the good doctor was being plied with pseudo-Manhattans (Coca Colas with cherries). His targets appeared to be Valentine Miller and Eugene Lewis. Gene stood all he could and then paid his respects to my wife and myself and attempted to leave giving as an excuse that he had no dinner clothes. Under a pledge of secrecy I told him that the affair was a hoax. Then he could not be dragged away by a team of horses. A ticklish moment occurred when Francis Lederer attempted to converse in Slavic with the doctor who replied, "When in America I speak American!"

Poor Gordon Hoople had to suffer as a table-mate during the banquet but managed to maintain his poise and remain the perfect gentleman in spite of the doctor's atrocious table manners. Gordon's collar did appear somewhat wilted.

In his speech, the doctor damned American medicine in general and specialization in particular. He praised socialized medicine in general and that of Yugoslavia in particular. The room became so noisy that the speaker could no longer be heard. To prevent an incipient riot, I called for order and confessed to the hoax. It was not a stuffy banquet!

Gordon D. Hoople, President, 1952

My connection with the administrative aspects of the Otological Society began just after World War II. There had been no meeting of the Society in the year 1943 because of restrictions on travel during the war period, and the meeting following this was supposed to be an especially important one; to attract people back after this lapse. I happened to be elected Secretary of the Society at this time, following the demise of Isadore Friesner. Having become acquainted with Dr. Terence Cawthorne in England during the war, I conceived the idea that it would be delightful if he would come over and address us. On my suggestion, he was invited to give presentations to both the Triological Society and the Otological Society. This was the first of many subsequent presentations by Terence Cawthorne before our Society.

Another change which came into the otological picture during this period was the birth of the (for the want of a better name) audiologist. There were some pioneer efforts by Fowler, Sr., McFarland and others prior to the war, but the military diagnostic and rehabilitative centers which were set up during the war gave training to a number of men who were competent in this field, and these men spearheaded further education in this particular branch of otology.

In 1952, it was my privilege to serve as President of the Otological Society. It was in this year that the first mobilization of the stapes was done by Rosen. Its popularity did not occur at once. There was a real disbelief on the part of many of the members in the efficacy of the procedure, and in these days the rebirth of stapedectomy was yet to come.

One of my greatest pleasures was to have Edmund P. Fowler as my guest of honor during the year of my Presidency. He gave a memorable talk on the occasion of the Toronto meeting in 1952.

Having served five years as Secretary, one year as Vice President, one year as President and two years on the Council, I had nine years during which I was connected with the administrative aspects of the Society. This was one of the rewarding experiences of my life, and particularly so because it came during this period of evolution in the management of otological conditions.

Albert C. Furstenberg, President, 1953

I cannot pass by without mention of the noteworthy progress our specialty has made in the training of young men in otorhinolaryngology. Education above the level of undergraduate studies is not only a mark of the medical profession but also a significant requirement that has assumed increasing importance with the evolution of American medicine. Its progress has not been rapid nor has it yet achieved exemplary objective; nevertheless, it has developed resolutely into an essential program that demands the attention of all graduates of medicine today.

William J. McNally, President, 1956

You, Dr. Fowler, have had the great good fortune to have contributed to the tremendous advances in otology which have been

brought about in this present century and I have been privileged to witness many of them.

One of the most impressive meetings of the American Otological Society which comes to mind was the one in 1931. It was held at Briarcliff Manor, New York, and adjourned to Arthur B. Duel's estate nearby at Laurelwood, Holmes, New York, where he had had special laboratories built for animal experimentation. From there, Sir Charles Ballance and Dr. Duel reported their basic experimental work on the neuro-physiology of the facial nerve.

Everyone was impressed and edified by these two elderly but vigorous scientists, both clinicians of world repute, who went back to the laboratory to establish a fundamental principle which has revolutionized subsequent peripheral nerve surgery.

During my Presidency of the American Otological Society and as a member of its Central Bureau of Research, I more fully realized the important part that the Society has played in the development of otology. The Council's policy of supporting the President in his search for good and new work from all corners of the world for the program of the annual meeting has been of inestimable value.

I deeply appreciate the distinction and honor of membership in this great Society.

John R. Lindsay, President, 1957

It was my privilege, following eleven year's service on the Council of the American Otological Society, to be President for the year 1957 when the meeting was combined with the sixth International Congress in Washington and many foreign colleagues were present. It was also my privilege as President that year to present the Award of Merit to an illustrious investigator in cochlear physiology who was later to receive the Nobel prize, Georg von Békèsy. During my association with the Society, several outstanding developments were witnessed in otology, some dramatic and even controversial, but each a significant milestone in the evolution of scientific or clinical progress.

Among these were the efforts of Eagleton to obtain drainage in petrositis, sulfonamide therapy, Lempert's success with the one-stage fenestration operation, the increased training stimulated by this development, and the techniques for facial nerve decompression and grafting, devised by Ballance and Duel.

