

TRANSACTIONS

American Laryngological
Association

FORTIETH VOLUME



THE DE ROALDES MEDAL

E TENEBRIS, LUX

. SOLIS-COHEN . WAGNER . DAVIS . LEFFERTS .

RUMBOLD . LINCOLN . BOSWORTH . SHURLY .

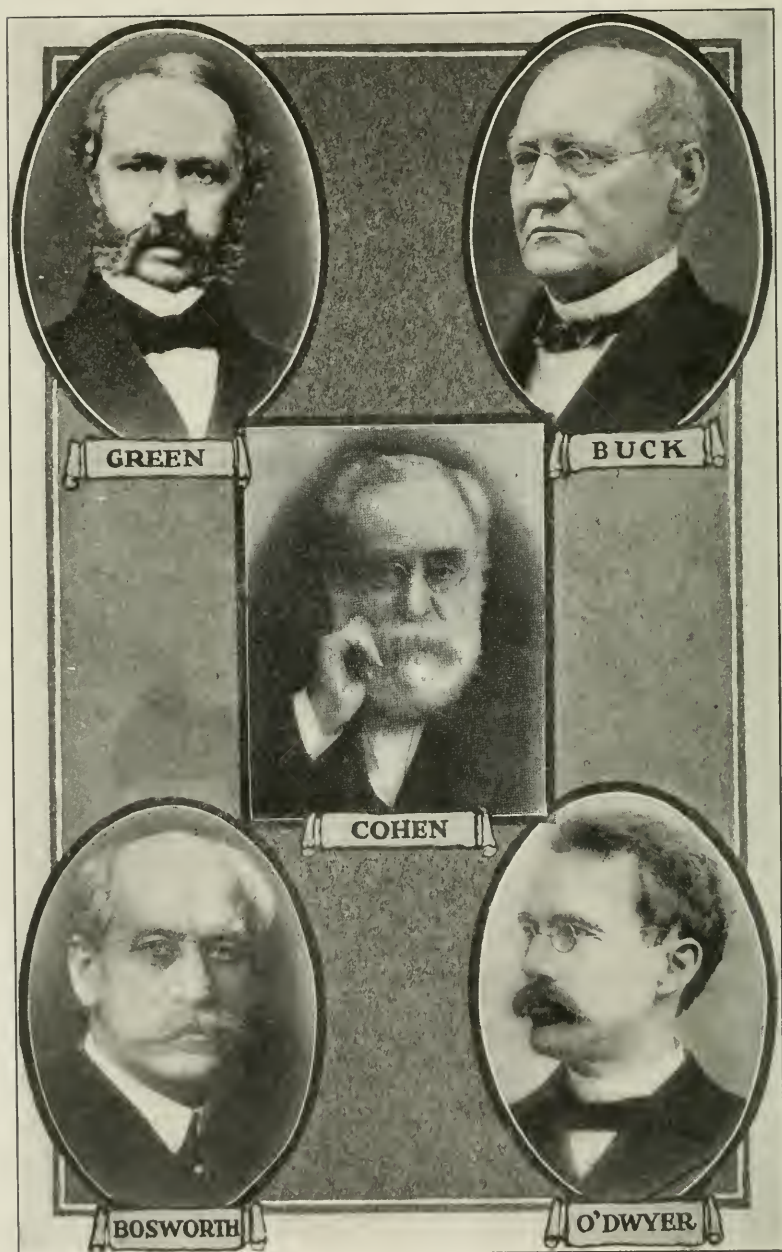
TO THOSE WHOSE WISDOM
FORESIGHT AND UNSELFISH
DEVOTION CREATED THE

AMERICAN
LARYNGOLOGICAL
ASSOCIATION

AND ESTABLISHED FOR IT
THE HIGH ETHICAL AND
SCIENTIFIC STANDARDS
UNDER WHICH IT HAS
FLOURISHED PRE-EMINENT
FOR FORTY YEARS.

KNIGHT . ROBINSON . ELSBERG . JOHNSON .

. HARTMAN . JOHNSTON . INGALS . GLASGOW .



PIONEERS

Jubilee Celebration

TRANSACTIONS

OF THE

Fortieth Annual Meeting

OF THE

American Laryngological
Association

HELD AT

ATLANTIC CITY, N. J.

370699
28.8.39

MAY 27TH, 28TH AND 29TH, 1918

TOGETHER WITH THE RECORD OF THE ASSOCIATION
IN THE GREAT WAR

NEW YORK

PUBLISHED BY THE ASSOCIATION

1918

OFFICERS

1917-1918

Honorary President

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THOMAS RUSHMORE FRENCH, M.D.

JOSEPH LINCOLN GOODALE, M.D.

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3 Portrait Groups, 15 Portraits, 44 Cuts and 2 Vignettes.	



FOREWORD

THE AMERICAN LARYNGOLOGICAL ASSOCIATION HAS ATTAINED ITS
FORTIETH YEAR

Remembering its influence upon the progress of medical science, the uplifting of professional dignity and the fostering of mutual understanding and friendship, it seemed fitting that the occasion should be recognized.

To delay until the celebration of the Fiftieth Anniversary would have been to tempt fate.

The present world influences have developed new and strange conditions. These, as affecting us individually and reacting upon the Association as a whole, have of necessity made themselves felt in our proceedings.

An essential historical feature of the Transactions is the record of the war services of our members, who, almost to a man, have given of themselves to the full limit of opportunity and strength.

This record, beyond question the most notable event in our history, is given the precedence that it so well deserves. While the volume is in press demobilization is rapidly progressing, many members of the Medical Corps are being mustered out of service and some promotions are being made. At least one fellow member is still abroad upon an important mission. Under these circumstances accuracy is difficult, notwithstanding diligent care to secure it.

The war record of the Association is inspiring. Of our total membership of 81, not more than 48 were eligible for active service. Of these, 38 were in uniform. Our service flag therefore carries 38 stars, one of them golden. The list includes 1 Brigadier General, 4 Colonels, 6 Lieutenant Colonels, 15 Majors, 5 Captains, 3 Lieutenants and 4 Contract Surgeons.

One, distinguished, and universally beloved, with characteristic self-sacrifice, has given his three sons and his own life to the cause. The services of the others in only less degree have

testified to their patriotism and devotion. In the case of those few who have made no report, illness has generally been the cause, while the zealous efforts in war work at home of many not in uniform have amply proved that age could not wither their loyalty nor stale their ability for efficient and very necessary co-operative assistance. Under the list of "miscellaneous services" will be found many records, brief indeed but full of eloquent proof of this.

Under the genial influences of our fortieth meeting the extraordinary cares and anxieties which the hand of Providence and the sword of the Hun had placed upon us were set aside and in the presence of some who were our founders and of others, who for a generation have been our own and our Associations zealous friends, we were allowed a few hours of pleasant retrospection.

With evident justice the place of honor was given to one who, through long and distinguished service, acknowledged accomplishment and true greatness of character, held it without a rival. It was well to crown with our deepest admiration and love the delightful serenity, wisdom and strength of his ever ripening years.

A feature of the celebration as originally planned was a series of contributions representing prominent geographical centers of Laryngology in the United States, which should set forth the development and the present condition of the specialty, each contributor dealing with his own district. While the necessary interruptions of the war interfered with this, sufficient has been provided to be of considerable historic interest. The rest it is hoped may be secured at some future time.

The much discussed question of priority as to the teaching of laryngology in America has been settled by the statements of Dr. Solis-Cohen and Dr. Oliver, for while Dr. Krackowitzer demonstrated the larynx to Dr. Horace Green and his other friends in New York in 1858, with the first instruments brought to this country, the names of Cohen and Oliver are the first officially recorded as having held authorized positions as teachers in regularly organized medical institutions.

The report of the proceedings of the meeting in 1878, at which

the Association was organized, has been reproduced as an important historical feature.

It recalls Wagner, who, the first in modern times to suggest such an organization, in 1873 founded the New York Laryngological Society; Davis, who crystalized the proposition of a National Society and having witnessed its successful birth, unhappily soon passed away; Solis-Cohn, at that time, as now, the Association's most distinguished member and, as chance ruled, the presiding officer of its first regular meeting; Lefferts, clear minded, constructive, enthusiastic, eloquently advancing the aims and the ideals of the new association, assuming as Secretary the heavy burdens of its organization and consolidation, asking no greater reward than the fulfilment of his dreams, setting an enduring example to his successors.

The address of the President and the regular scientific proceedings of the present year are of unusual interest, while the record of the Annual Dinner well deserves to be permanently preserved.

If the volume falls short of the Editor's ideals he can only plead "*C'est la Guerre.*"

DAVID BRYSON DELAVAN,
Acting Secretary.

RECORD

OF THE

AMERICAN LARYNGOLOGICAL
ASSOCIATION

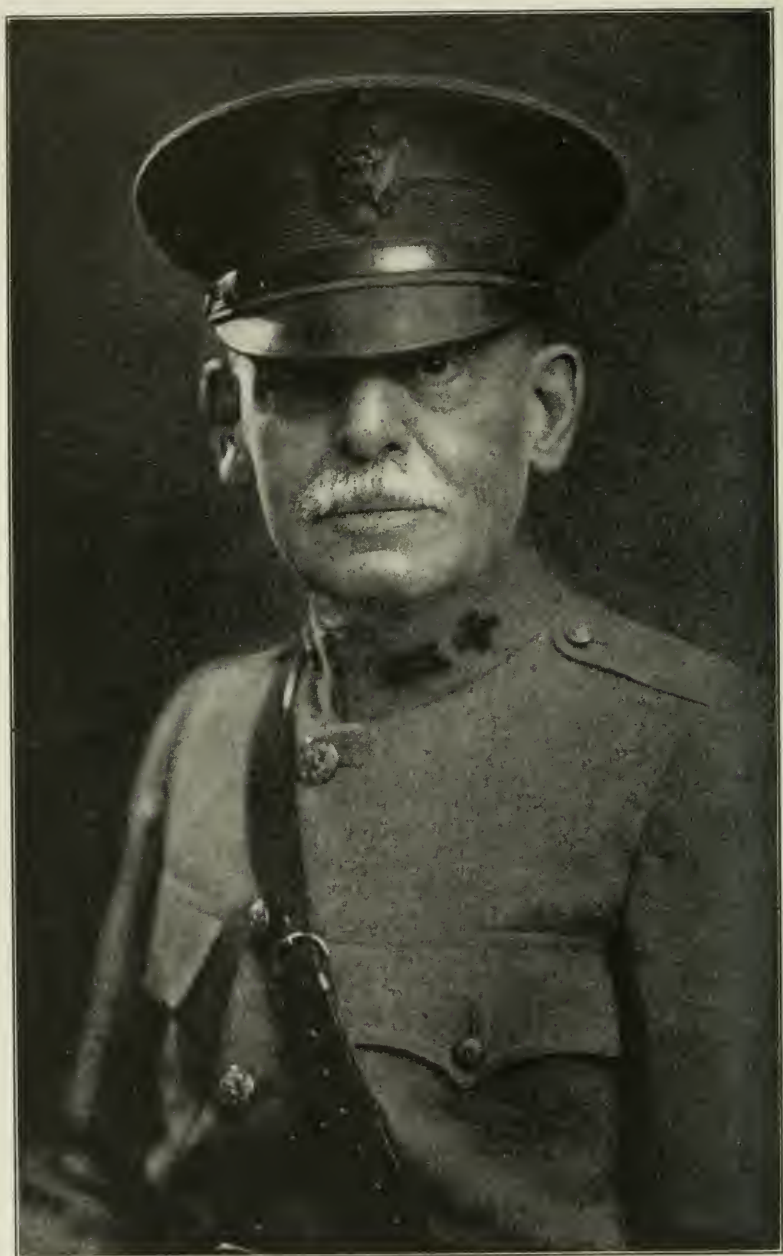
IN

THE GREAT WAR

HONOR ROLL

IN

OVERSEAS SERVICE



MAJOR JOHN HENRY LOWMAN, A.M., M.D.



JOHN HENRY LOWMAN A.M., M.D.

CLEVELAND, OHIO

Major Medical Corps
American Red Cross

Medical Director
American Red Cross
Tuberculosis Commission
to Italy

Late President
National Tuberculosis Association
Etc.

Physician Scholar Patriot

BORN
OCTOBER SIXTH
1849

DIED IN SERVICE
JANUARY TWENTY-THIRD
1919

VIRTUTIS QUÆSIVIT
GLORIAM VIDET DEI



BRIGADIER GENERAL HERBERT STANLEY BIRKETT, M.D.

GENERALS

BIRKETT, HERBERT STANLEY, BRIGADIER GENERAL.

Canadian Army Medical Corps; Professor of Oto-Laryngology and Dean of Medical Faculty of McGill University; Consultant in Oto-Laryngology, Military District No. 4. Organizer and late Commanding Officer of No. 3 Canadian General Hospital (McGill), overseas, from 1915 to May, 1918. Since January, 1919, Assistant Director-General of Medical Services, Great Britain. Present address: Pembroke House, 133 Oxford Street, London, England. War service to date about four years.



COLONEL JAMES FRANCIS MCKERNON, M.D.

COLONELS

MCKERNON, JAMES FRANCIS,

April 2, 1917—Commissioned Captain, M. O. R. C.

July 18—Mobilized at Gouverneur's Island with U. S. Base Hospital No. 8.

August 20—Arrived in France and appointed Director of Oto-Laryngological Surgery, United States Base Hospital No. 8, A. E. F.

August 30—Appointed Consulting Oto-Laryngologist to the Lines of Communication, A. E. F.

September 12—Assigned to temporary duty with British Expeditionary Forces, 47th Field Ambulance Corps, Third Army. Later assigned to duty with Casualty Clearing Station No. 19, 3rd Army, British Expeditionary Forces.

November 14—Commissioned Major, M. O. R. C.

April 1, 1918—Appointed, by Commander-in-Chief, Senior Consultant and Director of Ear, Nose and Throat Surgery, American Expeditionary Forces.

June 6—Commissioned Lieutenant-Colonel, M. C. N. A.

November 2—Commissioned Colonel, M. C., U. S. A.

January 9, 1919—Sailed from France, arriving in United States January 25, 1919.

January 26—Assigned to special duty, Surgeon General's Office, Washington, D. C.

February 12—Honorably discharged from service with rank of Colonel, Medical Corps, U. S. A.

(Copy of Citation)

GENERAL HEADQUARTERS, AMERICAN EXPEDITION-
ARY FORCES

Courier Cablegram No. 283.

March 15, 1918

From: The Commander in Chief, A. E. F.

To: The Adjutant General, U. S. Army.

Subject: Proposed paragraph for cable, transmitted by courier.

The following proposed cablegram has been approved, but transmission thereof is made by courier in order to reduce use of the cable. It is requested that this paper be referred without delay to THE ADJUTANT GENERAL.

Paragraph 1. Pursuant to authority granted me by Cable A-2830, I have awarded the Distinguished Service Medal to the following named American Officer:

Col. James F. McKernon, U. S. A.

For exceptionally meritorious and distinguished services.

He has, by his tireless devotion to duty and his willingness to work in any capacity, not only placed his remarkable ability freely and fully at the disposition of the wounded, but in addition he has set so high a standard of professional efficiency as to serve as an inspiration to all with whom he has come in contact.

Official

J. H. Muncaster

Major, Infantry,

Assistant to Dept. Adjutant.



COLONEL HARRIS PEYTON MOSHER, M.D.

COLONELS

MOSHER, HARRIS PEYTON.

In 1915 served four months as Major with British in the Royal Army Medical Corps as member of first Harvard unit, at Camiers. Later promoted to Lieutenant Colonel. In 1917 was appointed a member of a committee of three to represent the American Laryngological Association, the American Otological Society, the American Rhinological, Laryngological and Otological Society and the American Medical Association for the purpose of conferring with Surgeon General Gorgas as to the use of specialists in the Medical Corps of the Army. Appointed a member of the joint committee of the Council of National Defence to represent Ophthalmology and Otolaryngology. Went to Washington permanently July, 1917, and was commissioned a Major in the Medical Reserve Corps August 7, 1917. In the same month became chief of the Section of Otolaryngology in the Division of Surgery of the Head in the Office of the Surgeon General.

In October, 1917, ordered overseas to observe the management of the specialty of Otolaryngology in the Medical Corps of the English and French Armies, and the progress of the American Base Hospitals then in France. Returned in March, 1918, and excepting inspection trips to Base Hospitals in the U. S., has been on duty in the office of the Surgeon General, chiefly occupied with the care of personnel. December 24, 1918 was made in addition to his regular duties Consultant in Otolaryngology. Commissioned Lieutenant Colonel, May 29, 1918. Retired as Colonel, M. R. C. Total war service, two years.



LIEUT. COLONEL BURT RUSSELL SHURLY, M.D.

LIEUTENANT-COLONEL

SHURLY, BURT RUSSELL.

Dean Detroit College of Medicine. Member of the Committee of Three, in company with Dr. Chas. W. Richardson, and Dr. Harris P. Mosher, to represent the American Laryngological Association, the American Otological Society, the American Medical Association, and the American Rhinological, Laryngological and Otological Society for the purpose of conferring with Surgeon-General Gorgas as to the employment of Specialists in the Medical Corps of the U. S. Army.

Resigned from this committee, entered active military service and was commissioned Major, July 25th, 1917.

Organized and was appointed Medical Director of the Detroit College of Medicine and Surgery Base Hospital No. 36. Sailed October 27th, 1917. arrived November 10th. and was stationed at Vittel, France.

Commissioned Lieutenant Colonel June 6th, 1918.

Sailed from France February 8th, 1919. Arrived home February 17th, 1919. Honorably discharged March 12th, 1919. Duration of service 20 months.



LIEUT. COLONEL JOHN GORDON WILSON, M.D.

LIEUTENANT-COLONEL

WILSON, JOHN GORDON.

Canadian Army Medical Corps; Active service abroad from July, 1916, to April, 1917.

Later activities, M. A. B., Chicago.



LIEUT. COLONEL GEORGE M. COATES, M. D.

LIEUTENANT-COLONEL

COATES, GEORGE MORRISON.

For six months chief of Division of Head Surgery at Camp Sevier, S. C.

Transferred for six months, same position and duties, at Camp Hancock.

Organized Base Hospital No. 56 at Camp Wadsworth, S. C., and as commanding officer sailed with it for France August 28th 1918, where with it and its annex, Hospital 56-A, both together aggregating 3,000 beds, with a staff intended to care for 1,000, he remained as commanding officer until the armistice, at which time he was made Consultant for the Hospital Center at Alberg. In February, 1919, was stationed as officer in charge of oto-laryngology at the embarkation camp, Bordeaux. Returned home June 10th, 1919.

Commissioned Lieutenant-Colonel, September 10th, 1918.

MAJORS

CANFIELD, ROY BISHOP, MAJOR, M. C., U. S. A.

Chief of Surgical Staff, Base Hospital No. 76, Vichy, France.
Brother-in-law Chief of U. S. General Hospital No. 21, Denver, Colo.

COX, GERARD HUTCHISON, MAJOR, M. C., U. S. A.

In charge of Ear, Nose, and Throat Department of N. Y. Presbyterian Hospital Unit, Etretat, France, for one year; the same for U. S. A. General Hospital No. 1, N. Y. City, for eight months.

Two brothers-in-law, M. C., U. S. A.

FRIEDBERG, STANTON A., MAJOR, M. C., U. S. A.

From January, 1918, to August, 1918, Chief of Department of Head Surgery, later, Chief of Department of Surgery, at Base Hospital, Camp Doniphan, Fort Sill, Okla. In September ordered to France and stationed in Paris until January, 1919, when unit was transferred to Angers, Base Hospital No. 27. Has also been associated with Base Hospital No. 85.

LOWMAN, MAJOR, M. C., A. R. C.

Medical Director American Red Cross Tuberculosis Commission to Italy, with Headquarters at 14 Via Sardinia, Rome, Italy.

Mrs. J. H. Lowman, engaged in various war activities. Son, John, commanding American Aviation Detachment in Italy; son, Henry, American Aviation Corps; son, Shepard, Training Camp, Paris Island, S. C.

MAJORS

PACKARD, FRANCIS R., MAJOR, M. C., U. S. A.

Entered service May, 1917, as First Lieutenant, M. C., U. S. A. Sailed May 19th, 1917, as Oto-Laryngologist to Pennsylvania Base Hospital No. 10, which was united with British General Hospital No. 16, at Le Treport, France, in June, 1917. Was promoted Captain September, 1917, and Major October, 1918. As subsequent assignments to duty, served at British Casualty Clearing Station, No. 61, in Flanders, from July 6 to October 6, 1917. In September, 1918, was transferred from British Expeditionary force with assignment as centre consultant in Oto-Laryngology for the District of Paris, with headquarters at the American Ambulance, Neuilly, American Red Cross Military Hospital No. 1.

PIERCE, NORVAL HARVEY, MAJOR, M. C., U. S. A.

Commissioned Captain, M. R. C., April, 1917.

Entered active service June, 1917, in charge of oto-laryngological department of Illinois Charitable Eye and Ear Infirmary Unit, for Examination of Aviators. Promoted to Major August 11th, 1918. August 31st, 1917, was appointed chief consultant in oto-laryngology, Camp Grant, Illinois. June, 1918, ordered to U. S. General Hospital at Cape May. Sailed for duty with Base Hospital No. 115 at Vichy until December, 1918, when he was ordered to St. Nazaire for duty, January, 1919, ordered to Camp Hospital at La Boule. At Vichy served for a time as chief consultant in general surgery for the Base Hospital center. Afterwards as consultant in oto-laryngology for the center, as chief of the Division of Surgery at Base Hospital No. 115. Ordered home February 11th, 1919. Time of service nearly two years.

CAPTAINS

HALSTED, JOHN H., CAPTAIN, A. R. C.

Chief of Medical and Surgical Intelligence Department, Paris. Later, Field Representative of Entire Department of Medical Research and Intelligence under Colonel Alexander Lambert, Red Cross Headquarters, Paris, France.

Son-in-law, Thomas M. Small, Regular Infantry, U. S. A.

RICHARDS, GEORGE L.,

Medical Officer of District Board for Division No. 6, Commonwealth of Massachusetts, Selective Service, from July 27, 1917, until the board was discontinued.

Dr. Richards is at the present time in Turkey with the American Committee for Relief in the Near East, doing reconstruction work. The Unit expects to rehabilitate some twelve or fifteen hospitals in this region and he has charge of the Ear Nose and Throat Division. He sailed from New York February 16th, 1919, to be away about a year.

Son, Lyman G. Richards, M. R. C., Stillman Infirmary, Cambridge, Mass.

HONOR ROLL

IN ACTIVE SERVICE
IN THE UNITED STATES



COLONEL CHARLES W. RICHARDSON, M.D.

COLONELS

RICHARDSON, CHARLES W., COLONEL

Commissioned Lieutenant, M. R. C., U. S. A., July 5, 1908; Major. Medical Section, O. R. C., April 26, 1917; Lieutenant Colonel, M. C., National Army, U. S., May 20, 1917; Colonel, Medical Section, Reserve Corps, U. S. A., February 19, 1919. In April, 1918, entered active War Service as Major. Appointed member of committee of three formed from the three national medical societies and the American Medical Association as representative from the Otological Society, at the suggestion of the Council of National Defence, with Dr. H. P. Mosher and Dr. Burt R. Shurly, Dr. Richardson, Chairman.

Appointed to active service August 5, 1917, for two weeks, in order to make addresses to the oto-laryngologists in various cities; returned to inactive service September 1, 1917. Called to active service, Major, to assume charge of the Oto-laryngological Section of the Council of National Defense during the absence of Major Mosher in Europe. On March 11, 1918, relieved from duty in Oto-laryngological Section, Division of Surgery of the Head, and appointed Director in Defects of Hearing and Speech, Division of Physical Reconstruction. Assumed duties March 11, 1918. Honorably discharged from the service January 9, 1919, with commission as Lieutenant Colonel. February 4, commissioned Colonel in the Medical Reserve Corps of the U. S. Army.

Son-in-law, Lieutenant Commander, William Dwight Chandler, Jr., U. S. N., in command Destroyer McDonough, later Reed; sixteen months foreign service, with headquarters at Brest.

LOEB, HANAU WOLFF, COLONEL, M. R. C., U. S. A.

Vice Chairman Missouri State Committee, Medical Section Council of National Defense; on duty in connection with Publications of Department of Surgery of the Head, Surgeon-General's Office, Washington, D. C., December 1st, 1917, to December 11th, 1918; Author of Manual of Military Surgery of the Ear, Nose and Throat; in charge of Ear, Nose and Throat Service, Post Hospital, from October to December, 1918, Jefferson Barracks, Mo. Commissioned Colonel M. R. C., April 12, 1919. Term of Service, 13 months

Brother, Virgil Loeb, Major, M. C., U. S. A.



LIEUT. COLONEL JOSEPH HAMMOND BRYAN, M.D.

LIEUTENANT COLONELS

BRYAN, JOSEPH H., LIEUTENANT COLONEL, M. C., U. S. A.

For five years Assistant and passed Assistant-Surgeon, U. S. Navy; Chief of Oto-laryngological Section Walter Reed General Hospital, Takoma Park, D. C.

Member of Committee of Three of the National Societies, advisory to the Council of National Defense, in place of Dr. Burt R. Shurly, abroad.

Brother, Pay-Inspector, U. S. A.; Sister, Red Cross Motor Corps, D. C.

HARRIS, THOMAS JEFFERSON, LIEUTENANT COLONEL, M. C., U. S. A.

Chief of Department of Oto-Laryngology, U. S. General Hospital No. 14, Fort Oglethorp, Ga., in Charge of School of Oto-Laryngology.

Director School Oto-Laryngology, Camp Greenleaf, Ga. Term of service, 2 years.

INGERSOLL, JOHN MARVIN, LIEUT. COLONEL, M. R. C., U. S. A.

Director of Physical Examining Unit, Aviation Section, Signal Corps, U. S. A.

Chief of Oto-Laryngological Service, Surgeon and Director of School for Lip Reading and Speech Defects in Reconstruction Department of U. S. A. Hospital No. 11, Cape May, N. J. Term of Service, 14½ months.

MAJORS

BERENS, T. PASSMORE, MAJOR, M. C., U. S. A.

Chief Department of Oto-Laryngology, Base Hospital No. 1, Williamsbridge, N. Y. City.

FETTEROLF, GEORGE, MAJOR, M. C., U. S. A.

Chief Department Oto-Laryngology, Base Hospital, Camp Sevier, Greenville, S. C. Later, Chief of Section of Head Surgery, Base Hospital, Camp Hancock, Augusta, Ga. Term of service, 9 months.

GOLDSTEIN, MAX A., MAJOR, M. C., U. S. A.

Chief of Section of Head Surgery, Base Hospital, Camp Dodge, Iowa.

Son-in-law Norman C. Wolff, Spruce Construction Department, Portland, Oregon; daughter, Red Cross, Portland, Oregon.

GRAYSON, CHARLES PREVOST, MAJOR, M. C., U. S. A.

M. A. B., Hospital University of Penn.; Philadelphia, Pa.

HOLMES, CHRISTIAN R., MAJOR, M. C., U. S. A.

Organizer and Chief of Section of Surgery of the Head, Camp Chillicothe, Ohio.

LEVY, ROBERT, MAJOR, M. C., U. S. A.

Chief, Division of Oto-Laryngology, Base Hospital, Camp Lewis, Washington.

SHAMBAUGH, GEORGE ELMER, MAJOR, M. C., U. S. A.

Board of Appeals, Chicago; Base Hospital, Camp Grant, Rockford, Ill.

WAGNER, HENRY LEWIS, MAJOR, M. C., U. S. A.

Chief of Eye, Ear, Nose and Throat Service, Letterman General Hospital, San Francisco, Cal.

Son, U. S. Army.

WOOD, GEORGE BACON, MAJOR, M. C., U. S. A.

Chief Oto-Laryngological Service, Base Hospital, Camp Meade, Md.

CAPTAINS

BARNES, HARRY ALDRICH, CAPTAIN, M. C., U. S. A.

Surgeon-General's Office, Washington. Term of service, 6 months

GREENE, D. CROSBY, CAPTAIN, M. C., U. S. A.

Chief Department Oto-Laryngology, Base Hospital. Camp Sevier, Greenville, S. C. Term of service, 7 months.

HASTINGS, HILL, CAPTAIN, M. C., U. S. A.

Los Angeles, Cal.

LEWIS, FIELDING OTIS, CAPTAIN, M. C., U. S. A.

Surgeon, Base Hospital No. 92, Camp Greene, Charlotte, N. C.

LIEUTENANTS

COFFIN, ROCKWELL AUGUSTUS, LIEUTENANT, M. C., U. S. N.,
R. F.

Oto-Laryngologist U. S. N. Radio School, Cambridge, Mass.

GREENE, JOSEPH BERRY, LIEUTENANT, M. C., U. S. N.

Oto-laryngologist, Norfolk Naval Hospital, Norfolk, Va.

ROY, DUNBAR, 1ST LIEUTENANT, M. R. C., U. S. A.

In charge of Medical Examinations for Aviation, Atlanta, Ga.

"LIMITED SERVICE ONLY"

*I am not one of those the gods' decision
Has chosen for that highest gift of all—
The sacrifice, the splendor, and the vision—
To fight and nobly fall.*

*And yet I know—what though it be but dreaming!
Should the day hang on one last desperate hope
I—I—could lead one reckless column streaming
Down some shell-tortured slope.*

*To face the shadow-hell of Death's own Valley
With eyes unclouded and unlowered head—
Know, for an instant, one ecstatic rally
And then be cleanly dead.*

BY KENNETH RAND

YALE 1914

DIED IN SERVICE

1918

MISCELLANEOUS SERVICES

MEMBERS OF THE VOLUNTEER MEDICAL SERVICE CORPS

COHEN, J. SOLIS, V. M. S. C.

Son, Meyer Solis Cohen, Captain U. S. Army Base Hospital No. 59, A. E. F.

Son, Isidor Solis Cohen, Storekeeper, U. S. Navy,
JOHNSTON, SAMUEL, V. M. S. C.
Baltimore, Md.

MACKENZIE, JOHN NOLAND, V. M. S. C.
Baltimore, Md.

MAYER, EMIL, V. M. S. C., M. A. B.

Representative in U. S. of Medical Intelligence Bureau, American Red Cross, France.

Eight nephews in service; 5 are officers and 5 are overseas.

MUNGER, CARL EUGENE, V. M. S. C., M. A. B.
Waterbury, Conn

Son, W S. Munger, 302d L. F. Artillery, Battery C, A. E. F.

Son, R. S. Munger, 10th Obs. Battery, F. A. C., Camp Zachary Taylor, La.

MYLES, ROBERT C., V. M. S. C.
New York.

Son, Beverly Russell Myles, New York Manager American Field Service in France; Organizer and Director, American Ambulance in Italy; later, 1st Lieutenant American Red Cross, Italian War Zone, Front Line.

RENNER, WILLIAM SCOTT, V. M. S. C., M. A. B.
Buffalo, N. Y.

THRASHER, ALLEN BENTON, V. M. S. C.
Cincinnati, Ohio.

Son-in-law, James B. Craig, Lieutenant, F. A., A. E. F.

MISCELLANEOUS SERVICE

ARROWSMITH, HUBERT.

Consulting and Operative Work, Sailors and Marines, at Naval and St. Peter's Hospitals, Brooklyn, N. Y.

CHAMBERLAIN, WILLIAM BRICKNER, M. A. B., No. 7.

Consultant for Marine Hospital and Naval Training Service, Cleveland, Ohio.

CLARK, J. PAYSON.

Various hospital services to Enlisted Men and Red Cross.

Sister, Red Cross Nurse in France.

COAKLEY, CORNELIUS GODFREY, CHAIRMAN M. A. B., No. 2, New York City.

Consulting Oto-Laryngologist Gas Defense Plant, Long Island City, N. Y.

COFFIN, LEWIS A., CHAIRMAN, M. A. B., No. 12.

New York City.

Son, 1st Lieutenant Lewis A. Coffin, Jr., Coast Artillery, A. E. F., France; son, George Jarvis Coffin, Private M. R. C.; daughter, Assistant Nurse. Red Cross, France

DABNEY, VIRGINIUS.

Examiner for Aviation Corps; Consultant for the Red Cross; Washington, D. C.

DEAN, LEE WALLACE, CONTRACT SURGEON, U. S. A.

Iowa City, Ia.

DELAVAN, D. BRYSON.

Chairman American Executive Committee, American Red Cross Hospital No. 2, Paris (Col. J. A. Blake). Consultant (unofficial) Naval Recruiting Station, New York City. Member N. Y. Committee on National Defense; President Russell Sage Institute of Pathology (Calorimetric investigation of Food Values); unofficial services to various hospitals in France.

FARLOW, JOHN WOODFORD, BOSTON, MASS.

Son, John S. Farlow, 1st Lieutenant F. A., 3rd Army Corps, A. E. F.

Son-in-law, Wm. R. Castle, Jr., Head of Bureau of Communications of the Red Cross, Washington, D. C.

Daughter, Red Cross Worker in Washington.

FREEMAN, WALTER JACKSON.

Philadelphia, Pa.

Son, W. J. Freeman, Jr., S. A. T. C., Medical University, Pennsylvania; son, W. W. Keen Freeman, 2nd Lieutenant, Camp Zachary Taylor, La.

FREER, OTTO TIGER.

Wife's unele, Judge Advocate to France.

Four nephews in active service.

FRENCH, THOMAS RUSHMORE.

Volunteer professional work for various branches of personnel of U. S. Service.

Mrs. T. R. French, vice-Chairman Brooklyn Chapter, American Red Cross, since 1908; continuous volunteer war service since 1914.

FROTHINGHAM, RICHARD, CONTRACT SURGEON, U. S. A., M. A. B.,

No. 2, Columbia University; Surgeon S. A. T. C., Cooper Union, New York.

Brothers, Capt. Thomas G. Frothingham, U. S. A.; Capt. Henry A. Frothingham, U. S. A.

GOODALE, JOSEPH LINCOLN.

Service at Harvard Medical School, Boston, Mass.

Son, Lieutenant Robert Goodale, 9th F. A., A. E. F., France.

HARDIE, THOMAS NICHOLS, M. A. B.

Chicago, Ill.

Brother, Grant E. Hardie, Lieutenant Colonel, British Army.

Son, Philip Hardie, S. A. T. C., University of Michigan.

HINKEL, FRANK WHITEHILL, M. A. B., No. 43,

Buffalo, N. Y.

HOPKINS, FREDERICK E., V. M. S. C., M. A. B., District No. 8, Springfield, Mass.

*Son, Captain Ralph Hopkins, M. R. C., DIED IN FRANCE.

HUBBARD, THOMAS, M. D., V. M. S. C., M. A. B.,

N. W. Ohio District; Instructor War Nurse Classes, St. Vincent's, Flower, Mercy Hospitals, Toledo, Ohio.

Son, Holland A. Hubbard, Sergeant Battery B., 135th F. A., 37th Division, A. E. F., Active Service in region N. W. Verdun.

Son, Pomeroy G. Hubbard, C. M. M., U. S. S. C., Channel Patrol, Naval Base, Plymouth, England. Term of service about two years.

INGALS, E. FLETCHER. State Adviser, Surgeon-General's office.

Son, E. F. Ingals, Jr., Aviation Service, U. S. Army.

Son-in-law, Clarence L. Fisher, National War Work Council, Y. M. C. A.

JACKSON, CHEVALIER.

M. A. B., Philadelphia, Pa. Consultant in Bronchoscopy, Surgeon General's Office, Washington, D. C.

Son, S. A. T. C.

LELAND, G. A.

Son, George Adams Leland, Jr., M. R. C., 1st Lieutenant, Base Hospital No. 6, A. E. F., France.

Son-in-law, Captain Casano, Royal Italian Navy.

LINCOLN, WILLIAM.

Medical Advisor, Lake Division Red Cross (Ohio, Indiana, Kentucky); Cleveland, Ohio.

Son, Lieut. Donald Lincoln, Field Artillery, U. S. A.

Daughter, U. S. Nursing Volunteer.

Son-in-law Lieutenant Ralph R. Root, U. S. A. Aviation Observer and Gunner.

LYNCH, ROBERT C.

Contract Surgeon, in charge Physical Examining Unit; New Orleans, La.

MACCOY, ALEXANDER W.

Phila., Pa. Son, W. Logan MacCoy, Aviation Corps, U. S. N.

MACKENTY, JOHN EDMUND.

Exemption Board; Examination of Aviators, New York.

McKIMMIE, OSCAR.

Member Episcopal Hospital Unit for Examination of Avia-

tion Candidates, U. S. A.; M. A. B. No. 4, D. C., Washington, D. C.

RANDALL, BURTON ALEXANDER.

Son, Lieutenant Alexander B. Randall, No. 313 Engineers, A. E. F., France.

Son-in-law, Ensign Samuel M. Fox, Jr., U. S. N., Airplane Inspection, Buffalo, N. Y.

RHODES, JOHN EDWIN.

1st lieutenant, Ex-Med. Reserve Corps; Examiner Local Board at University of Chicago and at St. Luke's Hospital, and engaged in various other war activities.

Son, John Edwin Rhodes, Jr., Aviation Service, A. E. F., France.

Son-in-law, Roderick Peattie, Master Engineer, 29th Engineers, A. E. F., France.

Also nephews and nieces in service.

SMITH, HARMON.

Captain 9th Coast Artillery, N. Y. G.; instructor Red Cross Nurses and Y. M. C. A. Secretaries; New York.

SLUDER, GREENFIELD.

Services in Medical Department, Washington University, St. Louis, Mo.

SWAIN, HENRY LAWRENCE.

M. A. B.; Examiner of Eyes for same, also for Aviation Corps; New Haven, Conn.

THEISEN, CLEMENT F.

Chief Oto-Laryngological Department, M. A. B. No. 27, (Five Counties); Albany, N. Y.

Son, Clement F. Theisen, Jr., S. A. T. C.

WINSLOW, JOHN R.

M. A. B., No. 1, University Hospital, Baltimore, Md.

STATE ADVISERS TO THE OFFICE OF THE SURGEON-GENERAL

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GEO. M. COATES, Philadelphia

ABBREVIATIONS

A. R. C.—American Red Cross.

A. E. F.—American Expeditionary Forces.

C. M. M.—Chief Machinist's Mate.

F. A.—Field Artillery.

M. A. B.—Medical Advisory Board.

M. C.—Medical Corps.

M. R. C.—Medical Reserve Corps.

O. R. C.—Officers Reserve Corps.

S. A. T. C.—Students' Army Training Corps.

U. S. S. C.—United States Submarine Chaser Service.

V. M. S. C.—Volunteer Medical Service Corps.

U. S. A.—United States Army.

U. S. N.—United States Navy.

HONOR ROLL
OF
VETERANS OF THE CIVIL WAR

J. SOLIS-COHEN
HENRY KEMBLE OLIVER
FRANCKE HUNTINGTON BOSWORTH
BEVERLEY ROBINSON



MORRIS J. ASCH
WILLIAM CARR GLASGOW
EDGAR HOLDEN
SAMUEL WOOD LANGMAID
RUFUS PRATT LINCOLN
ERNEST LORENZO SHURLY
CLINTON WAGNER

REPORT
OF THE ACTIVITIES OF THE
SUB-COMMITTEE ON OTO-LARYNGOLOGY
OF THE COUNCIL OF
NATIONAL DEFENSE

REPORT OF THE ACTIVITIES OF THE SUB-COMMITTEE
ON OTO-LARYNGOLOGY OF THE SURGICAL SPECIAL-
TIES OF THE GENERAL MEDICAL BOARD OF
THE COUNCIL OF NATIONAL DEFENSE

LIEUT.-COL. CHARLES W. RICHARDSON, M. C. N. A.

At the request of the Medical Section of the Council of National Defense, the presidents of the American Otological Society, The American Laryngological Association and the American Laryngological, Rhinological and Otological Society appointed Doctors Charles W. Richardson, Burt R. Shurly and Harris P. Mosher a committee to formulate a scheme by which the membership of these societies and their colleagues throughout the country practicing these specialties, but not affiliated with these societies could be most advantageously utilized in case the United States became involved in the general war then prevailing in Europe.

The committee met in Washington, D. C., March 31st, 1917, and April 1st, 1917. At this meeting Dr. Charles W. Richardson was elected chairman. The committee after due deliberation prepared and formulated a series of suggestions for the consideration of the Medical Section of the Council of National Defense. Before the tentative plans were finally acted upon a conference was held March 31st, with Major Robert Noble of the Medical Corps, U. S. A., and Medical Director Holecomb of the Navy, in order that they might guide us in our action and offer suggestions. These medical officers gave the committee advice and offered many valuable suggestions. The suggestions as adopted were presented to Dr. F. F. Simpson, chief of the Medical Section, National Council of Defense:

Having been asked by the Council of National Defense to suggest in what ways the nose, throat and ear specialists of the societies mentioned can be of use to the Army and Navy Medical Corps, we feel that we can suggest the following:

We recommend that all the members of the American Otological Society, the American Laryngological Association and the American Laryngological, Rhinological and Otological Society be requested to become members of the Medical Reserve Corps of the Army and Navy, or of the Officers Reserve.

In the first place, the members of these societies could examine recruits for the aviation service, in testing the condition of their labyrinths.

In the second place, we could be of service in examining the upper air tracts of recruits, especially in cases of hoarseness or other suspicious conditions, which might evidence the possibility of tuberculosis.

In the third place, we could be of service in examining all recruits in whom there was a suspicion of impairment of the hearing, or in which there was any evidence or suspicion of infection of the middle ear, either acute or chronic. We recognize the importance of excluding chronic suppurative ears, from the experience of the British Army.

We could be of service in the organization of a base hospital for the treatment of cases of injuries and diseases of the eye, ear, nose and throat at the base of military operations or elsewhere.

The younger man or junior is the physician under thirty-five years of age, and the consultant or senior is the physician over thirty-five years.

It is advised that the younger man be utilized for active service in the base or other hospitals, and that the elder men be utilized as consultants for one or more base hospitals, or a group of neighboring hospitals.

It is advised that a list of the Naval and Base Hospitals, and Naval Training Stations be obtained, and a list made of the consulting specialists. This list is to be placed in the hands of the Army and Navy officials in order that in case of need the required specialists may be assigned to the various hospitals. The names of these specialists are to be chosen by a committee from the three special societies represented by this committee.

We should like to call attention to the necessity of testing the hearing of men in military service in order to ascertain the type of impairment of hearing that will exclude men from certain forms of service, yet permit them to engage in other forms; and to formulate and publish these tests for the use of the consulting military throat and ear specialists of the country.

We recommend that men furloughed from the front, having affections of the nose, throat and ear, be referred to some distinct hospital and some designated physician in connection with

that hospital, in order that the physician may keep in touch with the soldier or sailor until he is sent back to the line of service.

CHARLES W. RICHARDSON,
Representing the American Otological Society.

BURT R. SHURLY,
Representing the American Laryngological Association.

HARRIS P. MOSHER
Representing the American Laryngological Rhinological and Otological Society.

On March 26th, due notification of the membership of the committee, and that a meeting was to be held in Washington, was forwarded to Dr. F. F. Simpson, chief of Medical Section, National Council of Defense, which was acknowledged March 29th, 1917.

COUNCIL OF NATIONAL DEFENSE.

Washington

March 29th, 1917.

Dr. Charles W. Richardson,
Washington, D. C.

My dear Dr. Richardson:

I am very glad to have your letter of March 27th, giving me the names of representatives of your three special associations and will be glad to have the further information to which you refer.

Very sincerely yours,

(Signed) F. F. SIMPSON,
Chief Medical Section,
Council of National Defense.

Acknowledgement was also received of the report of the committee by Dr. F. F. Simpson, and it was stated that your committee would be further advised. At the meetings of the constituent societies in Atlantic City, May 29th to June 2d, 1917, reports were made by your committee. At these meetings your committee was requested to consult the Surgeon Generals of the Army and Navy, for the purpose of requesting the members of these societies that became members of the Officers' Reserve Corps be employed, so far as possible in the line of their specialty.

That the committee appointed to meet the Council of National Defense be empowered to consult the Surgeon Generals of the Army and Navy, for the purpose of requesting that the Medical Officers of the Officers' Reserve Corps of this Society be employed, so far as possible, in the line of their specialty, and that it be suggested to them the advisability of establishing one or more base hospitals devoted to the injuries of the head and air passages and diseases of the eye, ear, nose and throat, acquired in service; and also that this committee be empowered to take up any question that the Surgeon Generals of the Army and Navy may suggest, for the interests of the members of this society, in connection with the present war, and that the attention of the Surgeon Generals of the Army and Navy be called to the action of the joint meeting in regard to the examination of aviators and employment of specialists in their hospital staffs for this purpose.

Shortly thereafter a conference was held with the Surgeon General of the Army, and he received most kindly the suggestion of the society as embodied in the above resolution. He stated that he had under advisement the appointment of Major Theodore F. Lyster, Medical Corps, U. S. A., as an advisor to the committee, through his agency bringing the committee's activities in closer relation to the U. S. Medical Corps' activities. This action was promptly taken, and your committee began soon to realize the value of Major Lyster's guiding hand, and his valuable organizing ability. Your chairman also consulted the Surgeon General of the Navy. The Surgeon General of the Navy appreciated greatly the objects and desire of your committee, but acknowledged on account of the different features in the two services that he would not be able to employ us to the same degree of advantage as the other branch of the service. He readily acquiesced in the appointment of a member of the Medical Corps of the Navy as an advisor to the committee. The appointee was Surgeon G. E. Tribble.

On June 21st information was given your committee that it present a request before the meeting of the General Medical Board of the Council of National Defense to be held June 22d, 1917, to be created as a sub-committee on oto-laryngology

of the Surgical Specialties of the General Medical Board of the Council of National Defense. The plea for this action was presented at the meeting June 22d.

Washington, D. C., June 22d, 1917.

Chairman of the General Medical Board,
Council of National Defense,
Washington, D. C.

Dear Sir:—

The American Otological Society, the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, and the Laryngological and Otological Section of the American Medical Association, containing a committee appointed by the three former societies, consisting of Dr. Charles W. Richardson, of Washington, D. C., Dr. Harris P. Mosher of Boston and Dr. Burt R. Shurly, of Detroit, wishes to continue its activities and represent them before the Council of National Defense and the Surgeon Generals of the Army and Navy. This committee held a meeting in April, 1917, at which a report was formulated and presented to the Chairman of the General Medical Board of the Council of National Defense.

We know that the members of the above-mentioned societies will be pleased that the Council of National Defense has invited this committee to advise with them on this special and general work which the war has thrown upon the Medical Departments of the Army and Navy.

These societies have requested this committee as far as is in the power of the War and Navy Services, to employ the members of these societies in the lines of their special field.

The committee has been encouraged to believe that such disposition will be made of these men as far as is possible. In brief, some of the questions for immediate action before this committee are as follows:

The establishment of special hospitals for the treatment of wounds and diseases of the eye, ear, nose and throat.

The designation of men for the examination of aviation recruits, suggested by this committee and which is being thoroughly carried out.

In our original report we advised that men be selected for consulting and active duty in base, eye, ear, throat and nose hospitals and in connection with general hospitals, and that

these men be furnished through this committee, to act with the personnel medical officers of the Army and Navy.

If it is the pleasure of the Medical Board of the Council of National Defense to appoint this committee as a sub-committee on the ear, nose and throat, it stands ready to devote its services to whatever duty and in whatever form the General Committee may designate.

Respectfully submitted

(Signed) CHARLES W. RICHARDSON,

Chairman

Your chairman appeared before the executive committee in due course in elaborating the necessities of the appointment of your committee as a sub-committee of the Surgical Specialties of the General Medical Board, Council of National Defense. In a future conference with the Chairman of the Executive Committee, it was thought advisable to enlarge your committee, in the sub-committee of oto-laryngology, by the addition of Major Theodore F. Lyster and Surgeon G. E. Tribble. This action was taken. The sub-committee of oto-laryngology of the Surgical Specialties of the General Medical Board of the Council of National Defense as appointed by the chairman of the Executive Committee, Dr. Franklin Martin, consisted of the following membership:

Dr. Charles W. Richardson, Chairman; Dr. Harris P. Mosher, Dr. Burt R. Shurly, Major Theodore F. Lyster, U. S. A., and Surgeon G. E. Tribble, U. S. N.

The sub-committee of oto-laryngology was instructed by Chairman Franklin Martin, June 22d, 1917, that in due course the sub-committee would receive official sanction for its work. In the meantime, until such official sanction was forthcoming, it should begin its activities.

As war had been declared against Germany, and the United States Government was preparing to augment its fighting force through volunteer enlistment and conscription, it became necessary to furnish a large number of medical men to examine recruits and look after the welfare of these men while being prepared for service, and later on the firing line. As our specialties had been partly as-

sured that their services would be utilized along the line of their special field, in so far as it was possible under military medical organization, it became the object of your committee to enlist the support of oto-laryngologists for military medical service. The first object of your committee therefore was the listing of all men known as throat, nose and ear specialists in the United States. Through the use of various directories, 5,600 names were listed. This was completed July 6th, 1917.

The second object was the formulating of a questionnaire to be sent to each individual listed. The sub-committee on ophthalmology had already prepared such a questionnaire and it formed the basis of the one which we adopted with slight modification, July 3d, 1917. (Exhibit 1.)

The third object was the enlisting of an office force of volunteer typists to index the list of 5,600 names into suitable books arranged alphabetically as to names and arranged alphabetically according to states.

The fourth object was the enlisting of an adequate volunteer force to address and mail the questionnaire, and to dispose of the replies. The fifth object was the employment of a competent stenographer.

All of these objects were adequately met. The questionnaire was received on July 7th, by the committee. They were all in the hands of the Council of National Defense for mailing on July 9th.

The returned questionnaires were classified under the following heads. (Exhibit 2.)

It was found necessary, in order to simplify the work and make it less arduous for the committee, to prepare a set of "form" letters in reply to the returned questionnaires. The nature of the replies made this applicable in the great majority of cases. (Exhibits 3, 4, 5, 6.)

A large number of letters and questionnaires demanded and received individual replies.

The committee also found it expedient to form an advisory committee for the purpose of giving the committee information as

to the standing of various individuals applying for service, and those already members of the M. O. R. C., and of whose professional special standing the committee had no personal knowledge. The selection was made of one advisor in each state, in the more populous states two. (Exhibit 7.)

To each of these advisors, as the circumstances arose, a regular form letter was sent with the name of the individual about whom information was requested, as well as the classification to make. (Exhibit 8.)

Besides the index catalogue book which we have already submitted, each individual replying favorably as to service, M. R. C. and for future service was card indexed in two forms, viz.: 1. By a large card on which all information obtained by the questionnaire was noted. 2. Through a small card which was to serve as a record of the acceptance of commission, and subsequent medical army service. (Exhibits 9 and 10.)

Through the efforts of an able corps of volunteers this work was expeditiously and efficiently consummated.

This phase of our effort was practically completed by August 15th, 1917.

Number of questionnaires	5,468
Replies	2,014
Unanswered	3,474
Replies grouped as follows:	
Ophthalmology	1,244
M. O. R. C.	171
Accept service	196
Within draft limit	40
Past age limit (unavailable)	158
Physically disqualified	167
Dependents	58

The furnishing of questionnaires, containing franked return envelopes, multigraphing "form" letters and the use of the frank of the Council of National Defense, was furnished by the Council. The work incident to addressing, mailing and clerical was volunteer. The cards were furnished by the office of the Surgeon General. Other expenses were borne by your committee.

The sub-committee on Ophthalmology and Oto-laryngology found it expedient in the early period of their activities, as well as of strategic value, to combine their efforts. An informal meeting was held on July 7th, 1917. At this meeting a general plan of co-operation was outlined. Consent was requested of the General Medical Board for the sub-committee to meet in joint session whenever they deemed it advisable; the two sub-committees to still maintain their individual identity. The request was duly sanctioned. At the same meeting the joint committee designated itself as the Head Surgical Committee. A letter was formulated to the Surgeon General entitled, "Establishment of Head Surgical Sections for Base Hospital Groups," to be presented to the Surgeon General by Major Lyster.

July 7, 1917.

From: The Sub-Committee on Ophthalmology and Oto-laryngology of the General Medical Board of the Council of National Defense.

To: Surgeon General Wm. C. Gorgas, U. S. A., Washington, D. C.

Subject: Establishment of Head Surgical Sections for Base Hospital Groups.

The Sub-Committees on Ophthalmology and Oto-laryngology, in a joint meeting with representatives from the Army and Navy, deem it advisable to call your attention to the enclosed informal resolution, with the following explanatory suggestions:

It is estimated that approximately twenty per cent of the capacity of Base Hospital groups should be devoted to injuries or other affections involving the head. These cases can be brought to their proper section more expeditiously by direction from a common administrative head. Not only will the overhead administrative force be thus lessened, but also confusion and unnecessary details and loss of time in transferring from one section to another will be eliminated.

The elasticity of this method of handling permits its being applied to any institution, no matter what its size may be, from a hospital of several hundred to one of several thousand beds. In the smaller institutions the section would not be more than a ward. In a larger institution it would be practically a separate hospital.

When several Base Hospital groups are located in close proximity, they should be combined as a greater Base Hospital group, so that the various sections, such as the Head Surgical section would be combined; only so much of the staff and equipment to be mobilized as is deemed necessary.

The sub-committees on Ophthalmology and Oto-laryngology believe that in order to make this unit complete a brain surgeon and an oral surgeon, with necessary staff, be a part of the Head Surgical Section, as these specialties are so closely related and interdependent. It is believed that Base Hospital groups so organized will not only add to their efficiency, but will insure their being administered for the best interest of the patients.

Respectfully submitted,

SUB-COMMITTEES ON OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

JAMES BORDLEY, Chairman,

Sub-committee on Ophthalmology.

CHARLES W. RICHARDSON, Chairman,

Sub-committee on Oto-laryngology.

It was also moved and approved that a resolution be drafted enlarging the Head Surgical Committee by the addition of a brain and oral surgeon. A letter was also submitted by the committee through Surgeon Tribble of the Navy to the Surgeon General of the Navy. "Recommendation as to the appointment of specialists in the Navy for War Service."

From: The Sub-committees on Ophthalmology and Oto-laryngology of the Medical Section of the Council of National Defense.

To: Surgeon General, U. S. Navy.

Subject: Recommendation as to the appointment of Specialists in the Navy for War Service.

1. At a joint meeting of the sub-committee on Ophthalmology and Oto-laryngology of the Medical Section of the Council of National Defense, it was resolved to offer this recommendation to the Surgeon General of the Navy:

The Sub-committees believe that the best interests of the Naval Medical Service and the welfare of the personnel are served by the detailing of one Ophthalmologist and one Oto-laryngologist to each of the large Naval Stations and Bases not provided with

such specialists and the Sub-committees tender their services to the Surgeon General for duty at sea or abroad if the occasion arises. The sub-committees are informed that the field in the Navy is necessarily somewhat limited and that the conditions prevailing the Army and with the Red Cross are not duplicated in the Naval Service, where use must be made of specialists as individuals and not as members of organized hospital units. It is believed that with the facilities at the command of the Sub-Committees, qualified men can be found to accept service under the peculiar circumstances existing and the sub-committees freely offer their assistance as they feel that the efficiency of the medical administration is promoted by this action.

Attention is invited to the accompanying letter to the Surgeon General of the Army outlining a plea believed by the Sub-committees to offer a practical solution of handling the larger percentage of head injuries received in the existing type of warfare. Since the conditions under which a large naval action may take place are constantly varying, the Sub-committees do not feel competent to suggest a plan of procedure which because of diverse conditions might not be feasible.

The action of the sub-committee on July 7th in requesting the Surgeon General to form and recognize the Surgical Head Unit in the United States Army Medical Service was the most signal and important step that had been taken. Through the able assistance of Major Lyster the request was well received by the Surgeon General and a few days later was approved. Dr. W. H. Wilmer was designated as Chairman of the section of Surgery of the Head.

On August 17th, Major Mosher of the Oto-laryngological sub-committee was assigned to Major Lyster's office. Dr. V. P. Blair was made a member of the committee, representing the oral-plastic sub-section and assigned to the Oto-laryngological Sub-committee. Dr. Bagley was made a member of the committee, representing the sub-section of brain surgery and assigned to the Ophthalmologic sub-committees.

With the authorized creation of the Section of Surgery of the Head, Major Mosher, Major Black, Major Blair and Captain Bagley were assigned to the Surgeon General's office as

representing the four sub-sections of which this section was composed, with Lieut. Col. Lyster as the officer in chief.

From time to time various important questions as to organization, ways and means and various other timely subjects, were discussed at the numerous meetings, held by the joint committees. The subject of the re-organization of the committees came before several of the meetings and was most acutely discussed. After mature deliberation, it was decided to defer such action to a later day.

On August 15th, your chairman was notified by Dr. Franklin Martin, chairman, General Medical Board, Council of National Defense that the sub-committee on Otology, Rhinology and Laryngology had been formally approved by the Council of National Defense.

August 15, 1917.

From: Dr. Franklin Martin.

To: Dr. Charles W. Richardson,

1317 Connecticut Avenue,

Washington, D. C.

Subject: Appointment to Committee on Otology, Rhinology and Laryngology.

1. The Sub-committee on Otology, Rhinology and Laryngology has been formally approved by the Council of National Defense and the enclosed notification sent to the various members of your committee. This is a sub-committee of the Committee on Surgical Specialties of the General Medical Board.

Yours very truly,

(Signed) FRANKLIN MARTIN,
Chairman, General Medical Board.

On August 15th, the Head Surgical Committee was informed through Lieut. Col. Theodore F. Lyster, that the Surgeon General had suggested that he would look with favor on the preparation of plans and suggestions from the committee for the formation of a one thousand bed hospital for the surgical head section on the Western Front abroad. Sub-committees on construction, personnel, equipment and shops were immediately formed. After due deliberation and many consultations the completed plans, with costs, were placed

in the hands of the Surgeon General. Favorable action was taken.

During all this period the committee's activities were being more and more closely aligned into the activities of the Section of Surgery of the Head, Surgeon General's office.

Other activities during this period and subsequent thereto consisted of:

1. The visit of members of the sub-section to various cities, Cleveland, Detroit, Chicago, St. Louis and Cincinnati, August 21st-26th, under special order to make addresses to the oto-laryngologists in those cities in order to arouse their enthusiasm and gain recruits to the Army Medical Service.

2. The standardization of oto-laryngological instruments.

3. The revision of hearing requirements for entrance to the Army.

4. The assembling of tests for malingerers.

5. Efforts have been and are now being prosecuted to ascertain the best ear protectors for use in the service. These tests are being made at Indian Head and the Navy Yard in the City of Washington.

6. In conjunction with the sub-section of Ophthalmology, the brain and plastic officers in the Section Surgery of the Head, Surgeon General's office, under the direction of Major Mosher and Major Black of this committee, plans for a special hospital and dispensary building in the cantonments were completed.

7. Reports have also been sent out by this sub-committee through the secretaries of the National Societies which they represent, to all their membership, outlining the activities of this sub-committee.

8. Through the presence of Major Harris P. Mosher, in the office of the Surgeon General, and latterly through Major Charles W. Richardson, we have been enabled to suggest to the chief of the personnel bureau the appropriate grade to be assigned to various candidates for service in M. R. C.

9. Through the institution of our advisory committee we have been able to obtain accurate information on the professional

qualifications and character of each candidate for service in M. R. C.

10. We have also made the assignments in oto-laryngology in the base hospital in the cantonments and National Guard Camps.

11. In preparation is a roster of the men to be assigned in oto-laryngology, to the base hospitals abroad.

12. A course of lectures at the cantonments by the chief of the oto-laryngologic staff was ordered; the subjects to be lectured upon were given; and the officer to deliver the lecture was designated at each cantonment. A review of the literature was made. A list of books for the library was prepared.

13. The Sub-committee has had Major Hanau W. Loeb, of St. Louis, editor of the *Annals of Otology, Laryngology and Rhinology*, assigned temporarily for duty in the Surgeon General's office, in order to prepare the manuscript for a war manual of oto-laryngology.

14. Through the activities of this sub-committee a certain legislative act was so shaped as not to invalidate the right and authority of the Surgeon General's of the Army and Navy to the reconstruction, re-education and rehabilitation of the soldier and sailor in these arms of the service.

15. On October 24th, Major Harris P. Mosher was ordered abroad on an inspection tour with Lieut. Col. Theodore F. Lyster. On October 25th, Major Charles W. Richardson was ordered to temporary duty, in the office of the Surgeon General to occupy the desk left vacant by Major Mosher.

16. On September 27th, Major Burt R. Shurly resigned as a member of the committee on account of going abroad with his hospital unit.

17. On October 20th, Major Joseph H. Bryan was nominated by the Council of the American Laryngological Association to the vacancy. On November 15th, Dr. Franklin Martin as chairman of the Executive Committee approved the appointment.

The Sub-committee made reports from time to time to the General Medical Board of its activities, at times written and other times verbal.

During the latter part of September or early in October an important memorandum was issued by the Surgeon General designated "Recognition of Sections Representing Specialists." In this memorandum appears the following sentence: "the first step in carrying out this policy was the grouping of those specially qualified into a section of Surgery of the Head." It is followed by the statement that, "the older division of army medical work into the two divisions of surgery and medicine is superseded by the following grouping." The eight sections are then named.

RECOGNITION OF SECTIONS REPRESENTING SPECIALISTS

The sudden expansion of the Medical Corps of the Army by the incorporation of civilian physicians forces the consideration of new questions of policy. Civilian physicians of the largest experience are for the most part specialists. The problem is, how to give the army the benefit of their special training, and at the same time give them the necessary military instruction to make them effective from the military standpoint. Apart from the medical department, specialism has long been the rule in the other branches of the service. And in the medical department by the specializing of certain men, preventive medicine achieved some of its most notable advances.