The early thirties brought new life to research in audition. The discovery of the Wever and Bray phenomenon and the application of conditioning techniques in animals was made by Culler and associates. The Society has consistently given support to this research through its Central Bureau of Research, and also, by including reports of scientific investigation at its meetings, it has helped to promote better communication between clinician and scientist.

Several illogical operations had been tried on the middle ear for various purposes, but it was Rosen who discovered that a fixed stapes might be mobilized and hearing dramatically restored. Only the senior members of the Otological Society remembered the attempts by Jack to restore hearing by removing or mobilizing the stapes, and the earlier mobilization procedures by Europeans which had been abandoned.

The field of otology has progressed rapidly along with other fields of medicine. The fostering of research in the training institutions is having its good effect on the quality of clinical training. More exact diagnostic procedures have developed and contributions by the field of otology to the health of the community in prevention, diagnosis and alleviation of disease have been steadily increasing in the last few decades.

Dean M. Lierle, President, 1958

My experience as a member and an officer of the American Otological Society over a period of some thirty years has been most rewarding. The Transactions, or proceedings, of the Society have reflected the progress of otology. During this period we have seen the development of audiometry, audiology, microsurgery of the ear and most important, with the advent of the sulfonamides and chemotherapy, the elimination of most of the acute complications of otologic disease.

There was little research during the early thirties but one has only to look at each year's program now to note the tremendous amount of

research that is being done today. In the early years, there were not enough research subjects for the program. Today we have to be careful to have balanced programs as far as clinical and research papers are concerned.

Certainly I cannot forget the discussion concerning various scientific and other subjects that took place, especially during the evenings in the rooms of the Fellows. I remember when the annual banquet was a very dignified and staid affair, no ladies. I must agree that their presence now contributes to the enjoyment of these occasions.

It has been a great privilege to have served as President of the American Otological Society.

Moses H. Lurie, President, 1959

Meetings which I especially remember were in 1930 when Drs. E. G. Wever and C. W. Bray presented the first real break-through on the physiology of the cochlea. The meeting in Washington in 1933 when, with Hallowell Davis, A. J. Derbyshire, and Leon Saul, we reported our research plus a perfect demonstration of the functioning of the living cochlea, and I presented my first paper on the phylogenic development of the cochlea. I was informed after this meeting that I had been elected a member of the Society.

There were a number of episodes that I will always remember:

The meeting at Atlantic City in the thirties, when a discussion of the cochlea and middle ear functions was carried out on the beach just as the tide was changing. We were busy discussing the problems and drawing diagrams on the sand when suddenly a wave deluged us wiping out our diagrams and soaking us, to the amusement of the boardwalk watchers.

Also, the meeting when Lorente de Nó gave a masterly demonstration of experimental nystagmus.

The meeting at the Lido Country Club, Long Island, New York, when Dr. Fowler was President, and arranged for a wonderful beach party at which we stuffed ourselves with clams and lobsters.

The 1939 meeting at which Dr. Applebaum gave a brilliant summary of meningitis and its treatment, with a report on the successful use of the sulfa drugs.

One of the most traumatic experiences I had in presenting a paper occurred on June 6, 1944, the day of the landing of the Allied forces in France. All I saw of the audience were the newspapers they were reading throughout the presentation.

Robert C. Martin, President, 1960

The thing that has impressed me most about our meetings has been the presentation of truly remarkable developments in otology. I refer to 1) our advance in knowledge of the physics, anatomy, and the pathology of hearing losses; 2) the treatment of Bell's and traumatic facial palsy; and 3) Menière's disease. From these advances have come the surgical treatment of conductive deafness and facial palsy and the medical and surgical therapy of labyrinthine disease. The development of functional tests of hearing have been refined and standardized, rendering the diagnosis and therapy more predictable. All this has been correlated with the advances in anatomy and physiology. These advances have all come about in the last forty years. It has been a rare privilege to have lived in this era.

So much for the serious side! Two humorous incidents came to mind. The first was at Atlantic City when Ken Day introduced the Minister of Health from Yugoslavia (actually a professional ribber) who proceeded to insult everyone. One outraged member took exception and was promptly asked, "Where do you come from?" Upon his answering, "North Carolina," the next question from the ribber in his most insulting manner was, "Where is that? Is it in the United States?" The unmasking of the false minister was a necessity to prevent physical combat. It was one of the most complete sell-outs or "horseshoe-buyings" that I have ever seen.

The second humorous incident occurred where a discussant arose and began reading a paper which had no bearing on the one he was supposed to be discussing. The heavy gavel settled that promptly.

Which brings me to my final conclusion about being a presiding officer, "talk softly, but carry a heavy gavel, or big stick", else some speakers and discussions would go on forever.