At the beginning of the war it became the policy of this office to utilize the services of the specialist as far as possible in the line of his specialty. As soon as this became known the specialists of the country dropped their reluctance to enter the service. The first step in carrying out this policy was the grouping of those specially qualified into a Section of Surgery of the Head. The specialties which form this group are Ophthalmology, Otolaryngology, Brain Surgery and Oral Plastic Surgery of the face.

Other specialties, for instance, Orthopedic Surgery, Psychiatry, Venereal and Skin Diseases, and Genito-Urinary Surgery, also have been recognized and treated as sections.

It will be seen that with the advent of recognized sections for the various specialties, the older division of army medical work into the two divisions of surgery and medicine, is superseded by the following grouping:

1. Section of Internal Medicine
2. Section of General Surgery
3. Section of Orthopedics

4. Section of Venereal, Skin and G. U. Surgery.
5. Section of Surgery of the Head
6. Section of Laboratories and Infectious Diseases
7. Section of Neurology, Psychiatry and Psychology
8. Section of Roentgenology

This grouping accepted, the chiefs of all the sections should have equal rank, since professionally each in his line is the equal of the other.

When the specialist begins his military training by assignment to a training camp, the fact that he is a specialist may be an embarrassment. For instance, should he become an instructor in any military subject, he cannot be taken away without interfering with the progress of the military instruction planned. This being the case, if he is held back from assignment to work in his specialty should he be needed, as has been the case frequently of late, he loses his individuality as a specialist, and the army loses the benefit of his special skill. Two methods of avoiding this are possible. The first is not to assign a specialist as instructor, so that he can always be available for immediate release. The second and better method is not to call any specialist from the training camp until the Commanding Officer of the camp has been consulted by letter or wire. When the organization of the Medical Corps of the Army has progressed a little farther, this difficulty will in a great measure disappear, since the first assignments call for the most men. Later but few men will be called for at a time.

Orders have already gone out and are being complied with, which call for a monthly list of specialists at the various training camps. This furnishes, however, a record of the specialist only in the beginning of his military career. When he leaves the training camp, unless there is an immediate opening in his specialty to which he can be assigned, he is lost track of. In order to avoid this it is recommended that when he leaves the training camp, and for the rest of his military employment, he report by letter once a month to the officer in the Surgeon General's office who is the Chief of the Department of his specialty.

The medical officers for the Section of Surgery of the Head who have been assigned to the cantonment hospitals have been listed according to their specialty and ordered for duty in it. It is recognized, however, that in the beginning when all the work is in the rough there will be but little for them to do. During this period, therefore, they would naturally be asked to join in any medical work that was necessary.

Having placed the specialist at once in his specialty it is necessary in order to keep his efficiency at the maximum, that

he should not be taken from it except in case of great emergency, and that in actual war conditions he should see his case at the earliest possible moment. Men trained in special work are to be stationed in the evacuation hospital or even nearer the front. The specialist in this way sees his case at the very beginning, and the case in its progress to the rear receives an ever increasing amount of special care until the hospitals for surgical repair and re-education have finished with the injured man and returned him to civil life.

In order to serve the interests of the surgeons working in the surgical specialties of the head, an oto-laryngologist, an ophthalmologist, a brain surgeon, and an oral plastic surgeon, have been assigned to the Surgeon-General's office. As they know the personnel of their specialties they act both in an advisory capacity and as an information bureau for the specialists of the country. In order to make sure that the plans formulated in the Surgeon-General's office for the correlation of the specialists of the head carry out in practice, two members of the section have been selected to visit various cantonments, both National Guard and National Army, to furnish information as to the reasons for subdividing these hospitals into specialties, and to see that the personnel selected by this department is in every way qualified to carry out the work assigned.

The personnel of the Section of Surgery of the Head of each Cantonment Hospital includes one brain surgeon. This assignment is primarily for the purpose of caring for the brain cases occurring in the service of the hospital, and secondarily, to acquaint the surgeon with the methods of management of a military hospital, preparatory to going abroad.

A general surgeon especially trained in plastic and oral surgery, is one of the personnel of the section of surgery of the head. He has associated with him as assistants, one dental oral surgeon, and except in evacuation hospitals, also one dentist. Because of the probable small number of brain and plastic oral cases in the Cantonment Hospital, the surgeons of these two divisions will assist each other in caring for their respective cases. In the special building for the Section of Surgery of the Head there are special operating rooms. One of these is set aside for the services of oto-laryngology. This room is to be shared jointly by the oto-laryngologist, the brain surgeon and the oral plastic surgeon. Whenever the Brain Surgeon and the Oral Plastic Surgeon need instruments not in the oto-laryngological equipment they are to be obtained from the general surgical equipment.

The surgeon in charge of Plastic and Oral Surgery has charge of injuries and surgical diseases of the mouth, and its essential

structures, including the bony framework and soft structures of the face, and also of the neck when the major part of the injury is situated above the clavicle.

Exception to this classification is made in injuries and surgical diseases limited to the orbit or its appendages when the attending Ophthalmologist elects to do the work himself.

In injuries and diseases of the external nose and external ear and the accessory sinuses, when the attending Oto-laryngologist elects to do all the work himself.

In injuries and surgical diseases of the larynx when the Laryngologist elects to do the work himself.

In thyroid diseases, and in special cases of injuries of the peripheral nerves and the spinal column.

The commanding officer or the surgeon in charge of the hospital may delegate such other work to the surgeon in charge of Oral Surgery as the exigencies of the situation may dictate.

In the absence of the Oral Plastic Surgeon the Dental Oral Surgeon represents the Oral Surgery Division of the Section of Surgery of the Head. The Dental Oral Surgeon is advised to consult the surgeon in charge of the Section of Surgery of the Head in any question that may arise in the apportionment of cases or in the Dental Oral Surgeon's relations to the Oral Surgical and General Hospital work.

In cantonments the Dental Oral Surgeon's main work will be detecting and treating focal infections about the gums and jaw bones, of which there will be a great number. There may not be enough Oral Surgery to fill all of the Dental Oral Surgeon's time, or the Dentist Assistant's time, in which case he will do such other work as the Surgeon may delegate to him.

(Signed) W. C. GORGAS,
Surgeon General U. S. Army.

The question of the advisability of this memorandum being the most acceptable for the organization of base and general hospitals under war conditions was under consideration at several conferences. As a result of the deliberation of these conferences, the plan as thought more acceptable was adopted November 3d, 1917. This plan divides the service into Surgical, Medical, Laboratory.

SURGICAL SERVICE

1 Chief of Service	{Chest
4 Surgeons	}Abdomen
	}Fractures
	}General

- | | | |
|-------------------|---|---------------------|
| 1 Surgeon | { | Orthopedie |
| | { | Urology |
| 4 Surgeons | { | Brain |
| Head | { | Ear, Nose & Throat |
| Section | { | Eye |
| | { | Oral (Face & Mouth) |
| 1 Roentgenologist | | |
| 2 Dentists | | |

MEDICAL SERVICE

- 1 Chief of Service
- 3 Physicians
- 1 Neurologist
- 1 or 2 Psychiatrists (In Hospitals U. S.)

LABORATORY SERVICE

- 1 Chief of Service (Pathology)
- 1 Assistant (Serology; Bacteriology)

This organization received the approval of the Surgeon-General.

REORGANIZATION OF BASE AND GENERAL HOSPITALS**500 BED BASIS**

The Manual of the Medical Department, together with the rules and regulations for the governing of the United States Army General Hospitals, covers the organization of Base Hospitals in a satisfactory manner, and in sufficient detail, except as far as relates to the professional division.

Paragraph 761 provides that, as far as adaptable, the regulations for General Hospitals will govern the administration of Base Hospitals. Paragraph 290 is a tabular statement furnishing a working plan of administration.

It should be noted that a Chief of Surgical Service and a Chief of Medical Service are specified.

Paragraph 307 outlines the duties and responsibilities of Chief of Service. These may be selected from any section, ability and experience being the determining factors.

It is recommended that memorandum previously issued by the Surgeon General and Paragraph 200 be amended to provide for three services, namely, Surgical, Medical and Laboratory, with a Chief for each Service, and further, to provide that each of these Services shall include the following special sections, or as many as may be necessary.

SURGICAL SERVICE

- | | | |
|--------------------|---|---------------------|
| 1 Chief of Service | { | Chest |
| 4 Surgeons | | Abdomen |
| | | Fractures |
| | | General |
| 1 Surgeon | { | Orthopedic |
| | | Urology |
| 4 Surgeons | { | Brain |
| Head | | Ear, Nose & Throat |
| Section | | Eye |
| | | Oral (Face & Mouth) |
| 1 Roentgenologist | | |
| 2 Dentists | | |

MEDICAL SERVICE

- 1 Chief of Service
- 3 Physicians
- 1 Neurologist
- 1 or 2 Psychiatrists (In Hospitals U. S.)

LABORATORY SERVICE

(Includes Pathology, Bacteriology, Serology, Chemistry and Morgue)

- 1 Chief of Service (Pathology)
- 1 Assistant (Serology, Bacteriology)

(All other workers in the Laboratory will be under the direction of the Chief of Service.)

For the Head Section a Section Chief may be designated, if desired.

The Commanding Officer will organize a convalescent camp as the conditions warrant.

Nursing Service. The nursing service remains as at present, with the provision that the number of nurses may vary according to the needs of the service.

In the assignment of non-commissioned officers and privates, the Manual may be followed or modified as the Service demands.

It is also recommended that Paragraph 307 be amended to read: "The Chiefs of the Medical, Surgical and Laboratory services will be responsible, etc." * * *

Approved by the Surgeon General.

On October 5th, 1917, an order was issued by Major Winfred Smith of the Hospital Division for one oto-laryngologist for each of 50 Base Hospitals to be sent abroad. This list has been completed.

WAR DEPARTMENT
OFFICE OF THE SURGEON GENERAL

WASHINGTON, October 5th, 1917.

To the Chiefs of Divisions:

1. It is desired to begin the organization at once of 50 base hospitals for foreign service, beginning with number 54. These are to be organized on a basis of 500 beds and will include the following professional personnel:

1 Commanding Officer	5 Physicians
1 Adjutant	1 Neurologist
1 Quartermaster	2 Pathologists
1 Registrar	7 Serologists
5 General Surgeons	1 Roentgenologist
1 Orthopedic Surgeon	65 Nurses
1 G. U. Surgeon	153 Enlisted Men, Including:
1 Brain Surgeon	1 Master Hospital Sergeant
1 Ear, Nose & Throat Surgeon	1 Hospital Sergeant, 1st Class
1 Ophthalmic Surgeon	4 Cooks
1 Oral Surgeon	10 Assistant Cooks
2 Dentists	

2. You are requested to select such part of this personnel for each of these base hospitals as comes under your section. The personnel for each base hospital should be on a separate sheet, with the number at the top, beginning with No. 54. It is requested that these returns be made to this office in lots of not less than ten (10) at one time and that the lists be in duplicate.

3. It is requested that as soon as men are selected, steps be taken to insure the reservation of these men for the duty for which they are selected.

4. It is desired to produce well-balanced units and it is not desirable to assign to any one unit more than a minimum number of the older and more expert men. In this preliminary organization, it is not considered desirable to assign more than six majors to a unit and these should be distributed in the different services. The other personnel should be composed of younger men. The General Surgical Section and the General Medical Section need only select the Chief Surgeon and Chief Physician and one assistant at this time, although it would be well to select the complete personnel for at least ten (10) units and to begin the tentative tabulation of the names of all the remaining personnel for all units.

5. It is requested that the names submitted shall represent men who have received and accepted their commissions.

(Signed) WINIFRED SMITH, Major.

M. R. C.

During the second week of October, Major Harris P. Mosher made an inspection tour of the Eastern group of cantonments.

On October 24th, 1917, the chairman of your committee made a report of the activity at the meeting of the Clinical Congress in Chicago.

Reconstruction—In September, Dr. James Bordley, chairman of the Sub-Committee of Ophthalmology was assigned by Lieut. Col. Lyster at the direction of the Surgeon General to represent the Section of Surgery of the Head in the Reconstruction Bureau, under Major King, U. S. A. At the same time Major Charles W. Richardson was designated to represent through Major James Bordley the Oto-laryngologic section. Major Richardson's participation was in the proposed reconstruction of the defects in hearing and speech as a result of casualty in the war.

On September 22nd, 1917, Major Richardson called a meeting of physicians interested in the defective in hearing and speech, and teachers of the deaf, and as a result of this meeting the following report was made to Major Bordley.

On October 8th, a reply was received from Major Bordley requesting more detailed information embodying a plan of reorganization.

The subject of this letter was most thoroughly considered by the committee and a detailed report requested by Major Bordley was submitted.

On account of the uncertainty which existed in the reconstruction bureau as to the part which this bureau would play in the program of reconstruction, the activity of your committee in the general scheme of reconstruction has been held in abeyance to the time of this writing, December 6th, 1917.

Exhibit 1.

COUNCIL OF NATIONAL DEFENSE
WASHINGTON

Dear Doctor:

July 7th, 1917.

You are requested to fill out this form and return at once in the enclosed envelope.

- | | | |
|-------|--|----------------------|
| I. | Name | Address |
| II. | Age | Married or single? |
| III. | Country of birth | Are you naturalized? |
| IV. | Place and date of graduation? | |
| V. | Past hospital connections? | |
| VI. | Present hospital connections? | |
| VII. | Number of years in Oto-laryngology? | |
| VIII. | Foreign languages spoken? | |
| IX. | Military or naval experience? | |
| X. | Are you a member of the Medical Officers' Reserve Corps, U. S. A.? | |
| XI. | Are you a member of a Base Hospital Unit?
If so, what unit? | |
| XII. | Will you accept service in the Army or the Navy if the Government so desires? | |
| XIII. | Have you received a questionnaire from the sub-committee on ophthalmology? | |
| XIV. | Have you answered it? | |
| XV. | Do you prefer to be classified under the ophthalmologic or oto-laryngologic section? | |

Sincerely yours,

Sub-Committee on Oto-laryngology,

General Medical Board,

Council of National Defense.

Charles W. Richardson, Chairman,

Harris P. Mosher

Burt R. Shurly

Major Theodore Lyster, U. S. A.

Surgeon C. E. Tribble, U. S. N.

FRANKLIN MARTIN,
Member Advisory Commission,
Council of National Defense.

F. F. SIMPSON,
Chief of Medical Section,
Council of National Defense.

Exhibit 2

Returned questionnaires classified under the following Heads.

1. Accepted
2. Accepted for future service
3. Accepted qualifiedly—depending on rank or assignment to duty
4. Indefinite

5. Member M. O. R. C.
6. Applied for M. O. R. C.
7. Unavailable {
 - Members Base Hospital Units
 - Members Teaching Staffs
 - Members Hospital Staffs
 - Officers in National Guard
 - Officers in Navy
 - Officers in Public Health Service
 - Not Citizens
 - Beyond Age Limit
 - Physically Unfit
 - Females
 - Dead
8. Excused {
 - Civil obligations
 - Those with dependents
9. Within draft age limit
10. General Surgeons
11. Refusals
12. Slackers

Exhibit 3

COUNCIL OF NATIONAL DEFENSE
WASHINGTON

Dear Doctor:

We note in your reply to our questionnaire that you are under thirty-one years of age. As you are subject to draft, we would advise you to make application at once for a commission in the Medical Section Officers' Reserve Corps.

When feasible, men under thirty-one will be used in the specialty in which they have been trained, but with no promise on the part of the War Department for such service, the special work naturally being reserved for men of larger experience.

Sincerely yours,

CHAS. W. RICHARDSON, Chairman,
Sub-Committee on Oto-Laryngology,
General Medical Board.

Committee

HARRIS P. MOSHER

BURT R. SHURLY
MAJOR THEODORE C. LYSTER, U. S. A.
SURGEON C. E. TRIBLE, U. S. N.

Exhibit 4

COUNCIL OF NATIONAL DEFENSE
WASHINGTON

Dear Doctor:

As your reply to question 12—"Will you accept service in the Army or Navy to be classified in the Oto-Laryngologic Section, if the Government so desires?"—of the questionnaire of the Sub-Committee on Oto-Laryngology of the General Medical Board of the Council of National Defense *was in the affirmative*, we are enclosing you application blanks for appointment in the Medical Section Officers Reserve Corps.

As the Government is in serious need of your services *at once*, we trust that you file your application at the earliest possible moment.

Sincerely yours,

CHAS. W. RICHARDSON, Chairman,
Sub-Committee on Oto-Laryngology,
General Medical Board.

Committee

MAJOR THEODORE C. LYSTER, U. S. A.
HARRIS P. MOSHER
BURT R. SHURLY
SURGEON C. E. TRIBLE, U. S. N.

Exhibit 5

WAR DEPARTMENT
OFFICE OF THE SURGEON GENERAL
WASHINGTON

Dear Doctor:

In reply to the questionnaire sent you by the Sub-Committees on Ophthalmology and Oto-laryngology of the Council of National Defense you signified your willingness to accept service in the Medical Officers' Reserve Corps as a specialist, but stated that you have not practiced as a specialist exclusively. It is the policy of the Surgeon General at first to utilize as specialists only those who have had the largest clinical experience; that is, men who have practiced ophthalmology and oto-laryngology exclusively for at least eight to ten years. Your general medical training will make your services most valuable to the Medical Department in general work, and you are needed.

In this emergency will you not subordinate your personal desires to the good of the cause for which we are fighting and at once send in your application for the Officers' Reserve Corps? (Application blanks enclosed.)

R. B. MILLER,
Major, M. C., U. S. A.

Exhibit 6

COUNCIL OF NATIONAL DEFENSE
WASHINGTON

Dear Doctor:

In reply to your letter of inquiry, the Sub-Committee on Ophthalmology and Oto-Laryngology refers you to the following:

1. Officers of the medical reserve corps who have specialized in Medicine or Surgery will be given an opportunity to perform the duties of their specialty when feasible, men of larger experience naturally being given preference.

2. In the Medical Reserve Corps there are three grades, viz., Lieutenant, Captain and Major. It is the policy of the Surgeon General's Office to recommend the great majority of applicants for commission in the grade of First Lieutenant, with the expectation of making numerous promotions when the officers concerned have had an opportunity to demonstrate their professional qualifications and their adaptability to the military service after a reasonable period of active duty. Applications for increased grade are not favorably considered unless they come through military channels, in order that the Surgeon-General may have the benefit of the recommendations made by the applicant's superior officers. Political influence is unnecessary.

In making recommendations for original commission *age*, *professional attainments*, and *previous military experience*, are the chief considerations in determining the grade in which the applicant should be commissioned.

3. The pay of the different grades is:

First Lieutenant.....	\$2,000.00
Captain	2,400.00
Major	3,000.00

When assigned to duty in a city (not in camp, thus not serving with troops) the assignment carries with it commutation of quarters:

1st Lieutenant...3 rooms	} at \$12.00 per room heat and light additional.
Captain4 rooms	
Major5 rooms	

4. Acceptance of a commission in the M. R. C. automatically places your service at the disposal of the Surgeon General wherever he deems them most valuable, either in the United States or abroad.

5. Acceptance of commission is for 5 years; unless sooner relieved from active duty on recommendation of the Surgeon General, when officers will be placed on the inactive list.

Active duty in the present instance will naturally be for the length of the war plus 4 months, which will be required for the necessary physical examinations to be made of the men before they are discharged from the army. The old requirement of 3 years service, including at least 90 days' active service, before being eligible for promotion has been eliminated.

6. In case of death from causes in line of duty the Government pays to the widow or designated beneficiary six (6) months' pay of the grade held by the deceased at the time of death. The deceased's family is also entitled to a pension.

7. The limited number of quarters at the majority of stations and camps makes it inadvisable for Officers of the Reserve Corps to be accompanied by their families, unless they can provide for them independently.

8. In no event will the families of officers be allowed to accompany them abroad.

9. Officers in the Medical Reserve Corps under the age of 45 years will be called for training in the medical officers' training camps. This is for the purpose of giving intensive training in administrative duties, a requirement for military service. Men over 45 years, if they so elect, may attend a medical officers' training camp. If a surgeon has had military training, he may be called, without camp instruction, for active duty.

The following paragraphs are added from a letter from the Surgeon General to the chairmen of the State Committees of the Medical Section, Council of National Defense:

"1. It is believed that it would be of great advantage to this Department if each State Committee would make a census of its State with a view of dividing the medical profession into two classes: (a) those who cannot be spared for Army service because of their importance to the civil community; and (b) those who can be spared. Class (a) should be requested to refrain from offering their services. Class (b), on the contrary, should be encouraged promptly to apply for appointment. This office is frequently called upon to give advice along these lines in individual cases, but the Department does not care to assume this responsibility, believing as it does that the question is one that can much better be decided by the State Committee acting in conjunction with the County Committees.

"2. The Department will not feel called upon to consult the list prepared under paragraph 1 when individual applications are received, since it will be assumed in all cases that the individual offering himself can be spared and will be at the disposal of the Department for such duty as the exigencies of the service may demand.

"3. For the purpose of this census the State Committee should act as a clearing house for the County Committees.

"4. Frequently inquiries are made as to whether a medical officer will be assigned to duty in accordance with his medical specialty. In this connection attention is invited to the fact that a large proportion of the administrative work of the Medical Department of the newly-organized Army will fall upon the officers of the Medical Reserve Corps. The officers of the regular establishment are so few in number that they will be available for only the most important administrative positions. With this in mind, it will be readily understood that officers of the Reserve Corps must largely supplement their technical knowledge by a clear conception of military co-ordination and administration before they can be of the greatest service to the Department.

"5. They should offer themselves without reservation, considering their medical training as the basis upon which to build their education as medical officers.

"6. It is true, nevertheless, that all officers of the Reserve Corps are card indexed according to their special qualifications and that when the Army is fully organized and working smoothly, every effort will be made to assign each officer where his special qualifications will be most useful to the Government and where the work will be congenial to the officer himself.

"7. The Department has at its command, at present, only about one-fourth the number of officers that will be required for an army of two million men. By the application of the selective draft the full quota can probably be raised without difficulty. It will be more creditable to the profession, however, to attain this end by voluntary offer of service.

"8. A great deal of inconvenience has been caused by those applying for appointment in the Medical Reserve Corps by reason of the delay in issuing commissions. The business of the War Department has expanded so rapidly that it has been impossible to secure the necessary additional assistance required to handle the work. The delay has occurred in this office as well as in the office of the Adjutant General. This condition is being remedied as fast as circumstances permit.

"9. Your Committee is urged to take such steps as may secure the prompt acceptance of commissions issued, or their immediate return to this office."

Sincerely yours,

JAMES BORDLEY,

CHARLES W. RICHARDSON,

(Signed) Sub-Committee on Ophthalmology and
Oto-Laryngology, General Medical Board

Exhibit 7

Alabama

Charles Thigpen,
First Natl. Bank Bldg.,
Montgomery

Arizona

John J. McLoone,
O'Neil Bldg.,
Phoenix

*Arkansas**California*

Hill Hastings,
Los Angeles
Henry L. Wagner,
518 Sutter St.,
San Francisco

Colorado

Robert Levy,
Metropolitan Bldg.,
Denver, Colo.

Connecticut

Henry L. Swain,
232 York St.,
New Haven

Delaware

Oliver D. Robinson,
Georgetown, Del.

Florida

Wm. S. Manning,
Jacksonville

Georgia

Dunbar Roy,
Atlanta

Illinois

E. Fletcher Ingals,
Chicago

Indiana

John F. Barnhill
Indianapolis

Iowa

Lee W. Dean
Iowa City

*Kansas**Kentucky*

J. A. Stuckey,
Lexington

Louisiana

Robert C. Lynch,
New Orleans

Maine

John H. Allen
Portland

Maryland

John R. Winslow
Baltimore

Massachusetts

Harris P. Mosher,
Boston

Michigan

Burt R. Shurly
32 Adams Ave.
Detroit

Minnesota

Horace Newhart,
Minneapolis

Missouri

Greenfield Sluder
Detroit

Montana

John A. Donovan
Butte

Nebraska

Wm. M. Dayton
Lincoln

New Hampshire

Frank E. Kittredge
Nashua

New Jersey

Wells P. Eagleton
Newark

New York

W. H. Haskin,
New York City

Thos. H. Halsted Syracuse	<i>South Dakota</i> Frank H. Putnam Sioux Falls
<i>New Mexico</i>	<i>Tennessee</i> Edw. C. Ellitt, Memphis
<i>North Carolina</i> Jos. B. Greene, Asheville	<i>Texas</i> Eugene R. Carpenter, El Paso
<i>North Dakota</i> Thos. M. McLachlan Bismark	<i>Utah</i>
<i>Ohio</i> John M. Ingersoll, Cleveland	<i>Vermont</i> Edmond T. Brown, Burlington
<i>Oklahoma</i> E. S. Ferguson Oklahoma City	<i>Virginia</i> Jos. A. White Richmond
<i>Oregon</i> Chas. T. Chamberlin Portland	<i>Washington</i> H. V. Wenderman Seattle
<i>Pennsylvania</i> Geo. M. Coates, Philadelphia	<i>West Virginia</i> Thos. W. Moore, Huntington
<i>Rhode Island</i> H. P. Abbott, Providence	<i>Wisconsin</i> Henry B. Hitz, Milwaukee
<i>South Carolina</i> J. Wilkerson Jerry Greenville	<i>Wyoming</i> Geo. L. Strader, Cheyenne

Exhibit 8

COUNCIL OF NATIONAL DEFENSE
WASHINGTON

Dear Doctor:

You have been selected by the Sub-Committee on Oto-Laryngology of the General Medical Board of the Council of National Defense to furnish, if possible, information as to the professional qualifications of certain applicants, for commission in the Medical Officers' Reserve Corps, classified in the Oto-Laryngological Section, with whom this committee is unacquainted. This information is for the Surgeon General's office and will be considered as absolutely confidential

In your opinion are the candidates, whose names are enclosed, qualified professionally for Oto-Laryngologic Surgical

work in the Army? This necessarily requires a sufficient knowledge to make a functional examination of the ear, nose and throat and the ability and skill to do general Oto-Laryngologic surgery.

Will you please classify them as to qualifications as: A—well qualified; B—qualified; C—not qualified. In making these recommendations, also, please consider the physical and moral qualifications.

Very truly,

CHARLES W. RICHARDSON,
Sub-Committee on Oto-Laryngology,
General Medical Board.

Committee

HARRIS P. MOSHER

BURT R. SHURLY

Major THEODORE C. LYSTER, U. S. A.

Surgeon C. E. TRIBLE, U. S. N.

Exhibit 9

Name:	Address	Age:
Recommendations:		Dependents:
Married or Single:		Naturalized:
Country of Birth:		
Date and Place of Graduation:		
Past Hospital Connections:		
Present Hospital Connections:		
Foreign Languages Spoken:		
Military or Naval Experience:		
Member of M. S. O. R. C.	Base Hospital:	
No. of Unit:		
Remarks:		

Exhibit 10

Name:	Rank:
Address:	
Date recommended for commission:	
Date commissioned:	
Date acceptance:	
Date order requested:	
Date and number of order:	
Station and duties:	
Remarks:	

AN INFORMAL REPORT ON OTO-LARYNGOLOGY IN THE FIRST YEAR OF THE WAR.

BY COLONEL HARRIS P. MOSHER, M. R. C.

WASHINGTON.

This paper deals with the following subjects: The activities during the past year of the Section of Surgery of the Head; the Base Hospitals at the cantonments, some gossip about them, and the medical problems of the cantonments; the present and future needs of oto-laryngology as to personnel; and finally, a few comments on the character of the medical work in the army and why the writer believes that it is a grown man's work and not, as it has been dubbed by a few of the present stay-at-homes, work to be done by boys.

The writer's duty up to the present time has been largely in recruiting medical personnel for oto-laryngology. This naturally has aroused deep feeling, and the closing paragraphs, I am conscious, are at least reminiscent of this feeling.

Activities of the Division of Surgery of the Head.

During the war the interests of ophthalmology and oto-laryngology have been cared for in two ways. First, a committee for each specialty was organized under the Council of National Defense. These committees were responsible for sending out questionnaires, and tabulating the returns and helping with the first assignment of personnel. The second method of caring for the interests of the two specialties was the assigning of two members from the original committees of the Council of National Defense, one for ophthalmology and one for oto-laryngology, as official members of the Surgeon General's office. A section of surgery of the head was then organized, Major Blair and Major Bagley completing the section, the first representing oral and plastic surgery and the second brain surgery. Colonel Lyster became the head of the section; but Colonel Parker who, since last October, has been the acting chief, has recently been officially placed in charge.

The men assigned to the Surgeon General's office for the division of surgery of the head naturally consult and work in harmony with the parent committees of the Council of National Defense. The Council of National Defense, however, has always been an advisory body and, from the nature of things, can be nothing else. The officers in the Surgeon General's office naturally avail themselves of its counsel, but the division of surgery of the head is the only legal body, so to speak, that deals with the affairs of oto-laryngology, ophthalmology, oral and plastic surgery and brain surgery. Surgery of the head is classed as a separate division in the Surgeon General's office, but in the field as one of the sections of the surgical division, the other sections in this division being general surgery, orthopedic surgery, genitourinary surgery and roentgenology.

The original committee of the Council of National Defense for oto-laryngology was Dr. Charles W. Richardson, chairman, Dr. Burt R. Shurly and Dr. H. P. Mosher. Colonel T. C. Lyster, representing the army, and Surgeon G. B. Tribble, representing the navy, were soon added. After serving on the committee a few months Dr. Shurly resigned in order to go overseas in charge of a base hospital, and his place was taken by Dr. Joseph H. Bryan.

The medical officers composing the division of surgery of the head, working with the committee of the Council of National Defense, further classified the names sent in in response to the questionnaires; planned a special head building for the cantonments; selected instruments and advised in the selection of the personnel for the cantonment base hospitals in this country and for the base hospitals abroad. An investigation of ear protectors was carried out under the direction of Major Richardson. Naturally there were many other activities in which they took part but those just mentioned are the main ones.

In the latter part of October, 1917, Colonel Lyster, Major de Schweinitz, Major Mosher and Major Jones were ordered overseas for two months' temporary duty. During Major Mosher's absence Major C. W. Richardson took his place in

the office of the Surgeon General. Before the party sailed overseas Major Richardson was given charge in the Surgeon General's office of the reeducation of the deaf, and Dr. Max A. Goldstein came into the service in order to be associated with this work. Dr. H. W. Loeb also came into the service and was assigned the position of editor of a war manual for oto-laryngology. He spent some time in Washington collecting data, and then returned to St. Louis and continued his work there. The volume on which he has been working for the past months consists in the main of abstracts of the war literature with comments. This is to be followed by a condensed operative manual. In addition, there will appear a volume of abstracts of recent war literature dealing with the specialties which compose the division of surgery of the head. This volume of contemporary abstracts will appear at intervals, it is hoped, for the duration of the war.

The section of brain surgery has conducted a neurologic school in Philadelphia, New York and in Chicago. The section of oral and plastic surgery has had a school in St. Louis and one in Chicago. Neither the section of ophthalmology nor the section of oto-laryngology has undertaken separate schools, feeling that the making of competent specialists in these two lines was not a matter that could be satisfactorily accomplished in a short period of a few months.

The whole subject of medical instruction in the army, however, is now being coordinated by a school of instruction just starting at the Officers' Training Camp at Camp Greenleaf. All branches of medicine and surgery are to be taught there, or rather reviewed. The specialties which represent the section of surgery of the head are, of course, to have their representatives. Major Thomas J. Harris is to take charge of oto-laryngology. Military necessity permitting, this course is to cover a period of some three months.

A hospital for the surgery of the head has been started at Cape May. It is planned to send appropriate cases there as they return from overseas, and it is to act as well as the hospital of last resort for head cases occurring in the hospitals

in this country. The staff will be a brilliant one. Two staffs are contemplated—one to go abroad when the call comes, and the other to continue the work when it leaves. A corps of specially trained nurses has been at Cape May for some months. A small number of cases is already under treatment there, some thirty of which have returned from overseas. The building used for the hospital is a hotel which did not pay until taken over by the Government. It will hold about 500 patients and is beautifully situated. The staff is eagerly awaiting the full equipment and the full number of patients. In the meantime the attractive bathing facilities help while away the time.

Major Greenwood has just landed overseas in charge of a number of optical units, and Major Blair is also overseas, having crossed in charge of oral and plastic units which were requested by General Pershing. Lieut.-Col. de Schweinitz for the moment is taking Lieut.-Col. Black's place in the Surgeon General's office while he is on a western inspection trip. Lieut.-Col. Mosher is looking after oto-laryngology, Major Bagley brain surgery, and Major Ivy is taking Major Blair's place in charge of oral and plastic surgery. The chief work of all these men is to get adequate personnel and to place it to the best advantage. In addition, as stated above, publications of war literature have been issued, schools established, students assigned to them, proper teachers obtained and the courses supervised. The main work always has been and will be until the end, the delicate work of choosing and caring for the personnel. If I may be permitted to say so, firmness, judgment and tact and, as far as possible, an individual knowledge of the applicants, are essential for even a partial success at this undertaking. Having charge of personnel in many ways is not an enviable position.

The section of surgery of the head has for purposes of administration an independent existence in the Surgeon General's office and a semi-independent existence in the base hospitals. The main services in a base hospital are medicine, surgery and laboratories. The section of surgery of the head

is classed, like general surgery, orthopedic and genitourinary surgery, as a section of the surgical service. The chief of any section may be selected chief of the surgical service. The chief of the section of surgery of the head has been selected as chief of the surgical service twice—Major Ellett, at Camp Mead, and Major Todd at Des Moines. The chief of the section of surgery of the head, the chief of general surgery, the chief of orthopedics and the chief of genitourinary surgery, as well as the chief of roentgenology, alike report to the chief of the surgical service, whose duty it is to coordinate the work of the whole service.

As a matter of fact, in most cases it has worked out that the section of surgery of the head has been allowed practically an independent career.

The section of the surgery of the head is gradually achieving a position abroad much like the position which it holds in the Surgeon General's office. Its influence is markedly felt there, because each base hospital that goes overseas has an ophthalmologist, an oto-laryngologist, an oral and plastic surgeon and a brain surgeon selected for it in the Surgeon General's office. Major Blair, who, as I said, has just landed overseas, has been appointed by the chief surgeon, A. E. F., as consultant for oral and plastic surgery for the forces abroad. Major James F. McKernon, of the Postgraduate Base Hospital, who has been in France now for a year, has been appointed consultant for oto-laryngology, and richly deserves it. Major Greenwood has been appointed consultant in ophthalmology. Major Harvey Cushing has been appointed consultant in brain surgery. Base Hospital No. 115, which is practically a head hospital, has just been asked for by cable.

Observation Trip Overseas.

Now a few words about the trip abroad of three of the members of the section of surgery of the head, and Major Jones. Colonel Lyster went with the double interest of the medical care of the flier and the use of the specialists; Major Jones went in the interest of the medical care of the flier, and

Lieut.-Col. de Schweinitz and Lieut.-Col. Mosher represented ophthalmology and oto-laryngology, respectively. The party was away four months. They spent a little over two months in France, with Paris as their headquarters, and came back by way of England, staying there a short time. Lieut.-Col. de Schweinitz and Lieut.-Col. Mosher paired off and traveled together amicably; Colonel Lyster and Major Jones, for the most part, traveled together, except when Major Jones, during the latter part of the trip, went alone into Italy. While the hoped-for results and those actually obtained did not always correspond, its members brought back much first hand information which has since proved very useful, and more than one suggestion made by the members of the party has since been put into operation.

Lieut.-Col. de Schweinitz and Lieut.-Col. Mosher visited the English hospitals, where there were special eye centers, or centers for oral and plastic surgery. Oto-laryngology is not yet recognized as a specialty in the English army, and there were no centers to visit. In the English army the eye service is well organized. Next in excellence of organization come the oral and plastic centers, of which there are two in France and one in England. Next the observers visited an advanced part of a French hospital sector. In this they found that the surgery was largely specialized. For instance, at one hospital of three thousand beds, twelve miles from the line thoracic surgery and brain surgery were done by one man, bone and joint surgery by another, and wounds of the soft parts by a third surgeon. It was learned that early and thorough surgery had almost eliminated sepsis and that the Carrel treatment was seldom necessary. In this same sector, at a city perhaps thirty miles from the line, a special hospital for head cases was found and a special hospital for fractures. In other words, the French were everywhere specializing their surgery as much as possible. Major Jones, as I said, was the only one of the party to go into Italy. On his return he confirmed what we learned from other observers who had been there, that the Italians have gone even further than the French in

specializing their surgery. Everyone who goes to Italy comes back greatly impressed with the efficiency of the Italian surgery.

We reached France at a time when the American base hospitals were just getting on their feet. The first period of organization was over, and they were getting their final buildings under way. It is no secret that lumber was scarce. The initial buildings, therefore, of almost every base hospital were summer hotels or French schools or monasteries. Most of these the French already used as hospitals. The French, however, turned them over to the Americans, who at once began to build additions in the shape of wooden huts. None of the American hospitals had been doing much surgery up to the last of February, the time we left, except one that was situated far north, and the surgery there was civil surgery. Most of the American base hospitals were principally occupied treating infectious diseases, of which they had a good supply, and pneumonia. The plan was just being put in operation of sending from each hospital an operating team to the Casualty Clearing Stations of the English and French, a plan copied from the English. It really will save the day, because without it the hospitals at the coast will never see any surgery but remain as they were when we saw them, hospitals for treating cases of infectious diseases coming off the transports, and convalescent hospitals for cases sent back from the hospitals more fortunately situated.

Naturally we became very much interested in the whole question of hospital organization and management. Besides reporting on how the specialties were cared for by the English and French, we reported on this larger subject to the chief surgeon, A. E. F., and later to the Surgeon General. The chief recommendations of the report were that base hospitals should be placed as far forward as possible and that they should have radial control; that a consultant should be appointed for each branch of medicine and surgery, and for each of the components of the section of surgery of the head; that a chief should be appointed for the section of surgery

of the head, and a special head hospital established at a fitting time. Further the report urged that operating teams should be sent to the Casualty Clearing Stations as a routine from each base hospital, and that centers of instruction in brain surgery, oral and plastic surgery and the surgery of the eye and ear be established. The operating teams were being started, and some of the teaching centers were roughly in operation when we left. It was recommended that whatever consultants were appointed should supervise a sector radially from the front to the rear and be responsible from the front to the rear for the continuity of the treatment.

We learned, somewhat to our astonishment, that the greatest wastage of men in the various armies was caused by common and rather undignified diseases, namely, by trench fever, due to the louse, and by boils and scabies. We found that last winter very many of our men were landed overseas ill with bronchitis or influenza or soon came down with these diseases. When we left a formidable committee headed by Major Strong was preparing to exterminate the louse.

The Medical Problems of the Cantonments.

Much that I have to say about the cantonments is already familiar to you because they are all so nearly alike, and everyone here must have visited at least one of them. As you know, they are small cities with a population of twenty to forty thousand. Although they were built in a few months, they have all the appointments of cities of years of growth, from churches to jails, and from libraries and theaters to fire engine houses. They are cities of youth, and poverty and old age are never seen. Except for the nursing staff, women play no part in them. In the normal cycle of a man's life death alone is present.

At these cantonments there are sixteen base hospitals for the National Army and fifteen for the National Guard. Besides these, there are scattered over the country general hospitals, post hospitals and special hospitals. One of the special hospitals is being fitted out as a hospital for head surgery.

Reconstruction hospitals and hospitals for reeducation are soon to come. The number of beds in the cantonment base hospitals varies between 1,000 and 2,000, the beds in the general and post hospitals from 150 to 500. One special hospital for tuberculosis has 1,000 beds, and the hospital for head surgery has a maximum capacity of 500. Up to the present time the total number of beds planned for in this country is over 70,000. I am not at liberty to give even approximate figures, such as the ones just given, for the hospitals contemplated and actually built abroad, but the American public can rest assured that there will be an adequate number.

In the cantonment base hospitals the death rate is of course low, because the soldier citizens were chosen as physically fit before they took up residence there. The sick rate also should be low, and is low, but a curious fact, well known to all experienced medical men in the army, soon became evident—namely, that the grouping of these apparently well young men was at once followed by epidemics of disease. The infectious diseases of childhood at once appeared and took a very virulent course. Pneumonia, the friend of the old, became the deadly enemy of the young. Cerebrospinal meningitis, which is relatively rare in civil life, became almost common.

An apparently well man is often a carrier of bacteria which he gives to his fellows. Men who have long lived together, however, seem to acquire an immunity to each other's bacteria; but take men who are strangers and assemble them in large numbers, as they are today assembled in the cantonments, and infectious diseases at once appear, in spite of the healthy mode of life. Infections borne by food and drink—for example, typhoid fever, have been practically stamped out. Breath borne infections, the bacteria of which live in some part of the respiratory tract, preferably the nose and throat, are yet to be conquered.

There are no vaccines for most of these diseases. The fundamental point in dealing with them, therefore, is to prevent them by avoiding overcrowding and by providing adequate ventilation. Recurring epidemics of cerebrospinal

meningitis which took place last year at the barracks of one of the most celebrated regiments in England were controlled by such measures. For example, the sleeping huts, which previously contained thirty beds, had ten beds taken out, so that the minimum distance between each bed was two and a half feet. In addition, half of the windows of each hut were opened at the top on a slant and nailed in this position and untouched, regardless of the weather.

As the men come to the camps well, the problem is to find at once the soldiers who are carriers of disease and isolate them before they can infect their mates. This was accomplished in a dramatic fashion at one cantonment recently by having twenty-four teams of medical officers meet the incoming troop trains and take cultures from the nose and throat of each recruit. The soldiers who were found to be carriers were at once isolated and treated. Work of this kind means that the bacteriologists in this war are an overworked set of men.

The problem of the carrier is the acute medical problem of the cantonments. It is becoming evident that the nose and throat are the abode of choice of the streptococcus and probably of the organisms responsible for many of the infectious diseases. The prophylaxis of infections of the respiratory organs is a most pressing problem in this country and abroad. Striking results in the control of infectious diseases have been obtained in at least one cantonment by the use of gauze masks, and in measles the use of the gauze mask has been made compulsory. Of this problem only the surface has been scratched. Never before, however, has such an opportunity been offered to solve it. If it can be solved it will be one of the great medical achievements of the war. The poisonous gas of the enemy can be seen. We take the elaborate masks which are used by the soldiers to protect themselves from it as a matter of course. The germ laden breath of the soldier cannot be seen, but it is even more deadly than the gas. It would cause a smile if every soldier on a transport were required to wear a gauze mask when below or between decks, or if a less novel measure were ordered—namely, that every soldier should carry a piece

of gauze and be required to cough into it. Had either of these measures been a routine procedure on the transports this last winter, my feeling is that instead of men landing in France ill with acute or chronic pharyngitis, acute or chronic tonsillitis or acute or subacute bronchitis, which was the condition of things all through the cold weather, the percentage of such diseases would have been markedly reduced. I feel strongly on this point, and I am certain that I am not making a mountain of a mole hill.

In addition to the problem of the carrier at the base hospitals the following problems have come up for solution: The control and prevention of venereal diseases; the treatment of infectious diseases and of diseases of the respiratory tract; and the treatment of the surgical complications of these diseases, such as tonsillitis, mastoiditis and empyema. The otolaryngologist, the general medical men and the bacteriologists have been by far the busiest medical officers. Waves of infection have passed over some of the cantonments, and the streptococcus has had a field day.

Only supposedly well men are chosen for the army, because its sole purpose is to fight. The chief purpose of the medical corps, therefore, is to keep the soldier well. Unfortunately, it is not its only purpose, because well men get sick and fighting men must be injured. Naturally the most dramatic part of the medical officer's work in the army is caring for the wounded; the most important part, however, is keeping the fighting men well. Preventive medicine, therefore, is the medical problem of the army *par excellence*. Those who have the vision to engage in the solution of its problems have under their control in the army an unparalleled human laboratory and the opportunity of a century. I feel that physicians do not as yet realize this.

If practice makes perfect, the otolaryngologists in the army today should be experts in opening peritonsillar abscess, in resecting the septum, in tonsillectomy and in mastoidectomy. They can never hope, however, to catch up with the number of tonsils that are acting as foci of infection and thermostats for streptococci. The dentists can never hope to clean up all

the teeth that are foci of infection, and the surgeons, operating as they do in some of the cantonments on ten to twenty cases of hernia a day, can never see the end of their task. It is my belief that the soldiers who are to compose our standing army which is to help maintain peace when it finally comes will never be allowed to take their place in the ranks unless they have a normal nose and throat or have them made normal by operation.

I am much concerned at the present time about the scientific results of the medical work of the army. Naturally, of course, I am interested first and chiefly in my own specialty. My efforts must be largely confined to reminding the men in the hospitals that a great opportunity lies at their hand and urge them to grasp it. In a great measure it is a matter of keeping adequate records. One hesitates to add more paper work than is already necessary in the army. The initiative in this matter lies with the commanding officers of the base hospitals and the chiefs of the medical divisions. By means of the army records men can be traced for years to come. What better chance on a large scale has the medical profession ever had of settling the results of certain operative procedures—for example, tonsillectomy in chronic affections of the heart or of the joints—than is before it now? Practically every medical man serving in the army wants to go abroad. I have been in France twice during this war, but I can assure you that it is a great question in my mind whether there is not a fuller scientific opportunity in this country than overseas.

*The Equipment at Cantonment Base Hospitals—
Personal Notes.*

The equipment at the cantonment hospitals is nearing completion. At the beginning of the war it was found that eighty per cent of the surgical instruments were of German make. The instrument firms of this country were at once lined up and asked for maximum output. For a time the men who were first at the hospitals had but little to work with except the instruments which they brought with them or had sent from their offices. Now it is only a question of asking for reason-

able things and knowing how to ask for them and to have a vigorous commanding officer back up your request, and repeat it if necessary, in order to get all essential instruments. Naturally the whim of every operator for special instruments cannot be granted. It is still good policy, however, to carry your pet instruments. Then you operate at your ease from the start. If the instruments wear out, you can call this your contribution to the cause in place of buying more Liberty Bonds.

Speaking of being first on the ground reminds me that in the beginning days some of the men did not see why they were required to be on the spot so early, why they were not left until things were further along. They were sent because their experience was needed to start things properly. In banks clerks are not made directors. Of course in many cases the men first on the ground were uncomfortable. In the beginning some murmured a bit; now they brag of it. I have yet to talk with one of the pioneers who would have missed those beginning days. In many cases they made the hospital what it is at present, even, like Day, taking part in the carpenter work. Where the men realized their job they saw to it that the head building was not pushed off the map, that it was not used for extra barracks, that it was well placed, that the original plan was even improved upon. Take Holmes, for instance: he was put in charge of all the building by the commanding officer, and the result is no surprise to those who know him. The rest of the hospital had steam for its operating room. As a matter of course Holmes soon had it for his building. He got not only steam but everything else that the army allows, and I suspect some things that were not allowed. In fact, he has one of the show places among the cantonment hospitals. He is an early bird if there ever was one, and always collects a large basket of worms wherever he goes. Pierce is happy at Grant now that he can keep his shoes and his clothes clean. Eagleton, at Dix, is still in a delirium of enthusiasm. Knowles has a fine place at Devens, and Skillern has developed a taste for administrative work and has aspirations to become a commanding officer. He also is much interested in his band.

He has promised to embarrass me by meeting me with it when I next go there. Harris has gone to Oglethorpe to take charge of the teaching of oto-laryngology. His worries have begun and mine have finished. Berens, Greene, Emerson and Fetterolf are just coming into the service. Wherever they go, the Surgeon General's office can rest assured that things will run right. Levy got as far away as he could and is at Camp Lewis, American Lake, Washington. Wherever men of this stamp are placed there will be no more rumors of substandard work, like Wild's incision for mastoiditis, and no suspicion of over-operating.

Haskins went early to West Point and is now professor of military hygiene. Friedberg is at Doniphan and one of the men working under him says that being in the clinic there is better than any postgraduate course abroad.

Since the entrance of this country into the war, Ingals has died. He took great pride in acting for the Surgeon General's office as state adviser, looking up the standing of applicants and furnishing the Division of Oto-laryngology with their rating. His figure comes back to me now as he stood last year by the dinner table after the banquet of the American Laryngological Association. He spoke about the war and said quietly but firmly, as was his custom, how he regretted that he could not take a more active part. He did his part, however, to the limit of his strength, after the habit of his life. He suffered greatly, but lack of patriotism in a friend or acquaintance hurt him more than the pain of one of the cruelest diseases.

The Problem of the Surgeon General's Office

Naturally there have been many worrying problems for the Surgeon General's office to pass upon. Of these, oto-laryngology has had its share with the other departments. The first was the problem of consultants. Three or four consultants were appointed, but the plan from the start worked poorly, and the medical officers who held such positions had to be given the choice of taking full time duty or going on the inactive list. Part time service is considered by the man who is giving full time as an unjust discrimination against him. He

holds that all men have an equal right to it, and they have. Not only does it carry an unjust discrimination, but it destroys military uniformity and control. These, of course, are simply other names for discipline, and discipline is the backbone of the military machine.

The commanding officer of an army hospital naturally has pride in having a staff of medical men who can cope with all the cases that come to his hospital, however difficult. If he is not so fortunate in his personnel or if unusual cases occur, he is at liberty to call in the most available civilian physicians. This has been necessary in at least one hospital and may be necessary again, unless more of the experienced oto-laryngologists of the country enter the service. There will be, of course, some men who cannot enter the service on account of physical disability, age, or some other sufficient and good reason. Let these men, if they want to be of use, make themselves known as standing ready to help as civilians, but they should be careful not to embarrass the Government by trying to be both in uniform and out of it.

Service as contract surgeon has not been used in oto-laryngology, although it has been employed in some of the other divisions. Pressure is being continually brought to have the government use the civilian hospitals as a part of the war machinery. If I should give my own opinion in this matter, it would be that if the war is to continue three or four years more I can see how this may become necessary. At the present time, however, it brings up the old question of divided control and part time service. The Surgeon General's office, therefore, does not favor it.

The problem of the medical student has met a happier solution. Procuring a medical education is considered by Washington as preparation for the medical corps of the army, and the medical student graduates by law into that corps. Those who are serving internships in hospitals have been allowed a year for such service. Naturally, however, many of the more ambitious and the most patriotic among our young men prefer to enter the army at once and let the army experience take the place of the internship.

As I look at it, it is axiomatic in a war of the magnitude

of the present one that our hospitals are to be short handed, and that the medical schools must run on reduced personnel. Elaboration of courses must be eliminated for the time being and the schools come down to the three R's of medicine. Both hospitals and medical schools, however, can help themselves by doing away with the age limit and bringing back into service the men who have retired. There is at present a committee in the Surgeon General's office which has this most important matter of teaching in the medical schools in charge for adjustment. There is every disposition to look on both sides of the question—England's mistake is well known. The Surgeon General's office has been fully reminded of it.

The Need for Medical Officers.

I am continually asked if there is still need for medical men in the service. Sixteen thousand are now serving, but an imperative call has gone out for five thousand more. In the general branches of the medical service physicians of large hospital experience are badly needed. From all the cantonments the cry comes, send us experienced men. Oto-laryngology is better off than general medicine and surgery. However, when the base hospitals begin to go overseas in numbers there will not be enough experienced oto-laryngologists to take their places. To make the department of oto-laryngology what it ought to be there should be on file, ready for instant use, the names of two hundred oto-laryngologists of ripe hospital experience. These men should be ready to send in their application papers on telegraphic notice. As fast as the proper openings occur they could then be fitted in. At present the available list is less than fifty. As things stand now, if your name were on such a list you might be used in six weeks or six months. However, by standing ready to apply for a commission you have put yourself at the disposal of the government and have fulfilled your duty, at least as I see it.

If you take the combined membership of the American Otological Society, the American Laryngological Association, and the American Laryngological, Rhinological and Otological Society and omit the duplicate names and compute the percentage of the members who are in the service it is found to be

about twenty-two per cent. There are five Lieutenant-Colonels—Kopetsky and Imperatori in the field ambulance; Haskin, professor of military hygiene at West Point, and Richardson and Mosher in the Surgeon General's office. There are forty-one Majors, twenty-six Captains and eight Lieutenants. The records also show that there are in active service two hundred and ten oto-laryngologists and two hundred and thirty-two ophthalmologists. Unfortunately, I haven't the figures for the special sections of the American Medical Association. Owing to the large size of these sections, I imagine that the percentage would be somewhat less.

Retention in a Specialty.

In the beginning of the war the Surgeon General, with his large grasp of affairs, made the statement that specialists would be used in their specialty as far as the exigencies of the military service permitted. No absolute promise could be made and none was made. Naturally some men have tried to kill the goose which laid the golden egg by considering this statement a promise. This attitude has been especially true of the men just entering the specialty. No military organization could stand for a minute if so constructed. Full command is essential in order to meet changed conditions and emergencies. Up to lately the great majority of the specialists who came into the service have been used in their specialty. A few that have been found incompetent have been transferred to other lines of the medical service. I am aware also that a few men have escaped retention in their specialty, and these failures, I am aware also, will be talked about and made the most of to the end of the chapter. The fact remains, however, that never in any war before have the medical officers been fitted in according to their talents and special training as they have in this war; and this is all due to the recognition of modern medicine by the present Surgeon General.

Within the last month the shortage of medical officers has become so acute, the needs of the field service, without which the army, from the medical standpoint, could not exist a day, have become so pressing that all the medical men within the draft age, trained in a specialty or not, have been released to

field service. This, of course, is essentially a young man's job and one that appeals to the right kind of a young man. This emergency has made it difficult now to retain in his specialty any man under forty. How long this shortage of men in the field service will last depends in a great measure on how the medical men of the country respond to the recent appeal. It was this scarcity of medical men which made the last call of the Council of National Defense necessary. War has always been an affair of young men, inconceivably sad, of course, but in a just cause, most glorious. This war, from a medical standpoint, has been an affair of older men.

It goes without saying that all physicians are not equally well trained; that all have not had the same hospital advantages. As all the physicians did not enter the service at the start and at the same time, it follows that those who came in first will rank, for a time at least, those who came in last. You cannot make it fair any other way. The men who gave up a year ago—and what they gave up in many cases was all that they had—are not to be lightly pushed aside by those who took a year to arrange, bargain and decide. There is no game in civil life where such a thing would be called fair. Why should it be asked for in entering the medical corps of the army?

There are not enough men of operating experience to make the medical service in oto-laryngology what it should be. Some of the best men I know are not in the service—best in one sense. These men are beginning to come in. In the year that has elapsed they have been able to keep their homes open and to be with their families; yet in spite of having delayed, and in spite of having enjoyed these advantages, some of them ask on entering the service that they supplant the men already in the field. Not even a German would call this fair.

I am often asked where are the young medical men, what is the matter with them that there are not enough to do the commonplace work that makes up so large a part of the army medical officer's day? If they were all the sons of physicians I should say that they took after some of their fathers.

The Character of the Medical Work.

The opinion is often expressed that the highly trained physi-

cian is wasting his time in the army, that he would be doing more good staying at home attending to the civilian population. At times this view expresses an honest conviction; occasionally, alas, it is used to drug an awakening sense of duty. As I see it, there is an abundance of worthy opportunity for the man able to grasp it.

It is true, of course, that commonplace work predominates; that there is plenty of boy's work, as some have called it; that for the moment at certain places there is plenty of no work at all—to use an Hibernianism—plenty of just staying on the job waiting and prepared; which, by the way, is a new thing for us. It is true, to repeat, that there are plenty of all these nonpicturesque and nonstimulating things; yet those who are making up their decision to serve or not, if they let the question rest here, miss the most vital point of all. In the last analysis, no one enters the service to do special medical work, to increase his scientific reputation or to gain one. The basic idea is to help win this war in the shortest time possible, or as the boys say, “to lick the Germans”; and nothing which contributes to this end, however tedious and commonplace it may be, is beneath my dignity, or saving your grace, beneath yours. It must be admitted that it is hard at times to hold true to this glorified view of the work, especially when you see the inequality of sacrifice made by men, even in the service, and when you learn that some of them are snugly adding to their substance, even in war time, and you know that yours is lessening—but hold true to it you must. It is your guiding star in this lonely job of measuring up to your duty in your allotted place. If you think differently and stay out of the service when you should serve, you must be prepared some day to tell your daughter—you will not need to tell her mother, for she will have it buried in her heart—that her girl chum's father, not you, kept the faith. It has made me heart-sick and weary beyond words to sit at my desk in the Surgeon General's office and read and hear this and other threadbare excuses. As I look at it, after a year of trying to do my bit, those who made these excuses have lost their American heritage of red blood.

WASHINGTON, June, 1918.

TRANSACTIONS
OF THE
FORTIETH ANNUAL MEETING
OF THE
AMERICAN LARYNGOLOGICAL
ASSOCIATION

1918



MAJOR THOMAS H. HALSTED, M.D.

TRANSACTIONS OF THE FORTIETH
ANNUAL MEETING

OF THE

American Laryngological Association

HELD AT

ATLANTIC CITY, N. J., May 27th, 28th and 29th, 1918

The Fortieth Annual Congress of the American Laryngological Association was opened at ten o'clock on the morning of Monday, May 27th, 1918, by the president, Dr. Thomas H. Halsted, in the presence of the Guest of Honor, Dr. J. Solis-Cohen.

The secretary, Dr. Harmon Smith, proceeded to call the roll, the following Active Fellows being present during the meeting:

ARROWSMITH, HUBERT
BARNHILL, JOHN F.
BERENS, T. PASSMORE
BIRKETT, HERBERT S.
BRYAN, JOSEPH H.
BUTLER, RALPH
CHAMBERLAIN, W. B.
CLARK, J. PAYSON
COAKLEY, CORNELIUS G.
COFFIN, LEWIS A.
DELAVAN, D. BRYSON
FREEMAN, WALTER
FETTEROLF, GEORGE
FREER, OTTO T.
GOODALE, JOSEPH L.
HALSTED, THOMAS H.

HOLMES, CHRISTIAN R.
INGERSOLL, JOHN M.
JACKSON, CHEVALIER
JOHNSTON, SAMUEL
LOEB, HANAU W.
LYNCH, ROBERT C.
MACCOY, ALEXANDER W.
MACKENTY, JOHN E.
MAYER, EMIL
MOSHER, HARRIS P.
MUNGER, CARL E.
MYLES, ROBERT C.
PIERCE, NORVAL H.
RANDALL, B. ALEXANDER
RENNER, W. SCOTT
RHODES, JOHN E.

RICHARDS, GEORGE L.	SMITH, HARMON
RICHARDSON, CHARLES W.	STOUT, GEORGE C.
ROY, DUNBAR	SWAIN, HENRY L.
SHAMBAUGH, GEORGE E.	THEISEN, CLEMENT F.
SLUDER, GREENFIELD	WATSON, ARTHUR W.
WINSLOW, JOHN R.	

PRESIDENT'S ADDRESS

THOMAS HENRY HALSTED, M.D.

Fellows of the American Laryngological Association:

Because of the high character of this Association and of its membership, it is a great honor to be chosen your President during this Jubilee Year, when the Association is celebrating its fortieth Anniversary. While feeling keenly my inadequacy and my inability to attain the standard of the men famous in Laryngology who have preceded me in this office, I am deeply appreciative of the honor, than which there is none greater in our special field of medicine in this country.

The present meeting will prove memorable in the history of our Association. The men who are active in daily practice in their communities and in these annual gatherings are meeting today the veterans who not only founded the Association but who placed Laryngology in America on a foundation so solid that it is respected as one of the great specialties in Medicine. Forty years is not long in the history of medicine, but it comprises nearly the full period of modern laryngology. It is certainly an occasion long to be remembered, when the founders come back and mingle with those who are carrying on the work they so auspiciously began when they were in the early youth of their professional careers. Some of the younger members may not be familiar with their faces, but their names and their work are known to us all and are the subject of constant reference in the scientific discussions and social intercourse of our annual meetings.

Thanks to the efforts of our ever youthful and deeply beloved Fellow, Dr. Delavan, the program of this first day will afford us all an opportunity to see, hear and again renew our friend-

ship with those whom we hold in such well-deserved honor.

One member, whom we have all known and loved, will be especially missed from our number this year. An organizer of the American Laryngological Association, Dr. E. Fletcher Ingals remained to the last an Active Fellow, furnishing last year one of the most valuable papers of the meeting. He was rarely absent, seldom, if ever, failing to contribute a paper to the Transactions, and was listened to with closest attention in the discussions. Of enormous experience and broad knowledge, great resourcefulness, full of initiative, possessed of the genuine surgical sense, endowed with an inventive genius and with a rare skill in telling what he knew, he was one of the great constructive laryngologists of this country and of the world. He was an educator and a producer. With it all he was one of the most modest, most genial and most lovable of men. Of fine personality, splendid appearance, he never grew old but seemed to be one of those men who appeared younger each year because his sympathies and activities were always with those who were doing things. He, with our Active Fellow, Dr. Samuel Johnston, who was also a founder, was probably known personally by every member, past and present, of this Association.

We are glad to have with us this year Col. Birkett, whose last attendance at a meeting was in 1914. Shortly after returning home from that meeting his country became unexpectedly embroiled in the war, and on a call going out for medical men he was quick to respond to his country's need. Ever since, now nearly four years, he has been in active service, a few months in Canada, but mostly overseas in England and France, being of invaluable assistance to the Canadian and Allied forces, acquitting himself, like so many of his countrymen, with great honor and distinction, steadily rising to highest rank and responsibility. Each Fellow of this Association feels a personal pride in his achievements. Col. Birkett is with us now only because he was invalided home, and we all wish for him a speedy recovery to his former health and usefulness.

You may be interested to know that of an active membership of 82 there are in active Military and Naval Service of

the U. S., 28 men or nearly thirty-five per cent, a very creditable showing, considering the average age of our Fellows.

A Diagnostic Clinic for Pay Patients

In considering various topics for this address, it seemed that the occasion was appropriate for discussing a subject which has been occupying the thought of the speaker during the past months when he was not thinking and reading of the War. Indeed, it is a subject which has been brought forcibly to mind through the experience gained in co-operative work with other physicians in doing medical work in connection with the examination of recruits and candidates for the Aviation Section of the Army and on a Medical Advisory Board. It is a subject which must be of interest to all physicians as well as to the laity and while the speaker may be unable to present anything new, yet he hopes to stimulate an increased effort and aid in solving a very grave defect in the present system of private medical practice.

It is well recognized by the medical profession and by the intelligent lay public that a serious defect exists somewhere. Organization of Hospitals for the care of ward cases has always been better than that for the care of private patients. Dispensaries have been well organized for the free ambulatory cases, and team work or group work is well arranged for them. The private patient, who pays the regular medical fees, does not receive as satisfactory service, very often, as the patient who goes to the Dispensary or the Hospital ward where all medical service is free. In the case of the charity patient, the service of as many physicians, specialists or surgeons as may be required, the use of the laboratories, clinical or X-Ray, as freely as necessary, are all at his command. Hospitals and Dispensaries are supported and endowed primarily for this class of patients. When it comes to the private patient, however, the element of expense to him enters immediately into the consideration of what and how much shall be done. It frequently happens that a diagnosis cannot be made because of the expense involved in calling in as many physicians as the case really demands.

Diagnosis is the foundation of treatment and before the latter is undertaken the former must be made as carefully and as accurately as possible. To do this in many more or less obscure cases, as many as a dozen specialists and consultants as well as the full use of the most complete clinical laboratory and X-Ray department, may have to be brought to the elucidation of the case. The cost of all this, to the great majority of the middle class, who constitute at least 90 per cent of private patients, is prohibitive. To the other 10 per cent who can and are perfectly willing to pay for a diagnosis whatever the cost may be, there is lacking the organization in the present system of medical practice to provide them with this in an efficient way.

In the days of an earlier civilization, before the Christian era, in Ancient Egypt, where the population was largely concentrated in the numerous cities of that country, it was the custom and the medical practice of that day, that for each disease and for each separate region of the body there was a medical attendant, *i. e.*, the practice of medicine was chiefly by specialists. Specialism in medicine was, in all probability, brought to a finer point in Ancient Egypt than it is now with us, but we are rapidly approaching their system. Unquestionably the greatest progress in medicine has been made as the result of the work of those physicians who limited themselves in their practice or devoted themselves to special laboratory and experimental work. This is a justification of specialism, if such be needed.

Modern specialism goes back to about the middle of the last century, but there have been specialists, without doubt, throughout all ages. The surgeons, the obstetricians, the general practitioners, who practiced neither surgery nor obstetrics, were all of them specialists in their day, their specialties being broad, it is true, but comparing the accurate knowledge of their time and of this, they limited themselves as much as does the modern specialist. The great increase in knowledge in medical science, in chemistry, electricity and physics, together with the drifting of population to the cities, has caused the rapid growth of specialism in medicine during the past twenty-five years.

Including the broader branches, such as Internal Medicine, General Surgery, Pediatrics and Obstetrics and the more limited

specialties, such as Ophthalmology and Proctology, there are not less than 22 to 25 well defined and generally recognized specialties in Medicine. In an American city of 150,000 population, each of these branches will be found to be represented by from one to five or ten physicians, limiting themselves more or less rigidly to the specialty adopted. While the great majority of physicians are in general practice nearly all exclude certain classes of cases, while many of them are qualified more particularly along one or two specific lines. Many general practitioners develop into general consultants, *i. e.*, men who are consulted by their patients because of their known broad and general knowledge of medicine and because they can be trusted to direct the patient when direction is advisable, to the proper specialist for further assistance, at the same time continuing the relation of supervising physician throughout the whole management of the case. This type of physician is rapidly increasing in number and is being appreciated by an ever growing clientele.

A few years ago most patients who consulted specialists were referred by their own family physician. Now the great majority come of their own initiative, knowing of the reputation of such a physician for a special class of disease, or even of his supposed skill in relieving certain symptoms. The result is that frequently a patient will consult a number of specialists in different branches, each for the relief of a different symptom, or sometimes for the relief of a single symptom, headache for example. To each specialist consulted chief emphasis is laid on the symptom or the complaint this doctor is supposed to be especially interested in, while other symptoms, which are perhaps more important in arriving at a correct diagnosis, are either entirely omitted or slighted as being insignificant, the result being that the patient does not describe the complaint comprehensively to any one of the numerous specialists consulted. Disappointing results both in diagnosis and treatment are often the result of the patient's painstaking and expensive effort to find relief through this kind of search. Each specialist is looking for a cause in his special field, but is handicapped through the lack of knowledge of what is present in other parts of the body. He often mistakes cause for effect and vice versa,

or may overestimate the importance of a minor complaint, overlooking the predominant one. Several causative factors may be present, the question being as to which is dominant. Unfortunately, the result is often no better when the patient, under care of the family physician, asks if he cannot himself make the diagnosis, or, if not, to at least recommend some one who can give the necessary aid. In the great majority of cases it may not be necessary for the patient to consult any physician other than the first, but often he will find it advisable to refer the patient to a selected specialist to explain a difficult point or apply special treatment.

However, there are a certain number of seemingly obscure cases which the most intelligent general physician cannot diagnose, and he must refer his patient to at least one, and before he is through, frequently to eight or ten different specialists in different branches of medicine only then to fail in reaching a diagnosis, even after months and sometimes years have been spent in sending the patient to numerous different authorities. After the case has drifted from his care he is surprised to learn some day that the patient is well, the cause having been discovered and removed, perhaps by a dentist, who extracted a few teeth following an X-ray examination made at the suggestion of a lay friend. Or perhaps the patient has consulted a specialist who had not examined her at the time he was in charge of the case, there being no local or definite symptoms pointing to trouble in this specialist's domain, and yet the source of the whole obscure illness was easily discovered when the right man was seen or more likely when the right region was investigated.

The family physician or the general practitioner in charge of this case was competent, careful and used good judgment in selecting the consultants or specialists necessary. He received reports from all of them, the reports were clear, but the individual specialists never combined and consulted with him. Consequently no one of them ever saw more than a small part of the whole picture, while the family physician, the only one who heard all these reports, got them at various times, weeks and months between some of them, so that he failed to grasp the

significance of much of the information supplied him. He failed, therefore, in diagnosing what seemed a very obscure case, but which was in reality a very simple one, once the light reached it.

It is not to the credit of the medical profession that patients with obscure or complicated diseases should be compelled to drift about from one physician to another in search of a diagnosis, when the diagnosis might be made in a very short time, provided the patient were properly and skilfully referred to the proper man or men, because the diagnosis is finally made when the right man or the right specialty is reached. While the delay in reaching a diagnosis is going on the disease is progressing, often the delay is fatal, and discredit is brought not alone upon the individual examining physicians but is reflected upon the profession as a whole. It is for the profession to devise a means for correcting the very grave fault in diagnosing this class of cases. A better and more efficient organization than has existed heretofore must be found. Already there are scattered throughout the country many institutions, usually sanitariums, where the medical staff is composed largely of specialists of different branches who are paid salaries, the institution itself being a corporation organized to produce dividends for its stockholders. While some of these institutions are in every way first-class and their medical staff composed of high-grade men, the great majority are not of this character and as long as they are purely commercial organizations never will be.

In order to obtain the best possible results for the patient from the medical profession in a large and comprehensive way, a method must be devised that will utilize the medical and hospital facilities that already exist, or should exist, in any city. The method should consider the welfare of the physicians of the community, the personnel of the hospital staff, as well as of the laity. In order that it may be broad and of wide application its service should be within the financial reach of every one needing it. While but a comparatively few patients will require its services, the organization should be ready and in working order whenever called upon.

Group work, team work, is of course the essential feature of any plan. How shall this be made practical?

Hospital staffs are already organized for the diagnosis, treatment and care of ward cases, and the hospitals afford, or should afford, laboratory facilities. Team work on the part of the staff is already in operation to a limited extent among the ward or charity cases of all public hospitals. It would therefore seem that the place to put into operation a plan for group work among private and paying patients is in the hospital already established.

During the past winter a hospital staff of which the writer is a member, appreciating the desirability of establishing the group system for the benefit of private and pay patients, appointed a committee, with the writer as chairman, to study and if possible devise a system that would accomplish the object desired. The plan, outlined hereafter, is the one that was presented and adopted by the staff, ratified by the trustees, and is now in operation in the Syracuse Memorial Hospital. The plan seems equally applicable to other hospital staffs and communities and is presented more or less in detail for your consideration.

After considering the various ideas, plans and suggestions of various men and institutions, among them Dr. Cabot and others, of Boston, the Mayo Clinic, Johns Hopkins Hospital, the Life Extension Institute and many good sanatoria, it reported that in its judgment the general scheme devised, worked out and practised for nearly three years by the Clinical Club of St. Luke's Hospital of San Francisco, offered the best foundation from which to build a Diagnostic Clinic that would best suit our particular situation and meet the local needs.

The medical staff of this hospital consists of 24 full staff members, 4 consultants and 10 assistants, 38 in all. It has an excellent, well-manned clinical laboratory and a complete X-Ray department with a full non-medical technician in charge. The hospital has 150 beds.

The development of the plan met with the enthusiastic encouragement and co-operation of our Board of Trustees (all women) and of the progressive superintendent, without whose aid the plan could not have been consummated.

An important and essential feature of our plan, and one differing from that of the San Francisco St. Luke's Hospital, is

that every member of the regular staff is given an opportunity to take part in some capacity in the work, should he so desire. This at once makes for harmony and, more important, must stimulate each staff member to better work and greater exertion, and elevate the standard of the staff as a whole. In the beginning it is voluntary on the part of each member whether or not he shall become a member of the Diagnostic Clinic. Apart from his voluntary resignation his retention on a group will depend entirely on the individual's efficiency, faithfulness and honesty in doing his assigned work. Failure in any of these qualifications will result in his being dropped, because every member of the group becomes vitally interested in the quality of the work of every one connected with it, his individual reputation being involved with that of the others. In the St. Luke's system, a diagnostic group is selected from among the younger men, most of them being assistants, while with our plan, the first choice is given the regular staff, after which the assistants are given an opportunity, should a vacancy arise. In our plan the assistants have something ahead to work for, and they can attain a place by earning a right to it.

The organization is known as the Diagnostic Clinic of the Syracuse Memorial Hospital, and consists of two main groups, known as Group A and B, each serving on alternate months, and a third group known as the Auxiliary Group, made up of those men of certain specialties whose services will not be required in every case.

In each of the main groups—A and B—are eight men, viz., General Medicine, two dividing the work; one each from General Surgery, Gastro-enterology, Orthopedic Surgery, Ophthalmology, Oto-Laryngology, Laboratory (which includes Clinical Pathology and Bacteriology). In the Auxiliary Group are Neurology, Proctology, Urology, Gynecology, Dermatology, Pediatrics, Obstetrics, Dental Surgery, Anesthetist and General Consultants. In this auxiliary group are 20 men, any one or more of whose services are available in any case in which the group chairman thinks such service desirable. It is probable that a neurologist will be called in nearly every case, and the same may be true of the urologist and proctologist. As time goes on ex-

perience may demonstrate the wisdom of adding some of the departments of the auxiliary to the main group, but in the meantime the members are just as available. It is easier to add to than to delete and it is as unadvisable to have too many men examining every case as it is to have too few. With the changes that will constantly occur as the war progresses and the staff becomes smaller, it is possible that the two main groups may become one, but for the present there are two, each group serving on alternate months.

Each group selects its chairman, who is responsible for the history of the case, and will be the first one to see and examine the patient, after which he will arrange through the supervising nurse for the visits of the other members of the group, together with such members of the auxiliary group as he may desire. He has the right to call any member from the other main group to examine the case and participate in the work of that case as though he were a regular member of that particular group. Through this arrangement any member of the whole Diagnostic Clinic is available for service on any individual case.

The supervising nurse is a trained nurse, practised in the use of a typewriter, and as the clinic grows her entire service will be utilized for the clinic. Her duties are with the patient and the physicians of the group, while she also manages the bookkeeping and financial end of the work, and will receive her compensation from the clinic. She will take the patient's temperature, see that all specimens are furnished the laboratory, arrange the details of the physician's visits, be present at such examinations, take notes and typewrite them and attend the general consultation, taking the minutes and transcribing them.

The gastro-enterologist and orthopedic surgeon are also Roentgenologists, but the technical work will be done by a full time experienced technician who will also do the X-Ray work for the other departments. His business will be to do the mechanical work, but not the interpretation of the plates.

The laboratory member of the group will be personally responsible for the blood, urine, feces, the examination of tissues and such other laboratory examinations as are required, including the routine Wasserman, the tuberculin test, phthalein test,

test meal, lumbar puncture and any other special laboratory work, including bacteriological examinations that may be needed. Each clinician is responsible for the thoroughness of his own examination, making, when in his judgment it seems necessary, any special examinations, such as cystoscopy, bronchoscopy and examination of the ureter, should such examination be required to arrive at a conclusion. It is his business to elucidate that part of the case that comes within the scope of his special department, using his own judgment as to how much shall be done.

After all examinations, clinical and laboratory, have been completed, which it is estimated will take from three days to a week, a general consultation of all who have had to do with the case is held and, if possible, a diagnosis arrived at; the physician referring the case is invited and is urged to attend and participate in this consultation. The discussion may show need for further investigation in some particular field, and if necessary a second consultation takes place. At all events, every effort, regardless of time and expense, is spent in an endeavor to reach a satisfactory conclusion and diagnosis. When this is accomplished a typewritten statement containing the conclusions of the clinic, including the diagnosis if made, the individual findings of the different examining physicians, together with, when desired, such suggestions as to treatment which seem advisable is sent to the referring physician. A second copy goes to the patient or to his responsible relative whenever desirable, a third copy being retained in the files of the Clinic. A diagnosis will not be made in every case, owing to the limitations of medical science and of the individuals comprising the Clinic.

The Clinic is established for the purpose of rendering organized service primarily to the medical profession, secondarily to the individual patient. For this reason only patients referred by their physicians will be received for examination, and then only for purposes of diagnosis, treatment being suggested to the referring physician when requested or probably indicated. Only cases that are obscure and complicated and apparently cannot be diagnosed by the average physician in the ordinary way will be accepted by the Clinic, because its members cannot afford to give their time to cases that do not really require it. Consequently the Clinic reserves the right to decline to accept for diag-

nosis any case which the chairman of the group believes does not require its services. It is necessary to have this reservation in order to avoid abuse of the functions and purpose of the Clinic, as well as to protect the interests of the outside members of the profession.

A fee, the minimum being fifty dollars, graded upwards according to the patient's financial situation, is charged. This fee includes the services of the medical men and of the laboratory and X-ray departments, as well as of the supervising nurse. In addition, the Hospital will charge its regular room rates for time occupied. The portion of the fee remaining to the members of the Clinic will be finally divided equally among those who have examined the case, to be received by them individually or be voted by them for the purchase of new equipment for improving the service of the Clinic and of the Hospital, the latter being expected to be the disposition of the funds for some time to come. The Clinic members do not expect to be compensated for their time by adequate financial returns, but do expect a real reward for their time and labor. In rendering this service they will themselves receive much knowledge and should benefit greatly through these examinations and consultations, becoming broader physicians and keener diagnosticians, fitting themselves for a higher grade of work and service in their own practices and among their own clientele.

The Hospital will benefit by the steadily increasing efficiency of its Staff, and will become more useful than ever to its community. It will take a pride, as ours already has, in keeping its laboratory and other equipment up to modern requirements.

The Clinic hopes and expects to receive the cordial support of the profession of its community, expecting to give a service that will be real and of substantial benefit to their colleagues of the medical profession and to such of their patients as appear to require the benefit of a group of average physicians, organized for the purpose of rendering good service in the matter of diagnosis.

The present is one of the great periods in the whole wide history of the human race. There has never before been a time when every nation, every people on the face of the earth, have all been devoted simultaneously to the same thought, the same

effort, the same intense struggle for existence and survival. Our thoughts are all of war, our hopes are all of peace, but of a peace only that will spring from a complete victory over a people whose ambition it is to reduce to vassalage the other peoples of the earth. Consequently our thoughts are all centered on this war, the direct relation to which every organization and every individual has a definite place.

As an organization, the American Laryngological Association is represented on the Council of National Defense, a committee representing this and two allied societies having been appointed a year ago. The Committee was recognized officially by the Surgeon General and became the Sub-Committee on Oto-laryngology of the Council of National Defense. The three members, Doctors Charles W. Richardson, Harris P. Mosher and Burt L. Shurly, with Lt. Col. T. C. Lyster, representing the Surgeon General, have done a vastly important work in classifying, organizing and bringing into active work the oto-laryngologists of the country. Through this committee men qualified in oto-laryngology are placed in active service where they can best be utilized as specialists. Through their knowledge, personal and acquired, of the laryngologists and otologists of the country, the committee is rendering great service to the medical department of the Army and Navy, serving as well the best interests of the profession. In the department of aviation our specialty, particularly the otological part, has been called upon to do work that has been of inestimable value. In the fall of last year our representative, Dr. Shurly, having been sent to France as the head of a base hospital unit, resigned, and by vote of the Council, his place was filled by Dr. Joseph H. Bryan, who is now serving.

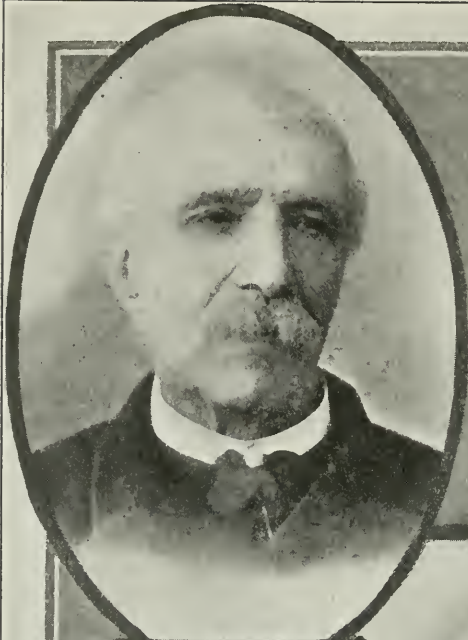
The work of the committee and its plans for the future will be presented later during this meeting by its chairman, Lt. Col. Chas. W. Richardson.

The Surgeon General has issued an urgent appeal for more medical men. As the army increases in size the ratio of doctors must keep pace with the general increase. There must be a quick response to his appeal, if voluntary medical service is to meet the demands of the drafted Army. Doctors in all the

special branches, ours included, are especially urged to come forward.

As a class the world over, medical men are accustomed in their professional life to respond promptly to the call of duty. To do so is a part of their training, it is at the very foundation of their success. To fail to go when called, is to fail in life. Each one of us should know his duty in this crisis when doctors, when laryngologists, are needed at the front, in the base hospitals in France and England, on the transports, and in the base hospitals, the cantonments and camps of this country. They are needed in increasing numbers and the need is urgent at the present moment. Every one of us should search his soul as he has never searched it before and must decide where his duty lies, and having decided, should immediately act, because the need is immediate. It is not every man's duty to leave his family, his dependents and his community and, forgetting all other obligations, join the fighting forces. Each man must weigh the matter for himself and, putting aside in the argument all question of personal advantage, come to a decision that he would be willing to subject to the scrutiny of his fellows and abide by their decision. Those who can go are to be congratulated, they are to be envied, they are the favored ones of the profession. A doctor who in this emergency can conscientiously go but fails to respond to his conscience and his country's call, putting his selfish profit first, is surely not to be envied.

Owing to the condition of the country the councils of the American Laryngological Association, the American Otological Association and the American Laryngological, Rhinological and Otological Society voted to hold their meetings this year more or less together, in order that the greatest amount of work could be done in the shortest possible time, with the utmost pleasure and benefit to the members of all three societies. The programs of all three show that this plan will be accomplished and I am sure with benefit to us all. We are guests of each other and being all interested in the same cause, can learn and profit from each other. It gives me pleasure to declare the Fortieth Annual Meeting of the Association open for the transaction of its regular business.



GARCIA

MacKENZIE

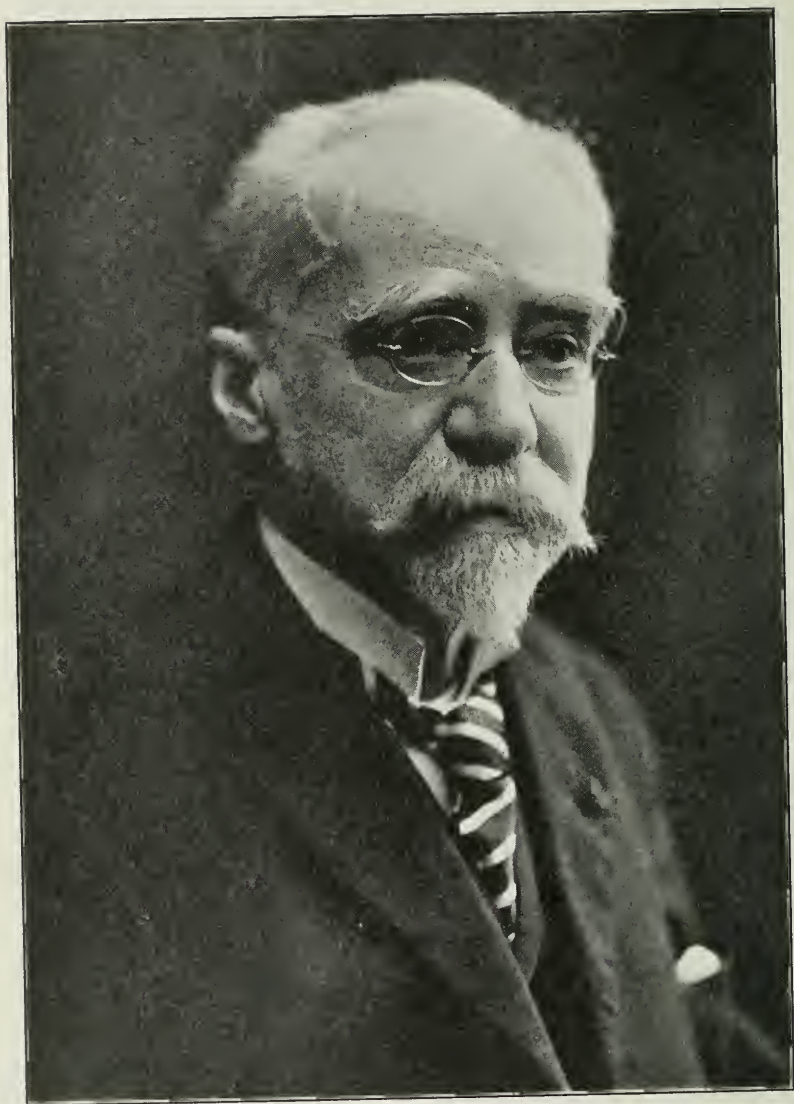


OUR FIRST HONORARY FELLOWS

FORTIETH ANNIVERSARY CELEBRATION

HISTORICAL REVIEW

EARLY DAYS OF LARYNGOLOGY



D. J. DA SILVA SOLIS-COHEN, A.M., M.D.

FORTIETH ANNIVERSARY CELEBRATION

HISTORICAL REVIEW

EARLY DAYS OF LARYNGOLOGY

Address of the Honorary President

J. DA SILVA SOLIS-COHEN, M.D.

Philadelphia

The American Laryngological Association was conceived in the arms of brotherly love, was born in the lap of professional comradry, was nourished by the milk of emulatory kindness, and has grown to vigorous maturity in a communal regard of its entire fellowship, and its useful work in the cause of laryngology, medical progress in general, and the interests of humanity.

And now it celebrates its official jubilee as an affectionate testimony to its love for its founders, so that those who are left of them might have an opportunity to participate in a joyful occasion which they would miss in all probability, should that celebration have been deferred to its conventional golden anniversary.

The high personal honor tendered in making me your honorary president for this occasion is more highly appreciated that it is an expression of the warmth of your regard through forty years of fellowship, acclaiming in unmistakable terms that it has been awarded for good and faithful service.

It is announced on the programme that the honorary president will present an address, an Historical Review, "Early Days of Laryngoscopy." At this time a review of laryngoscopy would be superfluous to so well informed an audience as the Fellows of the American Laryngological Association and occupy too much time in its delivery; so that portion will be eliminated as unnecessary.

The early days of laryngology were not auspicious. The laryngeal mirror was originally introduced as a means of observing the action of the vocal organs in singing and for physiological purposes chiefly. When adapted to professional use in the detection and alleviation of disease it was regarded as a toy by the profession at large and it was a long time before its usefulness became established.

Those who so used it were looked upon as quacks, or at least as *charlatanoids*. As to myself, I was blackballed from membership in the Academy of Natural Sciences in Philadelphia by some medical members whose superethicalness threatened antagonism and rejected any association with a physician who would pay especial attention to a limited field of practice.

My personal experiences in the field of laryngoscopy would interest you more than a general exposition, and so you are presented with a brief summary in accordance with a suggestion from Dr. Delavan that I should repeat some reminiscences which had been presented to the Philadelphia Laryngological Society and which he thought would be appropriate for the occasion.

Dr. Louis Elsberg, your first president and one of the first to establish laryngologic practice in the United States, and I were school mates and we attended medical lectures together in Jefferson Medical College. When he graduated in 1857 his sister and her husband took him to Europe on their honeymoon, and while abroad he learned of Czermak's demonstrations of laryngoscopy, visited him and with Frankel of Berlin, and two others formed Czermak's first class. On his return Elsberg settled in New York and then began his successful career. As a laryngologist such an enthusiast was he that he told the Fellows in one of his addresses that he considered it more honor to be president of the Association than to have been President of the United States.

When I entered military service in the War of the Secession, he begged me to send him some normal larynges for study, as they were hard to get in New York and would be easier to get on the battlefield.

When returning to Philadelphia after the close of the Civil War I began to resume practice, I took up the study of laryngology as a specialty at the suggestion of my friend Dr. Elsberg,

beginning with Morell Mackenzie's little volume on *The Use of the Laryngoscope*, as a text book. I became one of the outdoor visiting physicians of the Northern Dispensary, and that gave me the run of the dispensary itself for opportunity to practice the art.

After a little while I became able to get a good view of the larynx, and I well remember how, at my first success, I felt as though I was in communion with my Creator, seeing the hidden parts of the economy.

I had a number of friends in the dental profession who took an interest in my efforts, on account of the similarity of the laryngoscopic mirror to the dental one. It was during the early days of the use of nitrous oxide gas in dentistry, and some of these men used to give the gas themselves. They would allow me to use the mirror on their patients during the interval between the withdrawal of the teeth and the coming-to. I sought to induce them to use the reflector on dull days, but they did not take to it. In this way I acquired considerable skill in the use of the laryngoscopic mirror, and sometimes got a case to treat. Some of these cases I exhibited at the meetings of the Northern Medical Association, and thus gradually had paying cases referred to me. As my practice increased I bought more books, and more instruments as they were required, and some of these cases I published, chiefly in *The Medical Record*, of New York, for which journal, thanks to my acquaintance with its editor, Dr. Shrady, I had engaged to make extracts for foreign journals in exchange for the journals themselves.

One day Dr. Shrady suggested that I write for the *Record* a systematic series of articles on laryngoscopy. This I did and thus became known outside of my own community.

Shortly after Dr. Bertolet came from Europe, where he had studied the subject, and with his aid and that of Dr. La Roche who had become interested, I decided to open a private clinic, which I did in Ninth street, opposite the University of Pennsylvania buildings, in a couple of rooms just vacated by the orthopedic and nervous dispensary run by Dr. Thos. Morton and Dr. S. Weir Mitchell, who had removed to their present location.

Most of our patients were sent by my good friend Dr. Slocum,

the physician of the Northern Dispensary, but it was a long time before we got any students. It was a little hard to keep the patients, too. Sometimes I had to pay them for coming so that we should not be out of material should we have any professional visitors.

After a while I thought it time to begin a course of lectures. So I rented the use of Dr. Agnew's anatomical room in Chant street, now part of the Post Office building, for two nights a week and got out a prospectus which I tacked up on the bulletin boards of the University and the Jefferson.

I went to one photographer after another to get some enlargements made of laryngoscopic images for purposes of class demonstration, but I could not get them to do it for me. They all thought the pictures were those of the female genital organs and indignantly refused. So I had to go to New York where I got some splendid reproductions which were used successfully for a number of years.

Well, the course was to be opened and I had sold but two tickets, both to Jefferson men, one of them Dr. Graham, subsequently Professor of Surgery in the Denver Medical College, and the other to Dr. Watson, of Hot Springs, Arkansas, subsequently a noted practitioner in his own state.

The first lecture was attended by Dr. Watson only, but I did my best and lectured as enthusiastically as though the amphitheatre was crowded.

At the second lecture I had no audience, not even the janitor, and just as I was giving up, Dr. Graham came in and I gave him the lecture all to himself. This went on for a week or two, only one or the other showing up at a time, when finally, as I was entering the room I heard the end of a conversation like this: "Hello, Watson are you attending this course of Dr. Cohen?" "Yes," said he, "and the only one." "Well," said Watson, "let's come together after this and give the poor doctor a class."

Well, the thing got around the College, and after that there were always these two, and once in a while one or two more who dropped in to see the doctor who was lecturing at such odds.

The next year I had, perhaps, a dozen students and so it went

for a year or two, and I wrote a little primer on "How to Use the Laryngoscope."

I used to attend Prof. Gross' Clinics to report them for the *Medical and Surgical Reporter*, who paid me at the rate of five dollars per clinic. One day Dr. Gross introduced me to his class ironically, as a man who was devoting his energies to a single cubic inch of the human anatomy, and when the laugh he raised had subsided he added, "and some day I suppose some specialist will confine himself to diseases of the navel."

So you see the respect shown to specialists in those days. Later, however, Dr. Gross always got me to lecture on laryngoscopy before his class, and engaged me to write the chapters on diseases and injuries of the air passages in the last edition of his *Surgery*.

Shortly after this the University organized a summer course of collateral branches, leading to the degree of Ph.D., and the next year the Jefferson started a summer course on some practical branches and made me lecturer on diseases of the throat and chest, with the understanding that I should bring my clinic into the building, where it became established in the dark chamber under the amphitheater where the regular clinics were held.

Gradually we forged along until finally quite a respectable clinic was formed, with a very fair attendance of students.

I had a private student at this time attending the University, Dr. Carl Seiler, who, as well as my first assistant, Dr. Bertolet, was a good pathologist, and both were very properly looked upon as leading men in the Pathological Society. For quite a while we four were the only laryngologists in Philadelphia.

A fairly good laryngoscopic joke may be interpolated here. Dr. Seiler was examining a woman's throat one day, and not seeing anything wrong in the larynx remarked, "I think your cough must be a reflex from an irritation in your womb," and the woman replied, "Doctor, if I'd thought you could have seen so far down I would not have allowed you to put that looking glass in my throat."

Faber's talking machine was brought to Philadelphia and Faber brought me a letter of introduction from a medical acquaintance in Germany. This talking machine was an imita-

tion of the vocal cords in thin ivory moved by cords, the levers of which were worked by a piano key arrangement, and the artificial larynx was enclosed in a rubber head, the lips of which could be moved and the posterior nares worked by the piano keys, and so a good many words and short sentences could be admirably imitated.

The faculties of the University and of the Jefferson readily accorded me permission to lecture on the voice at both institutions with this apparatus in demonstration, and I gave one lecture at each College to audiences which filled the rooms.

I was getting better known in Philadelphia, because I had just delivered a course of lectures on acoustics at the Franklin Institute, and at the Institute of Technology at Hoboken, when that institution was formally opened.

And so laryngology gradually crept into repute. I was allowed to give clinics at Jefferson before the entire class, and *I well remember the first time the dental engine was ever used in rhinology.**

A physician from India came to Philadelphia to get rid of an obstruction in his nasal passages. It was found to be bony, and the case was referred to me. At that time Bonwill's dental engine was coming into use in dentistry, and I determined to try to bore through this obstruction with it. So I went to one of my dental friends and he taught me how to use the drill, and consented to come to the clinic and help me if I failed to get through. Dr. W. W. Keen was one of the clinical surgical assistants at that time, and he suggested that the great heat of the friction might do harm, and proposed with my consent to keep spraying the parts with cold water as I proceeded, which he actually did, and in this way the operation was performed, Drs. Gross, Pancoast, Levis and others being present.

It was in '67 I think, that one of the professors of the University, at the suggestion of Dr. John Atlee, of Lancaster, placed his son under my care with a growth of the larynx. I removed several portions with forceps, and the fragments, examined separately by Dr. Da Costa, Dr. Wm. Pancoast and Dr. Woodward of the Army Medical Museum, at Washington, were pronounced

*The italics are the Editor's.

epithelioma. *So I determined to open the larynx** and remove it externally, and get my friend Dr. Elsberg, of New York, to come over and help me.

There was a very distinguished audience present, as it was the first attempt in Philadelphia to remove an epithelioma from the larynx, and several surgeons were anxious to see it. There were Dr. John Atlee, the patient's physician, a celebrated surgeon, best known in connection with ovariectomy, a surgeon of the Navy, a personal friend of the patient, Professors Gross and Pancoast, Dr. D. Hayes Agnew, Dr. Richard Levis, the younger Drs. Gross and Pancoast and one or two others.

After the larynx was split and held aside by Elsberg, just as I was about to attack the growth, the elder Gross put his mouth to my ear and said, "Cohen, be sure you remove the very *atmosphere* of the damned thing." I removed it very thoroughly, scraped down to the cartilage, rubbed in acid nitrate of mercury, and then let the edges flop. I did not put in a suture. The man recovered and died twenty years later of apoplexy.

This was the case Prof. von Bergmann, of Berlin, referred to in his account of the case of the late Emperor Frederick of Germany, and said that this was the operation he had intended to perform, and not removal of the larynx as had been declared by his antagonists.

This was, perhaps, the most successful removal of the larynx of its day.

But there is a still better operation which I devised a number of years ago, in these cases of intrinsic carcinoma of the larynx, and that is, not to touch the growth at all, but to strip the cartilage of its inner epichondrium with all the soft parts and then sever the flap with serrated scissors. The vessels from the outer perichondrium supply sufficient nutriment to nourish the denuded cartilage and thus repair the loss.

One day the late Professor Harrison Allen came into my office complaining of conjunctivitis which hampered him in finishing his great work on anatomy which was being published by the Leas, and I said to him, "Allen, let me cure your nasal catarrh and the conjunctivitis will get well of itself," and he replied, "Why, you can't cure nasal catarrh." "Let me try,"

I answered, and when he consented I immediately flushed the parts out with the nasal douche and then covered them with a weak solution of silver nitrate. His catarrh gradually improved, his conjunctivitis subsided, he finished his book, and became so enamored with rhinology that he gave up his general surgical practice for rhinology and laryngology and soon became one of its leading exponents, and acquired such an extensive practice that he had to relinquish his professorship at the University to attend to its demands. He devised a number of operative procedures and appliances.

After a while Dr. Seiler was given a lectureship in the University, and did most excellent work there for many years. He conceived the idea of concentrating the saline ingredients of what was known as Dobell's solution for a nasal douche, into a tablet having the actual specific gravity of the blood, so as to avoid exosmosis or endosmosis, and these tablets have had a world wide reputation and extension. Those on the market are not made in exact accordance with his formula, which is in the hands of Mr. Chas. Dodson, an apothecary in Fourth street below Chestnut, Philadelphia.

As in all other departments of practice, both in medicine and surgery, there have been fads and fashions.

We had the nasal douche, a sort of fountain syringe, which lost credit because care was not taken in its use to breathe continuously through the mouth and thus avoid forcing the liquid up the Eustachian tube in the act of swallowing, which produced a good many ear troubles, but it is a good sort of flush used properly and at a sufficiently high temperature. Cold solutions and the act of swallowing during their operation are injurious, and as these precautions are not always avoided by patients, it is best not to use it.

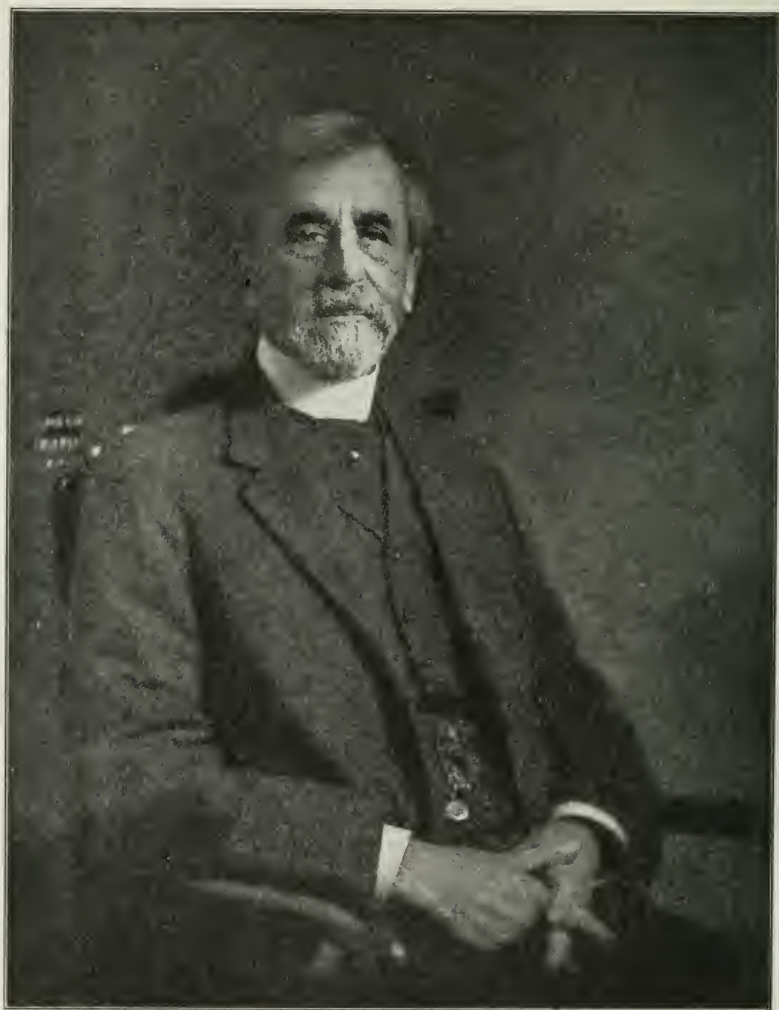
Then we had a great fad of snaring off the posterior tumefactions of the lower turbinates, with the Jarvis snare or some of its modifications, the best of which was that of Dr. Sajous, one of my pupils and one of my successors at Jefferson Medical College.

We had also a long series of operations for sawing off spurs of the nasal septum or of boring through them with the dental

and later the electric drill. I don't know how many different varieties of saws were devised, from Bosworth's adaptation of the digital saw to De Vilbiss' series of saws for attacking spurs of all varieties of deflection.

So, too, we had a prolonged season of electric cautery work for enlarged turbinates, destruction of morbid growths in the larynx, pharynx and rhinopharynx and long electric cauteries for removing nasal polypi. Now, these methods are used only in appropriate cases, but in the early days of laryngology in Philadelphia, as elsewhere, they were applied almost promiscuously.

I must not neglect in conclusion to state that we formed a Laryngological Society in Philadelphia in the early 70's, I think, Bertolet, Seiler, Sajous, Allen and a few others, including myself, but it lingered for a while and gradually died for want of nourishment.



HENRY KEMBLE OLIVER, M.D.

HISTORICAL SKETCH

HENRY K. OLIVER, M.D.

Boston

Several months before this annual meeting, Dr. John W. Farlow of Boston was kind enough to interest himself in securing from one of our original members, Dr. Henry K. Oliver, of Boston, a fine photograph of himself and a valuable and interesting paper relating Dr. Oliver's experiences in the earliest days of laryngology, also giving the date of his appointment as university lecturer on laryngoscopy at the Harvard Medical School. The last item is one of surpassing historical interest, inasmuch as this hitherto unsettled question as to who first established the teaching of laryngology in America has been under discussion for many years. The credit has generally been given to Elsberg. No record, however, can be found to justify the latter's claim to priority. Fortunately, with our fortieth anniversary the facts, sustained by irrefutable evidence, are brought so clearly before us that no further doubt can ever arise.

Last winter Dr. Farlow was interrogated as to whether a portrait could be obtained of Dr. Oliver, and with it some notes as to his career. A prompt answer stated that Dr. Oliver was alive and pretty well; that he was pleased to have been remembered and was greatly interested to hear of our proposed celebration. He said that he would have a photograph taken as soon as a blizzard then raging had subsided and he could venture out. As he was graduated from Harvard in the class of 1852, he was somewhat under the influence of the infirmities of age, but was as clear minded and appreciative as ever. In due time there arrived a most excellent photograph signed "Henry K. Oliver, M.D., written in his 88th year." Accompanying the photograph was the following sketch:

A Few Personal Reminiscences of Early Laryngoscopy

After two years study abroad, in 1855-57, first in Paris and then in Vienna, the writer returned to Boston via Paris. A visit was made to Charrière's to learn what, if any, new instru-

ment or appliance had appeared since he left the city in the spring of 1856. It will be remembered that Garcia obtained at Charrière's, in 1854, the little dental mirror with which he made his novel and important auto-laryngoscopical observations on the movements of the vocal cords, and that the results were published the following year. But it was not till the winter of 1857-58 that Czermak began his experiments, the date of his first publication being March 27, 1858, in the *Gazette hebdomadaire de Vienne*; and at the time of the writer's second visit to Paris there was no indication of the employment of the mirror in medical practice, and probably no one dreamed of the complete practical appliance which the Professor of Physiology in Prague evolved from the mirror in Garcia's hands.

From the date of the writer's return to Boston, in October, 1857, to that of his second visit to Europe, in the summer of 1860, he does not remember hearing any allusion made to the laryngoscope. At the period last named, however, the writer Tuereck, was a disciple of Czermak, opened a clinic in New

Your letter relating to the early history of laryngology in obtained at Charrière's a round steel mirror which he brought home. Nothing was said about a head mirror, and it is to be presumed, therefore, that its importance was not, even then, appreciated. The round steel mirror is a trifle over three-quarters of an inch in diameter. It has a fixed, flattened handle, oblong in form, of about an inch in width. It is now in the collection of old laryngoscopic appliances in the "Hooper Room" in the Massachusetts General Hospital in Boston. There is in the Historical Collection of the Boston Medical Library a square steel mirror with the corners considerably rounded, which measures just three-quarters of an inch from edge to edge. To it is attached a card bearing the following inscription:

"Czermak's Original Mirror, Presented to Dr. Hooper by Prof. H. Krause, Berlin, August, 1890."

Upon his return to Boston the writer embraced every opportunity to become expert in the use of the mirror obtained abroad, and when he felt justified in so doing, he sought disciples. The first regular teaching took place in the upper story of a little house in Staniford street, No. 18, generously placed at his dis-

posal by the late George C. Shattuck, M.D., 1835. The means of illuminating were restricted to the sun's rays, and when these failed, to diffused light, with various make-shifts to concentrate it upon the mirror. Here were gathered together, from time to time, such medical students as could be made interested in the new science. The writer's very capacious throat was placed at the service of these beginners, and auto-laryngoscopy alternated with their crude efforts in laryngoscopy.

The breaking out of the War of the Rebellion interrupted the special work of the writer, and he went into the service of the Sanitary Commission. Resumption of laryngoscopic teaching took place at his office in Joy street. The means to this end were much improved. An imported head-mirror took the place of the makeshifts hitherto employed, and this, a rather clumsy affair, was later in its turn supplanted by an excellent appliance obtained through Messrs. Codman and Shurtleff. Artificial illumination was provided for by an argand gas burner upon which was fitted a large light-concentrator, something after the type used by Tobold, but shorter. It had also only one double convex lens. There was the usual silver metal concave reflector at the back. The appliance proved so satisfactory that it served the writer's purpose throughout the remainder of his professional life. This appliance is also in the "Hooper Room."

Glass mirrors took the place of steel ones. Some of these were made of thin plate glass with the ordinary quicksilver backing, but in some silver had been deposited upon the back by the writer, after a process brought into use a decade before.

This process was patented by Petijean in 1855. The glass is first thoroughly cleansed and then placed upon a warm surface. Nitrate of silver dissolved in ammonia is precipitated by a solution of tartaric acid. The solution is then poured upon the glass, the heat helping the silver to precipitate and adhere to it. Silvered mirrors reflect 20 to 25 per cent more light than those backed with quicksilver.

Of the mirrors in use the largest,—employed for the most part in auto-laryngoscopy and demonstrations—was one and a quarter inches from edge to edge, and is now in the "Hooper Room." This is exactly the size of the largest of the group of

three mirrors represented by Czermak in his work "On the Laryngoscope and Its Employment in Physiology and Medicine."

The instruction up to this time, over and above the use of the laryngoscope, had been almost wholly confined to the study of the normal appearances of the parts brought into view, in accordance with the universally admitted necessity of having a thorough acquaintance with such conditions in order to appreciate properly those of morbid tissues.

In the winter semester of the Harvard Medical School, upon December 15th, 1866, the writer was appointed "University Lecturer on Laryngoscopy," and this was the first appointment on this special subject in the school. The medical school was then in North Grove street, and the building is now (1907) devoted to the purposes of the dental school. The lectures on laryngoscopy were delivered in the large room used by Professors John Ware, Jacob Bigelow and Walter Channing. There was upon the table on the platform a glittering array of brightly burnished brass stands, bull's-eye lanterns, steel and silvered mirrors, plane and concave. Also, a large glass globe filled with water as a light-concentrator was sometimes used in the early days. There were also, spread out upon the wall, large drawings of the throat and larynx made by the writer and colored by him in brilliant carmine.

In the audience was a recent graduate of medicine, who was himself later university lecturer in laryngology in the medical school, Dr. Frederick Irving Knight, who gave courses of lectures in 1870-71, being preceded by the writer, who lectured from 1866 to 1870, and also followed by him in his second appointment in the years 1871-1875.

Addendum

The writer refers to two articles which he published during the first course of lectures mentioned in this paper, viz.: 1866-70. The first one appeared in the American Journal of the Medical Sciences, Vol. 54, July, 1867. Its title is "Successful Removal of a Fibro-plastic Tumour from the Body of the Right Vocal Cord with the Aid of the Laryngoscope," by Henry K. Oliver, M.D. (with wood-cuts).

The second article is to be found, in the journal mentioned, for April, 1870. The title is "Cases of Aphonia from Paralysis of Intrinsic Muscles of the Larynx. Treatment by External Manipulation of the Organ and Restoration of the Voice in a Single Sitting." By Henry K. Oliver, M.D., Physician to the Massachusetts General Hospital, Boston (with seven wood-cuts).

LETTER

E. FLETCHER INGALS, M.D.

Chicago

Chicago, March 5, 1918.

My Dear Doctor Delavan:

Your letter relating to the early history of laryngology in Chicago has been received and I hasten to reply while the matter is still fresh in my mind. It was quite opportune, because had it been a year or two later, I doubt whether anyone else would have remembered the circumstances quite as well.

At the time of the organization of the American Laryngological Association forty years ago, there were a few men in this city of Chicago who were thought to be qualified to enter it as charter members. I think none of them at the time had more than a perfunctory knowledge of rhinology and laryngology. They were essentially internists, whose main interest was centered in diseases of the chest.

Of these men, Dr. Hosmer A. Johnson who was the Dean, was a gentleman in every sense of the word and beloved by all who knew him, especially the younger men. Always courteous and helpful, careful and exact, he did not make statements that he could not substantiate and I have frequently known him, when some of the younger men consulted him about a puzzling case, to say, "We will watch it"; and he did so before he gave a final opinion. Dr. Johnson was a member of the Association for several years and finally died in the harness.

The next in age was Dr. Joseph P. Ross. He was Professor of Diseases of the Chest in Rush College, and was very largely instrumental in rebuilding that institution after the great fire in

'71, and in locating the County Hospital at its central site where it now stands. The County Hospital has about 2,500 beds; within a block is the Presbyterian Hospital of some 400 beds, which was founded by Dr. Ross. These two results were largely due to his influence and organizing power. Dr. Ross, as far as I know, was not strictly a rhinologist or a laryngologist, but a general practitioner with his principal interest directed to diseases of the chest.

At the same time, Dr. Frank H. Davis, and myself, the former son of the late Dr. Nathan S. Davis, both younger men, were coming into the field. The American Laryngological Association, I think, had its inception in the mind of Dr. Frank Davis who saw personally four or five of the gentlemen here and interested them in the project. Contemporary with these were Dr. Rumbold and Dr. Porter of St. Louis, and Dr. E. L. Shurly of Detroit.

The first meeting of the Association for organization was called at Buffalo, when I think there were about a dozen men who agreed to join. Subsequently there were annual meetings with constantly growing interest.

We have been fortunate in that we have made no mistakes in our membership. There have been on two or three occasions fortunate circumstances which prevented mistakes, but our organization has been so complete that accidents have been avoided. There have been no members of whom we might not be proud.

I think that this finishes the essential history of the early stages of the Association. The history of the later years you will be able to get rather more connectedly than I can give it. However, if there is anything further that I can furnish, kindly let me know. At the time of the annual meeting I hope to be able to send you a letter of congratulation.

I am feeling better today than I have at any time before, for four months, although I am still in bed. I have a hope that eventually I may be up again.

Give my warmest regards to French and to any of my very old friends, especially to Sam Johnston, Hartman and Mackenzie.

Yours sincerely,

E. FLETCHER INGALS.



SAMUEL JOHNSTON, M.D.

REMINISCENT PAPER

SAMUEL JOHNSTON, M.D.

Baltimore

This Jubilee Celebration of the Fortieth Anniversary of the Inauguration of the American Laryngological Association appeals to each one of those founders who have survived the ravages of time, for some recognition.

I beg, however, before telling my story, to preface this narrative of past incidents and events with a brief review of the train of circumstances which terminated in my selecting laryngology as my specialty.

In the early spring of 1873 I went from Philadelphia, where I had been one of the assistants at the clinic of that renowned surgeon, Samuel D. Gross, to New York City for further study under some of the masters in medicine in that metropolis, of whose fame I had heard so much.

I carried with me two cards of introduction: one from Dr. DaCosta to Dr. Austin Flint, and one from Dr. Gross to Dr. J. Marion Sims. After settling myself at a good boarding house at No. 10 East Thirty-second street, I made haste to get to work. First I presented the card to Dr. Sims. My reception was most cordial, and I was invited to luncheon, which was announced almost at the moment of my entering the waiting room.

Our conversation at the table was centred upon the object of my visit to New York and the line of work I had in mind to pursue. After outlining a course of study and clinical observation from which my host thought that I would derive the most benefit, I was asked to accompany him in his carriage on his visit to the Women's Hospital.

It was a pleasure to accept this proffered invitation, and there lingers in my memory a delightful recollection of that occasion, and also of the fascinating personality of that illustrious surgeon.

I had some cards of introduction to the staff at Bellevue Hos-

pital, and I also met the internes, Drs. L. Bolton Bangs, Thos. F. Burehard and Wm. T. Bull. I saw a great deal of these men subsequently, for I made daily visits to the various wards and clinics at the hospital, and their companionship was to me an inspiration. I was especially interested in orthopedic surgery and was working in this branch under Dr. Lewis A. Sayer when my introduction to laryngology began.

One morning I presented myself at the doctor's office aphonic, the result of a severe cold. Dr. Sayer said, "Johnston, what has happened to your voice?" I could not tell and begged for some help to have it restored. The doctor replied, "I know nothing about throats; go over to the Sturtevant House and see Clinton Wagner who has just returned from Europe, and knows all about the subject."

Dr. Wagner considered himself a Baltimorean; an introduction, therefore, was unnecessary. I had never before seen a laryngoscope, and was much impressed by the examination of my vocal cords. My throat was sprayed, an application was made to my vocal cords, and I was given some *Krameria* lozenges to dissolve in my mouth. The next morning my voice was restored, and I determined from that introduction to this wonderful instrument to make a further study of laryngology. Dr. Wagner and I became close friends from that visit and remained so to the end of his life.

In 1874 I went to Europe for further study, taking with me two cards of introduction from Dr. Wagner: one to Morell Maekenzie, the other to Prosser James.

Arriving in London after a pleasant voyage across the Atlantic, I was soon comfortably quartered at the Langham Hotel. My first visit was to the Throat Hospital, Golden square, where I met the staff and presented my cards of introduction. I could not have been more cordially received, and within a few days I had been the guest at dinner of both Dr. Mackenzie and Dr. James. I also met Dr. R. McNeil Whistler, brother of the artist, Whistler, Dr. Hunter Semple, Mr. Pugin Thornton, and many others. The clinics in London, however, were too large for me to study to my satisfaction with my limited knowledge of laryngology at that time; so, upon the advice of Dr. L. Bolton

Bangs, whom I had the good fortune to meet in London, on his return journey to America after a year spent in Vienna, I decided to go to Leipsic to study German, and later to proceed to that famous school of laryngology in Vienna at which Stoerk and Schroetter were teachers. After five months of study there I returned to London, and had the good fortune to be appointed by Dr. Morell Mackenzie as his chief of clinic at the Golden Square Throat Hospital, which post I held for one year. My successor was Felix Semon.

In the fall of 1876 I returned to Baltimore to practice laryngology. In the early spring of 1878 I received a letter from Dr. Frank H. Davis of Chicago, inviting me to the inaugural meeting of the American Laryngological Association which was timed to assemble in Buffalo upon the same date as that of the American Medical Association of which Dr. Samuel D. Gross was the presiding officer.

I felt much flattered by this recognition of my young reputation as a laryngologist, and promptly accepted the invitation. My late friend, Dr. J. H. Hartman was also one of the favored ones, and together we made the journey to Buffalo. There were no parlor cars on that route in those days, nor were there any fast trains, so twenty-two hours were consumed in making the journey, under conditions which today would be considered intolerable.

At the appointed hour, on that memorable morning this society was first called to order. The assembling of these gentlemen whose names are so familiar to you all, was an epoch in the history of laryngology in America.

From this nucleus, with subsequent additions to our ranks, there has developed an association of which we can be justly proud. Of the forty meetings which have taken place since that day, I have been present at thirty, at least—each one to me a joy. Nowhere in the world—and I can make this assertion without fear of contradiction—has there ever assembled a group of medical men where there was present such a universal spirit of good fellowship, determination to advance the usefulness of laryngology as a branch of the healing art, and mutual affection. The other speakers will tell you more in detail, year by year, as

this society has grown from infancy to mature life. Its reputation is now world-wide, and the transactions are in every library of any importance in all countries.

I wish to add, in conclusion, one word of encouragement to those who have become our successors and beg that they resolve that these characteristics, namely: fraternal affection and mutual esteem, may not pass from our midst in the years to come.

I think I can picture in an early future, after peace has been restored to this sorrowing and troubled world, another celebration wherein our Honorary and Corresponding Fellows from Great Britain, France and Italy, will unite with us in one joyous acclaim for the triumph of civilization and democracy over "Kultur" and the Hun.



DAVID BRYSON DELAVAN, M.D.

HISTORICAL SKETCH

THE INFLUENCE OF NEW YORK UPON THE DEVELOPMENT OF LARYNGOLOGY

D. BRYSON DELAVAN, M.D.

New York

As loyal and patriotic citizens of the United States of America it is our duty, as well as our privilege, to understand and recognize wherein we, as a people have excelled in those things which have added to the welfare and the happiness of the world. Many of us heretofore have been possessed of a degree of modesty which has caused us to overestimate the scientific exploits of some of our European friends, at the expense of our own. The time has certainly arrived when we may well take account of what has been done at home and contrast it with the accomplishments of our not always too generous rivals across the Rhine. Selecting as an example that department of medical science known as laryngology, no occasion could be more opportune than this, the Fortieth Anniversary of the American Laryngological Association.

When all has been said it will appear that to the United States belongs the credit of the birth of laryngology, and no small share in the discovery and development of those fundamental principles which have placed it as a specialty in the foremost rank of scientific medicine. In this great advance, the American Laryngological Association has played and is ever playing an all-important part, in every great center of medicine in our broad land. It is well, therefore, that we should trace the beginnings of our science in this country, study the influences which culminated in the forming of our Association and recount the contributions which it has made to the laryngology of today, proving that in our department, as in most others, for basic scientific progress, North America leads the world.

Both the origin of the specialty and the conception and development of its most important principles, have been the prod-

uct of the splendid speculative and inventive genius of our countrymen.

The earliest reference in America to disease of the throat seems to have been made by Captain Morton who, in his "New England Memorial," says: "In 1650 a disease of the throat and mouth prevailed which proved mortal to many in a short time."

Up to 1817, little literature is found that does not relate to quinsy, diphtheria, or "croup." In that year New York began its record, for Dr. John C. Cheeseman published an interesting article upon "Growths and Tumors of the Throat." That Dr. Cheeseman was practically interested in the throat is proved by the existence of his fine tonsillotomes, now in the possession of the New York Academy of Medicine.

In Philadelphia, in 1828, the distinguished Dr. Physick gave to the world his tonsillotome, certainly one of the most universally accepted instruments ever known.

Between 1817 and 1846, nearly all of the literature of the subject was furnished by Boston, Philadelphia and occasionally Baltimore. With the advent of Horace Green in 1846, New York awakened to a lively interest in this department, an interest which has intensified with the passing years. To this great man has been universally accorded, both here and abroad, the title, "Father of Laryngology." Fresh from his studies in Paris under those undisputed masters Trousseau and Belloc, Dr. Green returned to New York stimulated by their enthusiasm and filled with their advanced ideas. While he could not actually see the interior of the larynx, he was able to appreciate many of its needs. The topical medication of the tonsils and pharynx as practiced by Trousseau did not satisfy him, for, reaching nothing below the base of the tongue except the epiglottis, he felt that the whole of the interior of the larynx and of the trachea was necessarily neglected.

In endeavoring to overcome this difficulty he made a discovery which revolutionized the old idea of the absolute intolerance of the larynx and successfully demonstrated the grand principle that the larynx, under certain conditions, might be invaded by a foreign body without danger or injury.

Of all the epoch-making events in physiology, few, indeed, have borne more wonderful results than this.

Green at once realized some of its great possibilities, and in a series of classic publications taught that an instrument could be passed through the larynx below the vocal cords and into the trachea. Upon this basis he built up a system of treatment such as had never been known before. By means of carriers of sponge or of brush material various medicaments were applied to the upper air passages as far down as the upper part of the trachea. This method, to us so seemingly crude, was in its day a wonderful innovation. At once it excited comment and controversy, and Dr. Green met the fate of many other pioneers. That he was remarkably versatile and expert is proved by his removal of a laryngeal growth without the aid of the laryngoscope, by his advanced knowledge and skill in the treatment of the tonsils and by his able writings upon the subject of bronchitis. Up to his time specialism in this country had hardly been known. Through his influence and example was created and established the specialty of diseases of the throat, or laryngology, not only here but throughout the world.

The knowledge of his methods, at once made public by him, was quickly taken advantage of, both in this country and abroad. Twelve years later the invention of the laryngoscope opened a new world of investigation and treatment. Dr. Green was actually the first in this country to recognize the importance of Garcia's invention, and to appreciate the great possibilities in store for it. Abroad, Dr. Green's methods of topical application had been universally adopted, and, in spite of the improvements upon them made in this country, are in use in many of the clinics of Central Europe to the present day.

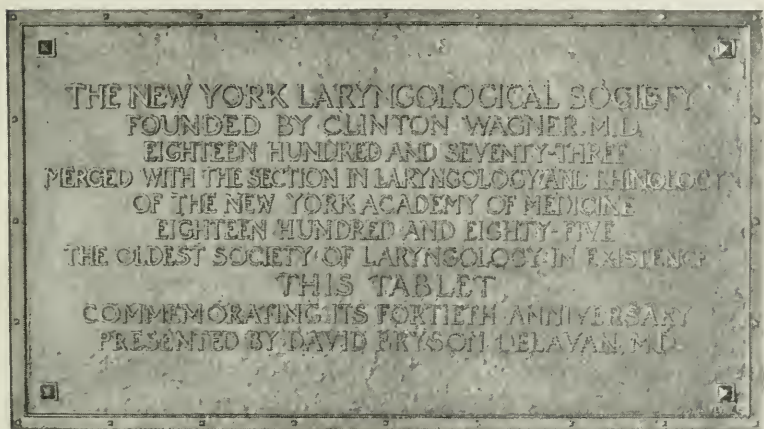
In 1848 Dr. Gurdon Buck gained for himself the name of "Father of intra-laryngeal surgery" by reason of numerous successful suggestions relating to the larynx, chief of which was his recognition of the pathological character of edema of the glottis. For the relief of this he proposed the method of scarification, and devised the celebrated curved knife which bears his name, "Buck's Scarificator." He also made many improvements in the operation of tracheotomy.

Proceeding in chronological order: Early in 1858 Dr. Ephriam Cutter of Boston made an unsuccessful effort to devise a laryngoscope. In the latter part of the same year Dr. Ernest Kraekowitzer, Surgeon to the New York Hospital and a member of the famous "Committee of 70," of New York City, received a laryngoscope from a friend in Vienna and was the first one in the western hemisphere to demonstrate the vocal cords. Dr. J. H. Douglas, the partner of Dr. Horace Green, under the latter's direction, at once familiarized himself with the use of the instrument and adopted it in his practice, Dr. Green at the time being ill. Dr. Green was the first to utilize the laryngoscope in medical practice in this country.

Dr. Louis Elsberg claims that in 1861 he established a clinic at the New York University Medical School. Careful search, aided by officers of that university has failed to reveal any record of this. The credit must therefore be given to Philadelphia and Boston where, in 1866, regular courses of instruction were inaugurated by Dr. J. Solis-Cohen and Dr. H. K. Oliver, in the Jefferson Medical College and the Harvard Medical School respectively, Dr. Cohen's appointment having been received in April. Mr. Charles F. Adams, Treasurer of Harvard University, has found upon the university records that, at a meeting of the Faculty of Medicine held December 15th, 1866, "Dr. Henry K. Oliver was nominated as university lecturer on the Laryngoscope." In the catalogue of the Harvard Medical School for 1866-1867, his name appears for the first time as lecturer. To Dr. Solis-Cohen, therefore, belongs the credit of having actually been the first.