It was one of the great experiences of my life to have been President of this Society.

Henry L. Williams, President, 1961

One thing that has impressed me through the years has been the changing attitude of the members toward discussions in general. Perhaps some types of discussion have been a little unfair. I remember as a case in point the remark made by Harris Mosher about a paper given by Gordon New. Mosher made some reference to the cold perfection of the papers written by the editorial department of the Mayo Clinic. This reduced Dr. New to a state of sputtering indignation, as he had really worked very hard on this particular paper and besides was far too inarticulate to make any effective reply. However, in times past, cogent objections were occasionally entered to statements in papers which added greatly to the value of the presentation, or at least so I thought. Of late, however, any disagreement with the author of a paper seems to be frowned on. "Discussions" have been reduced to compliments about the hard work that has seemed to have gone into the preparation of the work, and the great interest of the thesis presented to otology. It appears to me that discussion has been completely emasculated.

I thought that I might mention the alteration in the type of program that was instituted with my Presidency. At that time it was thought better to put clinical and laboratory type research papers on the program so that the Otological Society might be identified with the advancing edge of the specialty and leave the clinical papers largely to the Triologic. This seemed to work out very well, and I believe this policy has been continued.

Lawrence R. Boies, President, 1962

For many years before I attained membership in 1944, listening at the annual meetings of the American Otological Society and meeting

its members was an exciting experience. Today, similar experiences as a member have not lost any lustre.

My membership has covered a period of two decades which probably have been as eventful in otology as any equal number of years in the history of our Society. The one stage Lempert fenestration for otosclerosis was just gaining momentum in 1944; the terms "audiology" and "audiologist" were born a year later, and the latter substituted for "audio-technician." Basic and applied research related to the ear began to flourish, then stapes surgery was revived to become successful, then reconstructive surgery on the middle ear, and now more expanded temporal bone surgery is being explored.

What more can anyone ask than to have lived through this time as a member of this Society, the most important function of which is to encourage and support inquiry and to properly assess values in the progress of otology?

Joseph A. Sullivan, President, 1963

The American Otological Society stands like a beacon light in its own specialized field in medicine throughout the entire world. This venerable and ancient Society, one hundred years old, has had amongst its members some of the most distinguished professional men in the world. It was my singular privilege and very great honour to have had bestowed upon me this rare accolade that comes to so few men throughout their lives, the Presidency of the American Otological Society.

We, of the Americas, and that statement in its broadest sense applies to Americans and Canadians alike, together share a fraternal and brotherly association as members in this august Society.

I did not consider this an honour so much to myself as I stated in my inaugural address, but to my country, Canada, in joining with you, not only in the field of medicine in its otological aspect, but on a much wider basis, the trials, tribulations and loyalties of the free world, so dearly fought for in two world wars.

Theodore E. Walsh, President, 1964

It's very difficult to put into a few words how much I appreciate my membership in the American Otological Society. Ever since I was elected a fellow in 1941, I've had nothing but the most stimulating contacts with the Fellows of the Society, not only stimulating in terms of medicine, but fascinating in terms of good fellowship and real friendship. For example, it's hard to understand that in any other group a man like Ki Martin would have given up his vacation to stay with me when my wife was operated upon in Boston. We were in a strange city and she was extremely ill, and Ki, instead of going off on his vacation, stood and "held my hand" while the worst of the operative and post-operative period was over. This is hard to forget. Men like Ken Day and Ki and Gordon Hoople and Phil Meltzer and others are unforgettable, and it's only through the Otological Society that one can come close enough to know them as well as we do.

Harry Rosenwasser, President, 1965

I was fortunate in living through that exciting era of full employment and complete preoccupation with suppurative diseases of the temporal bone and its complications. I met Drs. Alexander, Ruttin, Nager, Rae, Holmgren, and many other outstanding men. I was fortunate in getting to know well such men as Drs. Page, Fowler, Whiting, Friesner, Coates and Hill.

It was my further good fortune to have lived through and been part of the exciting era of fenestration surgery.

One of my fondest memories of Dr. Holmgren is his story of what happened in a hotel in Chicago when he and Mrs. Holmgren called room service for tea and sweet rolls at teatime. After an interminable wait, an elaborately appointed table was rolled into their room with a complete dining service. Upon lifting the cover of a large serving dish he found he had ordered sweetbreads!

Howard P. House, President, 1966

My early days in otolaryngologic training and practice were filled with thrilling experiences. It was my privilege to meet and work with

the "greats" of our specialty such as my Chief, J. Mackenzie Brown, the "Dean of Otolaryngology," and many others.

Those days in the history of otolaryngology constituted an era of change encompassing the development of allergy, broncho-esophagology, rhinoplasty surgery, endaural temporal bone surgery, and surgery for otosclerosis.