The decade between 1860 and 1870 was productive of little marked progress in this country, by reason of the Civil War and its sequels. Meanwhile, the clinics of Europe, especially those at Paris, Vienna and London, had made rapid advances in the diagnosis and, to some extent, the pathology of laryngeal disease. Soon after the close of the war our enterprising young men began to avail themselves of these foreign advantages. The early seventies saw the return of some of the brightest of them and by 1873 Clinton Wagner, who had already served as military surgeon during the war and through other illuminating experiences against the Indians of the West, was able to gather a

sufficient number of associates, most of whom had been fellow students with him in London and Vienna, to form a society. Upon his invitation eight others met at his residence, and at his initiative was founded the New York Laryngological Society, the first of the kind in the world. Those present at this meeting, the charter members, were Drs. Wagner, Lefferts, Bosworth, Asch, Woolsey Johnson, Weir, Kinnicutt, McBurney, Mann and Bridge.



TABLET, COMMEMORATING FORTIETH ANNIVERSARY

Five years later, in 1878, as the outcome of this, was founded the American Laryngological Association, with a member of the New York Academy of Medicine as its president and another as its secretary. The first national society in Europe did not appear until 1888, when Sir Morell Mackenzie founded the British Laryngological Association, itself years in advance of Continental Europe.

As far as I have been able to ascertain, the first regularly organized hospital in this country for the exclusive treatment of diseases of the upper air passages was the Metropolitan Throat Hospital of New York founded by Dr. Clinton Wagner in 1873, upon a basis similar to that of the London Throat Hospital, Golden Square, made famous by Morell Mackenzie. This institution, the forerunner of the post-graduate schools of the

country, at once became the centre of instruction for those unable to go abroad, and even many of those who had studied in Europe availed themselves of Dr. Wagner's instruction.

Indeed, the year 1873 was an epoch making period in the history of laryngology in this country. Not only did Clinton Wagner found the first laryngological society in the world, and the first special hospital of its kind in America, but Philadelphia, not to be outdone as a leader of medical progress, contributed through the genius of Dr. J. Solis Cohen, the first complete treatise upon the diseases of the upper air passages as then recognized, ever published, either here or abroad, a classic production which for thorough comprehensiveness and originality, wide and well digested clinical knowledge gained by close and intelligent observation from an almost unlimited clinical experience, exhaustive acquaintance with the literature of the subject and sound, practical common sense was preeminent for many years and in the light of its time has never been surpassed. It well repays reading in these present days of therapeutic apathy.

Several times in former years efforts had been made to improve the technique of nasal and laryngeal medication. The sponge probang of Horace Green had been supplanted by the laryngeal brush and by the powder insufflator, and the post-nasal syringe had come into use. The same methods were used every where. In New York an attempt had been made as early as 1865 to devise an atomizer by which medicated sprays could be thrown into the various parts of the upper air passage, following the use of the laryngeal and tracheal spray syringe of the time of Horace Green.

In 1872, New York again came to the front, when Dr. Louis F. Sass invented and introduced his well-known spray tubes and apparatus, and thus revolutionized the practice of the intelligent world. The importance of this invention was almost at once appreciated in the United States. Abroad, it was slow to gain recognition but finally established itself in all but those places, where the prejudice against American institutions has always been impenetrable.

For the insufflation of powders the old powder blower was supplanted by an arrangement which could be worked by compressed air, the invention of Clinton Wagner.

The study of rhinology was practically begun in this country. The most important contributors to it were Harrison Allen, John N. Mackenzie, Jarvis, Bosworth, Shurly, Daly, Bryan and Roe. Long before this Catlin, in 1852, basing his observation upon nasal obstruction in the American Indian, had published his classic treatise upon "Mouth Breathing."

In 1879 Dr. Francke H. Bosworth realized that mouth breathing was productive of many ill results. He investigated the causes of nasal obstruction and found that in many instances it was due to the presence of ridges and spurs upon the nasal septum, these spurs projecting outward from the septal wall and by their volume and by the entanglement of secretions causing greater or less obstruction to the passage of air and to the free drainage of the nose. He accordingly proposed that such obstructions should be removed, and he accomplished their removal by means of an ingenious little saw which he had adapted for the purpose. Instantly a new era was opened in the treatment of nasal disease.

About the same time, another physician of New York, Dr. Wm. C. Jarvis discovered the important effect upon the nasal respiration, the ear, and even upon the nervous system, of enlargements of the soft tissues of the turbinated bodies, particularly at their posterior extremities. The instrument which he devised for the removal of these so-called posterior turbinated hypertrophies was the perfection of simplicity, adaptability, and effectiveness, and to this day stands easily at the head of its class.

To Bosworth and Jarvis is due the credit of the most important advance made in the history of the radical cure of nasal obstruction and its sequels.

But while Bosworth's idea of the necessity for the removal of nasal obstruction was fundamental, the existence of obstructing spurs was not the only condition that might cause occlusion. Malpositions of the septum itself were often the occasion of marked narrowing of the nasal chambers. While this had been recognized, and others, like Adams and Steele, had tried to devise methods by which the septum could be refractured at the displaced localities, the parts replaced in the median line and

held there by means of specially adapted plugs acting as splints until union had become completed, the methods were crude, ineffective and unsatisfactory, and were seldom practiced. Both Carl Seiler of Philadelphia and James Goodwillie of New York devised tubular splints, through which the patient could breathe.

Dr. Morris J. Asch, of New York, devised a plan of operation and of after-treatment which at once became popular and resulted in the relief of innumerable cases which before had failed of cure. It was Dr. Asch who proved the value of the principle of the re-establishment of the displaced septum to its normal vertical position, without the removal of any of its parts. The great value of his suggestion has been emphasized in these latter years by the indiscriminate radical removal of the cartilage and bony tissues of the septum by the so-called "submucous resection" process, a method valuable in itself and in some types of distorted septa indispensable, but subject to the serious objection that it deprives the nose of its septal support, for which reason it should not be employed in cases where a "setting up" operation will relieve the obstruction and retain the bony buttress of the nasal arch. One of the objects of the submucous operation is the avoidance of injury to the adjacent mucous membrane. But long before the days of its present advocates, Dr. John O. Roe of New York was teaching and practicing the submucous method, and long ago Dr. Emil Mayer* entered "a plea for the greater care of the nasal mucous membrane in intranasal operations," in which he advocated the submucous method.

Ingenious as was Bosworth's saw there were cases where its use was difficult by reason of the extent of the bony ridge or the density of its tissue, especially when the location was far back in the nasal cavity. To overcome the difficulties of these cases Dr. J. Solis-Cohen of Philadelphia and Dr. James H. Goodwillie of New York enlarged the burs of the dental engine, strengthened the power of the engine, and introduced a new method. All that remained was for Dr. H. H. Curtis of New York to substitute an instrument of his devising, a miniature trephine, and the method was made perfect and complete. While these advances were progressing in the correction of deformities of the

*N. Y. Medical Journal, June 13, 1896.

nasal septum, Dr. Roe was developing his wonderfully ingenious and original methods for the correction of deformities of the bony structures of all parts of the nose, his expertness soon placing him in a position unique in this country and in Europe. For good judgment, ingenuity and expertness he has not had an equal.

We have spoken of Horace Green as the father of laryngology. Neither time nor the occasion permit me to say what I would concerning that most honored one of our own time, Dr. Joseph O'Dwyer. A plain Irish boy, coming to New York poor, unknown, and without influence, he has left a name that none but the ablest pen would be fit to eulogize. I saw him frequently after his graduation in 1886, and at Charity Hospital, and, later was in communication with him during the period of his experiments with intubation at the New York Foundling Asylum.

It has been my privilege to meet not a few distinguished men. In not one of them were the elements of greatness more beautifully developed than in Dr. O'Dwyer. His accomplishments, however, are what concern us now.

Dr. O'Dwyer made a great discovery and invented intubation. Horace Green had discovered the fact of the tolerance of the larynx to the presence of a foreign body. O'Dwyer proved that this tolerance could be extended for indefinite periods of time. Thus again was created a new era. As the outcome of this O'Dwyer gave to the world a perfect system of intubation for the relief of acute laryngeal stenosis. Obstructions due to laryngeal spasm, to diphtheria, to edema, and to other acute conditions to which the larynx is liable were overcome, and in many cases the conditions themselves relieved, by the presence of the O'Dwyer tube. Its inventor had achieved a great exploit in the advancement of the knowledge of the physiology of the larynx and he had gained a triumphant victory over one of the most frequent and dangerous complications known in the history of disease. But with this he was not satisfied, for, realizing the possibilities of his method, his incomparable vision extended far beyond what he had already done.

Two things more, in particular, he desired to accomplish. The first was the employment of his tubes for the dilatation and per-

manent cure of chronic cicatricial stricture of the larynx and upper trachea. Many attempts had already been made to cure strictures of the interior of the larynx, by methods proposed by Morell Mackenzie and Whistler of London, Schroetter of Vienna, Solis Cohen of Philadelphia, and Gleitsmann of New York. In most cases except those of webs of the larynx, these efforts had failed, since the dilatation was not very vigorous and was only applied for a few moments at a time and at considerable intervals. O'Dwyer taught that to be effective a maximum of pressure must be exerted, and that the pressure must be continuous and persisted in for long periods of time.

Upon this theory he experimented for some time, and at the period of his death had a paper on the subject in preparation for publication. The matter was taken up afterwards by Dr. William Kelly Simpson and others, with fair success. In one of Simpson's cases a tube was retained in the larynx continuously and without renewal for a period of more than two years. In the treatment of these cases, however, difficulties sometimes arose. One of the most frequent was the ease with which a tube, at first tight fitting, could sometimes be coughed out, possibly leaving the patient to strangle. Dr. John Rogers of New York devised an arrangement by which the tube was retained in position with absolute certainty and comfort. By this means, numerous hitherto hopeless patients were treated and cured. There were some cases, however, in which the strictures were considerably below the larynx and beyond the power of the tube to relieve. Recently Dr. Henry Lowndes Lynah crowned the efforts of O'Dwyer and Rogers by a series of demonstrations showing successful methods for the relief of these difficult cases, thus finally perfecting O'Dwyer's idea.

Dr. O'Dwyer put forward and made practical another idea. In order to facilitate the expulsion of foreign bodies from the trachea he devised a special tube, of thin wall and largest possible calibre. With this tube in the larynx and the patient inverted, an explosive cough might avail to cause the expulsion of the foreign body. On several occasions Dr. O'Dwyer requested me to demonstrate the bifurcation of the trachea by means of the laryngoscope, the above mentioned tube being

in the larynx. In most instances this was easily done, and with a good illumination the entrances to the primary bronchi were brought plainly into view. O'Dwyer was enthusiastic about his invention and with truly prophetic foresight was confident that it had a great and useful future. He was working upon it at the time of his death. Had he lived a little longer, no one would have been so ready as he to appreciate the adaptability of the small electric Edison lamp to his purpose. As it is, to him beyond the slightest question belongs the credit of having originated the idea of the bronchoscope, today at the high-tide of a world-wide popularity.

Next to Horace Green, no man in laryngology has conferred richer or more abundant blessings upon suffering humanity than did O'Dwyer.

There is another member of our profession, the originality of whose genius has added lustre to it. Dr. Thomas R. French of Brooklyn has contributed many things to laryngology. Among them, three are pre-eminent. Attempts had been made by several abroad to photograph the larynx. All were failures. The nearest approach to success was gained by Mr. Lennox Browne of London, who photographed the larynx of Emil Behnke, an accomplished singer able to perform autolaryngoscopy and to hold the mirror in his throat for long periods of time. Thus, Mr. Behnke demonstrated his own larynx while Mr. Browne photographed it with an ordinary camera by long exposure while illuminated with an oxy-hydrogen light. But Behnke was the only person with whom Mr. Browne could work, and the picture of his larynx was unsatisfactory and uninstructional. Dr. French devised a special camera, designed with great ingenuity, by means of which any larynx or upper pharynx which could be demonstrated by the ordinary methods of laryngoscopy or rhinoscopy could be instantaneously photographed. Nothing of the kind had ever been dreamed of before. French at once applied his invention to the study of the larynx, not only in the department of pathology, but also with reference to the little understood physiology of the voice, and his investigations, based upon the study of the larynx in action of many famous singers, added a new and brilliant chapter to that branch of our science.



THOMAS RUSHMORE FRENCH, M.D.

His most recent gift to laryngology has been made by Dr. French within the past year, namely, tonsilloscopy, by which with simple means the tonsil can be transilluminated and the condition of its tissues accurately studied. By this invention the observer is able to estimate the importance of different degrees of congestion and to recognize and locate the presence of foreign matter, abscess or foreign bodies. Thus accuracy of diagnosis is attained and the question of the necessity for the removal of the tonsil placed upon a substantial scientific basis.

In the department of pathology no one has attained more well-deserved eminence than Dr. Jonathan Wright. His numerous original contributions are of the highest order of scientific merit, while his textbook, written in collaboration with Dr. Harmon Smith, is by far the best work of its kind of recent years.

In literature a host of able writers have been developed from Horace Green to the present time. While the lectures of Prof. Lefferts, delivered by him for many years to under graduates, were the clearest, most comprehensive, complete, instructive and splendidly illustrated of any ever given in the history of the specialty.

Manuel Garcia of Madrid, Paris and London, gave to the world the laryngoscope,—a very necessary gift, but one sure of accomplishment from the time of Horace Green's first great exploit. Czermak, of Budapest, developed it. The specialists of Paris—Fauvel, Mandl, Krishaber—and of Vienna—Turck and Schroetter—contributed much to our knowledge of diagnosis, as did Sir Morell Mackenzie of London. It was Mackenzie indeed who set aside the ancient and clumsy methods of treatment in vogue in Europe and placed the therapeutics of laryngology upon a modern scientific basis.

In addition to these, contributions of importance have come from many sources. But the essential principles, fixed, unalterable and fundamental, have been conceived, born, and developed here in our own country and in no place more abundantly than in the City of New York.



SECRETARIES 1878-1918

LETTER

GEORGE MOREWOOD LEFFERTS, M. D.

Katonah, N. Y.,

Jan. 22, 1918

Ever since I learned of the happy decision of the Council to celebrate the 40th annual meeting of the "Laryngological Association" as a "Jubilee," it has been a heartfelt wish of mine that I once more at least might be present, and in compliance with your cordial invitation, address you all. Although I may not be with you in person on this occasion, I can and shall be in spirit. My record, easily learned by the younger generation of laryngologists from your archives, will, I feel sure, prove that my devotion to the best interests of our Association has never wavered, a record, as a Founder, your first Secretary, and fourth President. I can look backward with nothing but pleasant memories of men and events for these forty years of the Association's life. From the very day of its birth, assisted by a mere handful of the then new "Throat Specialists," gathered at Buffalo in 1878 at the call of Davis of Chicago, to this day of its recognized and influential majority.

Today,—when if the names of these few original enthusiasts were called,—Solis Cohen, Johnston, Bosworth, Robinson and myself alone of the founders could and would answer

"HERE"

The 'Old Guard' it is said, may die, but it never surrenders. We alone, I believe, are on your Fellowship list, the Honorary one of today. With best wishes for a very successful "Jubilee Meeting."

Yours faithfully,

GEORGE M. LEFFERTS, M. D.

Emeritus Professor Laryngology,
College of Physicians and Surgeons,
Columbia University, New York.

MINUTES OF THE PROCEEDINGS
AT THE INAUGURAL MEETING OF THE
American Laryngological Association

HELD AT BUFFALO, JUNE 3D, 1878

INAUGURAL MEETING

In response to an invitation issued on May 10, 1878, to the following gentlemen: Drs. J. SOLIS COHEN, CARL SEILER, *Philadelphia*; CLINTON WAGNER, GEORGE MOREWOOD LEFFERTS, LOUIS ELSBERG, BEVERLEY ROBINSON, *New York*; J. H. HARTMAN, FRANK DONALDSON, SAMUEL JOHNSTON, *Baltimore*; FREDERIC IRVING KNIGHT, EPHRAIM CUTTER, *Boston*; ERNEST L. SHURLY, *Detroit*; WM. PORTER, WILLIAM C. GLASGOW, THOS. F. RUMBOLD, *St. Louis*; HOSMER A. JOHNSON, M. MONNHEIMER, E. FLETCHER INGALS, FRANK H. DAVIS, *Chicago*, a representative number came together at Buffalo, June 3, 1878, for the purpose of forming a national association for the advancement of the special department of surgery in which they were chiefly interested.

The meeting was called to order at 10:30 a. m., by Dr. George M. Lefferts, of New York, and at once organized by the election of Dr. F. H. Davis, of Chicago, as chairman, and Dr. Lefferts as clerk.

DR. DAVIS made the following remarks on taking the chair.

GENTLEMEN. I thank you for the honor of being called to preside at this meeting. The purpose for which we are gathered together requires no explanation. The call to which you have responded was issued in accordance with the individually expressed desire of the gentlemen present and of others who are unavoidably detained from being with us, the object being the formation of a National Association of Specialists in the Department of Throat Diseases. I presume the first move necessary in the perfecting of a permanent organization is the appointment of a committee on constitution and by-laws.

At the conclusion of Dr. DAVIS' remarks Dr. LEFFERTS being called upon, spoke as follows:

MR. CHAIRMAN AND GENTLEMEN :

When I in common with those of you who are assembled here today, received some weeks since a letter requesting my views regarding the desirability of organizing into a National Association, the workers in that special field of surgery to which we belong, I confess to have been in considerable doubt as to what answer should be given. That the day would come when such an Association would be desirable I did not question. I was aware likewise, of the decided advance made and of the rapidity with which our specialty was assuming in this country, a prominent and not undeserved position among the older, more firmly established, and more fully recognized specialties. I knew how many earnest workers, teachers, and writers it had enrolled in its ranks in various parts of the land, and how due to their influence, words, deeds, and examples, a knowledge of the use of the laryngoscope—of the art of laryngoscopy—its practical worth, the importance and interest of its results and its value as a diagnostic aid and therapeutic means had become more and more wide spread, until today it is almost universally resorted to in time of need, by many others aside from specialists. Still our specialty as a specialty, and compared with the others, was but a comparatively recent one, and I questioned whether sufficient time had been given it in which to demonstrate to the *whole* profession that what we, who are specially interested in it, claimed for it, was true. After the lapse of a few more years would our numbers not be greater, would we not perhaps be in a better position to ask special recognition or to demand an honorable place among the special associations. In short I deprecated premature action. Such, Mr. Chairman, were my views, crude ones it is true, and but imperfectly digested, for I acknowledged that I had not given the subject more than general—certainly not serious, thought. But whatever misgivings I may have had, are today swept away as I stand here and see around me so many representative and well-known members of our guild; and with them for co-operators I do not fear for the result, but can predict for our projected Association a most successful future. And when, moreover, our chairman informs me that he has received many warm letters of endorsement from those unable for various reasons to be with us today, but who sympathize with us in the movement and encourage us to proceed, I gladly concur in the decision of the majority, and am constrained to believe with you that the time has come for the organization of a National Association of Laryngologists. And may I not here express the hope that our young society will exercise a broad influence in exciting investigation, stimulating careful inquiry and promoting skillful observation, thus con-

stituting itself an important agent in contributing to the progress of science and our national reputation in this branch of our profession.

As is probably well known to all who are assembled here to-day, a gentleman in Chicago who felt that the speciality in which he, as well as we, were interested could only gain in importance and interest, and its members derive mutual improvement and increase of cordial relations by collecting them together under the form of a National Association, issued a circular letter after much preliminary correspondence with those who had by their work and writings acquired a reputation as laryngologists, inviting a certain number of gentlemen, representative of most of the large cities of the union, to meet here today and constitute themselves a national body. In selecting these names no invidious discrimination was intended and none made. Unquestionably many whose work entitles them to place among us, are not here and were not invited, not because we do not desire to have them, but simply because want of time, a lack of personal acquaintance and too great a distance prevented in very many instances, communication with them, and I wish to state distinctly at this point, that we desire their cooperation in our work. That we regard all workers in our specialty as desirable additions to our Association, and earnestly hope that they will avail themselves of the invitation here extended to them, of becoming members of it. Such then is a very brief sketch of the steps that have been already taken in the matter which interests us today, and we are now prepared, as our chairman has said, to take the necessary measures to effect a permanent organization. But before we proceed to do so there are two matters which I desire to allude to and which may perhaps be appropriately mentioned at this time: the first concerns the necessary qualification for membership in the Association, and the second, dependent upon the first, has reference to its name. It has been proposed, I believe, to include, aside from laryngologists, all those of our profession who pay more or less attention to the study of diseases of the chest or make that class of affection a prominent part of their practice. This would include a very large proportion of the profession. Now with the greatest respect for the general practitioner, and acknowledging the deservedly high standing of some of the names that have been mentioned, I do not consider them proper candidates. They all perhaps, use the laryngoscope but they are not laryngologists in the proper sense of the term, and as far as I know make no pretension to the title. Nor have they by their work or writings demonstrated to the medical world that they have given any more than general atten-

tion to the subject, certainly no more than every well-informed practitioner feels it his duty to give. But you answer me, diseases of the chest are inseparably connected with diseases of the upper air passages. This I admit and answer: so are diseases of the ear, so are many constitutional diseases, so is much that comes under the head of general surgery, and we are in duty bound as intelligent physicians to recognize them all when met with. Whether we are called upon or should treat them is another matter, which does not concern us at the moment. But are we to include in this account the aurists, general surgeons and general physicians? In short, gentlemen, the specialist in our department, as in all others, in order to be a good specialist must likewise be a good general practitioner. That is all important, but that is not all, he must also, aside from the knowledge which he possesses in regard to the treatment of diseases in general, and which he shares in common with the general practitioner, be expert in the use of certain special instruments (and here it seems to me that the line of demarkation between specialism and general practice, may perhaps be drawn), an expertness which has only been acquired by long practice, and possess a special knowledge in the diagnosis and treatment of a special class of affections, which from their very nature and location requiring special means for diagnosis, are by general consent transferred to the specialist for opinion and treatment.

We have met to form a *Laryngological* Association. Let it then be composed of laryngologists, men whose qualifications I have tried to sketch out, men who by their special course of study, by their work, by their contributions to literature, by their dexterity in the use of certain special instrumental aids to diagnosis as well as their special experience in diseases of the upper air passages, are justly entitled, not only in name, but in deed, to the honor of membership.

If you grant the truth of what I say, the selection of a proper name for our organization need not occupy us but a moment. The National *Laryngological* Association expresses most clearly its character.

In conclusion, Mr. Chairman, I may re-echo the sentiment, expressed by a distinguished colleague upon a similar occasion to that which has called us together, and it is this, that the spirit in which we are about to create this Society, is neither sporadic nor endemic in its character. It is a spirit shared by the entire profession of our day. It is that spirit which demonstrates itself by bringing together men who are thinking in the same direction, and laboring in a common field. It is that spirit which calls together the ophthalmologists, the aurists,

the gynecologists, the neurologists, and the dermatologists. Each department, like separate guilds, engaged in the erection of a great structure, carving and shaping and polishing the stone which is to constitute its contribution to the majestic edifice of medicine.

Dr. LEFFERTS then moved that a committee of three be appointed by the chair to draw up and present a draft of a constitution and by-laws.

Motion seconded and passed.

Dr. ELSBERG moved that a recess of an hour be taken, at the expiration of which the committee would report, and that the Chairman himself serve upon said committee.

Seconded and passed.

The Chair appointed Dr. E. L. SHURLY, of Detroit, and Dr. G. M. LEFFERTS, of New York, as members of the committee.

Upon motion of Dr. LEFFERTS, Dr. F. H. BOSWORTH, of New York, was appointed temporary Secretary to call the roll, during the absence of the committee; this was responded to by ten gentlemen, as follows: Dr. CLINTON WAGNER, GEO. M. LEFFERTS, L. ELSBERG, F. H. BOSWORTH, of *New York*, J. H. HARTMAN, SAM'L. JOHNSTON, *Baltimore*; E. L. SHURLY, *Detroit*; WM. C. GLASGOW, THOS. F. RUMBOLD, *St. Louis*; F. H. DAVIS, *Chicago*.

Meeting then adjourned, to reassemble at 12 m.

At the appointed hour, a constitution and by-laws for the association were reported by the committee, which, after discussion of the clauses *seriatim*, were adopted with only a few modifications.

On motion of Dr. LEFFERTS, a committee of three was then appointed by the chair to nominate a list of officers for the first year, in accordance with the Constitution.

It consisted of Drs. ELSBERG, of New York, THOS. F. RUMBOLD, of St. Louis, and J. H. HARTMAN, of Baltimore.

The morning session was then adjourned until 3:30 p. m.

At that hour, the following list of officers was reported by the committee through their chairman, Dr. RUMBOLD, and was unanimously elected by ballot.

President, Dr. LOUIS ELSBERG, of New York.

Vice-President, Dr. F. H. DAVIS, of Chicago.

Secretary and Treasurer, Dr. GEORGE M. LEFFERTS, of New York.

Council.—To serve one year, Dr. CLINTON WAGNER, of New York.

To serve two years, Dr. WM. C. GLASGOW, of St. Louis.

To serve three years, Dr. E. L. SHURLY, of Detroit.

To serve four years, Dr. J. H. HARTMAN,* of Baltimore.

The president-elect was immediately conducted to the chair by the temporary chairman, Dr. DAVIS, and after calling the meeting to order, made the following remarks:

GENTLEMEN:—You have been told by the secretary of the nominating committee of the hesitancy and embarrassment I felt to allow myself to be proposed for the presidency, on account of my being a member of that committee; but I do not want you to think, on the other hand, that I felt indifferent regarding the nomination. I do not intend to pretend that your electing me has not given me great pleasure and satisfaction.

When, twenty years ago, I took up the then newly-born specialty of medical practice, I resolved to devote to it my life, to devote to it energetically and perseveringly all the faculties that I possessed. The road has been a rugged one, and few of you can realize today the up-hill work, the obstacles and obloquy encountered. That I have not accomplished more than I have, I regret. If another with my opportunities could have done better, neither my desire nor my exertion, but ability is at fault. In the pursuit of our specialty, I have found much happiness, reward for all endeavor, satisfaction from consciousness of good done, gratitude from patients, recognition from the profession, and altogether greater success, perhaps, than I have deserved. I fear that already the specialty has given me more honor than I have been able to confer upon the specialty. And now, when a national association of laryngologists is formed, to be elected its first president is a greater gratification than any other that I can at this moment think of. I would rather hold this office than the presidency of the American Medical Association. Indeed, I would rather be President of the American Laryngological Association than hold the political office which I look upon as a higher position than that of any monarch or potentate on earth, namely, that of President of the United States.

*NOTE.—In explanation of the unusual course of the committee in nominating one of their own number to serve as president, it is but just to state in its behalf that the majority were strongly of the opinion that their nominee's claims to the position were so unquestionable and so generally conceded by all laryngologists that they would be but yielding to the unexpressed wish of the members present at the meeting by making the nomination that they did.

Thus appreciating the office, let me express to you who have called me to it, in few and simple words but with all the fervor of which I am capable, my heartfelt thanks! Its duties I promise to perform as well as I can. I shall endeavor to preside over your deliberations impartially and courteously, and my wishes for the success and welfare of the American Laryngological Association are such as to make me hope that though I do the best in my power, I shall be the worst president the Association will ever have!

At the conclusion of the President's remarks, each of the officers elect were severally and formally notified of their election by the President, and each signified his acceptance of the office to which he had been elected.

Dr. DAVIS moved that the names of those gentlemen which appear in the letter of invitation issued previously to the present meeting, and who for various reasons were unable to be present, but had signified by letter their desire to be and promised their co-operation, be added to the list of original Fellows. Motion seconded.

After a long discussion, participated in by the majority of the Fellows present, and during which letters of endorsement and encouragement were read from the following gentlemen: Drs. BEVERLEY ROBINSON, of New York; WM. PORTER, St. Louis; F. H. DONALDSON, Baltimore; E. CUTTER, Cambridge; E. F. INGALS, Chicago, and F. I. KNIGHT, Boston, the motion was put and lost.

Dr. DAVIS moved that the list of names be taken up and each considered singly.

Seconded and carried.

The following names were then added to the list of original Fellows: Drs. J. SOLIS COHEN, of Philadelphia; BEVERLEY ROBINSON, of New York; RUFUS P. LINCOLN, of New York; F. I. KNIGHT, of Boston; WM. PORTER, of St. Louis; H. A. JOHNSON, E. F. INGALS, of Chicago. And the following names were referred to the Council for their action: Drs. CARL SEILER, of Philadelphia; F. DONALDSON, of Baltimore; E. CUTTER, of Cambridge, Mass., M. MONNHEIMER, of Chicago.

The President then called upon the gentlemen present to suggest to the Council the names of such members of the pro-

fession as were known to them to be eligible for election to Fellowship, and with whom it was desirable to correspond.

Dr. LEFFERTS moved "that this Association hold its first annual meeting in the city of New York, commencing on the second Tuesday in June, 1879, at 10 a. m."

Seconded, and after some discussion carried.

Dr. WAGNER moved that the thanks of the Association be tendered to Dr. F. H. DAVIS, of Chicago, for the active and disinterested part that he had taken in calling together the Fellows present, and that the success of the meeting was to be regarded as due in great part to his energy and perseverance.

Seconded and carried.

Dr. GLASGOW moved that the thanks of the Association be tendered to the proprietors of the Tiff House for their courteous offer of the room in which the deliberations of the Association had been held.

Seconded and carried.

Dr. LEFFERTS gave notice that at the annual meeting of the Association in June, 1879, he would move to amend section III. of the constitution in part so as to read, "The Fellows of this Association shall consist of Fellows, Corresponding Fellows, and Honorary Fellows.

"The Fellows shall not exceed 50 in number.

"The Corresponding Fellows shall not exceed 30 in number.

"The Honorary Fellows shall not exceed 5 American and 15 foreign."

At 5:30 p. m., the Association adjourned.

GEORGE M. LEFFERTS,
Secretary.

MEETING OF THE COUNCIL

At 7 o'clock in the evening, a meeting of the Council was called, at which were present Drs. ELSBERG, DAVIS, LEFFERTS, WAGNER, GLASGOW, SHURLY and HARTMAN.

During the following hour, a free discussion of the measures best calculated to promote the welfare of the Association was participated in by all of the gentlemen present.

On motion of the Secretary, he was authorized to expend such

part of the funds of the Association in his hands as was necessary to print and distribute copies of the constitution and by-laws, as well as the report of the proceedings at the Inaugural Meeting.

A committee, consisting of Drs. ELSBERG and WAGNER with the Secretary, was appointed to prepare the programme for the first annual meeting.

Adjourned at 8 p. m.

GEORGE M. LEFFERTS,
Clerk.

OFFICERS FOR 1878
(ELECTED JUNE 3RD, 1878)

President

LOUIS ELSBERG
New York

Vice-President

FRANK H. DAVIS
Chicago

Secretary and Treasurer

GEORGE MOREWOOD LEFFERTS
New York

Other Members of the Council

CLINTON WAGNER
New York

WILLIAM C. GLASGOW
St. Louis

ERNEST L. SHURLY
Detroit

J. H. HARTMAN
Baltimore

American Laryngological Association

CONSTITUTION

I.

This Association shall be known as the "American Laryngological Association."

II.

The object of this Association shall be the promotion of knowledge in all that relates to Diseases of the Upper Air Passages.

III.

FELLOWS

The Fellows of this Association shall consist of Fellows and Honorary Fellows.

Candidates shall be proposed to the Council one month before the first day of meeting, by two Fellows, and on recommendation of the Council, shall be balloted for at the Annual Meeting, a list of the names having been sent to every Fellow, with the notification of the meeting.

A two-thirds affirmative vote of all the Fellows present shall constitute an election.

No one shall be eligible for active Fellowship, until he shall have submitted to the Council a paper on some subject connected with Laryngological Science.

IV.

HONORARY FELLOWS

The power of nominating Honorary Fellows shall be vested in the Council. The election shall take place in the same manner as that of ordinary Fellows. They shall enjoy all the privileges of other Fellows, but shall not be required to pay any fee, or be allowed to hold any office, or cast any vote.

V.

OFFICERS

The Officers of the Association shall be a President, a Vice-

President, and a Secretary and Treasurer, who with four other Fellows, shall constitute the Council of the Association.

They shall be nominated by a Committee of three Fellows, appointed by the President on the first day of the Annual Meeting. The Nominating Committee shall report on the following day, and the election take place by ballot, on the third day of the Meeting.

A majority of the votes cast shall constitute an election.

The President, Vice-President, Secretary and Treasurer shall enter upon their duties immediately before the adjournment of the meeting at which they are elected, and shall hold office for one year.

The members of the Council other than the President, Vice-President, Secretary and Treasurer, shall hold office for four years; except such of them as are elected at the first meeting; the first-named of whom shall retire at the end of one year; the second-named at the end of two years; the third at the end of three years, and the fourth at the end of four years, their places to be supplied by the election of one member at each Annual Meeting:

Provided: That the Officers of the first Meeting shall be elected immediately after the adoption of this Constitution, and these By-Laws, at the Inaugural Meeting.

Any vacancy occurring between the Annual Meetings shall be filled temporarily by the action of the Council.

All Officers shall be eligible for re-election.

VI.

ANNUAL MEETING

The Annual Meeting of the Association shall be held at such time and place as shall be designated by the Association at the previous meeting. It shall continue for three days, unless otherwise previously ordered by the Council.

The first Meeting shall, however, be held in New York, commencing on the second Tuesday in June, 1879.

VII.

AMENDMENTS

This Constitution may be amended by a two-thirds vote of all

the Fellows present, at an Annual Meeting, provided, that notice of the proposed amendment has been given in writing at the Annual Meeting next preceding, and the same been printed in the notification of the meeting at which the vote is to be taken.

BY-LAWS

I.

PRESIDENT AND VICE-PRESIDENT

The President and Vice-President shall discharge the duties belonging to their respective offices; the President shall be *ex-officio* Chairman of the Council.

II.

SECRETARY AND TREASURER

As Secretary, he shall attend and keep a record of all the meetings of the Association, and of the Council, of which latter he shall be *ex-officio* Clerk.

At each Annual Meeting he shall announce the names of all who have ceased to be Fellows, since the last report.

He shall superintend the publication of the transactions, under the direction of the Council.

He shall notify candidates of their election to Fellowship.

He shall send notifications of the Annual Meetings, one month previous to the meeting, and of the meetings of the Council.

At the Annual Meeting of the Association, he shall read the minutes of the previous meeting, and of all the Meetings of the Council that have been held during the current year.

As Treasurer, he shall receive all moneys due, and pay all debts.

He shall render an account thereof at the Annual Meeting, where an Auditing Committee shall be appointed to report.

III.

COUNCIL

The Council shall meet as often as the interests of the Association may require.

Four members shall constitute a quorum.

It shall have the management of the affairs of the Association, subject to the action of the Association at its Annual Meetings.

It shall consider the claims of the candidates recommended to it for admission to Fellowship, and shall have the sole power of making the nominations.

It shall arrange the order for the Scientific work at the Annual Meetings.

It shall not have the power to make the Association liable for any debts exceeding in total, one hundred dollars, in the course of any one year, unless specially authorized by a vote of the Association.

It shall have the entire control of the publications of the Association, with the power to reject such papers or discussions as it deems best.

The President or any two members may call a meeting, notice of which shall be transmitted to every member, two weeks previous to the meeting.

The Council shall determine questions by vote, or—if demanded—by ballot, the President having a casting vote.

The Council shall constitute a Board of Trial for all offences against the Constitution and By-Laws, or for conduct unbecoming an honorable physician and shall have the sole power of moving the expulsion of any Fellow.

IV.

ORDER OF BUSINESS

The order of business at the Annual Meetings of the Association shall be as follows:

I. General meeting at 10 a. m. each day.

1. Report of Committees.
2. Reading and discussion of Papers.

II. The Business Meeting shall be held during the first hour of the second morning session, at which only Fellows of the Association shall be present. The Secretary's Records shall then be read; the Treasurer's account be submitted; the Reports of Committees on other than scientific subjects be received; and all miscellaneous business be transacted.

V.

PAPERS, ETC.

The titles of all papers to be read at any Annual Meeting shall be forwarded to the Secretary, not later than one month before the first day of the meeting.

No paper shall be read before the Association, which has already been printed or been read before another body.

All papers that may be read before the Association, and accepted for publication, shall become the property of the Association, and their publication shall be under control of the Council.

VI.

QUORUM

A Quorum for business purposes shall be ten Fellows.

VII.

ASSESSMENT

Every Fellow shall pay in advance the sum of five dollars annually.

Any Fellow whose subscription shall be more than nine months in arrears, shall be reminded of the fact by the Treasurer, in writing; in event of payment not being then made, he may, on vote of the Council, be dropped from the Association.

VIII.

AMENDMENTS

Any of these By-Laws may be amended, repealed or suspended by a two-thirds vote of the Fellows present, at any meeting.

FELLOWS

FOUNDERS

BOSWORTH, FRANCKE H., M.D. Lecturer on Diseases of the Throat, Bellevue Hospital Medical College. Surgeon to the Out-Door Department of Bellevue Hospital, Throat Department. 26 West 46th street, New York.

COHEN, J. SOLIS, M.D. Lecturer on Laryngoscopy and Dis-

eases of the Throat and Chest, in Jefferson Medical College. Physician to the Jefferson Medical College Hospital, and to the German Hospital, Philadelphia. 1431 Walnut Street, Philadelphia, Pa.

DAVIS, FRANK H., M.D. Surgeon to the Chicago Medical College Dispensary, Throat Department. *Vice-President*, 1878. 65 East Randolph Street, Chicago.

ELSBERG, LOUIS, M.D. Professor of Laryngology and Diseases of the Throat, Medical Department of the University of New York. Physician to the Charity Hospital, New York. *President*, 1878. 614 Fifth Avenue, New York.

GLASGOW, WILLIAM C., M.D. Lecturer on Laryngology, in the St. Louis Medical College. Surgeon for Diseases of the Chest, St. Louis Mullanphy Hospital. *Council*, 1878. 2709 Washington Avenue, St. Louis, Mo.

HARTMAN, J. H., M.D. *Council*, 1878. 67 North Charles Street, Baltimore, Md.

INGALS, E. F., M.D. Lecturer on Diseases of the Chest and Instructor in Laryngoscopy, Rush Medical College Surgeon to the Central Free Dispensary (Throat and Chest.) 188 South Clark Street, Chicago.

JOHNSON, H. A., M.D. Professor of the Principles and Practice of Medicine with Clinical Medicine, Chicago Medical College. Consulting Surgeon to the Illinois Eye and Ear Infirmary. Consulting Physician to the Illinois Hospital for Women. 4 Sixteenth Street, Chicago.

JOHNSTON, SAMUEL, M.D. Physician to the Baltimore Special Dispensary, Throat Department. Consulting Physician to the Union Protestant Infirmary, Baltimore. 80 West Monument Street, Baltimore.

KNIGHT, FREDERICK I., M.D. Instructor in Auscultation, Percussion and Laryngoscopy in Harvard University. Physician to Out-Patient Department, Diseases of the Throat, Massachusetts General Hospital. 113 Boylson Street, Boston, Mass.

LEFFERTS, GEORGE M., M.D. Clinical Professor of Laryngoscopy and Diseases of the Throat, College of Physicians and Surgeons, New York. Laryngoscopic Surgeon to St. Luke's Hospital. Surgeon to the New York Eye and Ear Infirmary,

Throat Department. Surgeon to the Demilt Dispensary, Class for Throat Diseases. *Secretary and Treasurer*, 1878. 6 West 33d Street, New York.

LINCOLN, RUFUS P., M.D. 22 West 31st Street, New York.

PORTER, WILLIAM, M.D. Physician to St. Luke's Hospital, St. Louis, Throat Department. Washington Avenue Hotel, St. Louis.

ROBINSON, BEVERLEY, M.D. Lecturer on Clinical Medicine at the Bellevue Hospital Medical College, New York. Physician to the Charity Hospital. Surgeon to the Manhattan Eye and Ear Hospital (Throat Department.) Physician to the Out-Patient Department, New York Hospital (Lungs and Throat.) 37 West 35th Street, N. Y.

RUMBOLD, THOMAS F., M.D. 1225 Washington Avenue, St. Louis.

SHURLY, E. L., M.D. Lecturer on Diseases of the Throat and Lungs, Detroit Medical College. Physician to St. Luke's Hospital, Detroit. *Council*, 1878. 544 Jefferson Avenue, Detroit.

WAGNER, CLINTON, M.D. Surgeon-in-Chief, Metropolitan Throat Hospital, New York. *Council*, 1878. 53 West 35th Street, New York.

EPHRAIM FLETCHER INGALS



Feb 1917. *E. Fletcher Ingels* M.D.

Obituary

"Nor deem that acts heroic wait on chance
Or easy were as in a boy's romance,
The man's whole life preludes the single
 deed
That shall decide if his inheritance
Be with the sifted few of matchless breed,
Our nation's sap and sustenance,
Or with the unmotivated herd that only
 sleep and feed."

—LOWELL.

EPHRAIM FLETCHER INGALS, A.M. M.D.

Dr. E. FLETCHER INGALS, for many months a sufferer from angina pectoris, died at his home, in Chicago, April 30th, 1918.

Possessing a somewhat wide acquaintance with the laryngologists of the world, it has seemed to me that among them Dr. Ingals occupied a position of peculiar eminence. For accurate knowledge, calm reasoning, and wise judgment, he had no superior. Indeed, with rare exceptions, there was no one who equalled him in professional ability, versatility, and breadth of view. Strong for the right, fearless in expressing it, and of indomitable patience and industry, the success of his life, measured by what he accomplished, is an inspiring story. To his influence, far beyond that of any other is due the present advanced position of laryngology in the northern middle section of the United States, while his contributions to our specialty have permanently enriched it.

Such characters as his are not developed through any hazard of chance. Almost invariably like produces like. Thus, we are not surprised to know that Dr. Ingals came of that fine ancestry which has made New England the centre of influences which have for generations irradiated the intellectual life of our entire land. Dr. Ingals himself was born at Lee Center, Lee County, Ill., September 29, 1848. He was educated at the Rock River Seminary, Mount Morris, Ill., and graduated in medicine from Rush Medical College in 1871.

Three years before, he had entered upon the study of medicine under the admirable preceptorship of his uncle, Ephraim Ingals, a man prominent among the physicians of his time as a medical educator of ability. Thus at the very threshold of his career he was intimately associated with a most valuable friend and guide and surrounded by such inspiring instructors as those who composed the faculty of Rush at that time. It is not strange therefore that he was stimulated to a **high** degree of effort, that he should have been able to **win** the regard of professors who were the terror of poor students, and that he graduated with a well-grounded knowledge of his art.

Serving the usual term at Cook County Hospital, the experience of his internship in that great municipal institution, both medical and surgical, was the best possible preparation for his subsequent career. No course could be better calculated to counteract the narrowing tendencies of any specialty than the wide and comprehensive vista thus afforded of the whole field of human character and suffering. Nor was he content even after this rich experience to enter at once upon what might have seemed a restricted line of work. As a teacher his first appointment in Rush Medical College was to the Department of Materia Medica and Therapeutics. From this he advanced to the position of Instructor in Physical Diagnosis and Diseases of the Chest. From the beginning, however, he had devoted himself with special zeal to the study and practice of diseases of the throat, and twelve years after graduation was appointed to the Chair of Laryngology.

Meanwhile, his life had been one of great industry, as shown by the number and character of his published works. He had made himself known in the world of scientific medicine in no uncertain terms, and had already laid the foundation for a reputation soon to become international. At home, he had quickly placed himself in that select group of early laryngologists which represented the highest ability of the profession.

Dr. Ingals was one of the charter members of The American Laryngological Association, and although probably the

youngest of its originators his marked ability soon placed him in a position of commanding influence. In the eighth year of the existence of the Association he attained the honor of an election to its presidency, following men of the highest distinction and far more advanced in age than himself.

Dr. Ingals' presidential address on this occasion contained an eloquent disclosure of the high principles upon which his own professional activities were founded and of the enthusiasm and respect of his attitude toward the department of his choice. Nothing could give a truer or better idea of the man than the sentiments therein expressed, sentiments eminently worthy of perpetuation. Let them be repeated in his very words:

"Laryngology presents no opportunity for the superficial worker nor for him who seeks power in the exercise of his daily duties. Our science admits of few grand occasions. No applause of the hospital amphitheatre can aid its votary and no glamour of the surroundings of multiple assistants and invited guests can encourage and stimulate him! He must delve alone, or, at least he must remain content to demonstrate to a few in turn the morbid appearances he is called upon to treat, and to carry on his endeavors to relieve by continuous, patient, unobtrusive effort. Yet he can claim some advantage over his brethren in the clinical field. His hours of leisure and of work are more systematically arranged; his energies are of necessity restricted to the large communities where access to libraries and to well-equipped laboratories insures chances for study and research. Those who are desirous of indulging in scholarly diversions, those whose zest for investigation must be ever compromised with the necessity of pursuing a practical subject for support, will find in laryngology an opportunity equal, if not superior, to that afforded to the professed scientist.

"Let me at this place put in a plea for the employment of leisure for science. I hear without sympathy the expression of opinion that a paper is good in the degree that it is practical. Can we not with propriety look forward to the time when every Fellow will be identified with papers based upon results

gained by actual experiments or upon morphological data, as well as those secured from the operating chair? We will be raised in our own esteem in the degree that we add a little more science to our art.

"When we consider that laryngology includes in its scope the anatomy, the physiology, the pathology of the organs of speech and related parts, we have a wide area from which to select themes for study. The time doubtless will come when any important addition to these subjects by another than a practical laryngologist will be accepted as a reproach. The field should be occupied by its own men. To our pride it may be said that this to a great degree is already the case.

"The work done by the physician becomes the property of all his brethren the moment it is recorded. No secret formulae are tolerated; all is fair, generous and above board. While this is the case, are we as careful as we should be that proper credit is given to all? Is it not too often palpable that the path the pioneer has blazed becomes in time converted into the crowded highway while the pioneer himself is forgotten? It is well to recall the traditions of the scientific guild in this regard,—namely, to insist on a rigid application of the law of priority of discovery, to demand that improvements should be identified with the name of the investigator, and that the value of an individual's labor remain unchallenged until controverted by equally well accredited work "

Such were the principles, the ideals, upon which Dr. Ingals based his career. How nobly he lived up to them is proved by the unvarying history of his long and fruitful life, a life replete from beginning to end with earnest, intelligent effort for the welfare of his fellow man. The story of his early struggles in behalf of the Rush Medical College, as related by himself, clearly places before us the dominant traits of his character. Speaking of his early relationship with Rush as a junior member of the Faculty, he says: "I resolved to do all that in me lay to make it one of the foremost medical institutions in this country. I had no money and no acquaintances, and I realized that success in this undertaking depended upon my "making good" in the profession; therefore my every effort was made

with this ulterior object in view. Social life was ignored. I worked sixteen or eighteen hours a day, and this continued for many years. As a result of these labors many professional honors came to me but I cared nothing for them except as they were an evidence of the good will of the profession and the esteem of my friends, and that they enabled me better to accomplish my purpose for the advancement of medical education."

Dr. Ingals' work may be classified under five heads, the Practical, the Literary, the Inventive, the Executive, the Educational. The practical work was of two distinct classes; the private work done by him and under his immediate supervision in his office and among his personal clientele, and the institutional service at the various hospitals and dispensaries with which he was connected. For many years his private practice was the largest and best of its kind. Quick to secure the confidence of his patients, few there were who once knowing him ever cared to give him up. Distinguished as a consultant, his aid was sought far and wide of his own territory. While he may have lacked the flourish and self-assertiveness of many less deserving practitioners, his earnest manner and quiet dignity soon led to an appreciation of his strong, sympathetic desire to remove the patient from danger and relieve his sufferings. Many a time has been given him the high compliment so often paid Sir Morell Mackenzie,—“He gave me more *relief* than any physician I have ever consulted.” And this is not strange, for he was a most experienced and careful diagnostician, an excellent therapist, a skillful technician, a wise surgeon, and a man whose care of his patient was eminently painstaking and conscientious.

In addition to a private practice that would have engrossed the time and energy of any ordinary man, Dr. Ingals devoted himself unsparingly to hospital and dispensary work, thus gaining opportunities for wide clinical observation and study. At various times in his career he was connected with the Cook County Hospital, the Presbyterian Hospital, the Hospital of St. Anthony of Padua, the Central Free Dispensary, and the Chicago Polyclinic. The help and comfort which he brought to those upon whom he expended his matchless kindness and skill can readily be understood.

The scientific value of Dr. Ingals' work is abundantly shown in his published articles. By no means the least important and interesting of his contributions to medicine are his published monographs and books. The monographs number more than 150. Thirty of these were read at meetings of the American Laryngological Association and are published in its Transactions, while over 125 appear in various medical periodicals. The subjects of the articles are of the most varied character and cover practically the whole field of the diseases of the upper air passages.

Literary contributions began to appear from him in 1877, when he published several articles relating to diseases of the chest. In that year appeared his first article upon the larynx, a region which beyond all others never failed to interest him. Nearly 27 per cent of the sum total of the ten groups of subjects upon which he wrote relate to laryngeal disease. Twenty years ago, in 1898, Dr. Ingals published a paper entitled, "A Case of Foreign Body in the Larynx and a Modification of Kirstein's Autosecopy." Following this, six articles from him have appeared upon the subject of bronchoscopy, the last in 1915. A pioneer in this department, he continued one of its leading exponents, with few rivals in technical skill.

In 1881, he published the first edition of his treatise on "Diseases of the Chest, Throat, and Nasal Cavities," following this by three new editions, the last of which appeared in 1900. This work was widely complimented by the reviewers and attained an extensive circulation. Clear, comprehensive, accurate and complete, it is a most instructive and reliable guide.

In 1901 he edited the Department of Diseases of the Throat and Nose in the American Year Book of Medicine and Surgery; also, in 1901, the Department of Diseases of the Nose in Burnett's System. In 1902 he published a Treatise on Diseases of the Nose; in 1912, the "Life and Work of Dr. Brainard," founder of Rush Medical College; and in 1917, his admirable "History of Rush Medical College." All of this work is of a high order of literary and scientific merit. His remarkable article upon Angina Pectoris, published but a few weeks before his death, is a thrilling example of his superb self-sacrifice in the effort to re-

lieve the suffering of others. Even the earliest of his papers give evidence of good general training, excellent ability, and great promise for the future. It may be said in general that his writings were genuine contributions to medical science, not compiled from the works of others, but the outcome of wide and well-digested personal experience, thoroughly prepared and presented with admirable clearness.

Dr. Ingals' Inventive genius was of a high order. A master of intubation, he was among the first to take up the study and application of bronchoscopy, in which he speedily attained unusual skill. Among his achievements was his success in the treatment of naso-pharyngeal fibromata. For the radical treatment of these dangerous growths he suggested injections of lactic acid, and to aid their removal by means of the galvanocaustic snare he devised an ingenious and effective forceps by means of which the adjustment of the loop of the snare to the base of the growth was greatly facilitated. His method for the intra-nasal drainage of the frontal sinus is classic and should rescue many a patient from the radical surgery of the over-enthusiastic operator.

Dr. Ingals' interest in the dissemination of scientific knowledge through the medium of medical societies was unlimited. As an executive officer in such bodies he was soon recognized as invaluable and the highest offices came to him unsought. As a contributor to their scientific proceedings his wide knowledge and quick and accurate reasoning made him the trusted balance of debate. An ardent believer in the educational value of the American Medical Association, he was a trustee of its Journal and respectively Secretary and President of its Section on Laryngology; President of the Illinois State Medical Society, and Chairman of its Section on Laryngology; Chairman of the same section at the Pan-American Medical Congress; President of the Chicago Laryngological and Otological Society; and member of the Chicago Pathological Society, the Tri-State Medical Society, the Chicago Society of Medical History, the Chicago Institute of Medicine, The American Rhinological, Laryngological, and Otological Society, and of many other such institutions.

As in all else that he undertook, he gave to his executive work the benefit of his whole-hearted interest, guided by broad experience and wise, temperate judgment. Nor were his activities confined to his own country. He attended practically all of the International Medical Congresses abroad. Indeed, my own delightful acquaintance with him, begun in the American Laryngological Association, ripened at that never-to-be-forgotten Eighth International Congress held in Copenhagen in 1884, and which, in company with French, Hooper, John Mackenzie, Roe, Daly and Bosworth, we all so greatly enjoyed. Again I met him in Berlin in 1890, and at Budapest in 1911. Upon all of these occasions it was beautiful to see the respect in which he was personally held and the interest excited by his scientific contributions. That he was a charter member of the American Laryngological Association and one of its early Presidents, has already been mentioned. He was an honorary member of the Laryngological Society of Budapest.

The chief aim of Dr. Ingals' life, as he himself often said, was the advancement of medical education. Few have ever lived to see the realization of their highest ideals crowned with such splendid success. Always deeply interested in Rush Medical College his ambition nevertheless aimed at the uplift of medical education in general, under the name of any institution of honest, elevating purpose. In 1886, following his appointment to the Chair of Laryngology in Rush, he was appointed to the corresponding position in Northwestern Woman's Medical College, and for several years was Professor in the Chicago Polyclinic. The old University of Chicago honored him with the degree of Master of Arts.

He was President of the Old Citizen's Association of Chicago, and, full of years and of honors, and loyal patriot that he was, an enthusiastic member and supporter, with the rank of Captain, in the Medical Officers Reserve Corps of the United States Army, while his splendid work as State Adviser to the Surgeon-General's office was highly appreciated by the Government.

What tribute to this finished career could be more eloquent than the simple recital of its accomplished work? Passing it in review, there are many things which cannot fail to impress

and instruct. First of all we have the example of a man whose character and aims were of such crystalline clearness and purity that there could have been but one opinion of him. That opinion was plainly manifested in the affection and respect which were his universal portion. If there be any truth in the doctrine of heredity, Dr. Ingals could not help being what he was. Coming of the worthiest ancestors, the medical instinct was in his blood. How far back it may have extended we do not know. His paternal uncle, Dr. Ephraim Ingals, was a physician of marked distinction. It has often seemed that a man could hardly rise to the highest possibilities of the true physician without some infusion of this strain. The fact that Dr. Ingals' early days were spent in the pure outdoor life of the country may account for the long-continued good health and extraordinary capacity for work which enabled him in later years to accomplish such prodigious tasks.

From the generally accepted point of view his preliminary education was defective, for he did not go to college and was not able to "complete" his medical education by studying abroad. These apparent disadvantages, however, resulted in the greatest good fortune to him and probably had much to do with his peculiar success. Lacking a college education he became an ardent student in general learning, and by patient reading soon outstripped many of his seemingly more fortunate associates. At the time of his graduation, when in the usual course of events he would have sought instruction abroad, it was too much the custom of students in Vienna and other Continental cities to bow before their often narrow minded and self-assertive instructors and to accept their teachings with unquestioned acquiescence. Thus freedom of thought was stifled and the pupil became a blind, unreasoning follower of whosoever might chance to take the lead. Dr. Ingals, pursuing his way with unwarped vision, was given the freest exercise of his own individual powers, thus developing an independence of judgment and of action that placed him far in advance of the average educated man.

Undoubtedly from his own point of view the greatest success of his life was the result of the effort to secure the union of Rush

Medical College with the University of Chicago. To my own mind his service to laryngology was a far greater achievement. His contributions to its scientific progress enriched the entire world, while in his own more immediate surroundings the compelling influence of his strong personality, his wide and accurate knowledge, the breadth and clearness of his views, and his unusual ability as an instructor enabled him to place the specialty of laryngology in a position of dignity before the public and to gain for it the attention and the regard of his own profession. His teachings therefore were received with a degree of respect which increased with the development of his own powers and the growth of his ever-extending reputation.

It may be said that he entered upon the field of medicine at a time when and in a region where laryngology as a specialty was unknown. Himself its first exponent in the great Northwest, he nurtured it with untiring care through years of steady and every expanding growth and, inspirer, instructor, and exemplar that he was, left it at the close of his own well-rounded service, firmly established and splendidly represented and equipped.

Perhaps the most characteristic act of his career was the publication of his classic article on "Angina Pectoris," prepared as the result of his own personal experience during his last days, in the hope of helping other like sufferers. The fine self-sacrifice of this is no surprise to us, for it was in perfect harmony with all that had gone before. Truly, "The man's whole life precludes the single deed."

Dr. Ingals was married September 5th, 1876 to Miss Lucy S. Ingals, who survives him. Their children are Francis E. Ingals, Melissa R. Ingals, wife of Clarence L. Fisher, of Lyons Falls, N. Y., who have one son, Mary Goodell Ingals and E. Fletcher Ingals, Jr., a member of the Aviation Service, U. S. A.

He has told us that his diversions were fishing and golf, his church the Baptist, his politics Republican, but often voting a split ticket.

REGULAR SCIENTIFIC PROCEEDINGS

REPORT OF SOME INTERESTING CASES OF VINCENT'S ANGINA

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There have been a considerable number of papers on Vincent's Angina published during the past few years, and much has been accomplished in the way of treatment.

It is, of course, an accepted fact that the fusiform bacillus, with the spirillum or spirochete, are always found in the throat-swabs in cases of Vincent's Angina, and together with other characteristic clinical findings, make the diagnosis positive. The organism causes a pseudo-membranous ulceration of the throat and other parts of the fauces, being sometimes confined to the tonsils, but in the severe cases often involving practically the entire fauces and other parts of the mouth.

This bacillus is, however, not the specific organism of Vincent's Angina alone, but is found in mastoiditis, hospital gangrene, broncho-pneumonia, diphtheria, throat syphilis and stomatitis. Cultures and smears usually show mixed infections with other organisms, mainly the pneumococcus, Klebs-Loeffler and Staphylococcus.

The ulceration of Vincent's is frequently mistaken for the ulceration of syphilis or diphtheria, perhaps because only the cultures were examined, and not smears as well.

The organism flourishes in unhealthy mouths, particularly around decayed teeth and diseased tonsils. In the writer's experience the infection usually starts around a bad molar tooth and spreads from there to the tonsil and other surrounding parts.

Halsted, in his very complete paper (Trans. Amer. Laryng. Ass'n., 1912) states that there are two distinct clinical types of the disease, the one form to be differentiated from diphtheria and other non-diphtheric pseudo-membranous anginas, while in the other localized ulcerations closely simulating syphilis are present.

In the writer's experience the second type mentioned by Halsted occurs almost exclusively in adults, while almost all authors agree that the first type, simulating diphtheria and other membranous conditions, particularly those in which the streptococcus predominates, is far more frequent in young people. In practically every case of the ulcerative type the writer has found carious molar teeth with unhealthy gums, in fact, in nearly all adult cases the disease develops in mouths that are not well cared for. The odor is distinctive and characteristic and in many cases the diagnosis can be made on that alone. In the cases that are not promptly treated and go on to extensive ulceration of the fauces, it is in fact almost unbearable. The fact that the type of the disease in children so closely resembles diphtheria, accounts for many of the mistakes in diagnosis.

In the Michigan State Laboratory in 1909-10, out of 687 throat swabs sent in to be examined for diphtheria, 178 were not cases of diphtheria at all, but proved to be Vincent's Angina. A clinical diagnosis of diphtheria had been made in 224 of the 687 cases, but the bacteriological diagnosis proved that only 120 were true diphtheria cases.

Forty-six of the cases clinically diagnosed as diphtheria proved to be cases of Vincent's Angina.

Rolleston (*Br. Journal Children Dis.*, Vol. VII, 1910) states that of 18,187 cases of suspected diphtheria admitted to the Metropolitan Asylums Board Hospital (London), from 1905 to 1907, 3,047 were found not to be diphtheria; of this number 95 were cases of Vincent's Angina.

Vincent himself found the disease in 2 per cent of all cases of membranous anginas.

Lubowitz found the specific organisms in 6 out of 38 cases of ulcerative stomatitis.

Rodella found them in about one-third of all the pseudo-membranous anginas he examined.

Cases of bronchitis have been reported by Rothwell (*Jour. Amer. Med. Assn.*, Vol. LIV, 1910) in which the main organism found was the fusiform bacillus.

Fatal cases are not as uncommon as is generally believed, and in children, some cases in which a diagnosis of laryngeal diph-

theria had been made, terminating fatally, and in which the Klebs-Loeffler bacillus was not found, were undoubtedly cases of Vincent's involving the larynx. The writer has seen cases of the ulcerative type involving both the pharynx and larynx. These cases are always serious and in children when a pseudo-membrane is also present in the larynx, are sometimes fatal.

Three fatal cases have been reported by Bruce, and others by Meyer and Halsted.

Halsted's case was particularly interesting. A young woman aged 33 years, was sent to the hospital in a semi-conscious condition. The gums, and mucous surfaces of the lips were covered with a thin membranous exudate, which later developed into an ulceration. The autopsy showed a chronic interstitial nephritis, endocarditis of the mitral valve, a bilateral chronic salpingitis, and ulceration of the mouth, larynx, trachea and esophagus. A bacteriological diagnosis of Vincent's Angina was made before death.

The writer desires to add two fatal cases to the above list. One has already been reported (*Trans. Amer. Laryng. Assn.* 1912, p. 228). This patient, a tramp, about whom we could find out nothing, was brought to the hospital in a semi-conscious condition. His throat showed the worst ulcerative condition I have ever seen. The tonsils, uvula and part of the soft palate were practically destroyed, and there were deep ulcerations on the gums and mucous surfaces of the cheeks. Smears from swabs showed the specific organisms. He only lived a few days after being brought to the hospital, never becoming fully conscious. He received salvarsan intra-venously, and local treatment, but without any result. Just before death he developed hemorrhages from the nose, throat and rectum. Autopsy showed an ulcerative condition in the larynx as well, and a markedly enlarged spleen. On account of the great difficulty in examining his throat, the laryngeal involvement was not discovered during life.