My election to membership in the American Otological Society crystallized my interest in the rapidly advancing field of otologic surgery. As a member of the American Otological Society, a sincere friendship developed with the men on the move in otology. This close relationship has served as a continuing stimulus to me, as it has to many other men, to constantly upgrade our specialty. The American Otological Society has made it possible for this close relationship to exist among our distinguished colleagues in otology and this is the real contribution that the American Otological Society has made, is making, and will continue to make in the science of otology. I shall forever be grateful for the opportunity of being a member of this great organization.

James A. Moore, President, 1967

The most outstanding memories of my membership in the American Otological Society are related to my close association and correspondence with Dr. Edmund P. Fowler.

During my years as Secretary, there was considerable correspondence with regard to the History Committee of which Dr. Fowler was Chairman and in connection with the 100th Anniversary Celebration.

At the Mid-Winter Council Meeting in 1962, Senator Joseph Sullivan invited the American Otological Society to meet at the Seigniory Club in 1967 for our Annual Meeting in the spring, which, of course, was our 100th Meeting and the Canadian celebration of their 100 years as a Nation. The Triological Society had already agreed to meet that spring in Montreal. Since 1967 would be the 100th Annual Meeting of the American Otological Society, it was suggested that the Society celebrate its 100th Anniversary at the Seigniory Club. However, Dr. Fowler was quick to point out that since the American Otological Society had been

founded in July of 1868, the 100th Anniversary Celebration could not be held until the 1968 Annual Meeting. Obviously he was right as usual.

Another incident occurred while I was Secretary when Dr. Fowler missed the 98th Annual Meeting in 1965 at The Broadmoor. He sent a telegram to the Society which stated that this was the first and only meeting he had missed in 46 consecutive years. This telegram brought forth a tremendous response from the membership, and Dr. Fowler was unanimously elected to Honorary Membership. Dr. Fowler was notified of this honor and was duly appreciative. However, when he noted in the 1965 Transactions that his name was missing from the Active Membership list, he called me up and pointed out that he was also an Active Member and wished to remain as such. Those of us on the Council agreed that he was indeed an active member and at the 1966 Mid-Winter Council Meeting, it was unanimously agreed that the Council recommend to the Society that he be restored to Active Membership.

My only regret about the 100th Anniversary Celebration is that Dr. Fowler will not be there in person, but, as he said many times, he will be looking in on the affairs from his high perch on "cloud eight."

In closing my few remarks, I quote from one of Dr. Fowler's many letters to me regarding the 100th Anniversary Celebration. This was the closing paragraph of a letter dated February 7, 1961:

"Trusting you and a few of my friends may be able to drink a toast to me on the 100th Anniversary of the Society and that by some hokus-pokus I will be able to obtain a concoction strong enough to enable me to communicate with you, possibly by supersonic harp frequencies (there does not seem to be any other kind of music up there on "cloud eight" and I have always wondered how they kept the strings tuned and obtained more cat gut) and always good luck and best wishes,"

(signed) "Edmund P. Fowler"

George E. Shambaugh, Jr., President, 1968

My vivid memories of outstanding otologists of an earlier generation began during my residency at the Massachusetts Eye and Ear Infirmary, 1930 to 1932. Dr. Harris P. Mosher stands out as the respected,

feared, and eventually beloved tyrant who ran the Wednesday morning clinical meetings with an iron hand. It was a superb teaching experience for the residents who learned to think and speak on their feet, to accept barbed, but deserved comments by their Chief, and learned that there was no substitute for time and care spent in preparing a clinical report. Mosher concealed a warm and really soft heart beneath a forbidding and brusque exterior.

Dr. Mosher was the first to occupy the combined Chair of Otology and Laryngology succeeding Dr. D. Harold Walker who had recently retired as Chief of the ear service. Dr. Walker is remembered as a benign, kind and considerate man who spoke very rapidly, words tumbling out unable to keep pace with his thoughts. The tall, erect and regal figure of Dr. Frederick Jack attending one of the Wednesday morning meetings will never be forgotten. Unfortunately, he was unknown to the residents and was not introduced formally by Dr. Mosher. He appeared to feel rebuffed and remained in the background of this meeting, and did not return again while I was at the Infirmary.

One of the greatest mastoid surgeons, Dr. Philip Hammond, visited the Out-patient Clinic one day and spent considerable time instructing the residents in his method of catheterizing the Eustachian tube, and I have illustrated this in my textbook *Surgery of the Ear*. In those days, few of the Senior Attending men spent any time teaching the residents with the notable exception of Dr. Philip Meltzer who was then a comparative youngster on the attending staff, a marvelous teacher, a marvelous individual, who, in the opinion of many of us, would some day become Chief.

Dr. Henry Cahill is remembered as the dynamic and vigorous otologic surgeon most experienced and skilled in the diagnosis and treatment of intracranial complications, especially brain abscess. He demonstrated to the residents, slides he had brought back from Europe of otosclerosis of the labyrinthine capsule. He went farther than anyone else in New England in those days in that he would sometimes write on the back of a history, "I suspect otosclerosis", but on the front he would enter the customary diagnosis of chronic catarrhal otitis media for all cases of non-suppurative progressive conductive hearing loss.

The Swampscott Meeting of the Otological Society in 1931 was memorable, being the first meeting that I ever attended. It was as a guest, under the wing of my father. Two events stand out. Sir Charles Ballance read a paper on Chronic Suppurative Otitis Media and the Danger of not Operating because of Intracranial Complications. Sir Charles was not very tall but an imposing and heavy-set individual with very positive views. As founder of the British Neurosurgical Society and author of the beautifully illustrated two volume *Surgery of the Temporal Bone*, Sir Charles bridged the gap between the two specialties, a gap destined to increase until Doctors William House and Hitselberger revived a close co-operation between otologists and neurosurgeons. The second vivid memory at this meeting was the banquet at which Dr. Norval Pierce rendered "On the Road to Mandalay" in his operatic tenor.

Vivid memories of these earlier days, soon after my return to Chicago, include the greatest of all otologic surgeons of the twentieth century, Dr. Julius Lempert. Unknown in 1938 when Dr. Samuel Kopetsky made his attempt to capture the credit for the one-stage fenestration operation, Dr. Lempert was eager to demonstrate his technic to all who came. Within a few years he attained international renown and recognition for his fenestration operation and for his endaural approach to the temporal bone. Doubtlessly influenced by his short stature (hardly five feet tall) and humble origin, Dr. Lempert developed a fierce sense of personal ownership of the technic of the operation. This blinded him and made it impossible for him to accept the advantages of the operating microscope in the early days of fenestration surgery, and the advantages of the direct attack upon the fixed stapes in the later days. A complex, tortured, but generous and intelligent personality, Dr. Lempert is remembered with deep affection by countless hundreds of students and thousands of patients.

Among the most eminent of Dr. Lempert's pupils were Sir Terence Cawthorne and Dr. Gunnar Holmgren of Sweden. Dr. Holmgren, rightly regarded as the "father" of modern otosclerosis surgery, had tried in vain to find a technic that would consistently result in a lasting hearing gain in patients with otosclerosis. When he learned of Dr. Lempert's work he hastened to New York at the very first opportunity following the war. Sir Terence, too, came to New York and returned to England to be one of the first to use Dr. Lempert's technic. A close and lasting friendship sprang up between Dr. Lempert and Sir Terence,

while a friendship based on admiration and respect developed between Dr. Lempert and Dr. Holmgren. Many, many stories can and some day will be told of Dr. Julius Lempert, an amazing personality: the like of which will not be seen again.

At the time of my residency, and for some years to follow, the leaders in Otolaryngology were nearly all from Boston, New York, Philadelphia and Baltimore. There was a confident belief that no idea really worth-while would ever come from west of the Hudson River. The appointment of Dr. Harold Schuknecht as Professor of Otolaryngology at Harvard Medical School and Chief at the Massachusetts Eye and Ear Infirmary signaled the dawn of a new day in Otolaryngology when contributions of equal value came from every section of our country.

THE SECOND ONE HUNDRED YEARS MUSINGS AND DREAMS OF THINGS TO COME

EDMUND P. FOWLER, M.D.

Each member of your committee has searched the available records and his own mind for the true facts of our history, but more is needed. Although truth is essential we cannot live on truth alone. The writers of history should use their imagination and so leave with us not just the words, nor just the tale, but a way of looking at things. They should record the myths as well as the facts, the threads of the woof and warp of the fabric they are weaving into their picture of the past, and at least a shadowy suggestion of the picture of the future.

The growth of science is a continual advance into uncertainty, a continual stepping into the unknown. One step forward into the uncertain future also brings us one step backward into the past, and only a fleeting moment of time separates what has been from what is to be.

Although no history can be written about what has not yet happened, the past does cast shadows of some of the events to come. In fact, whatever is likely to happen is already happening. Just because our ancestors spoke a medical language quite different from that in vogue today does not mean that their thoughts and writings had no influence on our thoughts and sayings of today, but the impact of present trends is apt to be over-emphasized whereas too little emphasis is given to the rapid expansion of the unexpected.

So hold your breath and fasten your seat belt, for here we go into the bright blue yonder hoping that perchance we may make a bull's eye into a parahelium in the halo of truths yet to come.

Let us discuss some of the possibilities the future holds in store. Let us not only conjure up visions of what is obviously expected to happen but also of what, though now thought improbable, may by happy chance prove true.