The other case was seen recently and is quite similar to the one just reported.

The patient, a man aged 32 years, came to my office complaining of a sore throat. I was at once struck with the ex-

tremely offensive odor when he came near me. The throat condition was almost as bad as in the last case. The uvula and part of the soft palate had been practically destroyed and there was deep ulceration of both tonsillar surfaces and of the gums around the last molars. The ulcerated surfaces were covered with a tenacious pseudo-membrane. The molar teeth were badly decayed and the gums bled easily when touched with a probe. The odor was so bad that it required a good deal of courage to examine him. He said the condition had been going on for several weeks, and he had received no treatment. He had been using a mouth wash of peroxide and water.

He was in an extremely weakened condition because the pain in swallowing was so severe that he had not been able to take much nourishment. No history of syphilis could be obtained. Smears from throat swabs verified the diagnosis of Vincent's. I started him at once on a line of treatment that I had found effective, *i. e.*, a strong solution of Potassium Chlorate, powdered Alum, Carbolic Acid, Glycerine and water, to be used as a gargle, and locally the ulcerated surfaces, after being cleansed were swabbed with a saturated solution of methylene blue in alcohol. He was given Iodide of Potassium in large doses. This is always administered in the writer's cases whether a history of syphilis is obtained or not. Blood count showed a moderate leucocytosis. He failed steadily in spite of all efforts, and died two weeks after I first saw him. The larynx was not involved in this case. Salvarsan was used both locally and intravenously without any appreciable effect. We did not succeed in getting an autopsy.

I wish also to report two cases, fortunately not fatal ones, in babies aged 14 and 18 months. I have never before seen the disease in children as young as this, although we learn from the literature on the subject that it occurs at all ages.

As these two cases were almost clinically identical, although occurring in different families, I will report them together. In both, the first indication that there was anything wrong was the refusal to take nourishment. The throat findings in both cases were similar. Both children had moderately large tonsils covered with a pseudo-membrane, in appearance very much like a diphtheritic membrane. This could be quite easily

removed, and underneath, the surfaces of the tonsils were covered with a superficial ulceration. One of the unusual features of both cases was the extensive involvement of the glands of the neck. There is often some adenitis, but in these cases the cervical glands were very large and tender to the touch. There was a trace of albumen in the urine, which is of course a fairly common thing in all anginas. There was very little temperature reaction. Throat cultures were taken and examined for both diphtheria and Vincent's. A clinical diagnosis of Vincent's had been made, mainly on account of the typical odor, which we find in all cases. No Klebs-Loeffler bacilli were found, but numerous fusiform bacilli and some streptococci. A spray of potassium chlorate, powdered alum, carbolic acid, glycerine and water was used, and in five days with this treatment alone, the throats in both cases were entirely clear. Throat swabs were again examined at this time, and no Vincent's organisms found. This combination of old drugs, in spray form for children too young to use gargles, and as a gargle for older children and adults, is extremely valuable for the mild cases. The strength of the solution should be varied, of course, according to the age of the patient.

The cases just reported are the type that clinically resemble diphtheria more closely than the other forms of Vincent's.

Treatment

The good results following the use of arsenic in some form are so well known now that it is only necessary to mention that salvarsan used locally or intravenously, is very valuable in the severe cases. Hubbard, in a recent article, speaks of the value of Iodoglycerole, very much like the old glyceride of iodine recommended by Mayer and others in the treatment of this disease. I have used the solution but have not found it as effective as some other local measures, such as a saturated solution of methylene blue in alcohol (also advocated by Sluder). I have always thought that the alcohol does as much good as the aniline dyes, and as a matter of fact, experiments have shown that a 20 per cent solution of alcohol will kill practically all throat organisms.

Hubbard, in the paper before mentioned (Trans. Amer. Laryng. Assn. 1917) also mentions the value of cacodylate of sodium. Another one of the arsenical group, enesol, an arsenate of mercury, used hypodermically, has been highly recommended by Halsted. The writer has had no experience with this preparation. Its action is probably very much like that of salvarsan, which is certainly valuable, particularly if followed by iodide of potassium in increasing doses. Locally, I have found a solution of Potassium Chlorate, Powdered Alum, Carbolic Acid, Glycerine and water, to be one of the most effective methods of treatment. Pure alcohol swabbed on the ulcerated surfaces is also extremely valuable. I have found the greatest difficulty in having the severe cases get enough nourishment, because the pain in swallowing is often so great. A solution of orthoform in olive oil swabbed on the ulcerated surfaces before meals affords a certain amount of relief. A spray of carbolic cocaine, in the worst cases, gives more relief than anything else if used a few minutes before meals. In some of the adult cases of the ulcerative type, we are probably dealing with a combination of syphilis and Vincent's, even when we fail to obtain a history of syphilis. That may be one reason why salvarsan acts so promptly in some cases, although the consensus of opinion would seem to prove that the arsenical preparations *do* have a specific action. I have seen cases of this kind in which there was a positive Wasserman (with no syphilitic history), with the typical clinical and microscopical evidence of Vincent's.

DISCUSSION

Dr. Christian R. Holmes, Cincinnati: I would like to ask Dr. Theisen first, as to the temperature of the patients; secondly, whether blood cultures were made in these two severe cases; and thirdly, how he used the alcohol treatment—by applying it locally or not. In Camp Sherman we had for a while a considerable number of cases of Vincent's angina among the soldiers; but none were seriously ill. All were of the kind that yield readily to treatment.

My treatment was the nitrate of silver bead applied to the crypts, used on heavy silver wire, and to the external surface of the tonsil. Particular attention was given to the crypts. The

patients also used gargles of permanganate of potassium, and peroxide of hydrogen.

Col. Herbert S. Birkett, C.B., M.D., Montreal: Perhaps one of the most striking features of throat work brought to my notice during my three years in France was the condition considered in Dr. Theisen's paper, Vincent Angina, which was found to occur chiefly amongst the British troops. I seldom met with it in any of the Canadian troops, because I believe it is due to the fact that dental conditions in the Canadian forces receive very careful attention, not only at the time of enlistment but after it.

Vincent's Angina was not in my experience found to be limited to the tonsils, but I have seen it involve the gums as far forward as the incisor teeth. The condition yielded rapidly to a mixture containing liq. arsenicalis, vin. ipecac, and peroxide of hydrogen.

Dr. Emil Mayer, New York City: It is relatively easy to make a diagnosis of Vincent's Angina when there is an exudate and you can make a smear; but I saw quite recently an instance in which the diagnosis came as a surprise. The patient was a lady who not only took good care of her teeth, but was a woman of much refinement. She consulted me on account of a cough. She was being treated for skin affection (lichen planus). There was a mild exudate on her soft palate, which seemed an evidence of the skin infection on her mucous membrane. This also occurred in spots in her trachea and caused the irritative cough. She did not cough much. Examination of the sputum showed that it was full of the fusiform bacilli. There was an absence of anything like a membrane, yet the condition occurred, and in a person not neglectful of the teeth or anything else, suggesting that it is probably much more frequent than has been supposed.

The best treatment at my hands has been the local application of salvarsan, together with the iodine and glycerine which I recommended at the time the first case was recorded by me in the English language. I have never seen the severe fatal cases. Dr. Arrowsmith reported a case in which the patient nearly died. I think that we should be on watch, because we may probably discover cases where least suspected.

Dr. Greenfield Sluder, St. Louis, Mo.: Dr. Theisen spoke of a solution of methylene blue in alcohol and stated that he had gained equally good results from alcohol alone. I am glad to know that; but I have also used the methylene blue in powder and in aqueous solution, and likewise found it to answer the purpose.

Dr. Theisen (closing) : Regarding blood cultures, I would say that we did not take blood cultures, but we took blood counts; and the leukocytes in both cases were increased. I forgot to mention the increase in the polynuclears, and mention again a method of treatment—a combination of old drugs which is practically a specific, either as a gargle or in spray form. This combination consists of potassium chlorate, powdered alum, carbolic acid, glycerine and water. Its effects are very satisfactory.

The alcohol is used locally, applied with a swab.

REPORT OF SOME CASES, MOSTLY TRAUMATIC, OF
SERIOUS DAMAGE TO THE NOSE AND ACCESSORY
SINUSES, OPERATED UPON EXTERNALLY
WITH EXCELLENT COSMETIC RESULTS

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The following cases, of interest in themselves, seem to be especially in line with war time practice, and on that account are put upon record.

It is regrettable that war time conditions, causing scattering of patients, assistants and sources of information, have detracted materially from the value of the report.

Also that for several reasons it is impracticable to present these cases in person rather than by photograph.

Accept my assurance, however, that they have not been too flatteringly presented and rather under-represent the results than otherwise.

A CASE OF EXTENSIVE TRAUMATISM OF THE NOSE, FACE AND
FRONTAL SINUSES DUE TO A FALL FROM A HEIGHT

Operative Cure with Exceptional Cosmetic Result

Mrs. H. C. A., age 35, was seen by me about 2 P. M. Sunday, April 16th, 1916, at St. Agnes Hospital, in consultation with Dr. H. J. Hahn. Her statement was that she was awakened suddenly about 2 A. M. the same morning and intending to go for some medicine into an adjacent room, which is at the head of a staircase running from the first to the second floor, stepped, as she thought, into the room, but really into space; the first thing that she knew afterwards was that she lay swooning in a puddle of blood; she thinks that she was unconscious only a few moments.

She must have struck upon her nose, chin and right side of her face, judging by the injuries received; there was an oblique cut across the bridge of the nose from the inner end of the right eyebrow to the termination of the bony nose, also a cut from

a little to the right of the middle of the upper lip to the angle of the mouth, making a triangular flap; similarly, a cut from about the middle of the lower lip running outward and nearly meeting the previous one; the lower lip was torn from the jaw bone, and five lower teeth were knocked out. There was also a long cut (2 in.) to the bone, on the left side above the frontal eminence at about the hair line. Her appearance was described to me as being a horrible sight.

Dr. Hahn was summoned in the emergency and conveyed the patient to St. Agnes Hospital, where the cuts in the face were sewed up with inner and outer sutures, and temporary dressings applied to the nose. A number of radiographic plates were also taken which showed fractures of both nasal bones and nasal processes, left outer orbital wall, and an oblique fracture across the anterior wall of both frontal sinuses.

It was nearly twelve hours after the accident before I saw the patient (about 2 P. M.), at the hospital, and preparation for operation had been made.

After etherization, examination revealed a fracture of both nasal bones, the left one being dislocated and lying loose in the tissues, the right comminuted into small splinters.

The bony nasal septum was fractured from its upper articulation and partly destroyed, so that a periosteal elevator could be inserted through the external wound into the nose and out through either external naris.

The nasal septum was also fractured and dislocated at the vomeral articulation, forming a large ascending ridge obstructing the left nostril. The floor of the right frontal sinus was fractured and missing, so that the little finger could be inserted through the external wound and up into the sinus.

There was distinct crepitus of the right malar bone, but no depression. The wound and the nostrils were cleansed with extreme care. The nasal bones were replaced and sutured with catgut, even small splinters being sutured by their periosteum to the adjacent tissues.

In view of possible contingencies, however, the septal ridge was not removed, but was left as a resource for plastic work. Nor was any special treatment of the malar and orbital fractures deemed necessary.

A drain was inserted into the frontal sinus, and a separate strip of iodoform gauze into each nostril.

The skin wound was closed with fine silk sutures, except a small opening which was left temporarily at the inner angle of the right eyebrow for the sinus drain; this was covered with a gauze pad, but the rest of the wound was sealed with collodion and silver foil. No external support was applied to the nose, as it was not considered necessary, in view of the ease with which fragments of the nasal bones usually remain in position, nor safe in view of the doubtful extent of the cranial injury.

Considering the extensive injuries and the possibility of an undetectable fracture of the base of the skull, an extremely guarded prognosis was given the husband, both as to disfiguration and as to life. Fortunately this was not warranted by subsequent experience; the following day the temperature was 103° and while slightly dazed, the patient presented no evidence of cerebral complications, nor did any subsequently develop.

Usual after-treatment was carried out by Dr. Hahn, Dr. Stewart or myself.

On April 24th (8 days) the stitches and dressings were removed. Primary union was obtained, except a small sinus at the lower end of the incision; this caused some apprehension but promptly healed; the sinus left above had been previously sewed up; at this time the bridge of the nose was firm.

On April 28th the patient was able to leave the hospital (12 days). All wounds had healed, but she was suffering from general prostration, and a marked paralysis of the right side of the mouth and face. Dr. Hahn assumed charge of the case. I did not see her again for about a year, May 1, 1917.

The patient having regained her health and vitality and danger of collapse of herself or her nose having passed, it was deemed desirable to remove the thick septal ridge, badly obstructing the left nostril. This was done with Hajek's chisel and a mallet, and ultimately resulted in a decided increase in breathing capacity.

Present condition, May, 1918: General health and spirits fine. The bridge of the nose is firm and but slightly flattened at the root; there is a scar about 1-16 inch wide which is readily concealed with a little powder.

The scars of the chin and lips are scarcely noticeable; the one of the scalp is covered by the hair and very slight. The movements of the upper lip and mouth are practically normal. In general, the disfigurement is wonderfully slight. (Figure 1.)

Two features in the treatment of this case seem deserving of emphasis.

1. The early dispensing with dressings for the facial wounds, none having been employed after the first few days.



Figure 1

2. The preservation and reimplantation of bone fragments, even loose splinters.

The fact that the small bones of the face have unusual vitality has been known clinically for years, and was impressed upon me as an interne at the University Hospital by the late L. McLane Tiffany, Professor of Surgery.

Comparatively recently this fact has been given a scientific explanation, and in a much wider applicability, by animal experimentation. Very recently a report of a series of experiments upon bone transplantation and implantation has been made by Gallie and Robertson (*Jour. Am. Med. Ass'n.*, Apr. 20th, 1918), and seems to me to be of such value that I feel justified in quoting from it quite extensively.

"The conclusions deduced from these experiments may be thus outlined:

"When a piece of *living* bone has been separated from its circulation and implanted elsewhere in the body of the same patient, the immediate result, as indicated in specimens recovered within a few days of the operation, is the coagulation of all cells and vessels to which the surrounding lymph is unable to percolate. This means the *death* of all the cells in the lacunae and most of those in the haversian canals. This is indicated by the immediate change in the staining property of the protoplasm and nucleus, and is later proved by the complete absorption of these structures after the lapse of from three to four weeks. On the *surfaces* of the graft and in the open mouths of the haversian canals, however, are many *osteoblasts* which are in a position to absorb nutriment from the bathing lymph, and these cells are capable of living and proliferating and of producing those changes that make the autogenous graft so valuable in reparative surgery. At the end of the *first ten* days after the implantation of the graft the proliferation of these osteoblasts is well established on the periosteal and endosteal surfaces, and within a few days *new bone* formation can be plainly seen on these surfaces. In addition to forming new bone about the transplant these proliferating osteoblasts proceed to attach the *dead* bone of the grafts and rapidly produce *excavations* about the edges which are at first filled with proliferating cells and later by new bone laid down by these cells on the walls of the excavation.

"While these changes are occurring on the surface, a *re-establishment* of the *circulation* has been taking place as the result of the ingrowth of new blood vessels into the mouths of the haversian canals. This proceeds with extraordinary rapidity, and in small, porous transplants is complete in approximately *two weeks*. Along with these blood vessels the osteoblasts spread inward from the surface, and at the end of *three weeks* the same changes that have been described on the surface are occurring *within the substance* of the bone. At first cavities are excavated along the course of the haversian canals, not far below the surface of the bone. Later this cavity formation, which ap-

pears to be a solution of the bone by a secretion from the proliferating osteoblasts, spreads deeply into the transplant until ultimately the whole graft is permeated by blood vessels and osteoblasts. A few days after the formation of a cavity by these proliferating osteoblasts the older cells return to their adult function of bone production, and soon the older part of the cavity becomes lined with a layer of new bone. This layer increases in thickness and trabeculae develop from wall to wall until the whole cavity is filled with living cancellous tissue except in those areas in which the proliferating cells are continuing the work of excavation (Fig. 2).

"The rapidity with which these changes occur depends on three factors: the *size* of the graft, its *density*, and the *abundance* of the supply of osteoblasts that survive on the surface. Of the greatest importance, however, is the abundance of the supply of living osteoblasts on the surface. Thus, if the transplant is cut in such a way that the endosteal and periosteal surfaces are undisturbed and exposed to a good supply of lymph, the changes described above occur with certainty and rapidity.

"When the grafts are placed in good contact with *living* bone, the changes described occur much more rapidly, evidently because of the additional supply of osteoblasts arising from the bone in which the graft is embedded.

"Here the vexed question of the *periosteum* presents itself. The results of these experiments agree completely with those of Macewen, indicating that the periosteum as viewed by the surgeon is only a limiting membrane composed of fibrous tissue, and that the great majority of the sub-periosteal osteoblasts cling to the bone when the periosteum is removed. This view has been further substantiated by a series of experiments in which bone was transplanted *with* and *without* periosteum into the muscles of the back, and the amount of osteogenetic activity on the periosteal surface compared. These experiments showed that the value of the graft from the standpoint of osteogenesis was the same in the two cases. We are therefore in the habit of transplanting the bone without its periosteum, using the reflected periosteum to cover up the space left by the removal of the graft."

A CASE OF FRONTAL EMPYEMA WITH EXTENSIVE BONE NECROSIS
AND EXTERNAL FISTULA, OPERATED UPON EXTERNALLY
IN SEVERAL SITTINGS

Cure of Condition with Excellent Cosmetic Result

A. M. W., a white youth aged 20 years, was referred to me by Dr. Henry F. Hill, April 28th, 1914, with the following history. In June of the preceding year (1913) he had an itching of the upper inner angle of the left eye, succeeded in two days by great swelling over the eye, diagnosed as erysipelas. After a week, this was incised by Dr. Hill, followed by the discharge of a large amount of pus.

The patient was desperately ill, with high temperature, and an autogenous vaccine was employed as a part of the treatment. Ever since recovery he has had a small fistula in the left side of the forehead, to the left of the median line, usually covered by a crust. He is now in good general health and feels as well as ever; has no pain nor cerebral symptoms. Says that there is a slight nasal discharge at times bloody from the left nostril.

Examination: The interior of the nose looked normal; there was no pus and the probe did not discover diseased bone. After removal of a small crust an external fistula the size of a knitting needle was found above the root of the nose to the left of the median line; a probe inserted through this detected bare bone and entered a large cavity, the left frontal sinus.

Operation was determined upon and performed April 29th, 1914, at the University Hospital. A curvilinear incision was made along the left eyebrow (not shaved) and a vertical extension made from the inner end of this through the fistula, producing a triangular flap. The fistula was surrounded by granulations and bleeding was profuse. The bone fistula was enlarged with chisel forceps and a sequestrum of the intersinus septum was removed, so that a probe could readily be passed into the opposite sinus.

The left sinus was filled with pus and large granulations resembling brain tissue, which were removed with a spoon. The right sinus was also opened at its inner angle by a limited in-

cision and looked healthy. Both sides were packed temporarily with gauze strips, but the right side was closed in two days. At the dressing on May 7th the left sinus seemed to be granulating and the outer portion of the incision was sewed up.

The patient was discharged from the hospital and treated ambulatory. The left sinus was dressed at appropriate intervals, either by myself or various hospital residents. At first iodoform gauze strips, later Peruvian balsam were used for packing.

Despite these measures, continued for *nine months*, bare bone presented on the posterior (cerebral) sinus wall and at the floor of the sinus, and it became evident that further operation was required.

On January 9th, 1915, I performed a modified operation on the left sinus, at the Baltimore Eye, Ear and Throat Hospital, Dr. Geo. W. Lautenbach assisting. This was a very extensive and tedious performance, lasting over three hours and complicated by the collapse of the patient on the table. The entire sinus floor was removed, the inter-sinus septum and the upper portions of the nasal process and nasal bone were eurented with a bone-spoon. All of these bones were bare but very dense. The anterior half of the left middle turbinal and adjacent ethmoid cells though apparently healthy were removed through the wound for good drainage.

The usual drains and dressings were applied and the patient was able to leave the hospital in ten days' time. Subsequent dressings were carried out at the dispensary, and on February 1st (3 weeks), the bone was seen to be covered with healthy granulations, there was free drainage into the nose, and the greater part of the external wound was closed by secondary suture. The patient was furnished with a syringe for home irrigation, and directed to report to the hospital for treatment and inspection at increasing intervals.

Uneventful progress ensued until June 14th, 1916 (18 mos.) when the patient returned with a painful swelling over the *right* eye and pus in the *right* nostril.

The tip of the right middle turbinate was resected with Sluder's knife under local anesthesia, and a hot compress and

nasal douche employed. It became necessary, however, to reopen the sinus externally and apply drainage.

It shortly became manifest that something further must be done to cure this patient. On July 11th, 1916, I undertook what I had determined should be my final operation, under ether anesthesia at the Baltimore Eye, Ear and Throat Hospital. Both sinuses were reopened externally. On the left side scar tissue had to be loosened up and dissected out of the depressed fistula. While the left sinus had largely healed, bare bone could be detected with a probe at the root of the nose and on the posterior sinus wall. All granulations were removed from both sinuses with a eurette, and the left posterior (cerebral) wall curetted as vigorously as seemed safe. The nasofrontal openings upon either side were enlarged to the fullest extent with a burr. The basal remnant of the intersinus septum, the anterior nasal spine, and the uppermost portion of the nasal septum were removed with forceps (Citelli) and burrs.

This seems to be approximately what is known as Lothrop's operation, which I was not familiar with at that time. I determined to close the left wound by a plastic operation and leave a small opening at the inner angle of the right wound for a drain. A gauze pad was put over each eye but permanently removed from the left side the following day.

On July 14th, 1916, the stitches were removed and healing per primam had occurred; there was a fistula a quarter of an inch in diameter on the right side and one a twelfth of an inch on the left. No further external dressings were applied; only a small drain on the right side.

On July 20th he was thoroughly examined. A probe could be passed into either sinus and across into the opposite one, also down into either nostril. Fluid introduced into either sinus ran out of both nostrils. All drains were removed, the patient furnished with a syringe and directions given for self treatment. Subsequently he was seen only at long intervals, and had no trouble until October 31st, 1916 (3 mos.) when he returned with a moderate yellow discharge from a minute fistula in the left side, through which I was unable to irrigate the sinus successfully. The opening upon the right side had completely closed.

I irrigated the sinus a number of times with weak iodine solution, by means of a fine DeVilbiss irrigating syringe, and then furnished the patient with a gold dental root syringe for home use. There was free drainage through both sinuses into and out of each nostril. The minute fistula caused no disfigurement and it was thought best to leave it as a safety valve. Since this period I have not treated the case, but have seen him on several occasions. He has meanwhile married and was well when last seen, June 30th, 1917. Several interesting points were presented by this case:

1. Lack of intra-nasal pathologic conditions. A virulent m-



Figure 2

fection (erysipelas?) seemed to have attacked the frontal sinus and uppermost portion of the bony framework of the nose, without involvement of other nasal tissues.

2. The posterior (cerebral) sinus wall was denuded, but was hard and seemed devitalized rather than necrotic. It took a very long time for it to regenerate (26 mos.), but my own judg-

ment and the advice of colleagues was that it was better to delay than to assume the risk of removal.

3. Marked anesthesia of the operative field, the packing being for a long time painless, doubtless due to the devitalized bone.

4. Excellent cosmetic result. (Figure 2.)

A CASE OF FRACTURE OF THE EXTERNAL BONY FRAMEWORK OF
THE NOSE AND THE NASAL SEPTUM BY THE KICK OF A MULE,
CAUSING DEPRESSION OF THE TIP OF THE NOSE AND
GREAT DISFIGURATION

Restoration of Appearance and Function by Operation.

James C., a country lad, aged 19 years, was admitted to my service in the University Hospital, July, 1917, with the history of having suffered a kick from a mule two days previously, in consequence of which he presented a broken and badly lacerated nose. The median third of the lower end of the nose was cut out into a tongue shaped flap and crushed down upon the face; the upper and lower lateral cartilages were cut through and left erect, thus forming a trough at the end of the nose. The left nasal bone and the edge of the pyriform aperture were fractured. The bony septum was fractured and the cartilaginous septum was extensively dislocated.

In consequence of these injuries both nares were practically obliterated by a red, pulp-like swelling. The nose was thoroughly cleansed, and under ether, the septum and nasal bones were elevated with septum forceps. The depressed triangular flap was elevated and sutured, then covered with iodoform collodion. As the nose looked infected, it was at first packed with iodoform gauze; later a metal splint was inserted into the nares, and a metal support over the bridge of the nose.

The stitches were removed within a week when primary union had occurred and the patient was left with a nose fully as beautiful as the one which he originally possessed. This belonged to that underdeveloped, shortened variety with rounded tip termed "snub" nose.

Whether or not this type is usually associated with low mental development or degeneracy, as has been stated, it certainly was

in this case. It was impossible to impress upon the patient the importance of his treatment, and he insisted upon leaving the hospital without my consent and at his own risk. At this time he was breathing well and the cosmetic result was good. In January, 1918, he was seen at work by a patient of mine, and *seemed* to be all right.

This case illustrates the remarkable vitality of the nasal tissues and how much can be accomplished even in apparently bad conditions. The tissues appeared to be infected, and I greatly feared their destruction with extensive deformity.

A CASE OF FRACTURE OF THE RIGHT NASAL BONE AND NASAL PROCESS AND A PORTION OF THE ORBITAL PROCESS BY AN IRON ROD; FORMATION OF SEQUESTRA AND ABSCESS, WITH SECONDARY INFECTION OF THE RIGHT ANTRUM.

Operation and Cure, with Good Cosmetic Result.

James W., aged 14 years, was referred to me by Dr. Albert T. Chambers, with the history of having been struck upon the chin and face four or five months before by an iron rod of a revolving merry-go-round. For several months he has had an ovoid swelling along the right side of the nose, presenting a fistulous opening at the lower extremity, discharging pus. .

On probing through the fistula bare bone was detected, and the probe entered the right naris. The right eyelids were much swollen, nearly closing the eye. Operation was performed November 20th, 1917, under ether, at the Franklin Square Hospital, Dr. Furneyhaugh assisting.

The abscess was incised along its extent and a lateral rhinotomy done, removing the necrotic right nasal bone and a portion of the nasal process of the superior maxillary bone; also a sequestrum comprising the inferior inner rim of the orbit. The right antrum was opened through the nose, irrigated, and a drain inserted.

The external nasal wound was sewed up, except at its uppermost extremity which looked suspicious, and a small drain was inserted. This was covered with a dressing, but the greater part of the wound was closed with collodion cotton.

The wound was dressed and nose irrigated at appropriate intervals by Dr. Furneyhaugh until November 28th (8 days), when the patient left the hospital. December 4th the external wound was healed by primary union except a small fistula at the uppermost extremity; the edges of this were scraped with a knife and the patient sent home.

December 14th the patient's mother reported by letter that he "was doing finely and the wound had closed."

DISCUSSION

Dr. Cornelius G. Coakley, New York City: In my experience, the cases that I have seen of necrosis of the posterior wall, at the original operation, have usually been those that I have found to be associated with syphilis. It is very unusual no matter how acute the sinus involvement may have been, not to have syphilis associated with the condition. What I have not infrequently found in cases that have been operated on previously, where there has been a temporary cessation of this discharge and a reopening with fistula formation, are areas of very marked softening in the bone, such as one finds in a mastoid operation at the borders, when one has reached back of where the large cells are and come to the cells just between these and the cancellous bone. I think that there is no reason why that bone should not be regarded as infected bone, just as in the mastoid region and I feel that neglect to clean out this diseased bone and get down to healthy bone, whether in the anterior wall or anywhere else, is not good surgery. We should get down to good bone, even if we expose the dura in the frontal region. We have had some such cases that had been operated on two or three times in our service at Bellevue. The surgeon who operated was on my Staff, and asked me to operate in this particular case. I did so, and found such a degree of softening of the posterior wall that I felt sure that I should find exposure of the dura and epidural abscess. Fortunately, however, that was not the case. I went through an area of three-eighths of an inch of vascular soft bone before coming to what must have been a very thin area of good bone at the posterior wall of the frontal sinus. The soft bone was all cleared out. A drain leading to the nose was placed in the wound for a short time. The wound was sewn up, as in the ordinary Killian operation; and the patient has made—temporarily, at least—a good recovery. The operation was done three months ago; and up to the present time there

has been no recurrence; although there were two or three before that. I think that soft or diseased bone, in the frontal sinus, should be treated just as we are in the habit of treating the same kind of bone in the mastoid or in any other region.

Dr. Lewis A. Coffin, New York City: I should be much less afraid of a curette than of leaving diseased bone in a patient. As to whether the posterior wall being necrotic and perforated is an invariable sign of syphilis, I have grave doubts. I have seen this condition in comparatively few cases; one case was in a child of six years having perfectly healthy parents. In reporting that case I spoke of another that I had previously seen in which the anterior wall was so soft that I removed it with a spoon curette and stated that I did not see why the posterior wall should not be affected by the same pathologic process as the anterior wall. A case somewhat similar to the one just reported comes to mind. A young woman was riding in an automobile when a peculiar accident happened. The shaft of a wagon to which a horse was attached entered the antrum through the middle of her cheek, fracturing the floor of the orbit and the anteronasal wall. She had been under treatment for some time when I saw her. Removing a pad of gauze from her face revealed a stream of pus pouring from the open wound in her cheek. I made an incision over the eyebrow down over the ridge of the nose and the center of the skin covering the columnar cartilage and dividing the upper lip in the median line. Turning the flap well back gave a good exposure of all the diseased parts, which were thoroughly cleared out. We and our patients are fortunate in the kindly way in which incisions of the face heal. In this case there was practically no scarring except where the shaft of the wagon pierced the cheek.

Dr. George L. Richards, Fall River, Mass.: The ability of the face to heal is very remarkable. I recall that some years ago I had a patient who was riding a bicycle down a hillside, when the chain broke. He was pitched suddenly forward in such a way that the nose and mouth were torn off down to the chin and, in addition, the wounds were filled with the dirt of the street. A general surgeon attended to the mouth and I repaired the nose. The recovery of the nose was good, but in the part which afterwards grew into the mouth, there was a certain amount of hair, which caused annoyance. It is wonderful how a pulpy mass of the face will heal. Today, one would consider this patient a tolerably good-looking man.

Dr. T. Passmore Berens, New York City: Speaking of the frontal sinus, I understood the reader of the paper to say that he was endeavoring to heal a wound, the bottom of which contained hard bone.

This apparently is the same condition found in the mastoid, of bone that is not syphilitic, but is simply an unusually firm, hard bone. We have to be patient and let it heal.

Speaking of the first photographs shown, a number of years ago I mentioned the mild pressure that was needed in these cases, such as would come from a *pince nez* with long horns, pressing the bones together. Congratulating Dr. Winslow on the result, it seems that if he had exerted a slight constant pressure, such as is given by a *pince nez*, he would have overcome that broadening of the nose. I merely mention this to accentuate the benefit of this mild pressure.

Dr. D. Bryson Delavan, New York City: It is generally conceded that the existence of tertiary syphilis renders a patient liable to sinus disease in general and to the accidents which may arise from it. In old suppurative conditions of the sinuses, if there is any question or any certainty of the existence of syphilis, operative work should be undertaken with great caution, because, under anti-syphilitic treatment many cases will improve without operation, while others will improve so that any extensive operation will not be needed. A patient, unmarried and under thirty, of fine position and promising career was condemned to a double radical Killian operation simply because he had a suppurative condition of both frontal sinuses. He gave a clear history of syphilis. I advised temporary removal from business, specific treatment and two months vacation in the mild winter climate of Georgia. He recovered with no other treatment and has remained well. Not all cases result so happily; but where there is this spongy condition of the bone in a case in which the specific history is clear, if possible, wait and apply anti-syphilitic treatment. This alone will often effect a cure.

Dr. John R. Winslow, Baltimore, Md.: I do not want to leave anyone under the impression that I am ignorant enough to leave soft bone and close it in the wound. It was not soft, but hard as steel; and I resected it three times, as much as I thought was safe. I acted not only on my own best judgment, but also on the advice of several consultants.

Regarding the unreliability of photographs, I can only say that these patients are well satisfied and among the most grateful that I have ever had.

REPORT OF A CASE OF FOREIGN BODY (CARPET TACK) REMAINING TWO YEARS IN BRONCHIAL TUBE WITHOUT PATHOLOGICAL SYMPTOMS

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In the present day refinement of bronchoscopy it seems much out of place to report a foreign body as remaining in the bronchial tube or even in one of the twigs, without its removal. Authors always publish their successes, but few have the temerity to report their failures.

The writer has done but little clinical bronchoscopy, for he long ago realized that this work should only be undertaken by men who, from a natural aptitude for this particular branch, have placed themselves in a position to see many such cases, increasing thereby their clinical experience and rendering themselves more proficient in obtaining good results.

The writer believes that there should be such a thing as a peroral specialist in different parts of the country to whom such cases could be referred and from whom the patients could receive the best operative skill.

It is a matter of impossibility for men who only occasionally see cases of foreign bodies in the bronchial tubes to keep themselves in that extreme practice which is absolutely necessary for dexterity in the removal of these bodies.

While no laryngologist is willing to allow a foreign body to remain in the bronchial tubes if it is possible to extract the same, cases have been reported where the foreign body has remained in situ, either finally producing a localized lung abscess or becoming encysted, remaining in this manner without producing any untoward symptoms.

The present case is reported, not with the idea that there may not be some future trouble, but as of interest in that up to the present time, two years since the accident, the patient has remained in good health with no symptoms of discomfort.

Miss C. E. D., age 28 years, domestic, gave history of eating

puffed rice and in some unknown way sucked into her larynx a small brass headed carpet tack. She was immediately seized with

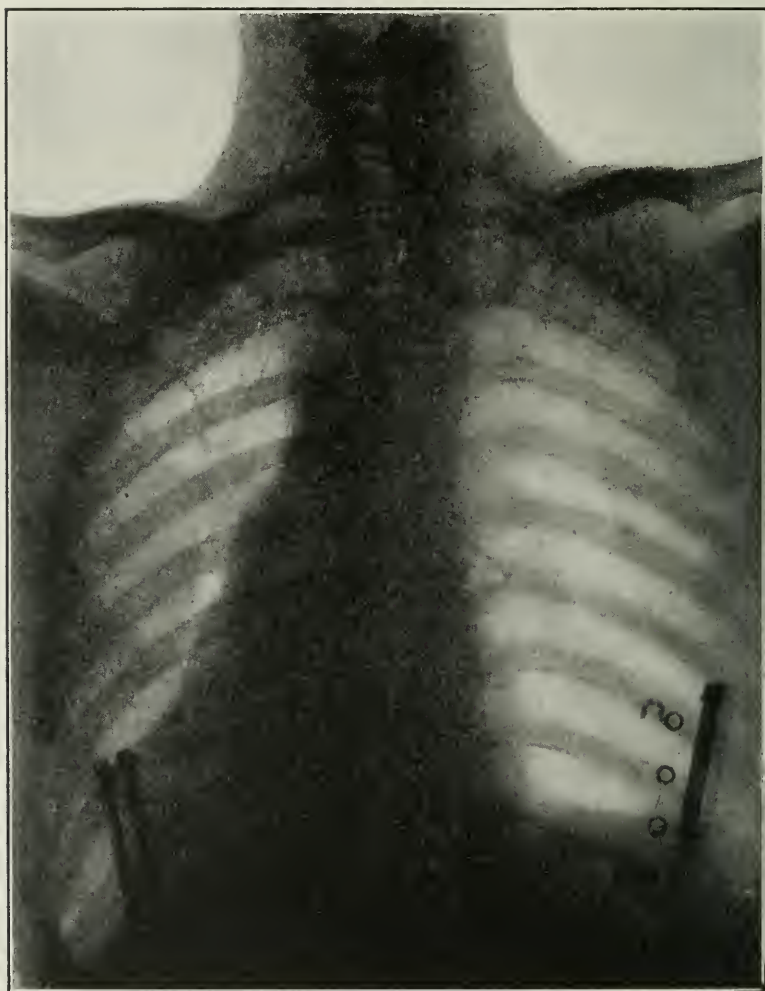


Plate: May, 1916

a violent spell of coughing and some difficulty in breathing. She consulted Dr. Crawford who had an X-ray taken and this plate showed the tack in the right bronchial tube between the

seventh and eighth ribs, with the head of the tack pointing down. She was sent to Grady Hospital and with the assistance of Dr.

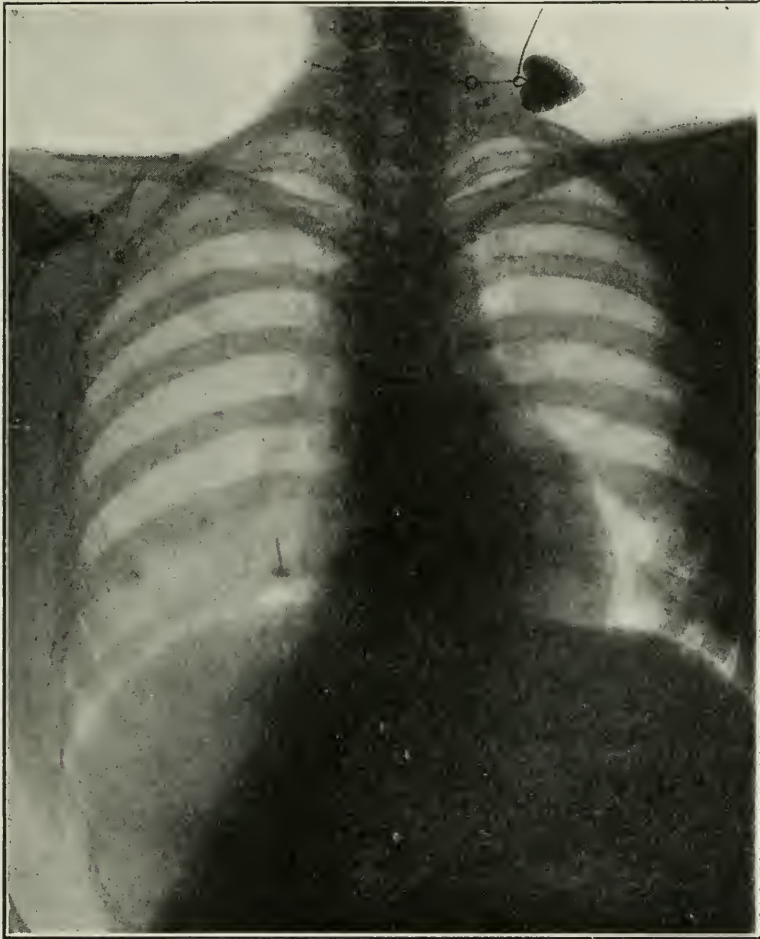


Plate: April, 1918

Crawford and Dr. McDougall I attempted its removal under local anesthesia, using the Brunnings bronchoscope. Our attempts proved unsuccessful, so we decided to allow the irritation to subside and on the next day passed the bronchoscope

through a low tracheotomy incision. We then made use of the fluoroscope and in that way attempted the removal of the foreign body under a most excellent shadow. The foreign body seemed to be in one of the branches of the large tube, thus causing us to be unable to grasp and dislodge it. After several attempts we decided to desist from further instrumental manipulation and to allow the tracheotomy wound to heal, leaving the foreign body in situ for fear of creating more damage than the presence of the tack itself. The patient experienced no further trouble and remained comfortable. No temperature, cough, or expectoration after the first few days. Patient then continued her work without interruption. On November 14th, five months later, at a meeting of the Southern Medical Association, our Fellow, Dr. R. C. Lynch, undertook again the removal of the tack. The X-ray showed that it was in the same position. Under general anesthesia Dr. Lynch had no difficulty in passing the bronchoscope, although he found that all the tubes he possessed were too short. He also located the foreign body in one of the side bronchial twigs. Not having tubes of the necessary length and being unable to obtain the same in our city, the foreign body still remains in the same position as previously shown.

Following this second operation the patient experienced no difficulty whatever and in a few days was again at her domestic work. I have seen her several times since, now about two years after the original accident, and she has increased in weight, with every evidence of no discomfort. I exhibit two X-ray photographs. The first is the one taken at the time of the accident, the second a few days ago.

A research into literature for accounts of foreign bodies in the lungs or bronchi of two or more years' sojourn brought to light notes of forty-seven cases, or forty-eight including the personal case. Since the continuation of the research failed to discover any further case, the author feels that not many have been overlooked, although to make sure it would be necessary to read over hundreds of case reports and discussions of papers.

The age of the patient, the kind of foreign body, the immediate symptoms, and the fate of the patient need not greatly concern us in this particular collection of data, for in the first place they

throw no light on the main question of length of sojourn in the chest. As might be expected, the longer the sojourn the fewer the number of cases. The number of cases in which the sojourn was two years or less than three years was ten. Had we noted the cases of one full year and less than two years, this would have been correspondingly larger. The number of cases of sojourn of three full years and less than four years was six; of four to five years two cases; five to six years, two cases; six to seven years, three cases; seven to eight years, five cases; eight, nine and ten years, two cases each. These irregularities disappear if we proceed by five year periods. Thus from two to seven years, the total number was twenty-three cases; from seven to twelve years, the total number was thirteen cases. The number from twelve to seventeen years, exclusive, was four cases, and that from seventeen to twenty-two years, exclusive, was two cases.

Gross in his monograph on foreign bodies in the air passages (1854) could make but two classes of cases, to wit: those in which the foreign body was coughed up and those in which it was found at autopsy. Since about 1897 two other classes have been added, those removed by bronchoscopy, and, in theory at least, those recognizable by the X-ray. A fifth class is also possible, those removed through the chest wall.

Some interest doubtless attaches to the foreign bodies of longest sojourn. The record is held by an old American case,—that of Bartlett, reported in 1846, in which a chicken bone swallowed at the age of three years was coughed up sixty years later. Chevalier Jackson is second, with a record of twenty-six years sojourn for a collar button, removed with the bronchoscope. The third place is held by the case of Eldredge of Rhode Island, the sojourn being twenty-three years. The case was reported in 1860 and the reference does not mention the nature of the object. The cases of Lescure in the 18th century and of Beer of New York in 1916, are tied for fourth place at seventeen years. The former was one of expectorated bone, and the latter one of a paper clip, removed with the bronchoscope.

A case of fourteen years' sojourn was reported in 1876 by Reclam, in which the foreign object was a needle. Of more

than usual interest was the coincidence in which two Americans, Whitley of Georgia, and Woolsey of Tennessee, two years apart, 1878 and 1880, reported almost duplicate cases of a cockle burr coughed up eleven and twelve years respectively after aspiration.

We omitted to mention in its proper place the case of a pin coughed up after sixteen years. The case was reported in 1886 by Colquhoun of Australia. Another case of long sojourn was reported in 1842 by Carpenter of Guy's Hospital, in which some teeth were found in the lung at autopsy, thirteen years after aspiration. During the present year, Walters of California, has reported the removal with the bronchoscope of a piece of bone aspirated eleven years before. The longest sojourn in Killian's practice seems to have been a needle for ten years. Another ten year sojourn is recorded by Dupuytren in connection with a coin. It seems hardly worth while to continue this narration because of the complete want of type. There appears to be no reason why any kind of foreign body cannot sojourn in the lung for any interval.

DISCUSSION

Dr. Thomas H. Halsted, Syracuse, N. Y.: I wish to report a case of a foreign body which I encountered about two weeks ago. This body, unlike Dr. Roy's, had not been long in the bronchus; but it shows how easily a foreign body can enter the bronchus and not be noticed at the time. The little girl was tetering with another child; and while doing so, wiped her face with her handkerchief. While doing this, something flew into her mouth. She inhaled it, coughed a few moments, got off the teter, and went to the house. A doctor happened to be in the house at the time. She told him that she had inhaled a foreign body and thought it was in her throat. He looked and found nothing and told her she had evidently spit it out or it had gone into the stomach. However, he waited fifteen minutes to see that he was correct, and then left the house. The child had no trouble that night; but the next morning she had a pricking sensation. A general practitioner assured the mother that the foreign body was not there, but had evidently scratched the throat and been coughed out. However, the child insisted that it was there, **and** located in the upper part of the neck. A radiograph was taken and the foreign body demonstrated in the right bronchus, between the 5th and 6th ribs. The child was sent to the hospital, where I assumed charge. The body can be seen very clearly in

this picture. I have brought two plates, which make a beautiful stereoscopic view of the chest with the foreign body in it. Under bronchoscopy and general anesthesia the foreign body was immediately located. The forceps were introduced and the foreign body grasped, but it was impossible to remove it, as the picture shows. This is not the original X-ray; the first did not tell whether the point was up or down. I worked two hours, and thought I had it several times. I could only advance it two inches. Then it would slip and return to the original position. At the end of two hours I desisted and the patient was sent to bed. The next day we had the stereoscopic plate made and found the body to be like a fish hook, with the fine point pointing upward. A tracheotomy and lower bronchoscopy were done. I used an alligator forceps with a strong grip, and it took two hours after that before the body was finally removed. The tracheotomy wound was sewed up at once, and the child went on without any discomfort. In six days the respiration was normal. The temperature was at no time above 98°. There was localized bronchitis, but perfect recovery. It shows how easily a body like this can enter the lung and remain there without causing local disturbance, and the great difficulty experienced in removing it after seeing and seizing it.

CONCERNING ATROPHIC RHINITIS AND OZENA WITH REPORT OF CASE REFERRED TO LAST YEAR

LEWIS A. COFFIN, M.D.

New York

What I have to say concerning atrophic rhinitis and ozena I fear is hardly worthy to form the framework of so dignified a thing as a paper. Last year in showing a series of X-ray plates of children's heads, many of which showed disease of the accessory sinuses of the nose, I remarked that in these cases I believed we saw the cause of many future cases of atrophic rhinitis and further, that in those cases showing disease of the maxillary antrum we saw the causative element of ozena. I shall not refer to the various causes of atrophic rhinitis that have been put forth. I simply range myself on the side of those who consider atrophic rhinitis as secondary to a hypertrophic condition of the membrane, which hypertrophy has not infrequently been caused by the constant irritation of the secretions from the chronically diseased sinuses. As far as I know I was the first to suggest that the foul odor which so frequently accompanies atrophic rhinitis, and constitutes the disease known as ozena, has its origin and is caused by a chronically diseased and poorly drained antrum. In making this statement a year ago, I invited members of the association to visit my clinic the following week and inspect a number of cases that had been treated on this principle; that is, whose antra has been opened for drainage, ventilation and treatment. I reported at that time that all cases so treated had been completely relieved, with the exception of one.

In response to that invitation one member of the association appeared, making this remark, "I am here to see what you have to show in confirmation of the statement I have heard you make." Having examined the cases presented, listened to their histories, and so forth, he expressed himself as well paid for his visit, and further stated that he felt it a duty to write several patients to whom he had given little encouragement of better-

ment from treatment, to return, that he might try the treatment I had indicated for their relief. About six weeks ago he wrote me that he had given the method a trial in several cases, with brilliant results. I am pleased to say this was our honored president.

Dr. E. R. Faulkner of New York has reported several cases completely relieved by the same method of treatment.

All cases reported last year relieved of the odor have remained so, as far as I know. Most of them have reported at the clinic from time to time and have continued to have odor free noses. For the most part they have been patients who have continued to give especial care to the toilet of the nose, and in two or three cases they have washed the antrum by the introduction of a canula into that cavity through the nasal opening. The case I reported as unimproved by the simple procedure of opening the antrum through the inferior meatus, and whose lack of improvement I believe to be due to lack of a sufficiently radical operation, is of interest.

The clinical history is as follows, by Dr. T. J. Harris:

F. S., female, 23 years, complains of crusting of nose and odor. Deviated septum. Perez organism found. Long course of vaccine, no benefit. (This vaccine was furnished Dr. Harris by Dr. Horn.)

At this point, February 9th, 1917, at my request, Dr. Harris referred the patient to me. Both antra were opened at once, after which Dr. Harris noted on her history card that the odor was much lessened. This I think was due to her regular attendance at the clinic, and the frequent cleansing of the nose, for as I remember the case the odor was always so bad that at that time I could not speak of much improvement.

Dr. Law made the following notes on envelope containing X-ray negative of her head:

Frontals contain granulations.

Ethmoids contain granulations.

Antra clear.

Sphenoids clear.

Shortly after returning from our last meeting I did a radical Caldwell-Luc operation.

There was no appreciable amount of pus in the antrum, but nearly the whole membrane was covered with small polypi. The entire membrane lining the antra was removed, sent to the laboratory, and the following report returned:

Copy of Report

Surgeon—Dr. L. A. Coffin.

Patient—Scholl, Florence, No. 83724, Lab. No. 6460.

Tissue—Lining membrane of antrum.

Findings—This tissue shows typical round-celled infiltration, with marked degeneration of the mucous membrane. The whole tissue presents the appearance of an hypertrophic process followed by an atrophic one.

Cultures—There was isolated in pure culture an organism resembling the Perez bacillus and the characteristic odor was given off to a very marked degree.

J. G. DWYER, Pathologist.

There still continued to be considerable odor immediately following the operation, diminishing gradually under treatment until, about one month after the operation, the patient wrote me that she was well and would not return to the hospital for further treatment. This was in October, 1917. About the middle of March, 1918, she returned to the hospital. Nose full of crusts and the odor almost as bad as before. Why this patient failed to respond as have the others, I have not satisfactorily explained to my own mind.

DISCUSSION

Dr. Cornelius G. Coakley, New York City: I wonder why, if I understand Dr. Coffin correctly, he would ascribe most of the trouble to disease of the maxillary sinus; and I understand that the radiograph showed distinct disease of the frontal and ethmoid, and not of the maxillary.

It seems to me that all the odor should not be attributed to disease of the maxillary. If the patient had pansinusitis, I do not see why it should be cured by washing out the maxillary and leaving the same pathological process in the ethmoid and frontal. Of course, one does not get much odor from them; but they should be cleared up, as well

as the maxillary; and I suggest that as the cause of the continuation of the odor.

Dr. George L. Richards, Fall River, Mass.: I do not know what Dr. Delavan is going to say tomorrow on the value of dichloramine-T, but I have had good luck in using this chlorinated oil in the type of case that Dr. Coffin has been speaking of. It is purely empirical. I used it, thinking that it would do some good to place it on the surface and hold it there. It was done with the swab or spray, and not after opening the antrum. I have not yet been converted to the belief that all, or even the majority of cases of atrophic rhinitis are due to antrum disease.

Dr. Thomas H. Halsted, Syracuse, N. Y.: I was greatly gratified and surprised at seeing the result apparently present in the fifteen or sixteen cases which Dr. Coffin presented at his clinic in New York. Returning home, I summoned a lady who had been a patient of mine for a number of years and one of the worst possible cases, with a most unendurable odor. She reported and I performed a double antrum, the simple Mikulicz operation. Nothing further was done. The saline douche she had been using was continued. I did not see her thereafter for a year. Then the odor had entirely disappeared. There was no odor whatever, from the nose, and there had been no other treatment during this time but the washing out. She had, even then, good penetration of the antra. I operated in some other cases, one, a double and three single operations. In three of the five there was absolutely complete cessation of all odor. It was one of the most satisfactory of any operations I have done.

Dr. Greenfield Sluder, St. Louis, Mo.: The point I should like to make is that if Dr. Coffin has established that the opening of the antrum will cure ozena, the stench of an atrophic rhinitis, it seems to me that it is one of the best advances presented for a long time. Last year I asked the question, which was not answered, "What happens in a case of atrophic rhinitis when the olfactory fissure anteriorly is surrounded with crusts?" There is no accessory sinus opening here but the atrophic process is as active and destructive here as elsewhere. I thought that it was decomposing crust that gave the odor.

Dr. Henry L. Swain, New Haven, Conn: In speaking to Dr. Sluder's remarks I am endeavoring to bring out the proposi-

tion that Dr. Coffin has presented; because he will be accused of saying that he cures atrophic rhinitis by opening the antrum. He does not cure the rhinitis, but does cure the odor, as Dr. Sluder says. As I said at the last meeting, it was a most radical remark on Dr. Coffin's part; and if it bore truth as promised, it was really an epoch-making suggestion. I rise to confirm Dr. Sluder. I would also remark that we have all by various procedures cured cases of atrophic rhinitis with odor. The latter is largely a matter of perfect cleanliness. I often say if the people will take enough pains to cleanse the nose properly most of them can remain inoffensive to their immediate environment. That could not be the case if the odor depended solely on the condition of the interior of the antrum. Although I am particularly friendly to Dr. Coffin's suggestion, I am sure that we shall not be able to cure all cases of ozenic odor by opening the antrum; because I do not believe that all cases are due to antral involvement. We are not saying that he does not do it, and we hope to do equally good work. In an ozena where the cavity could be seen through a large natural opening between the antrum and the nose, the mucous membrane lining the antrum showed the same process that was present in the nose proper. That is, there were masses of atrophic material lining the entire cavity of the antrum. If that could exist once, it could many times. It explains why in some of these cases in which, as Dr. Halstead discovered, there is no darkness under transillumination, the same process will nevertheless be going on as in the nose. This could be relieved by opening the antrum, and only by so doing.

Dr. Hanau W. Loeb, St. Louis, Mo.: It is obvious that if there is any process of this nature in the antrum, getting good drainage will naturally improve the odor; just as I have found that by clearing out the ethmoids, a particular odor that may accompany the process will improve or disappear. I feel that Dr. Coffin's contribution, in this respect, is simply calling attention to the fact that the antrum being the largest cavity connected with the nose, and most intimately associated with its function, the greatest opportunity for the development of these crusts is offered by it, whenever it is subjected to the action of putrifying bacteria. I do not see why it should be affected in all the cases, or even in more than a fair number of the cases; because, according to my information and observation, the antrum is not more often affected than the other sinuses.

Dr. Thomas H. Halsted: At Dr. Coffin's clinic the patients I examined were not all free from odor; but some were absolutely so. Of my own cases, three are free from odor. In the other two, the odor is much relieved. The improvement has been remarkable. All who were present at Dr. Coffin's clinic agreed that the result was remarkable.

FOUR UNUSUAL NASAL (SPHENOPALATINE) GANGLION CASES

GREENFIELD SLUDER, M.D.

In 1908* I described the symptom complex that seemed referable to the nasal ganglion. Since that time I have added some features under the headings of motor, sensory, gustatory and sympathetic.†

The pain picture is by far the most frequent and predominant; and next to that, I believe, come manifestations that seem referable to the sympathetic nervous elements of the ganglion.

It will be recalled that the nasal ganglion, that is, the sphenopalatine or Meckel's ganglion, is supplied from the second division of the fifth with the sensory fibres, and by the vidian nerve, with fibres from the geniculate ganglion of the seventh and the carotid plexus of the sympathetic.

This has been a very interesting phase of practice to me; and today I report four cases each having, it seems to me, unusual features. They are not representatives of types of cases.

The usual neuralgic picture is pain in and about the eyes and the upper jaw, the teeth, extending backward about the temple under the zygoma into the ear, making earache; and then backward into the mastoid; and severest usually at a point two inches back of the mastoid, to extend into the occiput, the neck, the shoulder; into the shoulder blade, and sometimes the axilla and breast, and frequently down into the arm, forearm, hand and even to the finger tips.

Added to this symptom complex, frequently is found a sneezing, and watery secretion, more marked, probably, in the morning, frequently extending through the day; a red external nose, with tearing eyes, photophobia, and a sense of discomfort in the eyes, difficult for the patient to describe.

Occasionally, however, are added unusual features to this

*Sluder. The Role of the Sphenopalatine or Meckel's Ganglion in Nasal Headaches. New York Medical Journal. May 23, 1908.

†Idem. The Sympathetic Syndrome of Sphenopalatine (Nasal) Ganglion Neuroses, Together with a Consideration of the Neuralgic Syndrome, and Their Treatment. Trans. Am. Laryng. Assn. 1915.

clinical complex. These cases record phenomena that at present are unique and cannot be explained. They may be recorded as facts.

Mrs. H. C. M., aged 35 years, Joplin, Missouri, came to see me December 15th, 1917, complaining of great headaches, lower half, accompanied by dizziness of such severity that she was able to walk with difficulty. She had suffered eight years from these conditions. Examination revealed a well marked post-ethmoidal sphenoiditis with considerable acute element mixed with it. In the effort to localize the point from which the pain proceeded, cocainization of the ganglion was followed by cessation of the headache, almost instantaneous relief. After six hours the headache returned to some extent, but the dizziness was totally absent. Owing to this patient living at a distance further observation has so far been impossible.

Mrs. Charles F., aged 30 years, came to see me January 1st, 1918, referred by Dr. Fayette Ewing. She had suffered violently from headache a large part of her life. Doctor Ewing had found some disease of the ethmoid on the left side, and had curetted the capsule of the ethmoid for that reason. She **continued** to have great headache, and as he was about to depart for service in the National Army he put her in my charge. In the effort to localize some starting point for the pain I cocainized the ganglion of the right side at a time when the headache was on the right side. The headache was stopped, but as an effect of cocainization the right eye-lid drooped very perceptibly to obscure probably half of the blepheral fissure and the pupil contracted to one half of the size of the fellow of the opposite side. So far the case presents this interesting phenomena that through the nasal ganglion in this case must pass a large part of the sympathetic supply which goes for the elevation of the eyelid and to close the pupil.

Fred B., aged 38, consulted me November 1st, 1917, sent by Doctor F. L. Henderson, who had exhausted all means known to him for the relief of a right-sided blephero spasm of great severity. Examination showed a post-ethmoidal sphen-

noidal suppuration with polyps, on the right side. Experiment showed that cocainization of the right nasal ganglion opened the right eye and relieved the blephero-spasm for a period of three hours. It was therefore decided to inject the nasal ganglion of the right side. This was done three times and was followed by relief of the spasm for three to six hours. The right post-ethmoidal sphenoidal operation was performed December 21st, 1917, and also relieved the spasm for a few hours. Treatment of the sphenoid cavity was followed by cessation of the suppuration and disappearance of the polyps; but the blephero-spasm remained. Intrasphenoidal cocainization relieved it for three to six hours. The case was unsatisfactory, at least for the blephero-spasm, and I determined to open the sphenoidal cavity of the left side which in this case appeared to be normal. I decided this because of my memory that nobody could tell the sub-division of the sphenoidal body prior to opening and not always then, without X-ray plates with probes in situ. I felt that the irritation might come from the left sphenoidal sinus; but prior to this the experiment with the left nasal ganglion was performed and found that it gave longer relief from the spasm than had the right nasal ganglion or the right sphenoidal sinus. I then elected to inject the left nasal ganglion, which has been done twice, with transitory relief. April 20th, 1918, I opened the left post-ethmoidal sphenoidal cells. The blephero-spasm is unchanged. This case to me is exceedingly interesting, raising the question of the path of the impulse which may set off the blephero-spasm. I had assumed that it was sent through the great superficial petrosal from somewhere, the seventh nerve, possibly the geniculate ganglion; but that would be of the same side. The fact that the injection of the left ganglion opened the right eye is to my mind at present not to be explained. This case is of great interest in connection with other cases where pronounced blephero-spasm was relieved, one associated with the lower half headache, and one having the spasm alone without headache and in both eyes. As I look back over the record of one of them I note with more attention than was given in the beginning, the fact that the injection of the first ganglion opened both

eyes to a very great extent. The case was not completed, however, until the second ganglion was injected.

Dr. Emil Mayer, New York City, N. Y.: We are much indebted to Dr. Sluder for calling attention to these nasal ganglion cases and what may be done for them. I recall the case of a young woman whom I had successfully treated for dysmenorrhea by the intranasal treatment. Later she came, suffering from severe headache. I cocaineized the nasal ganglion on the same side on which was the headache. She left no better; but an hour later telephoned to say that the headache had completely ceased. She was so rejoiced at the relief that she felt that she must inform me at once. She remained well for some months, and then had a return of the headache. She came to me again, the above mentioned application was repeated, and she has remained well ever since. The question as to why and how certain drugs act has been raised; for instance, I cannot understand why we get such wonderful results in dysmenorrhea by a treatment which must be called empiric, yet, some time it may be understood and explained. The word empiricism must apply in this instance as in that of Dr. Coffin's patient, when, without scientific explanation we nevertheless secure a good result, and the patient is happy.

Dr. Henry L. Swain, New Haven, Conn.: I always take anything Dr. Sluder says seriously. I have been guilty, on his initiative, of trying to cocaineize the ganglion and get results in neuralgic cases; and I endorse his observation on the question of concomitant dizziness, which neither he nor I have been able to explain. One of the cases that I cocaineized for headache also suffered from vertigo, and it was relieved entirely during the period of the cessation from pain, which was only two or three weeks. I made another application of adrenalin and cocaine in combination, and the patient was relieved for so long that she thought it unnecessary to have further treatment of that kind. That was a year ago. I have not seen her since, and do not know the final result.

The question of the cause of pain in these nasal cases is most interesting. I have had a number of cases of severe pain with previous sinus disease; and in order to be able to say that I was not longer dealing with a diseased nasal sinus, I have had an X-ray picture taken. The neuralgia has ceased in five instances immediately after taking the picture, so there must have been something in the exposure to the X-ray that broke up the nerve complex and caused the pain to stop

within a few hours. Previously I had been watching these cases and doing all I knew how, without relief; and immediately after the taking of the picture, the pain stopped. This occurred in several instances in persons whom I saw every day. The question arises: Could this fact be put to some practical use, and be of some therapeutic value? Shall we expose patients with neuralgia of this type to the X-ray to cure them? I do not think that this occurrence was accidental in all five cases.

The case that Dr. Mayer has described, was, I fancy, one of those in which the ganglion lies particularly close to the surface. That sometimes happens, and such a case may be exploded into the most violent lower-half headache by an ordinary coryza. Cocainization, in that case, is curative, not palliative merely.

Dr. Sluder: Dr. Swain's observation that an X-ray relieved headache is exceedingly interesting; and I, too, will take him seriously, and try it.