Through the lengthening train of ages past and the lessening train of ages yet to come, the otologist will continue to utilize advances in microbiology and in many other branches of science to perfect his techniques and to acquire new methods and new medications to assist him in his work. Without question he will continue to have better illumination, increased magnification, and many mechanical gadgets at his disposal until whatever gods there be stop the show.

During our first one hundred years the use of hormones, blood transfusions, a variety of electrical, radiological and surgical devices have given and will continue to give us more means for doing good but also more potential means for doing harm than could have been dreamed of even a few years ago, and certainly four or five centuries before Christ when Hippocrates, the father of medicine, admonished the physician to do good to his patient, "or at least to do no harm."

Unless donor and recipient are identical twins, the transplantation of organs or tissue will require more elaborate preparations than those used today.

Diseases of the heart, vascular lesions affecting the central nervous system and cancer, now overpowering causes of sickness and death, and on occasion lethal to the ear, will be better understood although we now have no biologic cure for these diseases and the immediate outlook is hazy indeed. But who knows, as with tuberculosis and syphilis, miracles can happen. However, from time to time there will be some resurgence as has occurred recently with both of these diseases.

Presbycusis will always remain a problem, especially as people will be living longer. There will be so many people that by the end of the present century the United States population can be expected to pass 400,000,000. A sure but temporary cure for this population explosion would be a plague like the black death which in twenty years in the twelfth century exterminated fifty percent of the population in Europe, and, as Menchen pointed out, by eliminating mainly the lower strata of the proletariat prepared the world for the Renaissance. Hearing aids will be improved but not much because the structures of both aid and ear impose insurmountable limitations.

The physiology and pathophysiology of the ear will be better understood and deterrents to some auditory neural lesions will be found as will deterrents to other lesions of the ear. If we concentrate more

on the early detection of disease, especially the viral invasions (and before birth), it may be possible to prevent some forms of severe or total deafness, and how the prospective mother may receive prophylactic treatment for herself and her expected child. We will discover what causes the primary lesion of Menière's symptom complex and the true relationship of the labyrinthine pressure changes to the triggering of the attacks. We will, it is to be hoped, concentrate not only on the lesions found at autopsy, the lesions occasioned by the terminal stages of disease, but upon what caused these lesions, or maybe more properly stated, the "cause of the cause." We shall learn more and more of the ultra-structure of tissues, some today not even suspected to exist, and how emotional stress can disturb the metabolism and generate disease.

We will more and more use the metric system and no longer remain in the confusions now extant, but "three barley corns laid end to end equal an inch" will generally be better visualized than is "1,650,763.73 wave lengths of the orange-red line of the gas krypton-86."

During the century now ending, a change has occurred in our preoccupation with infections to a growing awareness of the problems of the so-called "degenerative disorders and disease." This will continue.

Through biochemistry we shall learn how to prevent or cure many diseases now incurable, many now obscure or unknown. Many, many important signs of disease have existed for ages, yet still remain undiscovered.

Due to technological advances, the metabolic and nutritional deficiency diseases will be better understood. Even otosclerosis or its exacerbations may succumb to a hormone, a biochemical, an antibiotic, or an enzyme as yet undiscovered. The true facts of the otic capsule circulation and microcirculation will be determined and how reactions following local anoxic episodes affect the bone marrow.

The study of identical twins gives promise of eventually uncovering some of the factors underlying the genesis of otosclerosis, and in determining the relative roles of heredity and environment in this disorder. We may find out which chromosome causes a tendency to otosclerosis.

Even though we remain ignorant of how hormones work, we will be better able to control several defects common to hormone deficiencies or

over-abundancies. Isotope chemistry will open new areas in chemical and nuclear physics, geophysics, and molecular biology, all of which will have otologic connotations. Electronic computers will be perfected so that they may even be able to discuss with the otologist difficult diagnostic problems. (They may even be given a vote!) We will be plagued by simpler and sometimes similar names given to quite different diseases, and maybe call them "psuedo-pseudo" this or that. The wholesale intaking of vitamin pills will diminish, and when we cannot make a diagnosis we will find some other name than "virus" to hide our ignorance. The development of Laser would seem capable of furnishing tremendous aid in several lines of research.

The modern craze for "good causes" and the efforts to abolish poverty will, because of the expense involved, more and more diminish the money required for research.

The day of the specialty hospital will be over and all hospitals will be so crowded with patients that they will be compelled to increase their dependence on so-called "government grants", which are really monies taken from the population at large.

Medical fees will continue to increase and the cost of medical care will be prohibitive unless we curtail some of our diagnostic tests now often used in excess, especially arteriography, air contrast and radioisotope scanning investigations. More simple means skillfully used will avoid the dangers from these procedures and their cost. More thought will be given to avoid harm before mutilation surgery is carried out to prolong the life of a patient who would oft times be better dead. Maybe we will learn again to allow a patient a tranquil death.

As has been the case for a long time, about one-third of our patients should really not need our attention, but they will be so alarmed at all the medical news they read that they will, like medical students, tend to acquire symptoms which fit into almost every disease they have read about or heard described. They will be suffering from "scriptitis" (or "scriptosis"). They will be liable to die of a misprint. In a sense it could be said that they will be suffering from "extrasensory perceptions."

Direct stimulation of the cochlea nerve will from time to time be discovered. There is no indication that it will ever succeed in enabling a patient to readily hear speech.

Maybe in the not distant future a few females of the species will become members of our Society. If they be comely it would certainly be an improvement on the sad, bored, and helpless decorum of the countenances worn late in the afternoon sessions by some of our male audiences.

The history of the next one hundred years, like the history of the first one hundred years, will in essence be an otological biography of the wonderful men who have maintained the pre-eminence of our society.

We are on the threshold of great strides into the unknown; let us not hesitate in our search for the truth (for the cause of the cause), hoping to get closer and closer, always realizing that we will never know it all. If we ever presume to be omniscient, we will be putting ourselves on the level of whatever gods man has believed there be.

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1951 – John Mackenzie Brown, M.D.
1952 – Edmund P. Fowler, M.D.
1953 – H. I. Lillie, M.D.
1956 – Stacy R. Guild, Ph.D.
1958 – Ralph A. Fenton, M.D.
1961 – Julius Lempert, M.D.
1962 – Philip Meltzer, M.D.
1963 – Sir William J. McNally, M.D.
1964 – Kenneth M. Day, M.D.
1965 – Senator Joseph A. Sullivan, M.B.
1966 – Dean H. Lierle, M.D.
1967 – Lawrence R. Boies, M.D.
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1960	Dr. Beverly W. Armstrong	1600 E. Third St., Charlotte, N.C. 28204
1953	Dr. Shirley H. Baron	516 Sutter St., San Francisco 2, Calif.
1965	Dr. Milos Basek	180 Fort Washington Ave., New York 32, N.Y.
1958	Dr. Richard J. Bellucci	162 E. 71st St., New York 21, N.Y.
1944	Dr. Lawrence R. Boies	University Hospital, Minneapolis, Minn. 55455
1955	Dr. John E. Bordley	Johns Hopkins Hospital, Baltimore 5, Md.
1952	Dr. Greydon G. Boyd	76 N.E. 51st Lane, Box 1226, Delray Beach, Fla.
1963	Dr. Harold M. E. Boyd	1127 Wilshire Blvd., Los Angeles, Calif. 90017
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1964	Dr. Seymour J. Brockman	4759 Hollywood Blvd., Los Angeles, Cal. 90027
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1961	Dr. John F. Daly	566 First Ave., New York, N.Y.
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1959	Dr. David A. Dolowitz	2000 So. 9th St., Salt Lake City, Utah 84105

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1953	Dr. Glassell S. Fitz-Hugh	1400 Jefferson Park Ave., Charlottesville, Va.
1957	Dr. Meyer S. Fox	2040 W. Wisconsin Ave., Milwaukee, Wis. 53233
1953	Dr. Aram Glorig	Callier Hearing and Speech Center, 3819 Maple Ave., Dallas, Tex.
1959	Dr. Joseph L. Goldman	1050 Park Ave., New York 28, New York
1950	Dr. Victor Goodhill	4759 Hollywood Blvd., Los Angeles, Calif.
1957	Dr. Frederick R. Guilford	540 Hermann Prof. Bldg., Houston 25, Texas
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1953	Dr. Fred Harbert	Jefferson Med. Coll. of Phila., Philadelphia, Pa.
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1955	Dr. Anderson C. Hilding	Research Lab., St. Luke's Hosp., Duluth 5, Minn.
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- 1966 (1944) Dr. John R. Lindsay.....950 E. 59th St., Chicago, Ill.
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Dr. G. D. Hoople, Sec.-Treas.
Drake Hotel, Chicago, Ill.

1947 Dr. Wm. E. Grove, Pres.
Dr. B. J. McMahon, Vice-Pres.
Dr. C. D. Hoople, Sec.-Treas.
Hotel Statler, St. Louis, Mo.

1948 Dr. B. J. McMahon, Pres.
Dr. Marvin F. Jones, Vice-Pres.
Dr. G. D. Hoople, Sec.-Treas.
Dr. J. R. Lindsay, Editor-Libr.
The Homestead, Hot Springs, Va.

1949 Dr. Marvin F. Jones, Pres.
Dr. P. E. Meltzer, Vice-Pres.
Dr. G. D. Hoople, Sec.-Treas.
Dr. J. R. Lindsay, Editor-Libr.
Hotel Biltmore, New York City

1950 Dr. P. E. Meltzer, Pres.
Dr. Kenneth M. Day, Vice-Pres.
Dr. G. D. Hoople, Sec.-Treas.
Dr. J. R. Lindsay, Editor-Libr.
Mark Hopkins Hotel,
San Francisco, Calif.