SYPHILITIC NECROSIS OF THE INTER-MAXILLARY PORTION OF THE SUPERIOR MAXILLA

LIEUTENANT COLONEL CHARLES W. RICHARDSON, M.D., M.C., N.A.

Washington, D. C.

In a long clinical experience covering a period of thirty years I have seen the evidences of syphilitic infection of the upper air tract in almost every phase, stage and variety in which it is wont to appear in this region. The case which I shall describe while being a tertiary necrosis and therefore not unusual in the life history of syphilis, presents several points of extreme interest, that is, the manner of its onset and the area of bone infected

Mr. M. F., age 26, married, stock-broker's clerk, consulted me first on April 16, 1917, on account of extreme pain in the lower third of the left nasal cavity. The family and general medical history as given by the patient seemed to have no bearing upon the case. The pain was described as being continuous, localized in the floor, over the lower portion of the inferior turbinate and on the extreme lower portion of the septum near the floor. This symptom was present only in the left nasal chamber. The pain was so intense as to cause interference with sleep. The patient in no sense described the pain as greater at night. There was no alteration of function within the left nasal chamber. No symptoms other than pain and interference with sleep were complained of by the patient. The pain had already endured for several months. The young man had been under other special care before he came under my observation. He said that his former physician had believed the condition due to a spur of the septum which was forthwith removed, without giving relief.

Physical examination: Investigation of the nasal chambers through anterior and posterior rhinoscopy revealed practically no deviation from the normal in the appearance of the mucosa in either nasal cavity. Tenderness was especially marked in the lower anterior portion of the left nasal chamber and particu-

larly in the floor of the nasal chamber in this region. Careful examination of the incisor teeth demonstrated slight tenderness, but no evident disease. Sinuses were transluminated, especial regard being paid to the left antrum, with negative results. The patient was referred to a roentgenologist for examination of the condition of the incisor teeth and the contiguous portion of the maxillary bone. A negative report was received. As all other possible sources of such pain with negative objective symptoms had been eliminated, the patient had a Wasserman made, with a double plus result. As the alveolar border over upper incision had become so intensely painful and so tender to the touch, I had these teeth extracted. The patient was immediately put upon salvarsan, but a little too late to spare him the destruction which had evidently started before he came under my observation.

The destruction to which I refer was the complete necrosis of the inter-maxillary bone on both sides. Shortly after removal of the teeth the evidence of necrosis began to be patent along the lower margin of the alveolar border in this region. In the course of several weeks the whole mass of bone giving evidence of having separated, it was gently grasped with forceps and removed as one piece. By this time the patient had received three intravenous injections of salvarsan.

The important and salient feature in this case is, first, the severe, continuous pain for many weeks without any objective signs. Second, the severe necrosis with the formation of a complete sequestrum without any inflammatory swelling, and third, the complete limitation of the necrosis within distinct anatomical borders.

DISCUSSION

Dr. Henry L. Swain, New Haven, Conn.: Before coming to the meeting I tried but failed to find a specimen of sequestrum which I had removed in a woman of fifty years, who had false teeth and had as great pain as Dr. Richardson's patient. In treating her I was a little late, so a fistulous tract led from the roof of the mouth in this region. Under treatment common to all of us the local conditions cleared up so that I could remove the entire premaxillary bone, as in Dr. Richardson's case.

CYST OF THE THYROGLOSSAL DUCT—A REPORT OF TWO CASES

OTTO T. FREER, M.D.

Chicago

The middle lobe of the thyroid gland originates in early foetal life from a pocketing of the epithelium of the anterior pharyngeal wall at the place where the anterior bud or tuberculum impar, which becomes the anterior part of the tongue, is met posteriorly by the two posterior buds which form the base or root of the tongue. From this meeting point the invagination of the epithelium descends, prolonging itself as the thyroid gland moves downward in its normal site in the neck, a narrow, epithelial tube, the thyroglossal duct resulting, whose beginning on the dorsum of the tongue is permanently indicated by the foramen caecum, the little pit that is seen at the apex of the V formed by the papillae circumvallatae. The thyroid duct is a very early foetal structure, being formed and losing its continuity normally before the creation of the cartilage of the hyoid bone, the duct disappearing at four and one half weeks, while the cartilage of the hyoid bone does not appear before the end of the fifth week. The lingual part of the thyro-glossal duct may remain open throughout life as a lingual duct, a fine canal of varying length that begins at the foramen caecum and may even extend as far as the hyoid bone, a distance of about two and one-half centimeters. To meet the ductus lingualis the middle lobe of the thyroid gland (called the processus pyramidalis) extends upward from the thyroid isthmus, its continuation in the form of a fibrous band or tube often reaching up underneath the body of the hyoid bone to the level of the hyoepiglottic ligament. The ductus lingualis and the processus pyramidalis represent the track of the original thyroid embryonic descent. In most individuals the thyroglossal duct vanishes in foetal life, but in thirty per cent of a number of bodies examined by Woglinski remains of the primitive duct were found in the path from the foramen caecum to the thyroid

notch, these vestiges remaining unnoticed unless they take the form of separate lobes of thyroid tissue, portions of the duct as a band or tube, cysts or fistulae. Where the upper part of the thyroglossal duct fails to disappear it always lies close to the posterior (dorsal) surface of the body of the hyoid bone and may even pass through the bone. Thyroid tissue has been found in the body of the hyoid bone.

Thus, while every vestige of the thyroglossal duct usually disappears, the thyroid gland becoming completely detached from its connection with the pharynx, traces of the foetal descent of the gland may be found along the thyroid tract anywhere from the foramen caecum to the thyroid isthmus. The highest of these traces is an accessory thyroid gland in the tongue in the region of the foramen caecum, varying from cherry size to that of a hen's egg and it has even been found that all of the thyroid tissue in the body was collected in this locality, the foetal descent of the thyroid gland never having taken place. The next remnant of the thyroglossal duct is the ductus lingualis mentioned. Still lower may be found a processus pyramidalis. In other cases there is no thyroid tissue in the tract of the thyroglossal duct, a fibrous cord being found as a remnant of the duct. This may reach from the upper border of the body of the hyoid bone, lying against its dorsal surface, to the thyroid isthmus, or a portion of the open duct may remain, ending in a fistula in the median line of the neck or beside it, or the fibrous remains of the duct may be found to descend only a short way, ending in a median cyst, or the duct may expand to a cyst somewhere in its length.

Cases

Case 1. In October, 1914, the patient, a man of 57, began to have difficulty in swallowing and at the same time noticed a swelling in the region of the thyrohyoid space. When first seen, on April 19th, 1915, the swelling had increased and there was an increase in the difficulty in swallowing, so that to make solid food go down he had to try twice and help with a mouthful of water.

Examination showed a normal nose, pharynx, larynx and esophagus. In the thyrohyoid space a cyst was felt, seemingly

lying underneath the sterno-hyoid muscles. It was of walnut size and could be felt to interfere with the ascent of the thyroid cartilage to the hyoid bone when the patient swallowed, that is, the cyst became pinched between the two structures.

Operation on June 17th, 1915. After dissecting off the superficial fascia and platysma muscle from a vertical median incision, a strong, tendinous layer of fascia was exposed that was attached to the lower border of the hyoid bone above and to the border of the thyroid notch below, so firmly binding down the cyst between itself in front, the median thyrohyoid ligament behind and the thyrohyoid membrane laterally, the cyst being unable to escape from the compartment in which it was confined when pinched during swallowing. When exposed by removing the fascia described the wall of the semitransparent cyst (Fig. 1) was found to be so frail that it could not be seized

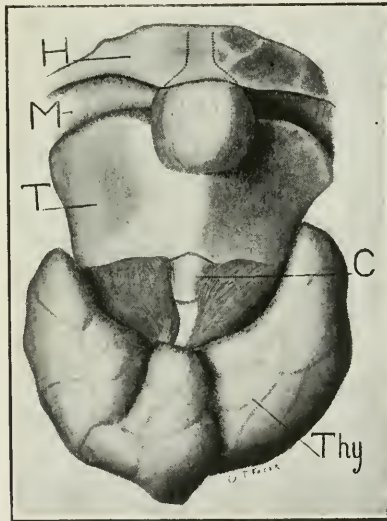


Fig. 1.—The cyst is seen placed in a specimen of the larynx and tongue in the position it occupied after being freed from its surroundings while still attached to the thyroglossal duct above. The dotted line shows the position of the duct underneath the body of the hyoid bone.

H, body of the hyoid bone. M, thyro-hyoid membrane. T, Thyroid cartilage. C, crico-thyroid membrane. Thy, thyroid gland.

lest it tear. This made the dissection tedious, as only the tissue surrounding the cyst could be held with tissue forceps, the cyst being held aside with dull retractors. The cyst was removed unhurt from its bed and was found to end above in a fibrous pedicle that lay against the posterior surface of the body of the hyoid bone and could be followed as high up as its superior border at the level of the hyoepiglottic ligament. Removal of the cyst exposed the median thyrohyoid ligament to view, this ligament forming the posterior wall of the compartment in which the cyst had been confined.

Microscopic section of a part of the cyst wall showed it to be composed of fibrous tissue lined with a layer of leucocytes intermingled with numerous, evenly distributed giant cells. There was no epithelium. The cyst contained a clear fluid. The removal of the cyst enabled the patient to swallow normally.

Case 2. The second patient was a woman of 32, first seen on November 8th, 1916. She had a swelling over the larynx since her tenth year. Iodine was injected into this swelling during the summer and since this was done the swelling had gradually increased in size.

Examination showed a spindle shaped cystic tumor of the size of a walnut in the prelaryngeal region. The upper pole of the cyst could be felt to dive under the centre of the body of the hyoid bone, its lower pole dwindled to a cord that could be felt to reach the region of the thyroid isthmus.

Operation under cocaine on November 17th, 1916. It took two hours to dissect out the cyst, as only the most delicate handling could prevent its rupture and inflammatory changes caused by the iodine injection had made the cyst wall grow to its surroundings, so that the thyrohyoid and sternohyoid muscles were firmly joined to it in front. The upper end of the cyst ended in a cord that extended upward under the body of the hyoid bone to its upper border where it was lost in the hyoepiglottic ligament. Below, the cyst ended in a similar cord that joined the isthmus of the thyroid gland. When freed from its bed just before removal the cyst ruptured, thick pus escaping, a cold abscess probably caused by the iodine injection.

After the cyst was taken away the thyroid and cricoid cartilages, upon which it had lain, were bared to view.

In the first case the possibility of the cyst being one derived from a subhyoid bursa might come into question. However the pedicle which formed a cord passing up under the body of the hyoid bone, in the location of the thyro-glossal duct, showed the thyroid origin of the cyst.

In the second case the entire thyroglossal duct, expanded to a cyst in its middle, was present to prove the correctness of the diagnosis.

Related to this subject is a report by Dr. T. W. Lewis of Chicago, presented to the Chicago Medical Society some years ago, but not yet published, of obstinate cough caused by suppuration of the ductus lingualis, pus discharging from the foramen caecum. Dr. Lewis also described a large lingual thyroid gland that he showed to me and which had led to repeated severe hemorrhages.

REPORT OF A CASE OF LARGE OSTEOMA INVOLVING THE RIGHT FRONTAL SINUS AND UNCOVER- ING THE BRAIN

JOHN F. BARNHILL, M.D.

Indianapolis

Vivian B., age 16, was referred to me August 20, 1917, by Dr. Judson D. Mochelle, because of a tumor over the right eye. The young lady gave a statement of previous perfect health except childhood diseases which were mild and uncomplicated. Her family history was also good. Her own statement of her case follows: "While in school in January, 1915, I noticed that there was a slightly raised place on my forehead. It was large enough that one could feel it by rubbing the hand over the forehead, but was not visible to the eye. It grew gradually, but at times I fancied it was smaller. It never caused pain in my eye or about my head. I was never nauseated nor in any way ill, except that I felt tired all the time. I slept well, ate well, thought well, and made my grades at school. It was the appearance of deformity and the fear that the tumor might be serious that troubled me. I never received any injury to my head, and I do not know of any cause for the lump over my eye."

At the time of her visit to me Miss B appeared well developed and in good health. The forehead was much deformed from the presence of the tumor, which on palpation, felt oval, smooth and very hard. There was no crepitation on pressure over the growth. The skin was perhaps a trifle thin, but was not reddened and showed no signs of breaking down. Vision was good. The nose was open, no enlargement or other growth of the turbinates present, and indeed, no evidence of nasal disease. There had never been any nasal hemorrhage. The X-ray plate showed an oval tumor, evidently involving the right frontal sinus, with absorption of the external and internal walls of the sinus.

The age of the patient led one to think of sarcoma, but prac-

tically all evidence of this disease was wanting. The diagnosis was, probable osteoma.

Operation Aug. 21, 1917. With every aseptic precaution the tumor was uncovered and removed. An area large as a ten-cent piece was wanting in the front wall of the sinus, and through this the hard, glistening tumor presented. The remaining portion of the sinus wall was removed by rongeur and the tumor forcibly pried out by stout bone rasps. It was attached to and extended into the infundibulum. The dura was exposed and absorbed over a large area. Some softened bone about the margin of the dehiscence was ronguered away, a sprinkle of iodoform powder applied to the exposed dura and brain, the infundibulum was enlarged by a bone rasp, and a drain tube inserted. The frontal sinus was lightly packed with sterile gauze and the external wound closed.

Uneventful recovery with but slight scar followed. I have seen the patient recently and she is entirely well.

The tumor was an osteoma, weighing a little more than 600 grains, and almost as dense as a billiard ball. Unfortunately, it has been lost.

I report this case because, evidently, osteoma in this location is quite rare.

DISCUSSION

Dr. John M. Ingersoll, Cleveland, Ohio: At the meeting last year I showed some radiographs of an osteoma of the frontal sinus in a boy fourteen years old, following a blow from a baseball. He has been under observation for three years. During the first year I was very hopeful, but the radiograph that I exhibited last year showed a recurrence and the osteoma had grown back into the brain cavity so far that it was inoperable. The tumor originally grew into the frontal sinus from the infundibulum, just as Dr. Barnhill's case did. The tendency to recur in these growths is very marked. We have a man now under observation at Lakeside Hospital, who has an exophthalmos, one eye being pushed downward and forward, evidently by an osteoma growing from the external part of the orbit. An X-ray taken two months ago compared with one taken recently shows that the osteoma is slowly increasing, but with the known tendency of the growth to recur rapidly we have hesitated to operate.

Dr. John E. Mackenty, New York City: At the Manhattan Infirmary, in another department, I was interested in an osteoma of the frontal bone. It involved the frontal sinus and extended back along the base of the brain, going through to the dura. The condition is generally recognized under the name of ivory osteoma of the frontal bone, and it is rather serious to operate on it. This man's was due to syphilis. I should like to ask Dr. Barnhill whether this girl's blood was examined for syphilis. The man subsequently died of meningitis following operation. The growth was not operable. The consensus of opinion is that when these tumors are very large, they are inoperable.

Dr. D. Bryson Delavan, New York City: At the last meeting of the New York State Medical Society, Dr. William L.



Fig. 1. Osteoma, involving the right frontal sinus and uncovering the brain.

Culbert of New York, presented an elaborate and scholarly thesis on the subject of osteoma of the frontal region and reported three cases.

Dr. John F. Barnhill: In answer to Dr. Mackenty, this patient, only a child, was not syphilitic. There was no evidence of hereditary syphilis, and she seemed perfectly well except for this ivory-like tumor. I would be greatly surprised if it were sarcoma. I am well aware that sarcoma is more common in the region of the antrum than is a tumor like this one. I should be surprised if it returned. When I pried it away, it snapped off from the infundibular attachments with the cracking sound of a piece of marble; and in sawing it had the ivory-like density of a billiard ball. There was no suspicion that it could be sarcoma; but knowing the tricks of sarcoma I would not say that it is impossible for it to have been one.

REPORT OF A CASE OF PROLONGED INTUBATION

EMIL MAYER, M.D.

New York

A. M., aged nine years, was admitted to the surgical division of Mount Sinai Hospital, New York City, on the 4th of June, 1912, because of a tracheal fistula.

At the age of two and a half years he had an attack of diphtheria requiring tracheotomy. The tracheotomy tube was worn for over two years, when it was finally removed; the opening in the trachea resulted, with constant discharge of mucous.

On June 15, 1912, a secondary tracheotomy was performed, the sutures breaking down, the fistula still remaining.

On June 20, 1912, my then associate, Dr. Sidney Yankauer, attempted to pass a small bronchoscopic tube. Owing to the low position of the larynx this was very difficult, the tube passing through the larynx slightly through the vocal cords where it met with a distinct constriction which was not permeable. On July 3rd he again attempted bronchoscopy, without being able to pass the tube. On the 10th of July a dilating tube was used, 3 mm. in diameter, which passed through the constricted part of the larynx with much difficulty. During this time, and up to October, 1912, the patient wore a tracheotomy tube.

A plastic skin transplantation was now performed, and Schrötter's tubes were passed daily without difficulty, through the constriction of the larynx. The patient was then placed in care of the laryngological department of the hospital.

On the 8th of January, 1913, after repeated attempts, the bronchoscope was passed beyond the epiglottis, but was firmly held by the narrow opening in the larynx.

On January 13, 1913, under general anesthesia, the patient was placed under suspension bronchoscopy. Large uterine dilators were now passed through the constriction, and the stenosis divulsed.

This was repeated on the 20th of January and again on the 27th. Following the divulsion intubation was attempted but the

tube slipped into the esophagus and was lost there. It was subsequently passed through the natural passages.

On February 10, 1913, again under ether anesthesia dilation followed, this time by the insertion of a rubber tube in the following manner: a needle-eyed probe was introduced from below through the tracheal wound and passed into the pharynx, where it was seized and withdrawn, together with the strong cord which had been previously inserted; a piece of tubing was very firmly tied at its lower end to the cord at its centre. This was then drawn down past the constriction until it reached the tracheotomy opening where it was allowed to lie, the string ends being drawn out through the tracheotomy hole and firmly tied around the patient's neck. Any portion protruding through the epiglottis was cut off. The tracheotomy tube was now reinserted.

A week later this tube was removed and a larger one inserted. This method was continued for the remainder of the month, when an intubation tube was successfully introduced on March 10, 1913.

March 18, 1913: Extubated and re-intubated. This time the Roger's attachment, with clamps on the outside, was made use of. On April 23, extubation with curetting of the granulations about the orifice of the trachea. Re-intubation. On April 26 patient coughed out the tube. On April 28 respiration became difficult and the tube was re-inserted. This remained until May 19th. Extubated again. Two days later he became cyanotic, and a tracheotomy tube was promptly introduced.

From this time on the history of the patient remains about the same. In each instance, about every ten weeks, under general anesthesia, the patient was suspended, the intubation tube seized with Mosher's extractor, and removed. The sudden withdrawal of the tube always produced such marked cyanosis that reintubation was immediately resorted to. The patient remained at home, going to school, and presenting himself from time to time in the outdoor clinic of the hospital, where he was directed when to appear for a re-insertion and cleansing of the tube. His general health was good during all this time, and for five years he was constantly wearing the intubation tube.

He had grown tall, and this increasing stature has undoubtedly

helped materially toward the ability to do away with the need for an intubation tube.

In April, 1918, almost five years since he was first intubated, his intubation tube was removed, it is sincerely to be hoped for the last time. While he became cyanotic as soon as the intubation tube was removed as had always occurred previously, it did not seem to be so extreme. The tracheal opening being there, a small tracheotomy tube was inserted and the patient returned to the Ward.

On the 2nd day thereafter, the tracheotomy tube was corked up and he breathed perfectly through his larynx.

Forty-eight hours later, the tracheotomy tube was removed, the neck bandaged, and he has breathed comfortably through the natural passages since that time.

The special points of interest in this case are:

1st. Persistent remaining of a tracheal fistula in spite of every faithful attempt at its closure.

2nd. A stenosis of the lower portion of the larynx due to contraction of the natural parts, and their consequent disuse.

3rd. The impossibility of intubating except under general anesthesia and under suspension.

4th. Persistent collapse of the larynx as soon as extubated.

5th. The prolonged wearing for five years of an intubation tube.

6th. The ability to breathe through the natural passages after all these years in spite of the loss of at least two anterior rings of the trachea.

To this happy outcome must be attributed in great extent, the growth of the patient, who, from a little boy of nine, and four feet in height, is now nearly fifteen years old and has attained a height of five feet five inches with natural increase in size of all his organs, including the trachea and larynx.

This gratifying result attained by constant and watchful care has been largely obtained through the faithful cooperation of the anesthetists of the hospital, Drs. Branower and Eliasberg, and also of my colleagues in the laryngological service, Dr. Yankauer and Dr. Kaempfer.

DISCUSSION

Dr. Henry L. Swain, New Haven, Conn.: I should like to inquire as to the development of the thyroid and cricoid cartilages, notwithstanding disuse. Did they grow in the normal way?

Dr. Mayer: Yes.

Dr. Thomas H. Halsted, Syracuse, N. Y.: Three months ago I was called to see a child who had suffered a mild laryngitis for several days. A general physician was in charge. One night, the dyspnea became worse, and I was called. The patient was cyanosed and the dyspnea very great—so much so that I hesitated to look into the larynx. Examination revealed nothing. The child was sent to the hospital where an intubation tube was immediately introduced. A culture was made and found negative. We gave anti-toxin on general principles; and the same night I examined the child carefully after the tube was in and found no membrane. At the end of six days I removed the tube but had to replace it immediately and make artificial respiration. We gave this child anti-toxin in the first few days. We had the throat examined repeatedly, but the culture was always negative. It is now three months and meanwhile I have extubated eight times and intubated nine times. I did a direct laryngoscopy a month ago and found nothing but an ashy appearance of the trachea, resembling a pseudomembrane. I did not do a bronchoscopy. We suspected the existence of a foreign body and the child has been X-rayed several times, always without result. It is perfectly well otherwise, has gained in weight, walks about and enjoys itself, and has no difficulty in swallowing; but I do not know how to get rid of the tube. I have only been able to leave it out for two hours. Some think that the trouble was due to teething. I do not know. There has been one very slowly erupting molar which has been exceedingly painful, and which has taken until now to come through. In the meanwhile, a number of other teeth have erupted.

Dr. Swain: I presume that the method was adopted of giving large doses of an anti-spasmodic before attempting to take the tube out. That is often successful. One can then remove the tube when he would not be able to do so if the child were in possession of all the reflexes. I have had exactly the same kind of case as that of Dr. Halsted. In fact, there are three in the hospital now. One is just like his and the others are retained cases. I have had trouble to get rid of them. I am sorry that I forgot Dr. Richardson's suggestion of chorditis hypertrophica inferior, for I think that this explains the situation perfectly. How-

ever, I did try to look upward in one of the cases. I was called in consultation, and thought that it would be a good thing to do a tracheotomy and take the intubation tube out. At the time of the operation and later, I tried to look in from below and see the condition of the larynx, and find out what its interior contained but with indifferent success. Some days after making the tracheotomy, the child appeared not to be doing well and without any attempt to do any work on its tube, suddenly, in the forenoon, with no warning, it passed away. The older children recovered; but in them, we had almost to stupefy the patient before we could get the tube out and have it stay out. In one case, we had to keep the child under the drug for a whole twenty-four hours. Both are now well.

Dr. Charles W. Richardson, Washington: The case of Dr. Mayer's is a very interesting one. In former days, when I did a great many intubations, I occasionally met with some prolonged retention of the tube, but I think that Dr. Mayer has the record for long retention of the tube, and I wish to congratulate him on surmounting his various difficulties, especially after the loss of part of the cartilage.

May I ask whether he does not think that there was some regeneration of the cartilage later on, which caused the box of the larynx to stiffen up so that its firmness made it possible for him to eventually take out the tube and dispense with it entirely? That seems to me to have occurred in this case.

Regarding Dr. Halsted's case: Some few years ago I reported a series of cases of laryngitis hypertrophica subglottica acuta, and I should judge from what he describes that it was a case absolutely of the same character. Such is the usual history of such cases as he describes and as I have seen them. They are usually very intractable with regard to the removal of the tube. They have in the past given me more trouble than the fewer retained tubes in diphtheritic cases, as you would naturally expect on account of that fact that the primary trouble in these cases is subglottic, in the cricoid region. Of course, when I took out the tube in these retained cases the stenosis immediately recurred, or soon thereafter. It takes some time to get rid of the tube. I have had cases last three or four months before eventually being able to dispense with the tube.

Dr. Halsted: I believe that Dr. Swain and Dr. Richardson are both right. I had thought of that, and had come to the conclusion that it was this condition. I had a case of intubation twenty years ago in a child three years old, in which, after the

second intubation, the tube dropped into the trachea, so low that I could not remove it and had to do a tracheotomy. I removed it by pushing it up after the trachea was opened. A few days ago, I was called in consultation by a doctor, and found this same patient with a baby. I did not know why I had been called to see a maternity case. The doctor called my attention to the fact that she was still wearing a tracheotomy tube.

Dr. Emil Mayer: Replying to Dr. Richardson's question, perhaps there was not so much re-formation of cartilage; but on account of the prolonged intubation all the tissues about the trachea became as hard as whip-cords. So we had almost bony ridges on each side, which served to prevent the collapse that else would have occurred from the falling in of the soft parts.

Regarding the case that the Chairman presented, it seems that an acute tracheitis of some kind was the original cause requiring intubation. Dr. Lynah, in a recent masterly paper on Prolonged Wearing of Intubation Tubes called attention to the immediate collapse that in many instances takes place when the tube has been removed, requiring a hasty reintubation. In fact, he tells of a case in a boy who was extubated and returned to the ward. The boy was under the impression that the tube was still *in situ*. He was kept in the hospital for some time; and every time he became unruly they threatened to remove the tube and he immediately behaved. The tube was not there, but he thought it was. I would suggest that Dr. Halsted introduce a much larger tube next time; and when he does extubate, to have the patient under some opiate, so that the general reflexes would cease, and, finally, to watch the patient carefully during the dangerous period immediately thereafter.

Regarding the question of Dr. Swain, as to whether the patient did not receive quantities of antispasmodics, I would say that the boy was never extubated except under general anesthesia. He was always given an eighth of a grain of morphia and then was completely anesthetized while the tube was removed for cleansing; and this latter had to be done quickly. He has been anesthetized fully twenty-five times; and each time the anesthesia became more difficult, because he was pretty well soaked with the drug. I hope that we shall not have to do any more for the brave little chap. It certainly was a most interesting case, and one of the most important deductions that we can make from it is the wonderful tolerance of the larynx. Retaining the tube in his larynx for a month's time seems to make no difference to him.

THE SURGERY OF LARYNGEAL MALIGNANCY

HUBERT ARROWSMITH, M.D.

Brooklyn, New York

It is with considerable trepidation that I venture to present before this Association so important a topic as is indicated by the announced title, with as little preparation as I have been able to make, in the short time allowed me, after my conscription by our honored President.

The time is ripe, I believe, for a general readjustment of our rather academic attitude regarding the various procedures employed in the surgery of laryngeal malignancy and for a fusion of views and practice which may obliterate the lines of cleavage between the thyrotomists, the laryngectomists and to that class in which we may include those who, when the diagnosis of cancer has been established, confine their efforts to symptomatic treatment with, perhaps as a concession to surgery, a tracheotomy in the terminal stage.

The very laudable effort of most statisticians in this field has been to reach some conclusion by which surgery for laryngeal cancer might be standardized. Such a hope is, on the face of it, chimerical. We owe to these investigators a great debt for their painstaking devotion to this task; yet their researches have only demonstrated that no reliance can be placed on conglomerate statistics and that the indiscriminating combining of numbers has only succeeded in clouding the issue.

Moreover, it is eminently unfair to group together all laryngectomies since the time of Billroth's original venture in 1873, or the early thyrotomies, with the improved procedure of later years, and attempt to strike an average. Delavan's summary, presented to this Association in 1900, as to thyrotomy, partial laryngectomy and complete laryngectomy, was the first rational and logical analysis of the work of the then great masters of laryngeal surgery, who in their reports were not seeking to exploit themselves, who were willing to publish "all their material—good and bad" in the most minute detail, to the end that

some definite conclusions might be reached concerning the operative demands of various stages of the disease.

A condensed recapitulation of Delavan's classic is in order; he reported.

Thyrotomy by 7 operators

50 cases Postoperative deaths	9	Recurrences	9	Relative recovery	23
				Definite recovery	12

Partial laryngectomy by 8 operators

56 cases Postoperative deaths	15	Recurrences	21	Relative recovery	27
				Definite recovery	7

Total laryngectomy by 6 operators

34 cases Postoperative deaths	9	Recurrences	12	Relative recovery	11
(deaths from intercurrent diseases 16)				Definite recovery	2

Such intimate statements are informative and extremely valuable—the mass reports very much worse than useless.

Let me illustrate in a concrete way the ever-changing value of totals at different epochs—the following being those of two of the world's most distinguished operators, Butlin and Glück. Butlin's report was made in 1890 at the International Medical Congress in Berlin (British Med. Journ. August 23, '90). Glück's was published twenty-three years later—in 1913. (Kätz-Preysing, special surgery of the ear and upper air passages).

BUTLIN	1890	GLÜCK	1913
All cases of operation for intrinsic cancer of the larynx...	102	303 personal observations of cancer of the upper air passages. 184 intrinsic cancers of the larynx.	

Thyrotomy

Cases 28	Operative mortality 3	Cases 35	Operative mortality 0
Recurrences 13		1 recurrence, and death in 6 months	
		1 recurrence?	
		1 cancer of transverse colon in 2½ years.	
Recoveries 8. One patient died after 18 months, without recurrence. Three were wholly successful—one dying of apoplexy after four years, one well after eight, and one at the end of twenty years.		Recoveries 28.	

Partial Laryngectomy

Cases	23	Cases	47
Operative mortality	7	Operative mortality	3
		("rather remote") In last 19 consecutive cases—none.	
Recurrences	6	Recurrences	13
Five recovered and were well at various periods within three years; one died, without recurrence in 2½ years.		In one 8½ years after operation. All 13 were re-operated and, with the exception of one dying on the fifth day of pneumonia, cured. After one year—no recurrence in 17.	

Total Laryngectomy	
Cases	51
Operative mortality	16
Recurrences	17
(6 dead of other causes)	
Cured after 3 years.....	8
Cases	244
Simple laryngectomies.....	132
The last 33 cases were operated without fatality.	
45 patients were alive from 2 to 15 years, viz.:	
1 over 15 years	
1 over 13 years	
2 over 10 years	
3 over 8 years	
5 over 7 years	
8 over 5 years	
4 over 4 years	
21 from 2 to 3 years	
All without recurrence!	

It is obviously as unjust to vitiate Glück's record by adding it to Butlin's, and averaging the total, as to depreciate Butlin's magnificent work by combining his results with those of the earlier operators.

All these returns, although they have failed of their immediate purpose, have shown beyond any cavil, by the progressive improvement in the recorded results of surgery in malignancy of the larynx, that we must energetically prosecute our work in this field and through closer attention to early diagnosis, by betterment of our operative and especially of our post-operative technique, by a discriminating selection of procedure to fit the individual patient, be convinced that we shall, if not *cure*, at least very greatly lessen the fatalities from this dread disease.

One of our most distinguished members, not very long ago, was the author of an article unfortunately entitled "Thyrotomy VERSUS Laryngectomy" (the emphasis is my own). That was the old clan war-cry of the cults of a not very remote day—most intolerant partisans of the one or the other procedure. There is not, nor can there be, any antagonism between the operations. A certain period of laryngeal malignancy justifies thyrotomy, as clearly and definitely as a later stage makes laryngectomy imperative. In the borderland, the laryngologist must choose according to his individual experience and judgment the method he should adopt for his patient's salvation.

"The surgery of disease is, at best, a compromise; it is never a *cure*." And so we must make on behalf of our patient the very best bargain we can. Unfortunately, by far the greater number of these patients come to us laryngologists at a very late period, when anything short of complete extirpation of the

larynx cannot be considered. The responsibility for this delay rests most often on the family physician, who from ignorance or carelessness fails to appreciate the import of the early symptoms. Therefore more laryngectomies than thyrotomies are undertaken; and, because of the greater seriousness of laryngectomy and the usual deterioration of the patient's condition when it is done, with larger mortality. If every subject of laryngeal cancer could be in the laryngologist's care when thyrotomy would suffice, laryngectomy would soon become obsolete. Even more desirable than this thyrotomic millenium would be that these patients should present themselves at a time when *intra-laryngeal* surgery might be sufficient for their needs; then we might count on almost actual anatomical cures. This is, of course, utopian, but we cannot entirely ignore Fraenkel's series of 5 cures out of 9 patients by intra-laryngeal removal. (Archiv für Laryngol, etc., Vol. 6.) One of his patients was well at 13 years, one at 10, one at 9, one at 6, and one at $11\frac{1}{4}$ years, after the operation. Even more remarkable is Lynch's record of his work done under suspension laryngoscopy, though his report concerning the after-history of his patients is necessarily much shorter in point of time. At the 1916 meeting of this Association, he presented the following statement:

1 patient operated in May, 1913.
4 in 1915 (In one of whom he did
a laryngectomy 3 months later be-
cause of recurrence).

1 in July, 1914.
4 in 1916 up to the time of the pre-
sentation of his report.
All 10 being at that date free from
recurrence.

At a meeting of the Section in Laryngology of The New York Academy of Medicine, in October, 1817, Harmon Smith recounted the removal of a laryngeal carcinoma by the indirect method, there being no recurrence after 18 months. He very frankly said: "Of course had I known that this tumor was malignant, I would not have removed it except by more radical measures." Dr. Smith on examination regarded the tumor as papilloma.

To me, Smith's terse comment on his fortunate outcome is more eloquent than an essay on the "Possibilities of intra-laryngeal surgery in cancer" (and its improbabilities).

Among our American laryngologists Jackson has one of the best records, both as to thyrotomy and laryngectomy. (British

Med. Journ. Nov. 14, 1906). He reported 15 thyrotomies and 8 laryngeotomies, with no operative mortality. Among 29 cases of extrinsic cancer, he did palliative tracheotomy in 21. He was able to follow the history of 9, none of whom lived more than 13 months—a much shorter time than the laryngeotomized patients. In all of the latter who lived more than a year, a buccal voice developed that could be understood by those closely associated with the patient; he is convinced that by practice any patient can develop a buccal voice intelligible to anyone. In the mechanics of laryngeal surgery, he recommends that when tracheotomy is demanded for the relief of dyspnea, it be made at the highest possible point, so that in the event of a later laryngeotomy it will leave the greatest extent of trachea available for mobilization and attachment to the skin, a most practical suggestion. He emphasizes the necessity for the utmost gentleness in separating the trachea from the esophagus. His dictum: "No food nor water by mouth for five days," has been superseded by the use of the permanent pernasal feeding tube and intensive feeding, a great factor in the recovery of these patients. Crile (Ohio State Med. Journ. June '17) concludes from his 34 laryngeotomies:

1. Intrinsic cancer of the larynx is perhaps more curable than cancer in any other part of the body.
2. Operation should be early.
3. It should be done in two stages. (?)
4. Even if an extrinsic cancer of the larynx seems hopelessly extensive, the patient should be given a fighting chance by as far-reaching a dissection as possible.

He minimizes the importance of loss of speech.

Moure (Bull Acad. de Med. de Paris May '17), once a most ardent thyrotomist—now, very likely, when he can be—reports between December, 1914, and March, 1917 (27 months) 15 complete laryngeotomies with no immediate operative fatalities, but with some recurrences. He attributes his better immediate results to the employment of local instead of general anesthesia; perhaps in a lesser degree to tracheotomy, two weeks before, "to accustom the lower air passages to the direct impact of air." He uses a permanent feeding tube. He concludes: Total laryn-

gectomy is a not too serious operation; good results and a minimum of recurrences depend on early intervention.

Mackenty, with a large and steadily growing record of successful work, has selected and assimilated the best features of all the other techniques and added several invaluable details of his own devising, making a composite procedure which is almost ideal.

The opportunity of seeing several operations by him during the past few years has encouraged me to again undertake laryngectomy, which I abandoned many years ago after some very unhappy experiences.

From my observation of Mackenty's work and my own trifling recent experience, modelled very closely thereon, I am inclined to tentatively suggest the adoption of Moure's antecedent tracheotomy, to accustom the lower air passages to the direct impact of air, which may lessen their immediate post-operative irritability and susceptibility; the tracheal opening to be made high, as Jackson has indicated, because that will not interfere with the later mobilization of the trachea. Otherwise the two-step operation seems to offer no special advantage. This is the ideal field for the employment of oil-ether colonic anesthesia, as devised by Gwathmey. It makes the whole procedure infinitely easier for both patient and operator. Even if really painless under local anesthesia, such an ordeal produces an enormous apprehension which cannot but be detrimental to the patient, and the degree of infiltration of the tissues, necessary to produce insensitiveness, must interfere with their repair. With rectal anesthesia laryngeal spasm does not occur, bleeding is very much less, there is no tracheo-bronchial irritation from the directly inspired anesthetic, which very largely obviates the necessity for subsequent repeated applications of the suction apparatus—in itself an agent of some danger—and there is much less likelihood of post-operative vomiting, most undesirable under these conditions.

The laryngologist for every possible reason is the man who should do laryngeal surgery, both external and internal. If he saw all these patients at an early date, thyrotomy would more often be adequate.

Laryngectomy cannot be repudiated on any such grounds as the mutilation, or the loss of voice. Laryngectomized patients are in no worse case than the blind, the deaf or the helplessly crippled. Many of them seem to get a fair amount of happiness out of the mere fact of existence, and are not, by any means, incapable of self-support. In judiciously chosen cases this operation offers a good deal more than a probability of clinical cure, and in most instances a definite retardation of the fatal ending.

As Joseph Beck says: (Laryngoscope, March, 1918) * * *
"I claim that one case in one hundred that will recover, following such heroic measures, is *one hundred* per cent. of cures, because, without that procedure, the patient would succumb to the disease."

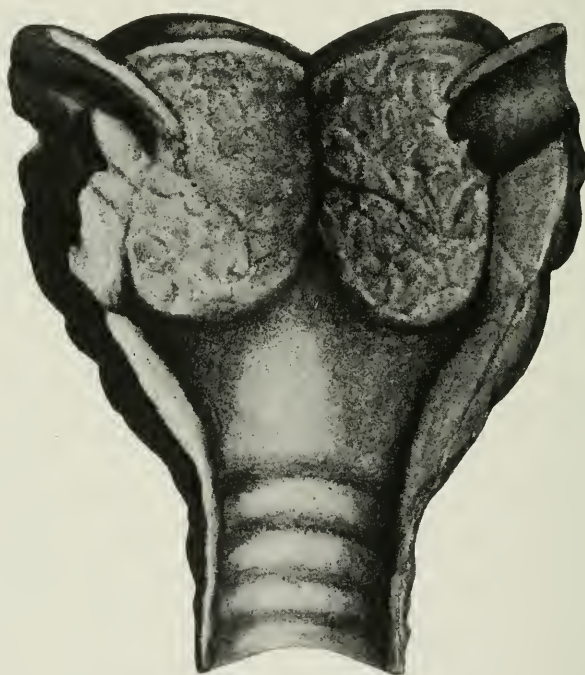


Fig. 1.—Case I.

Case 1. A man, 54 years old, was admitted to the Kings County Hospital about December 1, 1917. For three months previously he had suffered from hoarseness, increasing dyspnea

and dysphagia and latterly had raised blood-stained sputum.

There was moderate pain in the larynx. Wasserman test negative. Examination showed a mass pretty well filling the larynx, involving the left arytenoid and extending into the hypopharynx. A specimen was removed and pronounced epithelioma.

On December 6th, a hurried tracheotomy was demanded by imminent asphyxiation.

On December 28th, with Dr. Mackenty's assistance, I removed the larynx under oil-ether colonic anesthesia. It was necessary to take out about an inch and a half of the esophagus, with the exception of a narrow strip of the posterior wall. The tissues were united over the pernasal feeding tube, but there was considerable sloughing and the whole hypo-pharynx opened up in a few days. Notwithstanding this, the patient did remarkably well—the tube being reinserted in the open esophagus at the time of each feeding—every four hours, day and night. Repair went on satisfactorily till the sixth week, and we were planning to attempt a closure of the esophagus by some plastic method. At this time the patient developed a typical lobar-pneumonia and died in a post critical collapse on the sixth day.

It will be noted in the specimen (picture) that in the interval between the tracheotomy and the laryngectomy—three weeks—the growth has entirely obliterated the lumen of the larynx.

Case 2. A man of 44 years gave an indefinite history of a primary luetic infection, and there had been a positive Wasserman test. From the previous year he had suffered from progressive hoarseness and dyspnea. There was a subglottic mass to be seen on the left side of the larynx, irregular in form and grayish in color, a moderate infiltration of the left ventricle and the right vocal band was swollen in its anterior third. A superficial specimen was removed and reported as "possibly syphilitic." Vigorous treatment was given for two weeks, with no sign of improvement.

On January 9th, because of seriously increasing dyspnea, a high tracheotomy was done under local anesthesia; at the same time a deeper specimen was obtained and pronounced "typical epithelioma."

On January 30th, with the assistance of Drs. Mackenty and Talbot R. Chambers, under oil-ether colonic anesthesia, I removed the larynx. Feeding was conducted through the permanent pernasal tube which was retained for two weeks. The pharyngeal wound healed per primam. The highest rectal temperature was 100.5°. The patient was up on the fourth day and

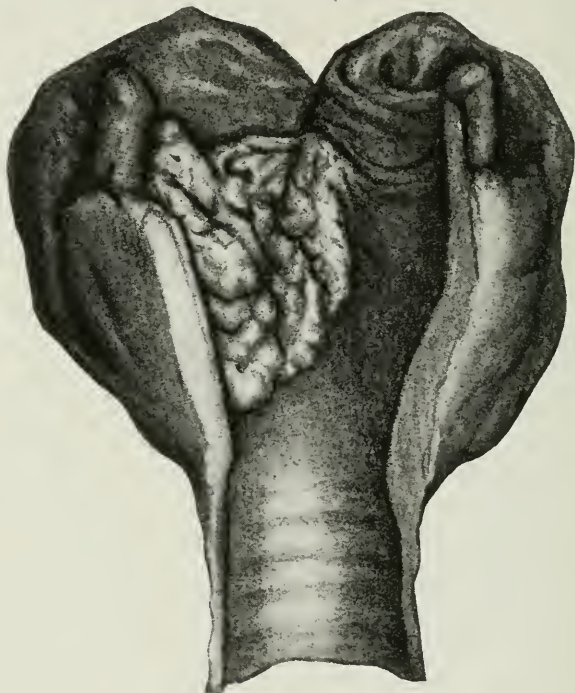


Fig. 2.—Case II.

left the hospital on the nineteenth. Tracheal suction was never required. He has gained sixteen pounds, is beginning to have an intelligible buccal voice, has resumed his position, that of a clerk, and says that he is entirely satisfied with his condition.

Case 3. A man of 45 years, by occupation an electric welder, was seen in 1910. A year before he had become hoarse, and for six months had had choking attacks with increasing dyspnea and dysphagia. An immediate tracheotomy was done, and he was kept under observation for some time.

As far as I could determine, the laryngeal growth had not increased since I first saw him and the time when the larynx was removed on autopsy. He had lived for eighteen months after the tracheotomy, working at his trade for almost a year of that time, finally dying from inanition from closure of the esophagus by outside pressure, due to the enormous surrounding glandular



Fig. 3—Case III. Epithelioma of larynx, anterior. Arrow points to tracheotomy wound. Tracheotomy tube worn eighteen months.

involvement, though the esophagus itself was not infested. The tumor was an epithelioma which completely filled the larynx with an enormous, though curiously circumscribed, extrinsic involvement of the cartilages, so that the appearance of the removed larynx suggests a large cyst.

In a similar case, I should be inclined to follow Crile's suggestion to "give the patient a fighting chance by as far-reaching

a dissection as possible," rather than witness such sufferings as this man endured during the last six months of his life.

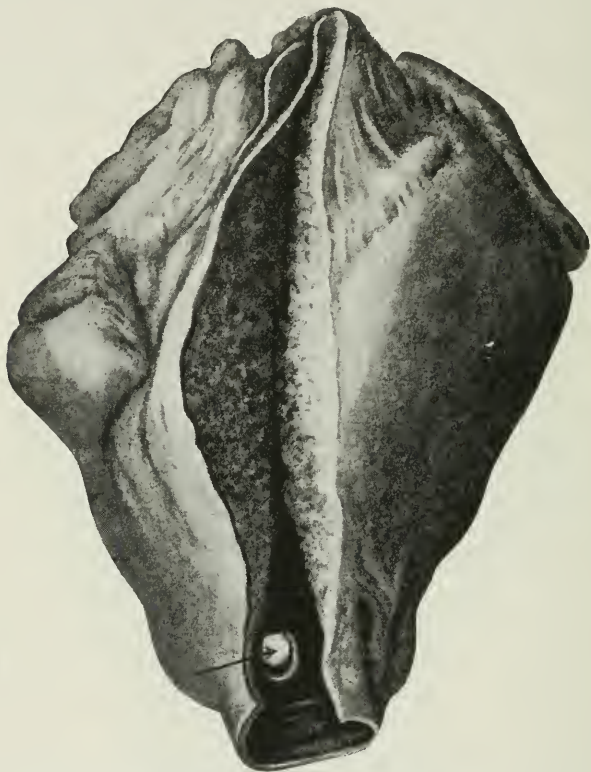


Fig. 4—Case III. Epithelioma of larynx, posterior. Arrow points to tracheotomy wound.

DISCUSSION

Dr. John E. Mackenty, New York City: Dr. Arrowsmith has put this subject in a concise and masterly fashion. In the space of but twenty minutes he has given an excellent insight into the statistics and the present status of cancer of the larynx in a way very enjoyable to hear. The main trouble is that the cases come to us too late for any hope of permanent cure. Of twenty-three cases seen by me since last September, seventeen were inoperable, except in the way of alleviation. Only one case of the twenty-three was incipient. That is an unfortunate commentary on the present condition

of the diagnosis of this disease. There is a fault somewhere; and, as Dr. Arrowsmith says, I think that it is largely with the general practitioner, who does not take notice of the early symptoms. Anyone of cancer age complaining of hoarseness which lasts more than six weeks should be under expert observation. There is no question that the mortality has decreased during the last few years. Up to seven or eight years ago it was very high. At the present day those interesting themselves in this work are having a different experience, and find the operative mortality much lower. I think that care in the technique will greatly reduce the operative mortality.

Partial laryngectomy is seldom indicated as an operation. I have added no cases of this procedure to my former record of six. I have seen none requiring it. Besides, hemilaryngectomy is more dangerous as an operative procedure than total laryngectomy. Much depends upon carrying the cases safely through the postoperative treatment. It is the neglect of the small details following operation that produces the mortality.

I prefer the one-stage operation, but I am not prejudiced. I see some reason now in the use of the high tracheotomy that does not in any way injure the trachea. I object to the two-stage operation, because it injures the trachea. In the radical treatment of cancer of the larynx, particularly in the extrinsic, there is no measure too radical. I believe that both cleidomastoid muscles should be removed and everything else except structures necessary to life and function, and the tissue should be cleansed of their fascia and fat. This is an extensive procedure, and the surgeon must decide whether to do it in one or in two stages.

I have been impressed by Dr. Arrowsmith's exhibition of colonic anesthesia. Having seen it used in this type of operation, I will give it a thorough trial; and although believing that it is a dangerous method of anesthesia, yet this is a dangerous disease; and if the patient dies during or following the operation, it is not so serious, after all, because his chances of living are not so very great. But I believe that in colonic anesthesia we have made an advance in this work, because it does away considerably with the trouble of bleeding and of the blood entering the trachea, an important consideration in guarding the patient against pneumonia.

I will now show a few pictures demonstrating the technique of total laryngectomy by the one-stage operation, already presented at the meeting of the American Medical Association in New

York City last year. (Dr. Mackenty showed and explained the slides.)

Dr. Cornelius G. Coakley, New York City: I have noticed when a two-stage operation is performed, a tendency for a very rapid increase in the size of the malignant area in the larynx. The extension through the larynx and into the surrounding tissues is also very great; and it would seem to me that a one-stage operation is, in some cases, much to be preferred to a two-stage operation. If the growth is small, and you can afford to wait for the adjustment of the respiratory tract to the new method of breathing, very well; but if the case is likely to result in total laryngectomy, the one-stage operation is to be preferred.

Dr. Robert Clyde Lynch, New Orleans, La.: The operation for intrinsic carcinoma of the larynx under suspension in cases absolutely suitable for that procedure has been fairly successful in my hands. I do not think the time yet ripe, however, to recommend it. I have operated upon six cases of intrinsic carcinoma of the larynx under suspension. Four are perfectly well at the present time. In the oldest case, it has been four years since the time of operation; in the most recent case, about eight months. So far there has been no recurrence. Nevertheless, I am not yet ready to advise this method in cases of intrinsic carcinoma of the larynx.

In the second place, I believe that operations for carcinoma of the larynx are going to divide themselves into two types, the thyrotomy and the laryngectomy types. The cases requiring hemilaryngectomy will, very likely, give much better results under laryngectomy. I have had seven cases with five cures and no immediate deaths within ten days from the operation. The quickest recurrence was within ten months. That is, the patient deriving the least benefit from the laryngectomy lived ten months, for which, for business and other reasons he was especially grateful. Five patients at present are perfectly well. Three are farmers who have planted and harvested their crops three times, and their families have been provided for by that means. The other are clerks, and all are particularly happy and grateful. All have been able to develop a type of speech understandable by their associates.

My procedure has always been by means of a preliminary tracheotomy, formerly low down, but now high up. I have seen no cases in which the tumors have grown so large within two or three weeks following the tracheotomy as to make me

feel that the tracheotomy itself had jeopardized the patient's future welfare. Giving always the ether-vapor anesthesia, and through the tracheotomy tube, has certainly facilitated every manipulation during operation. My technique differs somewhat from Dr. Mackenty's. I think it is not well to hug the larynx so closely in the process of extirpation, as I did at first. In other words, I now take away with the larynx the superficial thyroid muscles. I have found in three of the laryngectomy cases what apparently was a lymphatic gland between the esophagus and the posterior aspect of the trachea. I have not seen this mentioned in any text book; but there is a group of tissue that resembles lymphatic gland tissue, and this should always be removed. I have found that it saves time to make a cross incision at about the level of the hyoid bone; in other words, a central incision and a small cross cut incision, in order to get close to either angle of the neck. I use these cuts for drainage in the angles of the neck, instead of the stab wound. There is no advantage in that, except that it lays the flaps open and does away with some of the pulling of the retractors, especially where the wings of the thyroid cartilage have been broken. The cases are anesthetized from the beginning with the ether-vapor, and I have been constantly surprised at the lack of reaction and post-operative disturbance that have followed these operative procedures. The patients are comfortable and remarkably happy within twenty-four hours after the operation.

Rectal feeding after the operation has been supplanted by the use of the nasal tube or the introduction of a small catheter, after the manner of a stomach tube, keeping the end of the catheter out of the stomach. This is important, in order to avoid nausea.

The care of the trachea, seems very important. I pare the trachea and larynx, and attempt to separate, at one point, the trachea from the esophagus, placing a tape around it for support. When all is ready, the trachea is cut from above down, the only bleeding being from the mucous membrane. Before the trachea is cut, a heavy silk suture is put in and held by an assistant. This prevents blood entering the trachea. The anesthesia is carried on through a very small tracheotomy tube which lies in the opening, and is also under the care of the assistant who holds the trachea. His duty is to be sure that nothing enters the trachea. Whether this prevents pneumonia or not I do not know, but we have had no post operative disturbance, and the gain in weight and comfort enjoyed after the removal of the mass make the operation well worth while

Laryngeotomy does not seem so objectionable for the patient as many formerly believed.

Dr. Harmon Smith, New York City: The reader of the paper cited a report of a case made by me before the Laryngological Section of the New York Academy of Medicine last October. Last week, I saw the patient. Her voice has returned, and she has gained in weight; although that does not prove anything, as she weighed two hundred pounds to begin with.

Dr. Arrowsmith said in his paper that the general practitioner is responsible for the late date at which the laryngologist sees these cases. This woman for two years before she came to me, was under the care of a specialist who only sprayed her throat. I do not believe he ever saw the larynx; and if he did, the tumor was sub-glottic and only visible on high-pitched voice production. I never suspected that the growth was malignant. I took it off with a snare. Then granulation tissue formed, which I removed. Following that, there was a papilloma. For the last six months the cord has remained healed, without evidence of recurrence. The growth has been examined in two laboratories. The last examination was made by Dr. Ewing, of Cornell, who said it was of low-grade malignancy, between papilloma and carcinoma.

Dr. D. Bryson Delavan, New York City: Yesterday I exhibited to a number of members of the Society a patient operated upon for me by Dr. B. Farquhar Curtis of New York City, twenty-one years ago. Two-thirds of the larynx was removed. The man is perfectly well today, meanwhile having led a particularly strenuous life. No matter what the skill or energy of the surgeon in this department, without the accurate recording of results up to the final termination of the patient's history, we learn very little. I should like to enter a very strong plea for the continued observation of these patients and the more careful and straight-forward reporting of their ultimate fate. For a number of years European authorities have regarded the statements of Glück as unreliable. Personally, after considerable experience I have certainly found them so. In his meagre statistics, Glück claims "Thyrotomy: Cases 35, recoveries 28. Partial Laryngeotomy: Cases 47, recurrences 13, all reoperated on and, with one exception, cured. After one year no recurrence in 17." Such vague statements are misleading, unscientific, without value, and, in the case of the word "cured," absolutely false.

Dr. Hubert Arrowsmith, Brooklyn, N. Y.: I have very little to add. I can only repeat what I said of the value of statistics at the start. The plea I made is one of the utmost importance. If we are to reach conclusions, we must know what ultimately becomes of the patient. Perhaps we do not all realize that our distinguished honorary President was the originator of this method of handling the stump of the trachea, an invaluable step in the after treatment of laryngeotomy; and he was one of the first to do a laryngeotomy in America.

FURTHER OBSERVATIONS ON THE RADICAL TREATMENT OF PERITONSILLAR ABSCESS

CLEMENT F. THEISEN, M.D.

Albany, N. Y.

In a paper giving the report of an epidemic of acute infection of the throat with abscess formation, (Trans. Amer. Lar. Assn., 1916), the writer reported forty-four cases of peritonsillar abscess occurring in the epidemic. In fourteen of these cases, after a dissection backward toward the capsule of the tonsil to locate the pus, the upper lobe, which had been loosened by the dissection, was removed. This leaves a large opening for drainage, and the cases so operated upon cleared up much more quickly than when simply the usual incision was made.

Ballenger, I believe, was one of the first to suggest a dissection backward toward the capsule in peritonsillar abscess. In the majority of the cases, the pus is present very soon after the attack begins, and we often fail to reach it early because we do not cut deeply enough toward the capsule. Typical cases, with very little pus and great swelling, edema and inflammation of the surrounding parts, presenting the clinical picture of a typical peritonsillar infection, occur, but are fairly exceptional. In the vast majority the pus is present, but sometimes difficult to locate when it is confined between the body of the tonsil and the superior constrictor muscle. It is in this class particularly that Barnes, in his paper on the radical treatment of peritonsillar abscess, recommends dissecting out the tonsil early during the acute stage. He has reported excellent results.

We frequently see cases so late that, owing to the great edema and inability of the patient to separate the teeth, it is difficult to find the usual anatomical landmarks.

In such instances the writer has not attempted the removal of any part of the tonsil during the acute stage. When the infection has gone as far as this the pus is reached without difficulty almost anywhere in the peritonsillar region.

Since the paper above referred to was published the writer

has used the method described at the time, *i. e.*, the removal of part of the tonsil after reaching the pus, in twenty cases, and the complete removal in sixteen. These were all suitable subjects, seen early, before there was much swelling and difficulty in opening the mouth. The majority occurred in adults, and this is of course the rule in most peritonsillar abscesses. They do occur however, and not so very infrequently, in children.

In the series of cases reported in my paper in 1916, forty-four in all, four occurred in young children.

Five of the thirty-six reported in the paper read today occurred in children, and were operated upon under ethyl chloride anesthesia. They were all very nervous children, and could not have been easily managed under local anesthesia. All the adults were operated upon with cocaine and adrenalin. When possible, I think it is safer to use local anesthetics in these cases, particularly when there is considerable edema filling up part of the throat. I have found, and that is probably the experience of most of us, that as soon as the mouth gag is inserted, after the patient is practically under the anesthetic, he begins to act badly. The same is true to even a greater extent of retropharyngeal abscess in young children.

Barnes, in the paper before referred to (*Trans. Amer. Lar. Assn.*, 1915), speaks of the danger of pulmonary infection from inspired pus, when a general anesthetic is used. He has performed a complete tonsillectomy on about the third day, and has had no complications of this kind. His patients all did well, with no more distress than when the tonsil is removed under normal conditions. He has not found, when care is taken in dissecting out the tonsil with as little bleeding as possible, that there was any spread of the infection. The possibility of the aspiration of pus is of course largely done away with when local anesthetics are used.

The operation the writer has performed in selected cases, when the edema of the surrounding parts is not too great, is as before stated, a capsular dissection of the tonsil backward until the pus is reached, and then the immediate removal of the part of the tonsil that has been loosened by the dissection.

There is no reason why the entire tonsil should not be taken

out at the time, and this was done in my last sixteen cases. There is surprisingly little discomfort after the operation, and the relief following the much more thorough drainage than is afforded by the ordinary incisions, is much greater and more prompt. I have not found that this operation performed during the acute stage is attended by any increased risk of a spread of the infection, particularly if care be taken to cause as little bleeding as possible.

The ordinary incision is often attended with much more bleeding, which cannot be as readily controlled. When we bear in mind that in a peritonsillar abscess we are really dealing with an infection which soon involves the entire sinus tonsillaris, the risk of causing a more extensive septic process by our operative proceedings need not be considered very seriously. Even if this were not so the great relief following the operation so promptly is well worth the slight risk.

The ordinary incision, unless free, closes quite readily, and has to be kept open by packing or by stretching with a forceps every day. Patients as a rule object to this much more than to the more radical operations, at least such has been the writer's experience. The abscess cavity, unless superficial, drains badly after the ordinary incision, and not infrequently further abscesses form after the patient is apparently well. A tonsil is never perfectly normal after a peritonsillar infection, and in many cases the so-called "quinsy habit" is established, with an attack once or twice a year. The tonsils must eventually come out, and their removal, in selected cases, as early as possible during the acute attack, is a rational operation.

I would like briefly to report a case that brought home to me the necessity for some more radical operation in peritonsillar infections than the simple incision, and started the method of treatment I have used since that time.

A young woman, aged 25 years, developed what appeared to be a slight tonsillitis, not follicular, with very moderate inflammation of particularly one tonsil. I gave her an astringent gargle, told her to use ice, and did not expect to see her again. On the following day she appeared at my office, stating that she had great pain in swallowing and was feeling much

worse generally. The inflammatory process was now confined to the left tonsil, with very little swelling, nothing to suggest a peritonsillar infection. Her distress was so out of proportion to the findings that I decided to make an incision in the usual place. I did not strike any pus. This was repeated every day, punctures and incisions being made in different places, for four or five days, and no pus was found. The patient meanwhile was growing more and more discouraged. She could swallow nothing but liquids and with great difficulty. During all this time the swelling only very slightly increased, and clinically the condition could not have been called at all typical of a quinsy.

I was on the point of advising the patient to consult another doctor, when it occurred to me that she probably had a deep collection of pus, a very small abscess cavity. I then grasped the tonsil with a forceps and carried my incision directly back toward the capsule, and entered a very small abscess cavity containing pus. The dissection was completed and the upper half of the tonsil removed, with recovery in a few days.

I suppose all have had this same experience many times, not reaching the pus the first time simply because we do not go back far enough toward the capsule. I am speaking now only of typical cases, such as the one reported, and cases in which we fail to reach the pus during the first few days after the onset of the infection.

Conclusions

The radical method of treatment for the quick relief of the distressing symptoms was used in 36 selected cases, in 20 of which the part of the tonsil that had been loosened by the dissection in reaching the pus, was removed at the time. In 16 cases a complete tonsilleotomy was immediately done after the pus was evacuated.

The operation is performed as early as possible, usually within two or three days after the onset of the attack, and in selected cases. In cases in which there is so much edema of the parts that the anatomical landmarks cannot be easily determined the radical method was not attempted.

In this type of case the inability to separate the teeth is usually so great that the radical operation would be very difficult. Local anesthesia, because of the possibility of the aspiration of pus under general anesthesia, is always used except in young children.

The accident of an extension of the infection is so improbable, having never been experienced by the writer, that there seems no reason why a complete tonsillectomy should not be performed in every suitable case, at the time the abscess cavity is opened.

The cases reported in this paper were all unilateral abscesses, but the writer has used the same method in bilateral cases, which are fortunately not as common.

No unfavorable symptoms occurred when both tonsils were operated upon. As a matter of fact the pain in swallowing after the operation does not last much longer, and the case runs about the same postoperative course as when the tonsils are removed under normal conditions. There is at times some rise of temperature, particularly in children, and the tonsillar fossae recover to normal conditions rather slowly.

DISCUSSION

Dr. John F. Barnhill, Indianapolis, Ind.: I believe that this is a perfectly feasible procedure. I have followed it in many instances, with excellent results. The first time I employed it, the patient himself insisted upon having it done. This patient, who had been habitually having quinsy, had been told that he should have his tonsils removed before another attack. He failed to do so, but came to my office with this proposition: "Now I am taking the quincy. Would it not be easier to take the tonsils out now, and save me the attack than to allow me to go through the attack and take them out afterwards?" I removed the tonsils and he did as well as such cases usually do. He did not have that attack and after several years has never had any return of his former trouble.

A CARCINOMA OF THE EPIGLOTTIS AND ROOT OF THE TONGUE REMOVED BY THE SIMPSON RADIUM NEEDLES WITH DESCRIPTION OF A NEEDLE-PLACING INSTRUMENT

OTTO T. FREER, M.D.