1951 Dr. Kenneth M. Day, Pres.
Dr. G. D. Hoople, Vice-Pres.
Dr. J. R. Lindsay, Sec.-Treas.
Dr. H. L. Williams, Editor-Libr.
Hotel Claridge, Atlantic City, N. J.

1952 Dr. G. D. Hoople, Pres.
Dr. A. Furstenberg, Vice-Pres.
Dr. J. R. Lindsay, Sec.-Treas.
Dr. H. L. Williams, Editor-Libr.
Royal York Hotel, Toronto, Can.

1953 Dr. A. Furstenberg, Pres.
Dr. Fred. T. Hill, Vice-Pres.
Dr. J. R. Lindsay, Sec.-Treas.
Dr. H. L. Williams, Editor-Libr.
Roosevelt Hotel, New Orleans, La.

1954 Dr. Fred T. Hill, Pres.
Dr. D. E. S. Wishart, Vice-Pres.
Dr. J. R. Lindsay, Sec.-Treas.
Dr. H. L. Williams, Editor-Libr.
Hotel Statler, Boston, Mass.

1955 Dr. D. E. S. Wishart, Pres.
Dr. Wm. J. McNally, Vice-Pres.
Dr. J. R. Lindsay, Sec.-Treas.
Dr. H. L. Williams, Editor-Libr.
Hollywood Beach Hotel,
Hollywood, Fla.

1956 Dr. Wm. J. McNally, Pres.
Dr. J. R. Lindsay, Vice-Pres.
Dr. L. R. Boies, Sec.-Treas.
Dr. H. L. Williams, Editor-Libr.
Seignory Club,
Montebello, Can.

1957 Dr. J. R. Lindsay, Pres.
Dr. Dean M. Lierle, Vice-Pres.
Dr. L. R. Boies, Sec.-Treas.
Dr. H. L. Williams, Editor-Libr.
Hotel Statler, Washington, D. C.

1958 Dr. Dean M. Lierle, Pres.
Dr. Moses H. Lurie, Vice-Pres.
Dr. L. R. Boies, Sec.-Treas.
Dr. H. L. Williams, Editor-Libr.
Hotel Fairmont,
San Francisco, Cal.

1959 Dr. Moses H. Lurie, Pres.
Dr. Robt. C. Martin, Vice-Pres.
Dr. L. R. Boies, Sec.-Treas.
Dr. H. L. Williams, Editor-Libr.
The Homestead, Hot Springs, Va.

1960 Dr. Robt. C. Martin, Pres.
Dr. H. L. Williams, Vice-Pres.
Dr. L. R. Boies, Sec.-Treas.
Dr. B. H. Senturia, Editor-Libr.
The Deauville, Miami Beach, Fla.

1961 Dr. H. L. Williams, Pres.
Dr. L. R. Boies, Vice-Pres.
Dr. James A. Moore, Sec.-Treas.
Dr. B. H. Senturia, Editor-Libr.
Lake Placid Club,
Lake Placid, N. Y.

1962 Dr. L. R. Boies, Pres.
Senator J. A. Sullivan, Vice-Pres.
Dr. J. A. Moore, Sec.-Treas.
Dr. B. H. Senturia, Editor-Libr.
Sheraton-Dallas Hotel,
Dallas, Tex.

1963 Senator J. A. Sullivan, Pres.
Dr. T. E. Walsh, Vice-Pres.
Dr. J. A. Moore, Sec.-Treas.
Dr. B. H. Senturia, Editor-Libr.
Hollywood Beach Hotel,
Hollywood, Fla.

1964 Dr. T. E. Walsh, Pres.
Dr. E. P. Fowler, Jr., Vice-Pres.
Dr. J. A. Moore, Sec.-Treas.
Dr. B. H. Senturia, Editor-Libr.
St. Francis Hotel,
San Francisco, Cal.

1965 Dr. Harry Rosenwasser, Pres.
Dr. Howard P. House, Vice-Pres.
Dr. W. H. Bradley, Sec.-Treas.
Dr. B. H. Senturia, Editor-Libr.
Broadmoor Hotel,
Colorado Springs, Colo.

1966 Dr. Howard P. House, Pres.
Dr. J. A. Moore, Vice-Pres.
Dr. W. H. Bradley, Sec.-Treas.
Dr. B. H. Senturia, Editor-Libr.
Americana Hotel, San Juan, P. R.

1967 Dr. James A. Moore, Pres.
Dr. Geo. E. Shambaugh, Jr.,
Vice-Pres.
Dr. W. H. Bradley, Sec.-Treas.
Dr. B. H. Senturia, Editor-Libr.
Seignory Club,
Montebello, Canada