Chicago

The chief cause of the disappearance of malignant growths under radium treatment is the power of the radium rays to arrest mitosis and so prevent multiplication of the growth cells by division of their nuclei, the cells dying in time after losing their faculty of division. Actual destruction of the nucleus is only accomplished by doses of radium approaching caustic action. Another reason for the absorption of malignant tumors under radium treatment is the degeneration and swelling of the endothelial cells of small vessels caused by the rays, the result being stoppage of the vessels and consequent shutting off of the nutrient blood supply from the growths.

Experience has shown a great variation in the degree to which malignant tumors respond to radium. Sarcomas are the most readily affected, though also varying in susceptibility, round celled sarcomas with rapid cell growth and active nuclear division being the most easily reduced, while the nearer in structure a sarcoma approaches to fibroma, as in the case of the spindle celled growths, the more resistant it is to radium.

Carcinomas commonly yield less to radium than sarcomas, the most unresponsive being the squamous celled epithelioma. The basal celled epitheliomas, the carcinomas of adenomatous structure and the malignant adenomas are more readily influenced. Speaking of the influence of radium upon tumors in general, Arthur Fenwick Holding and W. Bayard Long state that "the most marked effects of the rays are on those new growths that show a structure composed mainly of nuclei and rich in mitotic figures and which at the same time are growing rapidly. They have small, poorly formed vascular channels. Also the more nearly embryonal in type the cell, the more easily is it influenced by radium rays."

Finzi says that small doses of radium stimulate tumor growth. Duane and Greenough, however, have found no such effect.

Finzi finds that the same dose of radium that destroys growth cells will not affect healthy ones and therefore regards the action of radium upon growth cells as selective. Clinical experience corroborates this, as is shown by the absorption of deep seated growths under the application of moderate doses of radium while the integument over them is not affected.

Although malignant growths are influenced by surface applications of radium in proportion to their susceptibility, it is generally appreciated that the introduction of radium or its emanation into the interior of a tumor is far more effective than

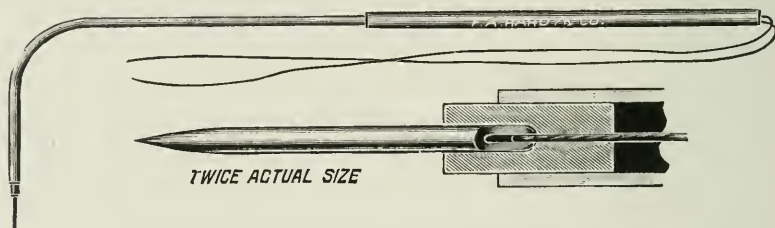


Fig. 1. The needle placing instrument and an enlarged vertical section of the socket containing the needle.

surface treatment. The methods in common use in regard to such introduction are the placing of tubes of glass or metal containing radium or its emanation into an incision or a thermo-cautery wound. A trocar is also used to place glass tubes into the tissues, or such tubes are placed in the sharp end of a pointed metal tube, this tube being inserted into the growth as described by Duane and Greenough.

What I have found to be a most effective and practical method is that of Dr. Frank Edward Simpson, of Chicago, who in 1914 devised short, hollow needles, 1 and 1-16 of an inch long, and 1-16 inch thick, made of steel and platinum, plated with gold (fig. 1) the cavity of the needle being packed with 12 milligrammes of radium sulphate which is sealed up within the needle, after the detachable eye portion of the needle has been screwed down upon its hollow shank. The wall of the hollow

*These Radium needles are made by Dr. Charles H. Viol, care of Radium Chemical Company, Pittsburgh, Pa.

needle is three-tenths of a millimeter thick, thick enough to filter out the irritating alpha and softer beta rays, while permitting the hard beta and gamma rays to pass freely through the wall of the needle.

The needles are stout enough to endure the firm grasp of a needleholder for their introduction into the tissues.

A hollow needle like that of Simpson, containing a charge of a radium salt, is preferable to one containing a receptacle of emanation, because the effect of the radium is always the same and may therefore be accurately estimated, while the emanation declines to one-half of its value in three days and is unstable because of the changing nature of its degeneration products, which, beginning as radium A change to radium B, C, D, E and F, each phase differing in the quality of its radiation. In addition, the preparation of radium emanation requires at least 500 milligrammes of a radium salt in solution as a proper basis for the production of emanation, an expense requiring the means of an endowed institution and which would only be necessary if the direct effect of a radium salt were inferior to that of emanation, Dr. Simpson's and my experience showing that it is not.

With several Simpson needles the effective so-called cross-firing of radium rays may be produced, that is, instead of the radium rays proceeding from a single source in the center of a growth it is easy to place a number of needles at its periphery as well as in the center, so that not only is the growth evenly influenced by multiple radiation, but the apparently healthy zone about the tumor is deeply penetrated by the rays, so helping to prevent a local return of the growth.

A valuable quality of the needles is their comparatively easy insertion, so that only occasionally, where a tumor is tough and resistant, is it necessary to place them in a preliminary knife cut, for as a rule they may be directly thrust into the growth.

It is generally agreed that malignant tumors should be destroyed at one sitting by one very large dose of radium. This is not only done in order to minimize the danger of metastases risked by waiting for the effect of lesser doses at intervals, but

it is the result of experience that the effect of a single large dose is proportionately greater than that of the sum of smaller ones that equal it in quantity. It has also been found that a tumor is less influenced by later doses than by the first one, a species of tolerance being established for radium. The demand for a single completely effective large dose of radium rays is filled by leaving the Simpson needles in place for from nine to twelve hours. Their efficient screening prevents the undesirable integumental burns that were so common before it became known that the soft beta rays and the alpha rays must be filtered out.

I have not yet had the opportunity to use the Simpson needles for intrinsic carcinoma of the larynx, but, considering their remarkable effect, it seems likely that they might lead to the disappearance of quite advanced cancers in this locality.

The complete destruction of a malignant tumor by radium does not, of course, insure against a local recurrence or, especially, against a metastasis. Radium, however, has this advantage over excision, that it is possible to go much further into apparent healthy tissue beyond the visible limits of the growth than may be done with the knife, and where a growth has been removed by excision or radium, it is possible by prophylactic radium treatments to limit the chance of a local return. As radium is being used so much for tumors that have grown beyond surgical interference there will always be a high percentage of secondary growths following local radium destruction of malignant tumors of such long duration.

Case.

The patient, a man of 53, was first seen on June 13th, 1917. His trouble began a few months before with slight sore throat, some dysphagia and a sensation as if something stuck in his throat. He had no pain, but his tongue felt thick. His general health was good. Wassermann test negative.

Examination showed (Fig. 2) an ulcerated area involving the region of the median glossoepiglottic fold, the floor of the left vallecula, the lowest part of the dorsum of the tongue on the left side and the left half of the base of the epiglottis. The ulcer had a ragged, irregular floor and there was a nodular infiltration of

the left pharyngo-epiglottic fold. Previous to coming for radium treatment the patient had had a piece of the growth excised for a microscopic examination, a diagnosis of epithelioma being made. The microscopic appearance of the growth was that of a typical, squamous celled epithelioma.

Dr. Simpson referred the patient to me for the insertion of the radium needles, which were introduced on June 13th, 1917, by indirect, mirror laryngoscopy. The tumor had deeply invaded the left side of the hyo-epiglottic space, following the lingual surface of the epiglottis. Therefore a needle was plunged into the centre of this space in front of the base of the epiglottis toward the thyroid angle, penetrating the hyo-epiglottic ligament and entering the region of the cushion of fat that lies between the two layers of the thyro-hyoid membrane (Fig. 2).

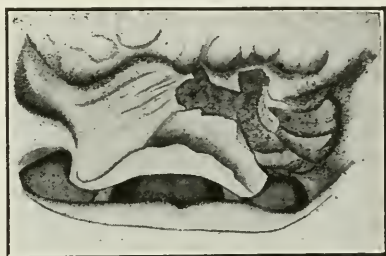


Fig. 2.—The epithelioma of the epiglottis and base of the tongue as first seen on June 13th, 1917. The black squares show the location of the needles.

To cause the needle to enter the tough tissue a preliminary cut had to be made with a laryngeal knife. A second needle (Fig. 2) was placed in the region of the median glosso-epiglottic fold, the fold itself having been destroyed by the growth. The needles were introduced with a laryngeal forceps and then forced into the tissues to the eye by means of a strong copper rod bent at the laryngeal angle and having a little socket drilled into its distal end to fit over the needle. The third needle had to be placed in the base of the tongue below the tip of the epiglottis and therefore necessarily from behind forward, a thing accomplished with some difficulty by seizing the needle with a strong common needle-holder at right angles to its bite, forcing the

corner of the mouth back to the ramus of the jaw with the needle holder to get the needle directed forward, and thrusting the needle into the root of the tongue nearly to the eye (Fig. 2). All of the manipulations in the region concerned proved unexpectedly difficult and required patience and time. Direct laryngoscopy would have been of no service as it would have distorted the parts and covered the lingual part of the field of operation.

The needles were threaded with stout silk fastened to the patient's cheek with adhesive tape. They were left in place for nine hours.

Two weeks later the radium reaction came and the patient began to have severe pain in his throat, aggravated by swallowing, so that his rest was broken. This painful state lasted for many weeks, from July first until December first, but gradually grew less from August fifteenth on.



Fig. 3.—View of the region shown in Fig. 2 as seen on August 25th, 1917. The carcinoma has disappeared. The radium slough is seen perforating the epiglottis into the larynx. A circular loss of substance in front of the left pharyngo-epiglottic fold, surrounded by smooth, swollen mucous membrane, has replaced the carcinomatous ulcer.

Examination on August 11th showed (Fig. 3) a smooth, deep, red swelling of the mucous membrane, filling out the space between the tongue and the base of the epiglottis and thickening the left pharyngoepiglottic fold. In the centre of the left vallecula there was a circular, smooth-edged defect in the mucous membrane that replaced the carcinomatous ulcer formerly seen, this defect being filled with a white exudate and occupying the site of introduction of the first needle. On the laryngeal surface of

the epiglottis, just above the right ventricular band (Fig. 3) a little hornlike, white projection was seen, due to a perforation of the cartilage of the epiglottis at this point which let a portion of the radium exudate protrude through it.

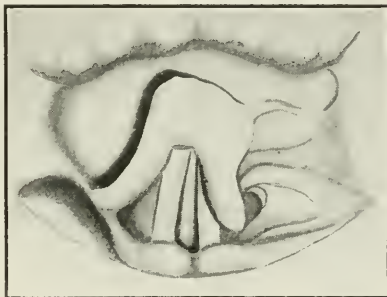


Fig. 4.—The same view as shown in Fig. 2 and 3 as seen on January 3d, 1918. There is complete healing of the affected area with a cicatricial drawing of the epiglottis to the left.

On December 7th, 1917, the entire area formerly occupied by the carcinoma had healed, as shown in Figure 4. Cicatricial contraction had folded the epiglottis vertically upon itself and drawn it over to the left in its entirety.

There was never any enlargement of the lymphatic glands in the neighborhood of the tumor.

The difficulty in accurately inserting the needles with forceps in this case, the roughening of the surface of the costly needle by the blades and the annoyance caused by the dragging thread that trailed the needle, led me to construct the following needle placer for inserting the needles, a device which in the case of a carcinoma of the laryngopharynx just treated has permitted their exact introduction into the flesh with an accuracy and ease that, I think, will make it possible to needle even intrinsic carcinomas of the larynx by the indirect, mirror method of laryngoscopy, a method so much less distressing to the patient than the direct or suspension laryngoscopy.

The needle-placer (Fig. 1) consists of a metal tube, either bent with the laryngeal bend for indirect laryngoscopy, or straight for direct laryngoscopy, the distal end of the tube having a little

plug of copper 5-8 to 3-4 of an inch long soldered into it. In the center of this plug is bored a socket deep enough to hold 5-16 of an inch of the eye end of the needle and holding the needle loosely, but yet giving it good support for its thrust. From the centre of the bottom of the socket hole a second smaller one is bored that pierces the plug at its upper end which, while too small to let the needle enter, is large enough to let the two threads that hold the needle pass easily. To arm the needle placer the two ends of a long, fine copper wire, bent on itself in the middle, are passed through the holes in the plug and through the whole length of the tube of the needle placer until they come out of its proximal end. The needle is now threaded with strong dental floss silk, an end of the silk thread is passed through the wire loop as it projects from the socket and the ends of the silk thread are tied to make a loop within the wire loop. The wire loop and the silk threads are then pulled through the bore holes and out through the proximal end of the tube, the soft, compressible knot in the dental floss silk easily passing through the small bore hole. This pulls the eye end of the needle into the socket, whence it is kept from dropping out by the drag of the thread in the bore holes and the tube. The needle socket is now well oiled so that the needle will leave it readily and stay in the tissues when the needle placer is withdrawn after the needle is inserted. When the needle placer is removed the threads are left hanging from the mouth. With this needle placer needles may be inserted as readily as it is possible to swab the larynx.

In conclusion I refer to two cases of malignant tumors of the pharynx described to me recently in conversation by Dr. E. Fletcher Ingals, in which he mentioned the complete removal of the growths with the Simpson needles.

In producing his radium needles Dr F. E. Simpson has increased the effectiveness of the radium treatment of malignant growths far in advance of the results obtainable by surface applications, and my observation of his work has convinced me that not only sarcoma but also carcinoma, will yield to his radium needles in nearly all cases.

DEMONSTRATION OF D. MENINGITIDIS IN THE ADE- NOID TISSUE OF THE NASOPHARYNX

J. D. ARONSON, CAPT. M.R.C. AND S. A. FRIEDBERG, MAJOR M.R.C.
BASE HOSPITAL, CAMP DONIPHAN, FT. SILL, OKLA.

An investigation of an epidemic of cerebro-spinal meningitis revealed so many points of interest that, in the opinion of the writers, a detailed report of the findings is warranted.

During the months of November and December, 1917, January and February, 1918, a small epidemic of meningitis developed amongst the troops stationed at Camp Doniphan, Ft. Sill, Okla. The first five cases occurred in the 110th Ammunition Train within a period of fourteen days. A second focus of the disease manifested itself about three weeks later in the 137th Infantry, an organization located about one and one-half miles from the Ammunition Train. Careful investigation showed that the development of this second focus could be attributed to the frequent visiting of the non-commissioned officers of the Ammunition Train to the 137th Infantry, the organization to which they were originally attached.

A consideration of the above circumstances led to the conclusion that the dissemination of the disease was probably due to the presence of a carrier or carriers in the Ammunition Train and a systematic study was undertaken to determine the fact.

Following suggestions made by Drs. Jordan and Mathers, the men of the caisson in which two cases of meningitis had but recently occurred were cultured. The cultures were obtained from the nasopharynx by means of a sterile swab placed upon a wire which was bent at an angle of about 45 degrees. This was introduced through the mouth and passed backwards and upwards into the nasopharynx, care being taken not to touch the tongue or fauces with the swab. Plates of horse blood agar were then inoculated from these swabs and the plates streaked by means of a platinum wire. The inoculated plates were incubated for twenty-four hours at 37 degrees C. and suspicious colonies were picked and strained by Gram's method. Colonies

which showed the presence of Gram-negative diplococci were transplanted to tubes of horse blood agar and after twenty four hours incubation were emulsified in normal salt solution and macroscopic agglutination carried out, using a polyvalent anti-meningococcus serum for that purpose.

The caisson cultured consisted of 126 men and of this number five were found to harbor the meningococcus in the nasopharynx. Of the five found positive, three were found in one tent, while the remaining two were found to be quartered in adjacent tents. The following questionnaire was then prepared and data obtained from meningitis cases upon their admission to the Base Hospital and from carriers and contacts in the field:

BASE HOSPITAL, CAMP DONIPHAN

Fort Sill, Okla.

....., 1918

Name	Color	Nativity
Age	Organization	Date of Joining
Previous organization		Date of Joining
Date when taken sick		
Date admitted to the hospital		
Symptoms		
Previous cases in same organization and date of occurrence		
Proximity to any previous case		
Location of tent		
No. of squad	No. of platoon	
Messing arrangement		
Sleeping arrangement		
Drilling arrangement		
Fomites used in common		
Names and addresses of friends		
Names and addresses of friends in common with previous case of meningitis		
Condition of nasopharynx		
Home address		
Date when last home		

Cases of meningitis in home town

Proximity to cases in home town

Laboratory results:

Spinal fluid

Nasopharynx

As a result of a study of these questionnaires it was found that Pvt. R. R. (one of the carriers found on January 4th, 1918) was a friend in common of the following men who developed meningitis on the dates indicated.

Pvt. R. V., Nov. 6th, 1917.

Pvt. C. C., Nov. 9th, 1917.

Pvt. B. C., Nov. 13th, 1917 (in the same drill squad).

Pvt. A. C., Nov. 20th, 1917 (quartered in a nearby tent).

While this study was being made, Pvt. H. F. developed meningitis on Dec. 24th, 1917, and it was found that he was a tent mate of Pvt. R. R. It was at this time that the entire caisson was cultured with the result that Pvt. R. R. and two of his tent mates were found to be meningococcus carriers.

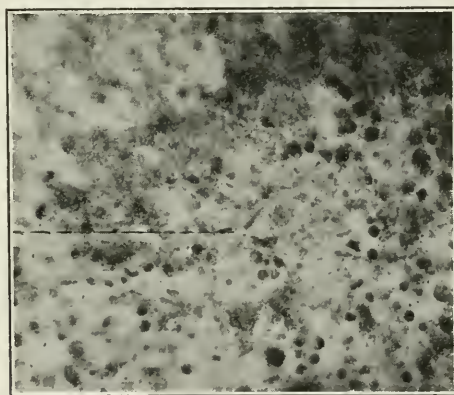


Fig. 1.—Low power photomicrograph showing collection of *D. Meningococcus* surrounding blood vessel and masses of bacteria deep in adenoid tissue.

In view of the foregoing findings it was considered probable that Pvt. R. R. was the source of the meningococcus infection. This was further born out by the fact that following his re-

moval from his organization on Jan. 6th, 1918, no new cases appeared until Feb. 1st, 1918, at which time the last case that occurred in this organization developed.

The following data has been collected as a result of our studies:

Pvt. R. R., age 23, white, farmer by occupation.

Now attached to Caisson F, 110th Ammunition Train.

Previous Medical History: Had measles at age of 11, and pleurisy at 22. His health had otherwise been good with the

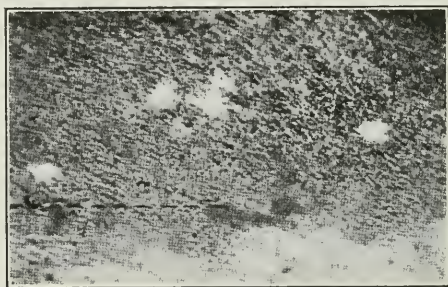


Fig. 2.—High power photomicrograph showing small clump of bacteria about a blood vessel and a nest of *D. Meningococcus*.

exception that he has always been subject to catarrhal affections of the respiratory tract.

Family History: Negative.

Personal History: He was born at Carthage, Mo., in 1894, where he attended public school until he was 16. In 1900 he went to Butler, Mo., where he remained until 1906, when he removed to Garden City, Kans. From 1912 to 1914 he worked on a farm at Ft. Collins, Col. He returned to Garden City in 1914, where he remained until he was drafted into the Army on September 18th, 1917.

During his stay at Fort Collins, Col., he made the acquaintance of a family which he visited frequently. About one month after his first visit two children in this family developed meningitis and died. These are the only cases of the disease of which he has knowledge, prior to his entry into the service.

In September, 1917, he was sent to Camp Funston, Kans., where he was assigned to Co. I, 353rd Infantry. While there he was quartered in a barrack with about 150 to 200 men. Accord-

ing to statements made by comrades who were quartered with him, cases of meningitis developed in his barrack as well as in some of the adjoining barraeks.

Present History: He was transferred to Caisson F, 110th Ammunition Train, stationed at Camp Doniphan on October 18th, 1917. About two weeks after his arrival he complained of weakness in his legs, backache, anorexia, tinnitus aurium in the left ear and pain radiating from his neck to his head. This headache was increased by lateral movement of the head. The backache was relieved by medication, but the headache was persistent. After about three weeks the symptoms disappeared with the exception of the tinnitus. The Regimental Surgeon did not consider his condition serious enough to transfer him to the Base Hospital, nor to keep him in quarters. From the foregoing symptoms one would be hardly justified in the belief that Pvt. R. R. suffered from an attack of meningitis which resulted in his becoming a persistent carrier.

Physical Examination: General inspection showed a fairly well developed male weighing about 140 lbs. and measuring 67 inches. His facial expression was rather dull and apathetic. Examination of the chest, abdomen and extremities revealed nothing abnormal. Upon examination, the right naris was found to be free, but the left was obstructed by a deflection of the septum which reduced the size of the passage to about one-third of the normal. The tonsils were moderate in size, submerged and pus was forced out on pressure. The nasopharynx showed the presence of a small amount of adenoid tissue. There was no pus in the nose or nasopharynx nor was there any other clinical evidence of accessory sinus disease. With the exception of a retraction of the left drum membrane nothing abnormal was found in the ears. Roentgenographic examination of the sinuses was negative.

A culture taken from the nasopharynx on January 4th, 1918, according to the method described above, yielded a pure growth of meningococcus which was agglutinated by polyvalent anti-meningococcus serum in a dilution of 1:400 which was the highest serum dilution used in that test. He was transferred to

the Isolation Camp where local treatment was instituted. Dichloramine-T in paraffine oil and oil of eucalyptol was applied to the nasopharynx and later local applications of silver nitrate were made.

Cultures taken from the nasopharynx on January 10th, 14th, 19th, 22nd, and 26th were negative, but became positive on January 28th, February 2nd and 5th. Cultures were again negative on February 9th, 13th, 17th, 20th and 27th, and again positive on March 2nd, 1918.

On March 6th he was transferred to the Base Hospital. A culture from the nasopharynx the next day was found positive.

On March 8th the tonsils and adenoids were removed under local anesthesia. Examination of the tonsils after removal showed them to be somewhat hypertrophied, with distinctly enlarged crypts from which pus could be expressed. No meningococci were found in cultures made from the tonsils.

Several small masses of adenoid tissue measuring about 1.5 cm. in diameter were fixed in Zenker's, embedded in paraffine, sectioned and stained with eosinmethylene blue and by Gram's method. Microscopic examinations of the sections of adenoid tissue revealed masses of bacteria upon the free surface of the tissue and small scattered clumps of bacteria throughout the cortex. Upon the free surface was noted areas of superficial ulceration located about the masses of bacteria and numerous newly formed blood vessels were seen at the periphery of the ulcerated areas. The capsule and the trabeculae were thickened. Tissue surrounding the masses of bacteria deeper in the structure stains uniformly pale and does not show any evidence of inflammatory reaction (Fig. 1). Under higher magnification the masses of bacteria were found to be Gram-negative diplococci with flattened approximating surfaces, resembling morphologically and in their staining reactions, the meningococcus (Fig. 2).

Following the removal of the tonsils and adenoids, no local treatment was instituted, so that the result of the operation could be properly controlled.

The following indicates the result of post-operative cultures:

	Nasopharynx	Nose
March 12th, 1918	Positive	Negative
March 17th, 1918	Negative	Negative
March 20th, 1918	Positive	Negative
March 23rd, 1918	Positive	Negative
March 25th, 1918	Negative	Negative
March 27th, 1918	Positive	Negative
March 30th, 1918	Positive	Negative
April 1st, 1918	Negative	Negative
April 5th, 1918	Negative	Negative
April 7th, 1918	Negative	Negative
April 10th, 1918	Negative	Negative
April 14th, 1918	Negative	Negative
April 18th, 1918	Negative	Negative
May 5th, 1918	Negative	Negative

All cultures were made upon horse blood agar, using six plates at each examination. A study of the nasopharynx on several occasions following the operation, while positive cultures were still found, showed an unhealed surface covered by a mucopurulent secretion. The complete healing of this area was followed by constantly negative cultures.

Study of the Cultures: After 24 hours incubation at 37 degrees C. the cultures obtained from the nasopharynx planted upon defibrinated horse blood agar showed discrete and confluent colonies. The colonies varied in size from 1 to 3 mm. in diameter. They were elevated, moist, round and opalescent in the center, while the margins were clear. The margin of the colony was regular in its outline and sharply limited. After 48 hours incubation the tendency of the colonies to become more confluent and opaque was noted.

Microscopic examination of the culture showed them to be Gram-negative diplococci with the morphology of the meningococcus. The organisms showed distinct variation in size and in staining reaction, this being especially marked in 48-hour old cultures.

Agglutination of the organism was carried out, using serum obtained from Pvt. R. R., antimeningococcus serum No. 1, No. 10, No. 30, No. 60, from the Rockefeller Institute and polyvalent anti-meningococcus serum. Control tubes were set up using normal horse serum and normal salt solution.

The serum was so diluted that the desired dilution was present in 0.8 c.c. of salt solution and to each tube of diluted serum was then added 0.2 c.c. of an emulsion of a 24-hour old culture obtained from the nasopharynx of Pvt. R. R.

The tubes were well shaken, placed in an incubator at a temperature of 55 degrees C. overnight and readings made the next morning.

The results of the macroscopic agglutinations are here tabulated:

x—Positive s—Slight agglutination d—Doubtful agglutination

Dilution	Pvt. R. R.	Sera				Poly-valent	Controls	
		No. 1	No. 10	No. 30	No. 60		Nor. Serum	Salt Sol.
1:10	x	x	x	—	—	x	—	—
1:20	x	x	x	—	—	x	—	—
1:40	x	x	x	—	—	x	—	—
1:80	x	x	x	—	—	x	—	—
1:160	x	x	x	—	—	x	—	—
1:320	x	x	x	—	—	x	—	—
1:640	x	x	x	—	—	x	—	—
1:1280	x	—	x	—	—	x	—	—
1:2560	x	—	s	—	—	x	—	—
1:5120	x	—	d	—	—	s	—	—

Summary:

1. History of cases of meningitis in a community where Pvt. R. R. resided.
2. Sudden outbreak of meningitis in the organization to which he was attached.
3. Close association with four out of a total of six cases of meningitis in his organization.
4. Isolation of a pure culture of an organism showing the

cultural, morphological, tinctorial and serological reactions of the regular type of meningococcus.

5. Sudden cessation of cases following his removal from the organization.

6. Demonstration of masses of bacteria in the adenoids removed from the nasopharynx showing the morphological and tinctorial characteristics of the meningococcus.

7. Persistent negative cultures from the nose.

8. Persistent negative cultures from the nasopharynx following the healing of the operative wound.

Conclusions:

1. That the epidemic which made its appearance in the 110th Ammunition Train was due to a carrier, who was identified as Pvt. R. R.

2. That proper isolation methods being instituted, the epidemic was checked.

3. That the organism was harbored in the nasopharynx exclusively.

4. That the persistence of the carrier condition was due to the localization of the organism in the adenoid tissue.

5. That local medicinal remedies were effective in obtaining negative cultures only while they were being used, but had no value in the relief of the carrier state. On the contrary, their employment could very easily have led to a false conclusion which might have proved dangerous.

We desire to thank 1st Lieut. Newton Stern, M. C., for the photo-micrographs of this case.

THE VALUE OF DICHLORAMINE-T CHLORCOSANE SOLUTION (DAKIN-DUNHAM) IN THE TREATMENT OF INFECTIONS OF THE UPPER AIR PASSAGES.

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The present war has brought a distinct advance in our knowledge of surgical infections and of the means for their prevention and relief. Of recent measures none has deserved greater attention than the so-called Dakin method for the disinfection of wounds. The advantages of this have been widely tested and convincingly proved. Of its value there can be no doubt.

The basis of the solution by means of which the Dakin treatment is carried out is a greenish-white crystalline substance possessing a sweetish, rather pungent, chlorous odor, stable in the solid state, especially when kept in the dark. It is known as dichloramine-T (toluene-p-sulphon-dichloramine). It has an intense germicidal action, corresponding with its high content of chlorine. It is difficult, however, to find satisfactory solvents for it which will yield stable solutions. The experiments carried on by Dr. Dakin, in company with Dr. Edward K. Dunham of New York,* have proved that the best medium thus far found by them is an oil obtained by the chlorinization of paraffin wax, to which has been given the name "chlorcosane." Other solvents which they have experimented with are a mixture of eucalyptol and paraffin, and one made by the prolonged chlorination of eucalyptol. Chlorcosane has seemed decidedly preferable. Dakin and Dunham thus describe the way in which the antiseptic action of dichloramine-T in the solution is exerted: "It is well recognized that antiseptics incorporated with or dissolved in oily substances usually possess little if any antiseptic activity, because intimate contact with the infected matter is hindered by the oil. When, however, such oil solutions of dichloramine-T as will be described are brought in contact with aqueous media, the

*A Handbook of Antiseptics by Henry Drysdale Dakin and Edward Kellogg Dunham, New York: The Macmillan Co., 1918.

partition coefficient between the oil and the water is such that a certain amount of the dichloramine-T passes into the water and there exerts its germicidal action. The amount of dichloramine-T thus passing from the oil is enhanced by the presence in the aqueous medium of substances capable of taking up chlorine, so that the oil solution serves as a store for the antiseptics, which is drawn upon to maintain the germicidal activity of the aqueous medium with which it is in contact. Thus the amount of antiseptic leaving the oil solution is, to a certain extent, dependent upon the rate at which it is used up in the aqueous medium."

The dichloramine-T oil solution may be sprayed upon wound surfaces or poured into accessible parts of deep wounds. It yields a moderate amount of the antiseptic to watery media, such as secretions from wounds or mucous membranes. It is suitable for cases requiring prolonged antiseptic treatment and for first dressings of wounds which do not require irrigation. The application of the oil is extremely simple and in the treatment of wounds it ordinarily need not be renewed more than once in twenty-four hours.

The highly active germicidal qualities of dichloramine-T having been demonstrated in general, it becomes a matter of great interest to study its value in the upper air passages, regions especially liable to infection, prone to harbor germs of dangerous character, abounding in recesses difficult of access by the ordinary means of application, and often becoming foci of infection threatening extreme danger.

Of the various parts of this region the upper half of the nasal cavities, the tonsils, and the vault of the pharynx seem the most susceptible to infection and the hardest to reach. They may be invaded by a wide variety of harmful microorganisms, including the staphylococcus, the streptococcus, the pneumococcus, the meningococcus, the bacilli of diphtheria, and, in fact, almost any one of the active infections, not excepting those of measles, scarlet fever, and grippe. The successful disinfection of these parts therefore becomes a matter of wide interest and serious importance.

Applied for this purpose in the upper air passages, the dichloramine-T may be used with advantage under three different

conditions: (1) To prevent the development of newly acquired infection; (2) to overcome the acute results of infection; and (3) to abolish the bacilli persisting in carriers.

Thus, it has been found effective in the prevention of cerebro-spinal meningitis and of measles through its early application in subjects who have been exposed to those diseases, and in other analogous situations it has proved a valuable safeguard.

Its value in acute infectious conditions of the tonsil has been tested by the writer and others during the past winter. There are many like conditions of the nasal cavity in which its use has already been found advantageous.

A third and very interesting situation promising important results is the disinfection of so-called "carriers." Recent investigations in the medical service of the U. S. Government and elsewhere have proved that carriers of infection are commonly met with, that their presence is associated with great danger to others, and that the means heretofore used to disinfect them have often proved unsatisfactory. In the Dakin-Dunham solution we have a germicide which has already proved itself superior to those in ordinary use in that its disinfectant action is more powerful, its activity more profound, and its local effect less irritating. The best results to be obtained from it, however, have not always been secured. In order to insure them, the anatomy of the tonsil and of the nasal cavities must be clearly understood and the inaccessibility of their parts recognized.

The value of the method must, of course, depend in an important degree upon the thoroughness with which the disinfectant is applied to the ultimate recesses in which the germs are lodged.* Brushing the surface of the tonsil or spraying the lower section of the nasal cavity with the solution cannot possibly be effective as long as the remote parts are not reached. The reason why the attempted disinfection of infected throats and nasal cavities has sometimes failed is because this all-important principle has not been recognized. The writer has been experimenting for some time past with various methods calculated to secure the intimate contact of the oil solution with foci of infection in the upper air passages too remote to be reached by

*Gordon and Flack, "*Brit. Med. Jour.*," Nov. 18, 1916.

the ordinary methods. He has adopted a procedure based upon the simplest mechanical principle, which has yielded the best practical results thus far obtained. Its neglect is a frequent cause of disappointment. *This principle consists in the most complete possible exposure of the parts, preliminary to the application of the oil.* As far as can be learned, this suggestion heretofore has not been advanced or carried out. In the case of the tonsil, it is the crypts which harbor the most persistent of the offending organisms. It is absolutely essential therefore that these crypts should be disinfected to their lowest depths. In the nose the complicated structure of the superior half of the nasal cavity necessitates that it receive especial attention.

For example, to secure the thorough treatment of the tonsil it should first be cleansed with some mild alkaline or salt solution by means of a spray carried into the crypts. Immediately following this, a spray of adrenalin or other similar astringent should be carefully applied for the purpose of contracting the tonsil and thus exposing its recesses. When this has taken effect, the crypts should again be sprayed with the cleansing solution to rid them of all obstructing secretion. Finally the dichloramine-T solution, driven in the form a spray, must be applied to all crypts and pockets of the tonsil and caused to penetrate to their lowest depths. This is usually not difficult of accomplishment, as the force of the air current from the spray tube causes the crypt entrances to open widely and the crypts themselves to balloon out until they are distended to their capacity, in which position the oil can enter with complete thoroughness. This course of action is absolutely necessary, since attention alone to the surface of a thoroughly infected tonsil cannot succeed.

What is true of the tonsil is even more positively the case with the upper nasal region. The parts lying above the inferior margin of the middle turbinated body are not often freely accessible to any spray. Under the influence of infection they become still less so, by reason of the turgescence and swelling of the soft parts. To be effective the spray must be driven directly into the affected recesses, for should it impinge upon any projecting angle in its course the current will at once be destroyed and will not enter the parts beyond. In all cases where disin-

fection of the upper nasal cavity is required, the following practice is recommended:

First cleanse the mucous surfaces within reach with some simple alkaline spray. Follow this with a spray of adrenalin, the adrenalin spray to be repeated until the upper parts have been successively opened and the whole way to the roof of the nasal cavity is clear. Then, and not until then, and guided by a clear demonstration of the parts by a good light and a nasal speculum, the dichloramine-T spray can be thrown to the remote upper parts which most stand in need of it, and the disinfection of the region made complete. While it may be said that this method, thorough as it is for the nose, does not reach the nasal sinuses, it nevertheless has proved more practically effective than any other method of which we know.

The disinfection of the vault of the pharynx may be secured by first applying the adrenalin to the soft palate and the lateral walls of the pharynx, thus facilitating the complete introduction of the spray.

Used in the strength of 2 per cent., the solution of the dichloramine-T is seldom irritating. In the case of stronger solutions it may become so, producing a sensation of smarting or burning. This is easily obviated by reducing the percentage of dichloramine-T of the solution to as low as one or even one-half per cent. Otherwise than this, the oil is well tolerated and free from any injurious effect.

For its application in the form of spray an atomizer must be used which will throw the spray *in all directions*. It should be made of some medium which will not be acted upon by the chlorine, and the compressed air should be supplied from a good condenser.

Theoretically, the most complete possible exposure of the affected areas should permit the best contact of the disinfectant. Practically, this is found to be true, as proved by the speedy success of the treatment, two or three applications often sufficing to sterilize the parts. Where success is delayed, there will usually be found enlargements of the tonsils or of the adenoids, or marked obstruction of the nose. In such cases, after a reasonable number of local treatments have been given without

avail, the removal of the offending lymphoid tissue or suitable attention to the nasal cavity must be considered.

Dr. Stanton A. Friedberg, in his excellent theses (Trans. Am. Laryngological Ass'n, 1917 and 1918), has ably set forth the value of the operative treatment in diphtheria carriers, and concludes with the statement: "When the bacilli, deeply buried in the tissues, persist in spite of any local treatment beyond a period of three to four weeks, the removal of tonsils and adenoids is the most effective treatment and the most uniformly successful that has yet been proposed." The same treatment has been found true in the case of meningococcus carriers.

In cases where no obstruction exists or where for any reason the immediate removal of adenoid enlargements is not advisable, the dichloramine-T chlorosane solution seems to offer the best hope of a speedy cure. If, as is the fact, complete disinfection can be accomplished in uncomplicated cases with as few as three, two, or even one treatment, the superiority of the method over others is beyond question.

As to the relative merit of the application of the oil solution as compared with the inhalation method, the results seem to show that the former is more prompt in its action and that in uncomplicated cases the number of treatments required is far less. Again, an important advantage is the simplicity of the outfit. An inhalation room could hardly be established at any but a hospital of some importance and at considerable expense, while its apparatus is sufficiently complicated to require expert care. My desire is to offer a method so simple in itself as to be readily carried out by the average practitioner, with the aid of apparatus inexpensive, durable, and clean, very compact of form and light of weight, and therefore conveniently available for use under all circumstances of medical practice, whether at home in the hands of the practitioner and the health officer, or in the various branches of hospital and field service of the army and navy. All that is necessary for this is:

1. The recognition of the principle upon which success absolutely depends, namely, that in order to carry the dichloramine-T chlorosane solution to the chief foci of infection *these foci must first be thoroughly exposed*, as described above.

2. The application of the dichloramine-T solution by means of a properly constructed spray atomizer, the air current being supplied if possible from an air condenser and not by means of an india-rubber handball.

3. The devotion of time and painstaking care to the effective carrying out of the treatment.

I have personally used this method sufficiently to believe that in it we have a means for overcoming infections of the upper air passages which is more simple, safe, prompt and successful than any hitherto known.

DISCUSSION

Dr. Joseph H. Bryan, Washington, D. C.: I am very much interested in this paper, and believe that the method of treatment described will be of valuable assistance in correcting these conditions. I cannot understand how the spray can get into the deeper portions of the tonsils, however. I have been using a small dental syringe, by which the solution can be carried into the depths of the tonsil better than by the spray.

Dr. Cornelius G. Coakley, New York City: Regarding disinfection of meningococcus carriers: two weeks ago Dr. Flexner asked me whether I could help him out in the examination of a number of the naval men who had been sent to North Brothers' Island as chronic meningococcus carriers. Some had been there since January, and there were fifty-four of them there. They had had dichloramine-T in oil and watery solutions, and lugol solutions, using the special respiration chamber, without any benefit as far as relief of the infection was concerned. On the other hand, a great many others had been relieved; but these fifty-four, do what they would, did not clear up. They brought twenty-seven of these cases to the Rockefeller Institute, and I spent one afternoon making a thorough examination of their upper air passages. The conditions found were almost identical in all—a most intense hyperemia, redness, with moderate swelling of the nasal, naso-pharyngeal and pharyngeal mucous membranes. I have never seen such red throats, and none had had, during the past four days, any local treatment, so that I could not ascribe the conditions there to the result of local treatment. Of the twenty-seven, twenty-four had unusually extensive masses of adenoid in the nasopharynx. I have rarely seen such masses of adenoid tissue in adults, in private practice. They were large, husky

men from the Middle and Far West, fine specimens of manhood; yet with masses of adenoid tissue bigger than my thumb, as proved by removal by Dr. Babcock later. In two, there were smaller amounts of adenoid tissue; and in one, none. One patient only had a sinus involvement. I feel that neither the dichloramine-T nor other local disinfectant can have any great bactericidal or germicidal value when we find such masses in the nasopharynx as were present in these twenty-four cases. I believe that this was the cause of failure of the local treatment. The results of operation will be noted later on. But last fall, I had a smaller number, about ten, who were sent from one of the cantonments of the South to the Rockefeller Institute for study; and we found in all, large tonsils and adenoids. When these were corrected they promptly cleared up in two weeks; and they were long standing cases. So I think, from what little I know at present, that if you have a smooth surface which can be readily acted on by the antiseptic, dichloramine-T, you will get good results; but if you have a rugous surface, its efficacy is much less.

Dr. Robert C. Myles, New York City: I have been experimenting for several months with these preparations of Dakin's fluid, although nothing definite has resulted. A great many of the cases seemed to have been relieved and it would seem theoretically that it is the best thing that has been proposed. I have used it in solutions and mixtures. I have used also the watery solutions in tracheobronchial conditions and so far the results have been very satisfactory. When the oily solutions were used much precaution was employed in dropping them into the trachea. Too much paraffin oil going into the lower bronchi might not be brought back again. Not being absorbable it was a question what would become of it.

Dr. Harmon Smith, New York City: I have had more or less success in employing this solution, beginning with dichloramine-T chloroosane in February. I believe that the most important point is to have the surface clean and the sinus clear of any invading pus or mucus pus found there. In addition, we should not only bring the solution in contact with, but force it into these rugae. I have shrunk the tissues first, and then irrigated with an alkaline aqueous solution or normal saline; and afterwards instituted suction until there was no evidence of pus in the solution coming away. Then I have employed a syringe which I have endeavored to impress on some as being efficient. It is loaded as an ordinary syringe, with a two per cent solution of dichloramine-T. Then

by turning the stop-cock in the direction of suction, I bring about a vacuum in the sinus, after which I turn the cock and force the solution in, using the efficiency of the vacuum together with the force of the syringe. I have had more success with the dichloramine-T and chlorcosane than with the dichloramine-T aqueous solution. This suction sinus syringe has been more or less condemned by some, but in my hands it has met all requirements. In addition to this treatment of the patient, it is necessary for him to do something in the interim between the calls at the office. I give the patients a weak solution of adrenalin, and they first spray the nose with this, and follow with a normal salt solution, irrigating the nose until the first outpouring of mucus is over. I give them also a bulb that may be attached to the Sorenson machine, with a ten degree suction registration on the dial. Employing this at home, they can keep the sinus more or less free from mucus and there is less for the physician to remove at the office before employing the injection with the syringe. I use half a syringe full of the two per cent solution of dichloramine-T.

Dr. Emil Mayer, New York City: My experience with this solution, many months ago, was that it produced so much irritation of the skin in the cases of otitis that I was rather chary about its use in cases in which there was much sensitiveness of the mucosa; hence I have recently been using the watery solution in treating bronchiectasis and bronchial abscess, washing them out and, at the same time, using the suction apparatus, and then throwing in this watery solution. I took a number of the cases that were under observation, and, for control, used the old solution of iodine and carbolic acid; and in the others, I used the chlorcosane. The site of application is in the bronchus. Drawing out the immense mass of secretion by means of the suction apparatus, which was attached to a double pipe, the irrigation could be continued while the suction was being used. Our experience has been of such short duration that I am unable to say anything but to report a decided amelioration of the worst symptom of the patients, the odor. Whether we can use a solution of oil in the bronchus, remains to be seen. I will experiment later on, and hope to get better results with the oily solution.

Dr. Robert Clyde Lynch, New Orleans, La.: During an epidemic of Grippe in New Orleans last winter, cultures from many patients showed a diplococcus that resembled the meningococcus. We used dichloramine-T solutions, both in water and in oil, the latter two per cent in the sinus cases, especially

the antra, and in a few sphenoidal cases. The sinuses were first irrigated with normal salt solution, and then thirty minims to a dram of the two per cent oily solution was instilled into the sinuses. This was followed, at first, by an apparent increase in the inflammatory state lasting on an average about six hours. On the return of the patient, the following day, apparently more secretion could be washed from the sinus; but it was usually changed in character. That is, instead of the secretion showing a tinge of blood or being bloody, there was, on the patient's return, what appeared to be an excess of the normal mucous secretion. In other words, the washing from the sinus lost the peculiar muco purulent sanguinous type, and was changed to a thinner watery discharge, having a considerable amount of apparently perfectly clear mucous. In the cultures taken from these washings there was a notable decrease in the diplococci but the duration of the attack did not seem to be perceptibly shortened. In studying parallel cases we found in time that nearly the same results were accomplished by irrigating with a normal salt solution or with a solution of permanganate of zinc. We were able to accomplish convalescence in about the same time as with the dichloramine-T solution. We then tried simply washing the sinus with plain tap water, following that with the instillation into the sinus, through the canula, of from one to two drams of two per cent dichloramine-T oil, and allowing that to remain for as long as it would stay, requesting the patients to sit upright and refrain from blowing the nose. The fluid seemed to be retained within the cavity for some odor of the chlorine remaining until the next day. This plan was followed by the same reaction, but convalescence was apparently shortened from two to four or five days. After the instillation of the first oil and the washing of the second day, we instil the oil for the second time. Then, if the symptoms are not too violent, we refrain from any further intrasinus medication. We do not try to wash the sinus out, but allow the oil to stay in and give the sinus a period of rest for about four days. In the cases so treated the convalescence was shorter, the pain less, and the patients recovered most satisfactorily. We used the dichloramine-T oil on tampons in cases of acute suppurative otitis requiring tympanotomy. As soon as the discharge was reduced in quantity, so that we could feel safe in putting a tampon in the ear canal for a period of twenty-four hours, we applied, on a little cotton tampon, the two per cent solution of dichloramine-T oil, and found that the first re-action was

quite marked. The drum and the canal would be reddened; but with twenty-four hours of rest, the discharge would change in character from the sero-sanguinous discharge to one not of blood, but of an excessive secretion of what apparently was white, clear, normal mucous. Some of the acute suppurative cases seemed aggravated by the use of the dichloramine-T oil tampons. We therefore discontinued them, not being able to accomplish the convalescence of the individual more promptly than by other means. We used the dichloramine-T oil in the acute tracheal cases, cocaineizing the trachea rather thoroughly and introducing into it, by means of a tracheal canula or syringe, thirty minims to a dram of the dichloramine-T oil solution. This was followed in one or two instances, by considerable spasm of short duration, but by very rapid amelioration of the symptoms. In other words, the intense redness of the mucous membrane was greatly lessened. Cough and distress were diminished and the cases, diagnosed as acute tracheitis, recovered more rapidly than did those treated by the means formerly used. With the sinuses, however, we did not see that the period of convalescence had been shortened. Some of the ear cases were made apparently worse by the application and we discontinued its use. In the tracheal cases, we saw real, decided benefit.

Dr. J. Payson Clark, Boston, Mass.: I have not had enough experience in the use of dichloramine-T in nasal conditions to draw any definite conclusion in regard to it; but I was instructed when I began the use of the solution that it was important to avoid the use of any metal in the canula or syringe in its application. I should like to report one case of chronic pansinusitis in which most of the sinuses were discharging pus. In this case, I used this solution. I washed the affected sinuses with a normal salt and boric acid solution, then irrigated them with a Dakin watery solution. The patient went home and had a headache, and so much malaise that she went to bed. She absolutely refused to have me continue this treatment.

Dr. Delavan: In general surgical cases, Dr. Dakin and Dr. Dunham use a special sprayer, composed entirely of glass. In order to reach the remote recesses of the upper air passages, however, it is necessary to use an atomizer by which the spray can be thrown directly into them, and from every direction.

Regarding the irritating possibilities of the dichloramine-T solution, formerly, when the eucalyptol medium was employed, that solution was found to be irritating. Drs. Dakin and

Dunham therefore tried to find a medium that would give a non irritating solution. Chlorcosane seems to answer the requirements. Almost anyone with a little expertness in chemistry can prepare it.

Regarding the important subject of the disinfection of carriers, I know nothing better on the subject than the candidate's thesis of Dr. Friedberg, published in the last volume of our Transactions. Not only may the crypts of the tonsil contain the offensive germ, but it may penetrate to such a considerable depth that even when the disinfectant is brought into contact with the wall of the crypt it does not reach the buried micro-organism. The disinfection of the sinuses, too, is a difficult matter, as we must admit.

I am gratified at the discussion. Of course, it is conceded that dichloramine-T is in itself a valuable germicide. The discussion has brought out much of value in the use of it. The vital point after all is the thorough preparation of the parts, so that the intimate contact of the disinfectant with the germ-invaded recesses may be absolutely secured.

ESOPHAGEAL OBSTRUCTION DUE TO ACCESSORY THYROID

DR. FREDERICK E. HOPKINS

Springfield, Mass.

A case labeled unusual sometimes exposes the limited observation of the reporter—the unusual to him being no rarity to those whose experience in large clinics brings numbers of cases of almost every possible variety.

The case of esophageal obstruction presented herewith may have some interest, even if to most of you the possibility of its being due to hypertrophy of an accessory thyroid would seem more reasonable than it did to me.

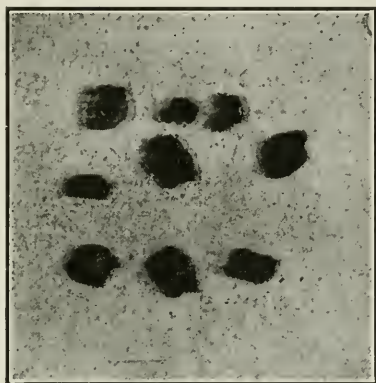
Mrs. A., American, about 40 years old, came to my service at the Springfield Hospital, November 16, 1917, complaining of inability to swallow solids. There was no enlargement of the thyroid or any symptom to direct attention to this gland. Her general health was good, save for such loss of weight and strength as followed the inability to take sufficient food.

The obstruction was so marked and its location so definite to the patient that she thought she must have "swallowed a bone." No foreign body was discovered by the esophagoscope, but about five inches below the level of the cricoid cartilage a soft, irregular, vascular growth projected into the lumen of the esophagus, from its posterior and left side.

A portion of this growth was removed and submitted to the Hospital Pathologist, Dr. Frederick D. Jones, for examination. When he reported this to be thyroid tissue, I was not a little surprised and more than a little skeptical as to the correctness of his diagnosis. However, Dr. Jones was positive as to the character of the tissue and subsequent search of references to accessory thyroids made the diagnosis appear reasonable. A section is submitted for your examination. I will add that the vascularity of the growth was such that the removal of the specimen for examination was followed by sufficient contraction to permit of comfortable swallowing. The patient has re-

cently reported herself so well that further treatment is declined for the present.

It is unnecessary to weary you with many references to the literature on accessory thyroids. The following are brief quo-



Microphotographic Section of Accessory Thyroid.

tations from a physiologist, a surgical anatomist, a pathologist and two internists.

Howell:¹ "Accessory thyroids varying in size and number may be found along the trachea as far down as the heart. They possess a vesicular structure and no doubt have a similar function to that of the thyroid body."

Deaver:² "Accessory thyroid glands occurring near the median line of the neck in the vicinity of the hyoid bone, and elsewhere in the neck, are regarded as being formed by division of the pyramidal process."

McCallum:³ Speaking of the physiology of the thyroid, says, "Destruction of the thyroid gland in animals by operative extirpation is not easy, because there are practically always numerous minute nodules of accessory thyroid tissue scattered in the neck, in the thymus, and inside the pericardium."

Wilhelm Falta:⁴ who quotes Maurer regarding the development of the thyroid. "The rudiments of the thyroid wander

1. Howell, "Text Book of Physiology," 1914, p. 850.

2. Deaver, "Surgical Anatomy," p. 125.

3. McCallum, "A Text Book of Pathology," 1917, p. 807.

4. Wilhelm Falta, "The Ductless Glandular Diseases," p. 53.

downward with the heart. Along the entire tract from the root of the tongue to the aorta may be found cut-off portions of thyroid glandular tissue, accessory thyroids, which may give occasion to the formation of abnormally situated goiters—tongue-goiters, retro-sternal goiters, etc.”

Thompson:⁵ “Accessory thyroid glands have sometimes been found at the root of the tongue, and in the pleura.” Speaking of adenoma of the thyroid, he mentions “a rare malignant form as described by Hayward, with metastases of thyroid-like tissue in the lungs, bones and elsewhere.”

Dr. Frederick D. Jones, a pathologist of this city, mentioned to me a like metastasis coming under his observation. “At the time of the removal of the growth—involving one of the lower ribs—the existence of the primary disease in the thyroid was not suspected. Examination of this growth showed thyroid tissue.”

Osler:⁶ “It may be mentioned that the aberrant, or accessory, thyroid gland may form large tumors in the mediastinum or in the pleura. I have reported two cases of this kind, and an instance is on record in which an enormous cystic accessory thyroid occupied the entire right pleura.”

5. Thompson, “*Practical Medicine*,” p. 537.

6. Osler, “*Practice of Medicine*,” p. 751.

OBSERVATIONS ON PNEUMOCOCCUS INFECTION OF THE NASAL ACCESSORY SINUSES

CORNELIUS G. COAKLEY, M.D.

New York

The systematic study of the bacterial flora found in the discharges from acute and chronic inflammation of the accessory sinuses of the nose is such an arduous task that few investigators have had the patience to carry out the work through any considerable series. I have been very fortunate in having associated with me Dr. James W. Babcock, whose training in Bacteriology has made it possible for him to do this work in addition to his many other duties. The tedious work of subculture, identifying and grouping the bacteria, has been partly alleviated by the clinical interest we have had, as all of the cases have been in our private practice.

In undertaking this study Dr. Babcock and myself have frequently consulted with and gratefully acknowledged the valuable assistance given by Dr. Simon Flexner of the Rockefeller Institute, and Professor Hans Zinsser, head of the Bacteriological Department, College of Physicians and Surgeons, Columbia University, in the laboratory of which institution all of the research work has been done.

Dr. Babcock reported to The New York Academy of Medicine, Section in Laryngology, Meeting of January 1918, the findings of the first 100 patients examined, suffering from sinus disease. Up to May 15th, 1918, a further study has been made of 88 additional cases, so that we are now able to report upon 188 cases. In this paper, as in the previous one, we shall divide the cases into acute and chronic. We shall consider as acute cases those giving a history of a duration of one month or less. Of this number there were 109. All cases giving a history of disease of more than one month have been regarded as chronic cases, and of this number there were 79. Of the 109 acute cases, in 48 pneumococci were obtained on culture, that is, in 44% of the acute cases pneumococci were present. Moreover, in 80% of the

cases in which pneumococci were obtained they were the sole organism found.

Grouping the 48 acute pneumonia cases, according to The Rockefeller Institute classification, we find

Type undetermined	4
Type 1	4
Type 2 Typical	15
Type 2 Atypical	3
Type 3	3
Type 4	19
<hr/>	
Total	48

Among the 79 cases of chronic sinus disease there were 10 cases in which pneumococci were found or 13% as against 44% in the acute. Grouping these as in the acute we found

Type undetermined	2
Type 1	1
Type 2 Typical	0
Type 2 Atypical	0
Type 3	0
Type 4	7
<hr/>	
Total	10

A comparison of the types found in acute and chronic inflammation is instructive. In the acute cases, of the 44 in which the Group was determined, 19 or 43% were of Group IV, the common variety fairly constant in the mouth. 25 or 57% were of the other three groups comprising the invading organisms.

In the chronic cases of the 8 in which the type was determined, 7 or 87% were of Group IV and only one or 13% an invader. These would seem to warrant the inference that in acute inflammations possibly half (43%) the cases might be due to auto-infection while the other half (57%) were due to infection from some outside source. In chronic cases by far the larger number 87%, were accompanied by auto-infecting organisms.

CASES BY MONTHS.

	Total Cases	Acute	Chronic	Pneumo- coccus	Acute	Chronic	% Pneum. Acute Cases
1917							
January	2	0	2	0	0	0	
February	15	6	10	3	2	1	2/5
March	23	13	10	6	5	1	5/13
April	12	6	6	3	3	0	3/6
May	19	12	7	9	6	3	6/12
June	5	2	3	1	1	0	1/2
July	2	2	0	1	1	0	1/2
August	3	2	1	0	0	0	0/2
September	—	0	0	—	0	0	0/0
October	1	1	0	1	1	0	1/1
November	15	9	6	4	3	1	3/9
December	18	11	7	6	6	0	6/11
1918							
January	16	13	3	9	8	1	8/13
February	10	7	3	3	3	0	3/7
March	23	15	8	7	7	0	7/15
April	15	6	9	5	2	3	2/6
May to 15th	9	5	4	0	0	0	0/5
	188	109	79	58	48	10	

A study of the cases according to the months in which they occur shows a very high incidence from November to May (97) as compared with the number from May to November (30). These are the months in which coughs and colds are more frequent, and also the months in which the different varieties of pneumonia are most numerous. The percentage of pneumococci in cases in these months (November to May) run much higher (see column 7 in table) than it does in the months May to November.

The length of time necessary to cure the average case of acute pneumococcus sinusitis apparently does not materially differ from that of a sinus when other bacteria such as streptococci or staphylococci or mixed infection are found. In the 48 acute cases the minimum time was three days, maximum 42 days, and average $8\frac{1}{3}$ days. In the acute cases due to other or mixed organisms the average time was 9 days.

Some of the cases were of considerable clinical interest.

I. Mrs. J. E. W. was seen on January 30th, 1918.—suffering from what appeared to be an acute tonsillitis. There was a typical exudate over both tonsils, and also a swelling of the lymphoid tissue on the posterior wall, in which there were a number of yellowish punctate spots, the result of infection of the lymphoid tissue. Culture was made from the tonsillar exudate and a pure culture of *Pneumococcus* Group II—was obtained. The tonsillar inflammation was accompanied by a temperature of 103, and the usual symptoms of tonsillitis which cleared up rather promptly, and the patient was last seen for the tonsillitis on February 3d, 1918. During the time of her acute tonsillitis the translumination of the nasal accessory sinuses was normal. On February 14th patient was again seen, owing to the fact that she did not seem to recover her strength as quickly as one would expect. On examination the pharynx was still red, and on the translumination the left antrum was slightly darker than the right. There was no secretion in the nose. Patient was not seen again until February 24th, at which time there was considerable secretion in the left nasal cavity and the patient still complained of considerable malaise. Translumination showed the left antrum to be considerably darker than the right, and darker than it was ten days before. Radiographs showed her left antrum very cloudy; all the other sinuses clear. We punctured and washed out the left antrum and obtained from the secretion a pure culture of pneumococcus, type 2. In this patient we have a pneumococcus tonsillitis, followed at an interval of two weeks with a pneumococcus infection of the left antrum, which cleared up in a week after daily irrigations of the antrum with normal saline solution.

Case II. Miss E. McC., age 18 years, was first seen on February 12th, 1918, complaining of cough and considerable secretion coming from the nose. Translumination showed both antra dark. On irrigation, a pure culture of pneumococcus IV was cultivated from the secretion obtained from each antrum. Patient continued to have the sinuses irrigated daily until the 21st, when they were clear. On February 24th, patient began having pain in the left ear, and the membrana tympani was found on examin-

ation to be red and bulging, and a myringotomy was performed. Examination of the serous secretion obtained showed a staphylococcus aureus on culture with a few diphtheroid bacilli, (possibly contamination). The ear became dry on the 28th, four days after myringotomy. On April 2d the patient contracted a fresh cold, but the sinuses seemed to illuminate clearly. On April 5th there was a slight darkness of the left antrum. On translumination the cavity was somewhat darker than the right. It was irrigated with normal saline solution, and a pure culture of pneumococcus I was obtained. The attack lasted until April 16th, since which time there has been no recurrence of sinus involvement. A pneumococcus IV in the first attack and a pneumococcus I in the second attack.

Case III. Mr. W. P., age 32 years, presented himself on January 19th, 1918, with a history of having had a cold for ten days. His left antrum was very dark on translumination, and on irrigation a large quantity of broken down purulent secretion came away, from which on culture we grew pneumococcus II. This attack lasted until the 14th of March. On the 19th of March he seemed to contract a fresh cold, was very hoarse, had a marked redness and edema of both vocal cords, and a redness of the tracheal mucous membrane. An examination of his sputum at that time showed a few pus cells, many coeci, some of them paired, and on culture a staphylococcus aureus predominating, a non-hemolytic streptococcus, pneumococcus, type 4, a micrococcus catarrhalis. Within a few days the amount of secretion from the nose became very much greater, and on April 1st we punctured and washed out the right antrum and obtained a pneumococcus IV, associated with a staphylococcus albus. It would seem as if this patient had a secondary infection starting in his larynx and trachea and secondarily involving his antrum.

Case IV. On April 10th I was called to see Mr. W. K., age 31 years, with a history of cold in the head for about a week. He complained of pain in the left side of his face for four or five days, and was finally persuaded to visit a rhinologist with reference to his sinuses. This he did on the afternoon of April 9th and had his left antrum irrigated with result of abundant thin purulent discharge. Two hours later he had a chill, temperature of 104. At the time I saw him his temperature was

103.3, Respiration 32—Pulse 112. His chest had been examined by two very competent internists with a negative result. I washed out his left antrum through the same opening which was used the day before and found a large quantity of broken down, bloody, non-odorous secretion. I advised a radiograph. Patient was sent to the radiographer that morning, and cultures were made from the discharge. The radiographs showed a bi-lateral maxillary sinusitis. His right antrum was punctured and washed on the afternoon of the 10th. It was found to contain the same sort of secretion as the left. His respirations at the time being 40, we became suspicious of pneumonia, although the physical signs of the disease could not be found by the internists. On the morning of the 11th we received the report that the secretion from each of the maxillary sinuses gave a pure culture of *Pneumococcus* I. About noon on the 11th definite physical signs of consolidation were found at the base of the right lung, and anti-pneumococci serum was administered, followed shortly by a chill, rise in temperature to 106.4, and an immediate drop in temperature. By 12 noon the following day his temperature had dropped to 100, and it did not rise above 100.3/5 that day nor above 100 during the next three days. He was too prostrated to have any attention given to his sinuses for a week or ten days, when they were found clear. From his sputum a pneumococcus I was obtained. We wonder what role the serum played in curing his maxillary sinusitis.

Case V. On April 15th I was asked to see his wife who also complained of a cold in the head beginning about three days after her husband's cold, namely about April 8th, and during the last 24 hours, accompanied by a profuse discharge from the left side of the nose, and considerable neuralgia over the left side of her face. Transillumination showed her left antrum dark, right antrum bright. We punctured and washed out her left antrum and obtained a pure culture of pneumococcus I from the discharge. This patient was radiographed and the radiograph showed an involvement of only the left antrum and ethmoid, all the other sinuses being clear. The left antrum was irrigated daily until April 22d when the return fluid became clear. It seems to me that Mrs. K's infection was almost surely a direct one from that of her husband, but she was more for-

fortunate in having the disease limited to the accessory sinuses, and not implicating her lung tissue.

Case VI. Miss M. S., age 28 years, a trained nurse on April 25th, 1918, complained of very severe pain in the left ear of about two hours duration. Examination showed a left drum membrane the outer surface of which was covered with blebs, and blebs on the inferior wall of the canal adjacent to the membrana tympani. The right membrana tympani was normal. She had had a cold in her head for about one week. At the time of examination the patient had severe pains on pressure all over the entire mastoid region. The membrana tympani (left) was incised and there was an abundant bloody, serous discharge, which when cultured gave a pure culture of pneumococcus I. There were no facilities for the translumination of the sinuses and the patient was seen by one of my associates during the next three days, I being absent from town. The ear continued to discharge profusely, mastoid tenderness very great, temperature range 101 to 102, S.W.B.C. 15,800, Polys 81% and considerable secretion in the left nasal cavity. I punctured and washed out the left antrum, and found a large quantity of partly broken down muco purulent secretion, culture of which also gave a pure growth of pneumococcus I. In this case it would seem as if the cold in the head, complicated by the sinus disease was the primary infection, followed by the otitis media and mastoiditis. Fortunately, after running a very sharp course, the antrum and ear ceased discharging, mastoid tenderness disappeared, and the patient made an uneventful recovery from both the ear and nasal sinus disease in ten days.

From a study of this series of cases, the writer feels justified in drawing the two following conclusions:

First: Pneumococcus infection of the nose and its accessory sinuses does not in any large percentage of cases result in a pneumococcal infection of the lungs. Only one of our cases developed pneumonia.

Second: There would seem to be direct evidence that in one of the cases the infection, pneumococcus I, was transferred from husband to wife.

We hold that most severe acute rhinitis attacks are the result

of infection, either with autogenous or foreign bacteria or viruses. The presence of pneumococcus rhinitis and sinusitis during the stage of profuse secretion, accompanied by coughing and sneezing, must be a fruitful source of disseminating pneumococci, some of which may only invade the upper air passages of the victims of the infection, while in other patients, finding a suitable soil in the deeper air passages, produce a pneumonia. There is abundant evidence that pneumonia is infectious and may not one source of infection be in these pneumococcic head colds?

DISCUSSION

Dr. Clement F. Theisen, Albany, New York: Some time ago, I published a paper on "Pneumococcus Infection of the Nasal Cavities in Children," which was based on a small epidemic, observed in the Child's Hospital in Albany. In these cases, the children, six in number, ranged from four to fourteen years of age. We obtained in all the cases the pneumococcus from the nasal secretion. In two cases there was marked exophthalmos, with serious ethmoidal and frontal involvement. These patients were operated on and made good recoveries. There was one death, in a child of four with sinus involvement and a high temperature. Pneumococcic serum was administered without effect. In all the cases there was profuse nasal discharge, very high temperature, and very serious involvement of the cervical lymphatics; and the pneumococcus was obtained in pure culture, as I have said, from the nasal secretion.

Dr. Henry L. Swain, New Haven, Conn.: Dr. Coakley says that he does not know what relation the administration of the pneumococcic serum had to the course of the sinus disease, as I understood him, in the cases that he spoke of. I had three cases this winter in which the pneumococcus, Type I, was found, and in which the immediate onset of pneumonia set the specialist aside at once, in order that the necessary attention might be given to the chest condition; so that I could not follow the cases during those two or three days. Two of the three cases recovered. The sinus condition absolutely cleared up within three days after the administration of the pneumococcic serum in those that recovered.

Dr. Coakley: The only case in which the question of giving pneumococcic serum of Type I arose was the only one in which the serum was very efficacious. When there were no pulmonary symptoms I discussed the matter with Dr. Flexner. He thought

that it was not worth while to administer the serum in the plain, uncomplicated cases, because the reaction is great and we could not carry on the nasal treatment on account of the prostration resulting. I was surprised to find that from such a severe attack the patient recovered. Of course, he might have recovered without it. Some recover without treatment.

SYMPOSIUM
BRONCHOSCOPY

BRONCHOSCOPY

THE BRONCHIAL TREE—ITS STUDY BY INSUFFLATION OF OPAQUE SUBSTANCES IN THE LIVING.

CHEVALIER JACKSON, M.D.

Philadelphia.

The wonderful development of stereoscopic radiography has rendered it possible for the expert roentgenologist to see the trachea and, in many patients, some of the larger and some of the smaller ramifications of the tracheobronchial tree, the latter more especially in cases which are more or less pathological. A method for increasing the visibility of the tree is a great desideratum. The author believes that intrabronchial insufflation of opaque substances meets this requirement and opens an enormous field for investigation.

The method consists in insufflating or injecting an opaque substance or mixture into the living tree. The injection of the tree in the cadaver has been done many times, and in a few instances opaque solutions have accidentally gotten into the trachea or bronchi from the esophagus either by overflowing into the larynx or by leaking through a cancerous fistula.* Naturally, no one would care deliberately to inject the living tree unless either (a) the absolute harmlessness of the method were proved, or (b) there was a reasonable hope of bettering that particular patient's condition at no more than slight risk. Indisputably to prove absolute harmlessness a large number of observations on all sorts of patients will be necessary, and this evidence must come primarily from the second class of observations, namely, those in which there is a reasonable probability of benefiting a patient not otherwise relievable.

Since his first publication† in 1907 the author has, in a number of cases, deposited a small amount of bismuth in the bronchi

*Beeler, R. C., Journ. Amer. Med. Assn., 1915, LXV, 1178.

†Tracheobronchoscopy. Esophagoscopy and Gastroscopy, p. 69.

for the radiographic localization of a particular spot, to show the relationship of the spot to a foreign body that was itself not in view and for the localization of bronchiectatic and abscess cavities, etc. In none of these cases was there any after-trouble from the bismuth. In using the method in a case in which we obtained the mapping out of a considerable portion of the tree of one lung, Dr. David R. Bowen, with whom I was collaborating, suggested the advantage of stereoscopic plates in such a case.

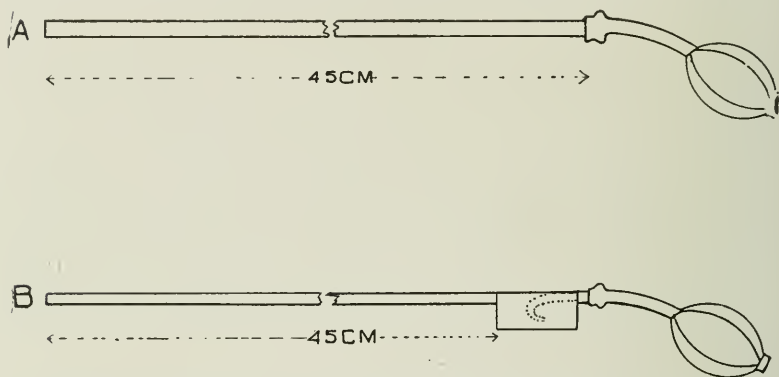


Fig. 1. At A is shown a plain tube with which bismuth was bronchoscopically insufflated into lung of a living patient (see Fig. 2). At B is shown a bronchoscopic powder insufflator. The latter will probably prove to be less efficient than the plain tube shown at A.

In the case of a young man, 23 years of age, with a metallic foreign body "around the corner" in an ascending branch of the left upper-lobe bronchus, bismuth subcarbonate was blown in with an insufflation tube (A, Fig. 1). A radiograph, Fig. 2, taken by Dr. David R. Bowen, within five minutes after the insufflation showed a mapping out of the stem bronchus, the upper-lobe bronchus and some of the branches. One of the bronchi was plugged by the bismuth and caused me some uneasiness until a radiograph taken by Dr. Bowen 24 hours later showed that all the bismuth had disappeared. Occasional cough and expectoration for the first six or eight hours was rather free, the sputum being of milky whiteness from admixture of bismuth. At the end of 24 hours cough and expectoration ceased, and the patient has been normal ever since getting rid of his foreign body. The plugging of a bronchus by the bismuth is doubtless

less likely to occur with the bronchoscopic insufflator (B, Fig. 1), but the relative merits of each method have not as yet been fully worked out.

Conclusions

1. In intrabronchial insufflation with opaque substances, in the living, we have a measure of the greatest usefulness in mapping out the tracheobronchial tree in foreign-body cases in

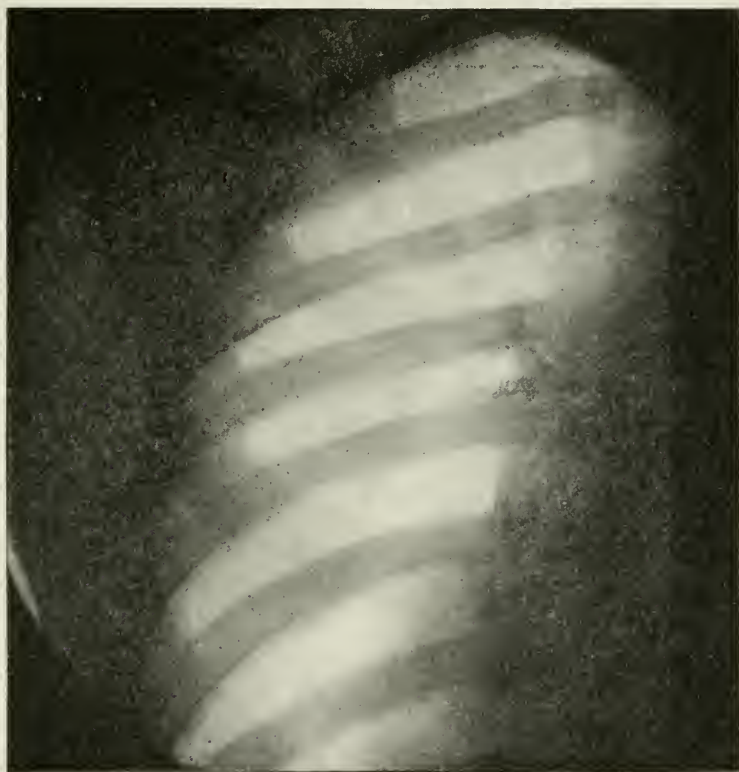


Fig. 2. Radiograph showing bismuth subnitrate insufflated for localization purposes into the bronchi of the living patient, a man 23 years of age.

which a foreign body is far in the upper-lobe bronchi, or in other small bronchi that cannot be entered by the bronchoscope. A stereoscopic pair of radiographs, when the method is fully

developed, I believe will show the bronchi in situ in the living, and the bronchi can be followed in the fluoroscope.

2. The intrabronchial insufflation of dry bismuth subcarbonate through the bronchoscope in sufficient quantities to cast a shadow did not produce any untoward symptoms and the bismuth totally disappeared from the lung by expectoration in 24 hours.

3. The insufflation of dry powders and the injection of opaque fluid mixtures through the larynx gives a degree of visibility of the trachea and larger bronchi in the radiograph; but the results are not as good when the insufflation of a dry powder is done through the bronchoscope.

4. The method is available for an enormous field for investigation of the action of the living cilia, in health and disease, the lymphatic drainage of the lung, the mapping out of bronchiectatic and abscess cavities, etc.

5. For the present it might be best to limit experiments to cases in which there is hope of benefiting the patient by localization or by therapeutic effect.

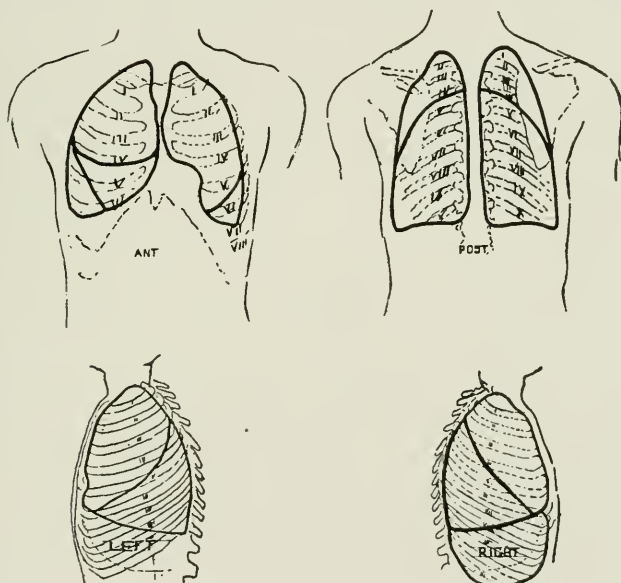
LOCALIZATION OF THE LOBES OF THE LUNGS BY MEANS OF TRANSPARENT OUTLINE FILMS

CHEVALIER JACKSON, M.D.

Philadelphia.

Clinicians have a very good working conception of the size, shape and topography of each of the five lobes of the lungs, in the living. But when a foreign body is seen in a radiograph there is often a difference of opinion as to which lobe the intruder is in.

In case of a foreign body in any of the larger bronchi, bronchoscopic finding is a very simple matter. In those infrequent



Transparent films as described in text.

cases of a foreign body, small in one diameter, such as a pin, and located in a small bronchus far out toward the periphery, finding the foreign body may be facilitated by very accurate localization. The author's transparent positive films of the

opaquely injected cadaveric bronchial tree have been a great aid in these cases.

In a number of cases of small foreign bodies far out toward the periphery, transparent films made from drawings of the outline of the lobes of the lungs for overlaying the radiographic negative have been of great service to me. Twelve sizes of each of the 4 points of view are needed, front, back, right lateral, left lateral (Fig. 1).

Knowing the lobe invaded the bronchoscopist limits his search for a lost foreign body to the branches of the stem leading to that lobe.

Conclusions

For mapping out the outlines of the lobes of the lungs in a radiographic negative, the overlaying of the plate with a transparent positive outline film is very useful. It is necessary to have about 12 sizes of outline films of each of the 4 points of view, front, back, right lateral and left lateral. These, with a moderate mental endowment of solid geometry will be of great help in localizing the outlines of the confusingly irregular lobar shapes.

SUSPENSION AS I USE IT TODAY

ROBERT C. LYNCH, M.D.

New Orleans, La.

Suspension as I use it today differs so decidedly from that presented two years ago, that I thought at this combined meeting would be a good opportunity to correct some statements made previously and to exhibit that technique which has stood the test of time and proved so satisfactory as to be practically fixed.

There is still room for improvement, however, and you may be asked to consider new principles in the future. Like all mechanical problems which start with an elaborate equipment and technique, progress is in the direction of simplification, and so it is with suspension. This seems to have been brought about by the adoption of a new position which is simple and easy to acquire.

As I proceed now, the patient lies flat upon the table with the head extended, the crane is attached as far back on the table as is possible, allowing only sufficient room to turn the handle which moves it horizontally. The vertical position of the crane will now be on a line with the patient's shoulders. The mouth is opened wide by placing an ordinary mouth gag in the left angle of the mouth and this is steadied by the assistant who has only to keep the head extended in the middle line, there being no need of support, since the head is resting on the table. The hook is the same in its every detail as presented before, and we have done away with the long tooth plates and dental spoons. The gag of the hook instead of being closed is now introduced sufficiently open to permit a view of the tip of the spatula.

Instead of passing the spatula along the post-pharyngeal wall, I now follow down along the base of the tongue until the epiglottis is seen, then it is lifted with the spatula just as one does in bronchoscopy, and by this time the short tooth plates will fall behind the teeth, when the gag is opened wide to fix the tongue

and epiglottis. Now the hook is placed upon the crane and the worm gear joint turned to bend the hook slightly to an obtuse angle. The crane is lifted in the vertical to flatten the base of the tongue. This will raise the epiglottis so that the larynx will come into view. If the view in this position is not already sufficient, then by moving the horizontal crane towards the head of the table, the anterior commissure will be brought into view far better and much easier than by the old method.

This differs from the older technique in that the head is flat upon the table and any untrained assistant can hold it steady. The patient is not dragged over the top of the table as before, and the mouth is wide open with a gag, giving plenty of room for the introduction. There is no necessity for the table to be cut as has been described nor for the projecting platform, since the crane is attached far back on the table behind the patient rather than ahead of him. There is no danger of dropping the patient from the crane or from the spatula, since the head is not lifted from the table or if so, just enough to procure sufficient tension to flatten the tongue.

The spatula will not now dig into the post-pharyngeal wall as it did before, because the tip is always in view; the epiglottis will not fold in front of the tip of the spatula, since it is seen and picked up by the tip as in bronchoscopy. There is practically no pressure upon the teeth and therefore no need for the dental spoons or modelling compound, and to be rid of these is a source of relief because they were very often hard to introduce after anesthesia had been induced, and hard to remove at the completion of the operation. Pieces of the compound have been chipped off and while I have never lost any, this is a possibility. In selected cases a small piece of lead bent to suit the case and only sufficient to cover the biting edge can be used. This protection seems to be all that is necessary now. Armed with the long tooth plates and the dental spoon the spatula was hard to introduce, and under the extra tension made necessary by the short lever, the view seemed hard to acquire and the tooth plates would bend sufficiently to throw the spatula out of line. The short tooth plates are used because the fulcrum is further

without the mouth, making the view far better with less tension. There is no need for the occipital strap to relieve the outward pull on the upper jaw and it would seem impossible to fracture the alveolus in this position, as I reported while working in the old way. The view is much more natural and if anything clearer and less distorted, since there is much less tension at the region of the hyoid bone and the base of the tongue. The vocal cords instead of being stretched anteroposteriorly are now more relaxed, as shown by the respiratory movements under ether, and by the tones emitted under cocaine. This of course permits of more accurate dissection, especially when removing small tumors, such as vocal nodules. One looks now down the spatula along the line of the trachea and can usually see the bifurcation, as is shown by the possibility of introducing a bronchoscope deep into either bronchus.

In the old way, one looked from below up along the spatula and it was impossible to get the bronchoscope further down than the fourth ring of the trachea. Consequently, in this new position, there is really no need for a table that can be elevated, though it is always a comfort for any operative procedure. Finally, the patient will complain much less of after pain about the angles of the jaw, back of the neck and of headache. There is much less danger of pinching the tongue between the spatula and the teeth of the lower jaw, and it is much easier, more rapid, and more accurate to introduce in this than in the old way.

As an appendix to this, I will report two interesting situations met during the last two years. First, the papilloma cases number thirty-seven, with five recurrences. In three of these the recurrence followed upon some definite inflammatory state in the larynx, one after whooping cough, one after grippe and pneumonia, one after scarlet fever and the other two without reason. One of these yielded after seven sittings, with dissection and fulguration. The last was operated on twenty-one times. This is the case of the little boy in whom the papilloma seemed to invade the deeper structures. This boy is now talking clearly and breathing well after combined dissection and fulguration.

The other condition resembled the same pathology as occurs

in rectal tags from hemorrhoides. This young girl had a severe whooping cough which lasted for about six months. Following the subsidence of the cough, an increasing dyspnoea was noted. This progressed to such an extent that sleep was almost impossible and the dyspnoea was marked during the waking hours. Examination with the mirror revealed a condition such as is seen in marked tubercular laryngitis but without ulceration, and the tissues seemed thoroughly organized and there was no pain upon swallowing. Under suspension it was plain to see the cause of the dyspnoea. Over each arytenoid cartilage there appeared a round, smooth mass covered with normal mucous membrane, apparently continuous with that overlying the arytenoid and having the aspect of a rather broad, thin pedicle. On inspiration these hemorrhoidal tags would be pulled into the larynx, producing almost complete obstruction; on expiration they would flap over on either side of the mouth of the esophagus. By holding them away with the forceps or spatula, respiration would be free and comfortable. The interior of the larynx and the ventricular bands were perfectly normal.

I dissected these masses away, putting four sutures of catgut on each side. Relief was instantaneous, healing was accomplished in five days and recovery has been complete. It would have been extremely difficult to secure the same end by any other means than suspension.

SOME ORIGINAL METHODS OF TREATMENT OF LARYNGEAL STENOSIS

SAMUEL IGLAUER, B.S., M.D.

Cincinnati

In this paper it is my purpose to describe some methods of treatment, which I have employed with advantage in cases of chronic laryngeal stenosis. These methods are only applicable with patients wearing a tracheal canula, or in cases in which it was deemed best to perform a tracheotomy as part of the treatment. In addition there must be a real or a potential passage through the larynx to the tracheal fistula.

1. *Dilatation by Means of a Rubber Tube Doubled Upon Itself.*

This procedure is based upon the well known effect of the continuous elastic pressure of rubber tubing in promoting the resorption of cicatricial tissue. This follows the same principle which underlies the use of rubber tubes in laryngostomy, but has the advantage of being employed without the necessity of splitting the larynx.

The technique is as follows: A stout silk cord, (A, Figure 1) about 8 inches long is firmly tied about the center of a piece of soft rubber tubing (B) of a diameter to suit the case. The tubing is then doubled upon itself and the free ends are firmly tied together with a second cord (C). The length of tube, when doubled, should approximate as nearly as possible the distance from the arytenoids to the upper margin of the tracheotomy. The spring wire taken from a Bellocq canula (or some similar appliance, such as a grooved director perforated at the tip) is threaded with a cord in the usual manner. The tracheal canula having been removed, the wire is introduced through the tracheotomy opening until it presents in the mouth (mouth gag) when the cord it carries is pulled out of the mouth. The wire is then withdrawn from below, leaving the lower end of the cord protruding from the neck. In old tracheotomies, if any difficulty is encountered in passing the wire toward the mouth, it is

best to incise the upper margin of the tracheal opening under local anesthesia.

The oral end of the cord is now tied to the free end of the

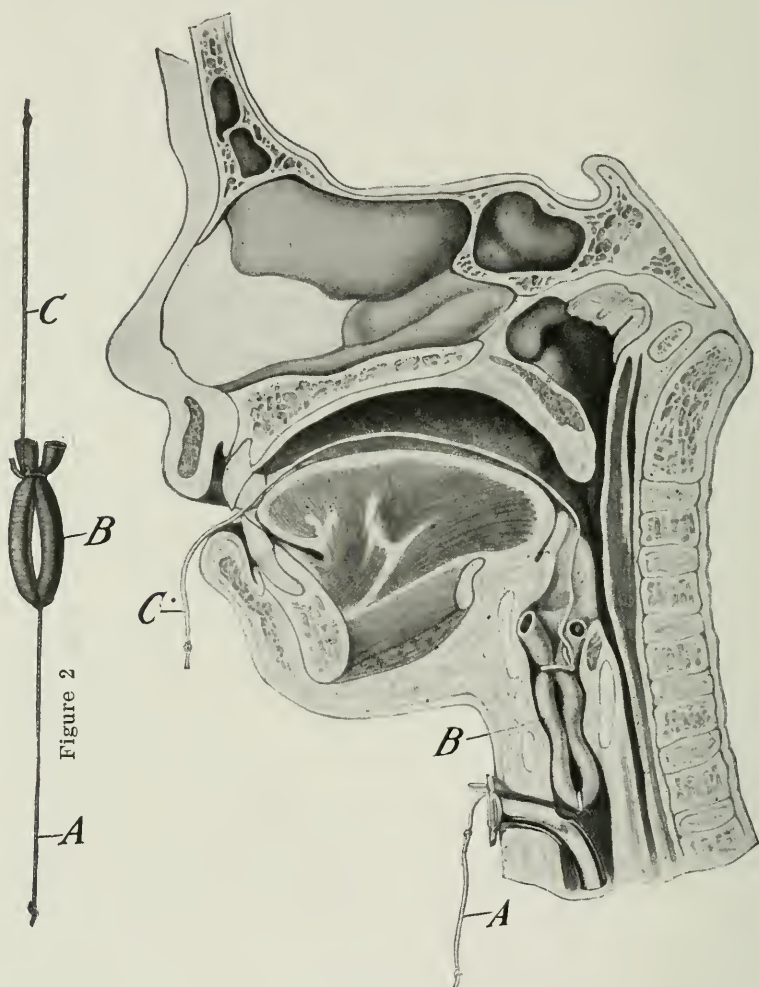


Figure 1

string (A), and traction is then made downward upon the tracheal end of the cord, drawing the rubber tube into the larynx until its folded end presents at the upper margin of the tracheal

fistula (Figure 2). At the same time counter-traction is made upon the string (C) to prevent the tube from being drawn too far into the trachea. The tracheal canula is now re-introduced and the string protruding from the trachea wrapped (clock-

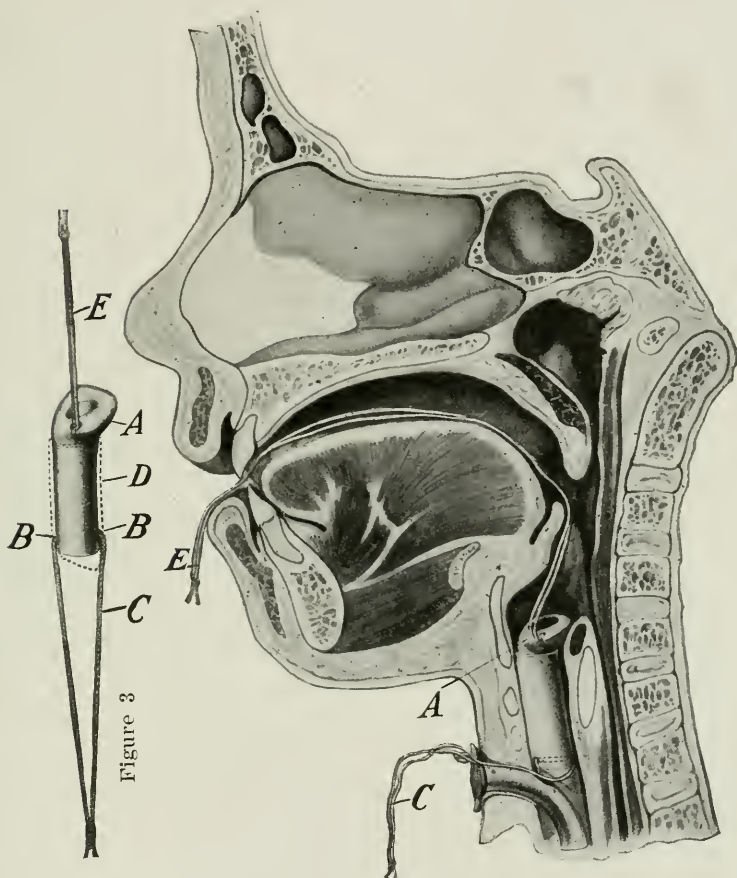


Figure 4

wise) about the stem of the canula and is then fastened to the patient's neck with adhesive plaster. This is important, since it prevents the rubber tube from gliding past the tracheal canula. The string (C) is allowed to protrude from the patient's mouth and fastened to the cheek with adhesive plaster, to serve as an

extractor when the tubing is to be changed. Otherwise the tubing may be removed by depressing the patient's tongue and seizing the tubing with a forceps. Figure 1 shows the doubled tube in place in the larynx. Should the tube project too far into the pharynx it may be cut off by depressing the tongue and seizing the projecting ends with a tonsil forceps, over which a snugly fitting tonsil snare is passed, amputating the protruding ends of the tubing in situ.

In addition to the elasticity of the rubber itself the tubing contains imprisoned air, which exerts pneumatic pressure as well. The tubing should be changed after several days, and larger tubing can be substituted. In making the change it is usually unnecessary to employ the Belloeq canula a second time, because during extraction the tubing draws the long string (A) after it, and this string can then be attached to the next size rubber tube, which is then drawn into place as before.

This procedure has been employed to considerable advantage in the course of treatment of some five patients. In one case with a complete subglottic cicatricial diaphragm a passage was first made by blunt dissection, with the patient in suspension. Through this passage a single piece of small rubber tubing was at first drawn and allowed to remain. In a short time this could be supplemented by the double tubing. The advantage of continuous elastic pressure without laryngostomy has already been mentioned. The chief objection to the method lies in the impossibility of oronasal breathing with the tubing in place.

Insertion of a Single Rubber Tube from Below. Oral breathing can later be re-established by the following modification of the procedure described above. A piece of rubber tubing of proper length and diameter is selected. A draw string is attached to each end of the tubing and one of the strings is then passed from below into the mouth, drawing the tubing into the larynx. The tracheal canula is reinserted and the tracheal string is then anchored to the plate of the tracheotomy tube, as in laryngostomy.

As soon as the stenosis has become somewhat dilated oral breathing may also be partly re-established by introducing a short intubation tube above the tracheal canula. In some cases

of laryngeal stenosis, however, it is exceedingly difficult or even impossible to introduce an intubation tube in the usual manner. Under these circumstances, the following method may be employed:

Intubation by Traction. Two small holes (B. B., Fig. 3) are bored into the lower end of an intubation tube, one on its anterior surface and the second directly opposite on the posterior surface of the tube. (A) A stout silk cord (C) about 18 inches long is then passed through both these openings in the intubation tube and the ends of the cord are tied together and are allowed to hang from the lower end of the tube. In addition the head of the intubation tube should always be threaded in the usual manner. (E) The tracheal canula is then removed and as described above a cord about a foot long is now introduced through the tracheotomy opening until it presents in the mouth. The string (C) previously attached to the lower end of the intubation tube is now tied to the oral end of the cord. Traction from below is then made on the tracheal end of the cord and with a guiding finger in the larynx, the intubation tube is drawn into place. The tracheal canula is now replaced and the string (C) protruding from the neck is fastened to the neck with adhesive plaster.

Following a suggestion by Dr. Lynah, the diameter of the intubation tube may be increased at will by stretching rubber tubing (D) (Figure 3) over the intubation tube. When thus covered the traction string is then threaded through both the rubber covering and intubation tube at the same time. The rubber covering exerts continuous elastic pressure on the stricture.

By allowing the rubber tubing to project slightly beyond the lower end of the intubation tube posteriorly, the angle between the intubation and tracheotomy tubes is obliterated, preventing the formation of a spur in the trachea at this point.

Figure 4 shows the intubation tube in situ with the strings (C and E) attached. In performing intubation by traction the technique as described above should be closely followed, since one can exert considerable force by this method. In one case when I neglected to pass the string C through both the lower openings in the tube, the lower lip of the tube caught in the posterior wall

of the larynx and made a false passage into the esophagus.

Fortunately the patient made a functional recovery from this accident. Otherwise no bad effects have resulted from the employment of this method.

Intubation with Anchored Tubes. In the final treatment of these cases the tracheal canula should be left out and clamped. Rogers or Lynah intubation tubes may be employed. Spontaneous extubation may also be prevented by employing the anchor-string method of fixation which I have described in former publications.* According to this method a long silk thread is tied into an annular groove in the intubation tube. After intubation the thread is drawn through the tracheotomy fistula and fastened to the skin with adhesive plaster.

DISCUSSION

Dr. Emil Mayer, New York City: I wish to express my thanks to Dr. Lynch for having made suspension laryngoscopy so easy that everyone will be able to do it, and by a most simple and happy method. While I have not tried it, it appeals to me in every way. Whereas formerly we have hung up the patient and practically held the weight of his body on his head, the teeth and the tip of the epiglottis, today that patient can, thanks to this method, rest on his back. Instead of hanging the patient up, we are really only opening his jaws. We are thus getting much closer to the larynx, and are able to enter it more deeply. With the mouth open wide, we are nearer, and can see better to handle the patient, and with the fewest number of assistants.

The paper of Dr. Iglauer was particularly interesting to me as I reported yesterday the case of a boy who had worn an intubation tube for five years before I was able to do away with it. I want again to call attention to the fact of the extreme tolerance of the larynx to manipulations of various sorts. I rather feel that I should disagree with Dr. Iglauer with regard to doing a dissection and making an open wound in the larynx, if it can be divulsed in any other way. I have always been able, after a comparatively short time, to have the opening wide enough in my cases to introduce the ordinary uterine dilator, either from above or from below, and preferably the latter, and dilate the parts without making any wound.

Again, I object to the leaving of any cord in the patient's

*Lancet Clinic, Oct. 11, 1913. Laryngoscope, August, 1916.

mouth. Those who lived in the early days of intubation thought that we could help the O'Dwyer method by leaving in the mouth the cord which was fastened to the intubation tube. But the cord was either bitten through or pulled out by the child, and we abandoned the attempt. My experience is that a piece of rubber tubing fastened at the upper and lower ends acts as a balloon and can be introduced in the manner described.

One other thing. I prefer to keep the rubber tube *in situ*, leaving two ends of cord and tying it around the neck, rather than fastening it to the tracheotomy tube.

The ingenious method of holding an intubation tube in position by drawing it down is one that I think extremely valuable, but I am going to take a few moments to describe in brief a method of slow intubation that I described a few years ago. In view of its prospective value in military practice it may be of interest. During the Spanish-American War I was asked to treat a soldier who while in the battle line, lying on his abdomen, had been shot by a sharpshooter from a tree. When found, he was bleeding from the mouth, a piece of tissue was hanging from the mouth, and he was apparently shot in the eye. The diagnosis made at the field hospital was that it was a glancing shot, and that the eye was not injured. He was transported to New York and sent to Bellevue Hospital, where tracheotomy was performed. Some weeks after receiving his wound, he was walking around with a tracheotomy tube in position, and was brought to Dr. Morris Asch and myself to see what could be done. Examining the throat, I noticed a hole in the soft palate, as though taken out with a punch. The man had been shot from above, and the bullet going down along the inner side of the eye, through the maxillary bone, cutting the soft palate, smashing the thyroid cartilages, had entered the esophagus spent, dropped into the stomach, and passed out through the rectum.

I began slow dilatation and finally got the larynx dilated so much that I thought I could introduce an intubation tube; but as soon as I put it in, the man became cyanosed. I had an intubation tube made of the same external size, but with a larger opening, and with an introducer that was hollow. The moment it was introduced the man breathed through it and I could intubate him for any length of time. In that slow way it was possible to introduce the intubation tube into the larynx. Those who have followed up the method of slow distention of the larynx must have been extremely gratified by the results reported here today. I feel that when a boy of

nine with tracheal stenosis and wearing an intubation tube for five years, after those five year has become able to breathe through the natural passages, something of importance has been achieved.

Dr. Hubert Arrowsmith, Brooklyn, New York: Dr. Jackson has brought another illuminating procedure for the locating of these elusive foreign bodies. I cannot see how, in view of the fact of the little injury formerly done by copius insufflations of powder into the air passages, a little bismuth could do lasting harm; this method should be of extreme value in helping us to locate these very small foreign bodies.

Dr. Lynch's ingenuity has really revolutionized suspension laryngoscopy. Now it has resolved itself into direct laryngoscopy with mechanical retention of the speculum. Since hearing him speak of this in New York last fall, I have used this method continuously; and can corroborate his statement concerning the greater facility with which the speculum is introduced, the infinitely greater comfort with which it is retained by the patient and the improvement of the operative field. I have had the pleasure of having several members observe my work with suspension after this method. They have all been gratified, and have taken it up successfully themselves. Dr. Lynch and Dr. Iglauder are to be congratulated on having devised a method undoubtedly helpful in some of these difficult cases of induced stenosis.

Dr. Joseph C. Beek, Chicago, Ill.: A few years ago a brother of mine succeeded in outlining the bronchial tree with bismuth. The subject was a cadaver. I then lost interest in this method of diagnosis; but the method of Dr. Jackson is, of course, of a different type. I had a case of pneumoconiosis in a man who had a lung full of coal. He showed a beautiful bronchial tree, and I made experiments with forced steam inhalation, by means of the Billings inhaler, of aniline dyes that are radiographically obstructive. The picture showed that, if not the insufflation, perhaps the forcible inspiration of radio obstructive substances that would be vaporized might be of some value.

With reference to Dr. Lynch's method, perhaps some who were present at the meeting of the American Medical Association or of the Congress of American Surgeons (the one before the last) may remember that in attempting to demonstrate suspension laryngoscopy in a patient under general anesthesia, I was unable to put his head over the table. Finally I succeeded, with the patient's head on the table, and made a poor demonstra-

tion of suspension as then taught. The next day I asked the patient to bend his head back; and he said, "I never could; I have a stiff neck." Since Dr. Lynch showed this method a year ago, at Memphis, I have employed it. Three weeks ago I wished to examine a small growth in a larynx of which I could not obtain a good view with the head on the table, but succeeded well with the old method. So, perhaps, there are some cases that would still be better handled by the old method.

The method that Dr. Iglauer mentioned, of using the full length intubation tube, I have used with satisfaction; and the new method that he has described today, I will employ. I had a similar accident to his, in using the full length intubation tube. It did not perforate, but engaged in the wall of the trachea; and I had much trouble in manipulating it. The method he describes will do away with some of these difficulties.

Dr. Richards: The symposium is now open for general discussion.

Dr. Fielding O. Lewis, Philadelphia, Pa.: I was especially interested in Dr. Iglauer's paper. During the last year I have operated on four cases by the method of Dr. Jackson. Here are some drawings which show three of them before and after operation. I have also brought Dr. Jackson's laryngoscopy tube with the rubber extension, which I have used in all these cases. The advantage of the tube is that it prevents the formation of a tracheal spur between the tracheotomy tube and the extension, whatever it may be, above. It also permits breathing through the tube, the upper part not being completely closed.

I should like to ask Dr. Iglauer whether any of his cases that were treated by this method developed any tracheal spurs. These are the ones with which we have had the most difficulty.

Dr. John W. Murphy, Cincinnati, Ohio: Only the experienced can understand the great difficulty of dealing with these cases of stenosis. Before Dr. Iglauer devised his method, as we usually worked together, we found it hard to improve our patients so that they could leave the hospital. They were with us for months at a time. In several, one of which the doctor mentioned, there was absolutely no opening from the upper part, owing to the patient's having worn a tracheotomy tube until the upper part of the larynx had closed, so that even a filiform bougie could not be passed. By means of a fine sound, however, we succeeded in getting a minute opening through this membrane. It is not safe to attempt to enlarge the opening with any instrument. We find that the moment we can pass the finest probe and carry a string down, and draw the rubber tube into the

larynx, there is much less risk of doing damage; and by this continuous method of dilatation, we secure more satisfactory results than by any other. I consider Dr. Iglauder's method a great advance in this line of work.

I have employed the method of Dr. Lynch since I saw him use it, about a year ago. For a long time I had discarded the Killian method, owing to the difficulty in getting a proper view. I supposed it was due to faulty technique, but on talking to others, I found that they were having the same difficulty in getting a view and keeping the head in proper position. With this method I find it much simpler and very much more comfortable to the patient.

Dr. Jackson's very practical method of demonstrating the bronchial tree is likely to be of great use.

Dr. George F. Cott, Buffalo, N. Y.: I was interested in Dr. Lynch's remarks that when the patient can breathe and he tries to dilate the larynx by inserting the tube, it occasionally enters the esophagus and the patient cannot swallow. I do not think it possible that a man can overlook that mistake, unless he is extremely careless. If, when the tube is placed supposedly in the larynx, you do not get that tubal sound after coughing or forced expiration, then, of course, it is in the esophagus; and if you do, it is in the trachea or larynx. With a little care, I do not think that mistake would ever be made.

Regarding the suspension position, Dr. Beck says that he found that the patient had a stiff neck. I reported a similar experience before this Society some years ago. In this case the patient had difficulty in breathing. I put him under ether and tried to introduce the bronchoscope and found that I could not put the head back far enough. The next day he told me that he had ankylosis of the vertebrae of the neck.

Dr. Wolff Freudenthal, New York City: It seems to me that the modification of Dr. Lynch is a great improvement over the old method; yet I am not ready to give up the original Killian method, with the head hanging down, for a certain class of cases. I think that in those cases in which we may expect a great deal of pus or blood from the pharynx or larynx, suspension laryngoscopy is the only method to be recommended. They are very important and urgent cases, and for them the head hanging down is the best position in order to get rid of the secretions. It is much better than the use of the suction apparatus or anything else. I operated with suspension laryngoscopy in a tuberculous case, in which any effort on the part of the patient was undesirable, in order

to prevent a hemorrhage. For this class of cases the new modification is really excellent; but we encounter cases in tuberculous patients which are unsatisfactory. We do not want to do tracheotomy or laryngostomy and try to cure them intratracheally or intralaryngeally. I had a case a year ago, in a tuberculous patient. I had had to do a hasty tracheotomy three years before, when the patient was in a moribund condition. After that his pulmonary affection improved and remained cured for about a year; the only thing that troubled him was the laryngeal affection, causing complete stenosis. To open the larynx from the outside did not seem advisable, because eighty per cent of tuberculous cases die from such operation, so I tried suspension. I removed all the infiltrated tissue from above and below, with good result. The patient came to my office, and I put in an intubation tube in order to keep the larynx open. He was doing well when, three weeks afterward, he suddenly died from a hemorrhage.

Dr. Harmon Smith, New York City: I should like to speak concerning one statement of Dr. Lynch regarding recurrence in five cases of papilloma after his suspension method. A few years ago he reported no recurrences after removing papilloma, and I thought that he had solved the problem of papilloma. It would be interesting to know whether these cases were in children or in adults, whether the growths were single or multiple, and whether single or multiple in children or in adults, because I think that this classification affects the problem of recurrence. In the multiple variety in children, interference predisposes to recurrence and of all methods that have been tried, the tracheotomy tube I think is the surest method. Secondly, the removal of a growth in an adult and its non recurrence does not assure us that after removing a papilloma in another adult, it will not recur. Papillomata vary in type, in malignancy, and in tendency to recur; and from the pathological standpoint one is unable to deduct whether or not the tumor will recur.

Another point that I should like to have brought out by Dr. Lynch is whether he has ever employed fulguration alone; because, with suspension, as he employs it, the surface of the larynx can be made as dry as the face; and I have always contended that if the surface of the papilloma in the larynx can be dried and we can be sure that it will remain dry during the fulguration, fulguration will overcome it—except in the multiple variety in children.

Dr. Henry L. Lynah, New York City: Dr. Jackson has given us a great aid to bronchoscope localization by his bismuth insuffla-

tion method, especially in the cases of small foreign bodies which do not show in the X-ray plates. I have used his bismuth esophageal capsule in foreign bodies which did not show in the X-ray plate, and by this means have been able to locate the foreign body and easily remove it. As far as bismuth irritating the bronchi is concerned, there seems to be very little discomfort from it. We have had two cases of tracheo-esophageal fistula admitted to the Polyclinic Hospital, both patients complaining of difficulty in swallowing. They were sent to the radiographic room and after swallowing bismuth paste, had violent coughing spells, and the X-ray pictures taken showed a beautiful bismuth shadow of the tracheo-bronchial tree. All of the bismuth was subsequently coughed out. After having had this rather unpleasant experience, neither patient returned to the hospital for further treatment.

Dr. Lynch has made suspension laryngoscopy much more advantageous by changing the position of the head from extension to semi-flexion. It was always necessary to use too much force in securing a good view of the larynx in extension, and the wide opening of the mouth displaced the hyoid bone downward while the tip of the spatula pulled the larynx upward, and with the pull made in opposite directions something was bound to give way and cause damage to the soft tissues; but with the new position everything was quite different. I should like to ask Dr. Lynch whether he removes the apparatus after he passes the bronchoscope, especially when the patient is in the Trendelenburg position, or when rotation is necessary in examining the upper lobe bronchi. I can see no advantage in suspension bronchoscopy over the other methods, which could be performed much more rapidly and with much simpler technique.

Dr. Iglaue in his masterly paper has brought forward one of the most difficult problems in surgery. It makes little difference how a case of laryngeal stenosis is cured, as long as it gets well. That is all we are striving for. Some cases can be cured by some simple method, while others require much more radical procedure before recovering. Some are cured by one method, and some by another. All of the various methods may be necessary in cases of long standing. The voice in the final outcome has been better in cases cured by intubational dilatation than it has ever been following laryngostomy, but when there is extensive destruction of the thyroid and cricoid cartilages and complete laryngo-tracheal stenosis, laryngostomy is the only method indicated. The larynx cannot be dilated from above. The method of Dr. Rogers to dilate the larynx from the tracheal fistula upward will dilate the larynx, but may also make

a false passage into the esophagus. The identical accident of a laryngeal or mediastinal false passage will result when forcible dilatation is attempted from above downward by mechanical means. Laryngostomy is certainly the easiest method of curing these cases. Dr. Jackson has demonstrated this in many of his severe stenotic laryngeal cases. As far as the string is concerned, I agree with Dr. Mayer that it is annoying to the patient when left in the mouth, and in acute diphtheritic cases in whom the string has been left the children by constantly tugging at the string with the tongue are easily able to extubate themselves. Of course this is impossible in the anchored tube of Dr. Iglauer. In many cases in which the string has been left attached to the tube, the nurse may only discover that the tube is not in the larynx at the time she feeds the child, and I have often been notified that the child has difficulty in swallowing which was due to the tube obstructing the esophagus, while the child having been cured of the acute diphtheritic lesion is breathing quite naturally without the tube. If the string must be left attached to the tube it is best to bring it out through the posterior nares and anterior nares and attach it just opposite the vestibule of the nose with adhesive plaster. The string is not now a source of discomfort to the patient and the child can not remove the tube with the tongue.

Dr. Chevalier Jackson: So far I have used the insufflation method presented only in cases in which it promised benefit to the patient, directly or indirectly, for localization or therapeutic effect. It remains to be determined whether or not we may expect benefit to chronic bronchitis, pulmonary abscess and other lesions. I used dry powder and it was coughed out completely in 24 hours. Possibly other preparations might not be so readily expelled. I hope Dr. Arrowsmith will try to devise a way of introducing the dry powder or some suitable preparation down through the larynx without having to pass the bronchoscope. The method then would be of general application by the roentgenologist. Localization, individual variation, bronchiectasis, abscess and other pathological conditions could be readily demonstrated.

The treatment of obstinate tracheal stenosis has been a hobby with me for many years. The method developed by Dr. Ellen J. Patterson and myself has succeeded well. Our experience coincides with that of Dr. Lynah as to the indications for laryngostomy. It also coincides with that of Dr. Mayer and Dr. Iglauer with regard to the use of another method when one method does not succeed. In laryngostomy the operation is of less importance than the after-care. Many cases are reported

prematurely. Dr. Patterson insists on a period of from 1 to 3 years before doing the plastic operation for closure of the laryngostomic opening. One of our patients who lives in Chicago was recently sent to Dr. Beck for plastic closure, and I think he can testify to the widely open larynx obtained by the method devised by Dr. Patterson and myself.

Dr. Robert Clyde Lynch, New Orleans, La.: In response to Dr. Lynah as to whether we removed the suspension in bronchoscopy, especially in work on the upper bronchi, referring to a paper that I read before the Clinical Congress of Surgeons two years ago, in which I showed a method for taking the suspension apparatus out of the mouth, I would say that it is preferable in these cases to do the bronchoscopy without suspension, the apparatus being used for the simple passage through the vocal cords. When the tube has entered the trachea, the suspension has served its purpose; and the rest is better done without the suspension apparatus. The only exception is where there are multiple foreign bodies, when it is necessary to introduce the tube several times, and retention of the apparatus will save the traumatism induced by passing the tube through the larynx of an infant or young child.

Replying to Dr. Smith, all my cases were put in the appendix on the recurrence of papilloma after dissection, purposely to contradict my statement made at first, when I reported sixteen cases of papilloma of the larynx removed by the dissection method without recurrence. I had had no experience with recurrence up to that time; but since then, the cases have increased, and my knowledge in proportion, and we have had these five recurrences after dissection by means of suspension. I report that particularly to contradict my own statement that there were no cases of recurrence.

The cases were all multiple. They were all in children, and I brought out the point that they recurred in three instances after some inflammatory attack and without apparent reason in two. I have used fulguration and believe that in the multiple cases it is possibly better than dissection. Recently I have been drying the papilloma by swabbing the surface first with alcohol and blowing in compressed air to dry out the water that remains in the papilloma, and then fulgurating it, and the same in the cases operated on a second time by various methods. One patient wore a tracheal canula for two years, with a steady increase in the growth of the papilloma. He was given rest and had no manipulation, in spite of which the papilloma continued to grow. After drying and fulgurating there has been a steady decrease in the amount of papilloma. But it has taken all of this

time to restore the patient to a functioning larynx and apparently perfect recovery.

I have two forceps for picking up intrinsic tumors of the larynx. They are modeled from the fixation forceps used in the cataract operation. All the forceps formerly used closed along the line of the cord, but this pair bites at right angles to the tumor mass. They grip tightly and hold, and apparently do not tear through. These have the same grip, only in the outer direction, running straight.

Dr. Iglauer: I was gratified that the only objection raised to the method described was that a string was allowed to protrude from the patient's mouth. After all, that is not a serious matter. I do not always leave the string in the mouth, but find that it takes a little time and trouble to depress the tongue and find the tube by the ocular method. The real question is, how sharp are the teeth? We have one little patient with very sharp teeth, who usually chews through the string. By leaving the string in the mouth it is easy to make the change when the insertion of a fresh tube is desired. All possible methods should be devised to facilitate treatment, because no matter what the method used, the chief things are persistence and patience, and if the necessary time can be given, it counts for both physician and patient. As for the tube being coughed up and getting into the esophagus, that is impossible with this method, because the tube is anchored below.

So far as I know, there has been no spur formation. In using the intubation tube, the rubber covering can be worked downward on the posterior lip of the tube. That prevents the formation of a spur. Another advantage is that an anesthetic is seldom required. As I understood Dr. Mayer yesterday, his case required twenty-five inhalation anesthetics. If that can be avoided it is desirable.

As for laryngotomy, there is no objection to it; but if the case can be treated without splitting the larynx, so much the better.

Candidates' Thesis

**'GAS POISONING IN WARFARE'—A STUDY OF THE
EFFECTS OF SO-CALLED MUSTARD GAS
UPON THE UPPER AIR TRACT***

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Early in 1915 a new type of warfare was introduced on the Western front with the launching of the first cloud gas attack against the British. Suddenly confronted with waves of poisonous gas carried along by the wind, the troops were absolutely helpless, except for the protection afforded by their pocket handkerchiefs, saturated with any available liquid material, not infrequently urine.

It was not long before gas masks were invented, and these now form an essential part of the equipment of all troops operating in the front area.

Cloud Gas Attacks: The gas is taken to the front line trenches compressed in steel cylinders which are placed in the bottom of the trenches and carried over the parapets by pipes. Cloud gas attacks are dependent upon the direction and velocity of the wind, and are made when there is a strong, steady wind blowing at the rate of from four to eight miles an hour in a direction from the enemy lines toward those of the troops attacked. In most instances cloud gas attacks have been made at night.

At first chlorine was employed, later it was mixed with phosgene. Both are heavier than air, and therefore roll along the ground, entering trenches, shelters, crater holes and unprotected dugouts.

There are certain disadvantages in cloud gas attacks, which have lead to their abandonment, and the substitution of other methods. In the first place, if the wind suddenly changes, the gas is blown back upon the users. In the second place, the danger of leakage from the containers is considerable.

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Then, too, there is the ever-present danger of a shell fragment striking the gas cylinder and thus poisoning the gas operators.

Consequently cloud gas attacks have been abandoned, and gas shells or gas projectiles used instead.

Gas Projectiles

In a gas projectile a part or the whole of the explosive charge is replaced by a liquid which is converted into gas by the explosion of the charge. There are various kinds, viz.: shells, trench motor bombs, hand grenades and projectors. Gas shells are frequently not used alone. For example, during a bombardment with high explosives and shrapnel a certain number of gas shells are mixed in with the high explosive shells, thus masking the gas attack. The odor from the gases now used is very slight, often almost negligible. The first intimation of a gas attack may be a shell which sounds like a "dud," i. e., a high-explosive shell which strikes the ground and fails to explode. In the case of the gas shell, as part of the charge has been replaced by a liquid, the noise of the explosive is very much less violent, and thus the first hint of a gas attack is given.

Alarms of various types are immediately sounded and gas masks are put on at once. The slightest delay on the part of the men in adjusting their respirators may mean serious disability, or even death.

Gas Masks

The first gas mask adopted by the British is known as the P. H. helmet. It fits over the head, and is fastened around the neck under the tunic. (See fig. 1.) As the material from which this helmet is manufactured cannot be saturated with a sufficient number of chemicals to make it impervious to all enemy gasses, its use has been abandoned, and the box respirator substituted. The latter is shown in figs. 2 and 3, and consists of a box packed with chemicals, and connected by a rubber tube with an impervious mouthpiece or mask. The inspired air enters through a valve at the bottom of the box, while the expired air escapes through a valve connected

with the rubber breathing tube. The wearer's nose is closed by a clip inside the mask, which prevents the air inside the face-piece being breathed back and forth through the nostrils. The mask is also provided with two eyepieces, which are cleaned by means of folds in the material. This box respirator is carried in a suitable canvas container, and is a thoroughly trustworthy and efficient protection against all poisonous gases used by the enemy.

Fig. 4 shows a picture of a captured German gas mask.

In the British Army, horses are provided with gas masks when they are sent to the vicinity of the trenches with ammunition and supplies. These animals are said to stand a higher degree of concentration of poisonous gases, without great damage, than is the case with human beings. It is not considered necessary to protect their eyes.

The horse respirator consists of a flannelette bag, with a canvas mouthpiece, which fits into the animal's mouth.

Fig. 5 shows the mask worn in the alert position.

Fig. 6 shows the mask as worn during a gas attack. This respirator does not interfere with the use of the bit and reins.

Classification of Poisonous Gases

For our purposes the gases used by the enemy may be divided into four main groups. It is obviously not permissible, for military reasons, to give a complete list of all enemy gases, or to state the sources from which some of the information contained in this paper is derived.

(1) *Lachrymator or Tear Gases*, of which benzyl bromide may be taken as a type.

(2) *Eye and Lung Irritant*—of these perhaps the best known is chlorine.

(3) *Lung Irritant and Asphyxiant*—Phosgene.

(4) *Eye, Lung and Skin Irritant*—"Mustard Gas."

Pathology and Symptomatology of the Four Types of Gases

In this connection it is important to remember that a shell gas, for example, phosgene, is seldom used alone, but is generally combined with some other gas or gasses, perhaps mus-

tard. Hence the symptoms exhibited by the individual who has been poisoned vary, as one or other of the gases predominates in the mixture.

(1) The lachrymator gases, or eye irritants, produce excessive lachrymation, photophobia and palpebral spasm. In high



Fig. 1. P. H. Gas Helmet (British).

concentration they cause irritation of the throat and nausea. They are never fatal.

(2) A typical case of poisoning by chlorine gas, which may be taken as an example of eye and lung irritants, exhibits the following phenomena:

Lachrymation, spasm of the glottis, choking sensations, cough and dyspnoea are followed by headache, nausea and vomiting.

In a severe case the man passes into a state of asphyxial

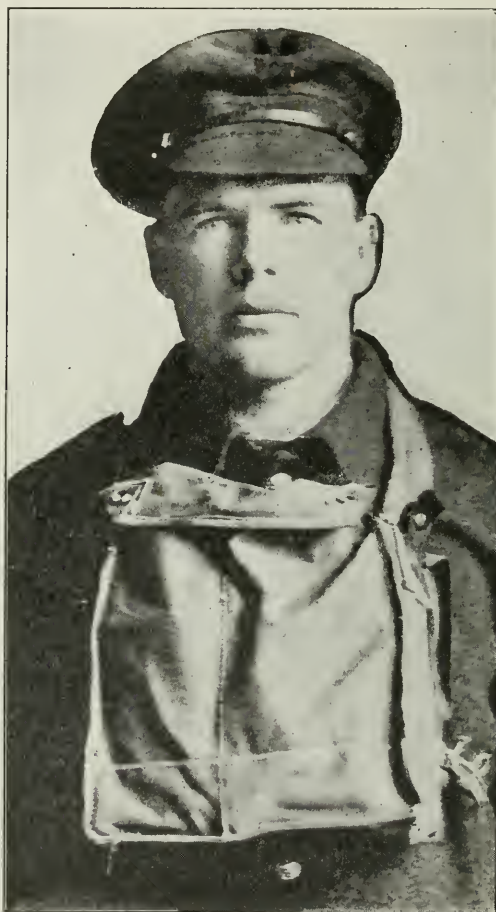


Fig. 2. Box Respirator worn in "alert position." (British model)

cyanosis, with mental failure and loss of consciousness. The breathing is rapid, labored and interrupted by spasmodic coughing. At first the face is cyanotic. As the circulation fails a gray pallor ensues. Finally death results.

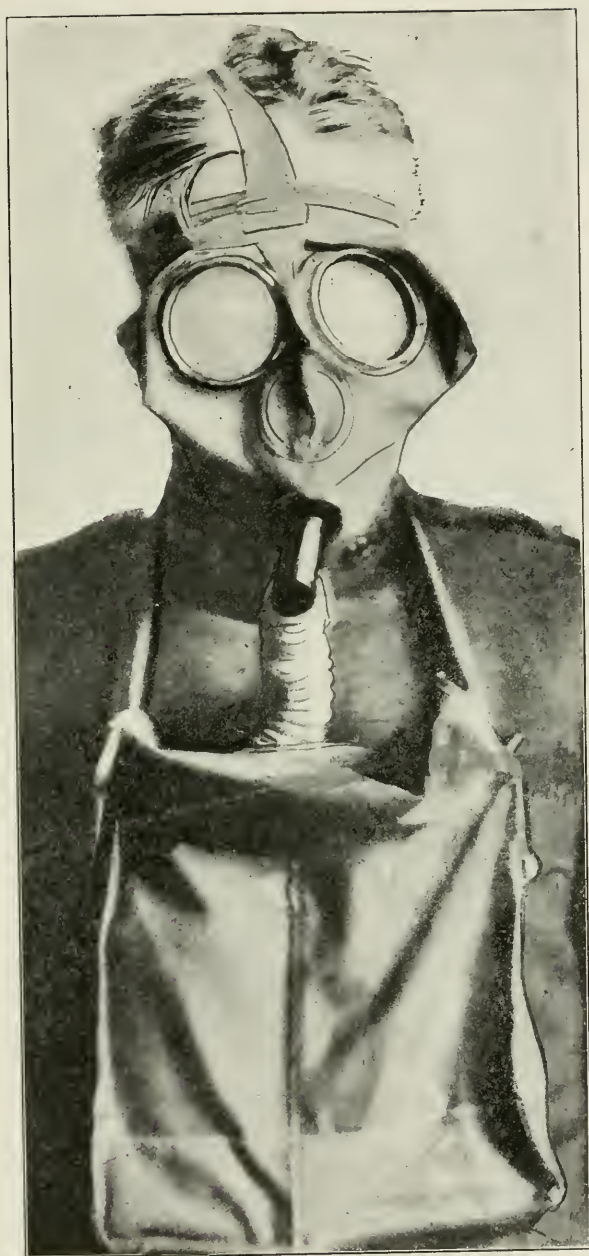


Fig. 3. Box Respirator as used during gas attack.

The writer has not had an opportunity to observe the post mortem appearances in chlorine gas poisoning, which are said to be as follows:



Fig. 4. Captured German Gas Mask.

The trachea and bronchi are deep red and congested. There is often a thin serous exudate in the lungs. Petechial hemorrhages are present on the surface of the lungs, heart and

stomach. Pleurisy and broneho-pneumonia, with purulent secretion in the bronehi, are usual findings.

(3) *Asphyxiant and lung irritant*—Phosgene represents this type of gas. The eyes are very slightly, if at all, affected by the poison, which is characterized by its delayed action on the heart and lungs.

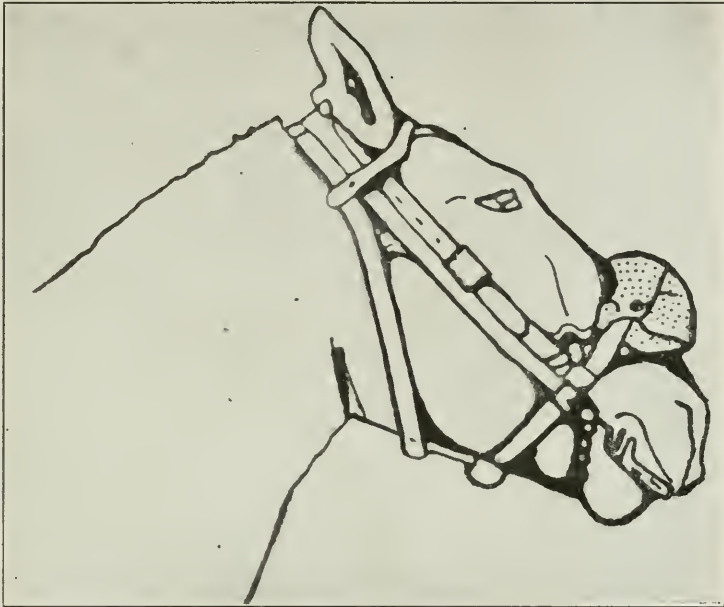


Fig. 5. Gas Mask for horse, "alert position" (British Model)

Major Moore, of the Royal Army Medical Corps, told me that earlier in the war, many a man who has been gassed with phosgene, apparently lightly, has started off to the aid post with his heavy pack on his back and rifle over his shoulder. One hour later he falls down dead from heart failure. For this reason soldiers poisoned with phosgene are now carried back on stretchers, and not allowed to walk.

Unfortunately the writer has no autopsy notes at his disposal on phosgene poisoning.

(4) *Eye, lung and skin irritant*—*Mustard Oil*.

The symptoms and pathology of mustard gas poisoning will be described later.

In a base hospital, where many of the patients are evacuated after short intervals, it is manifestly impossible for one man to examine the upper air tracts of such a large number of patients. After consultation with the Commanding Officer,



Fig. 6. Gas Mask for horse.

Major Darrach, a questionnaire was drawn up and given to the medical officers in charge of the hospital wards, who filled in the required data.

The writer wishes to acknowledge his indebtedness to the Commanding Officer and Medical Officers of this Unit for their co-operation and assistance at a time when they were extremely busy with the care of large numbers of casualties.

In addition to taking many of the histories, the writer has examined personally the eyes, nose, pharynx, larynx and upper

trachea of over 100 cases of mustard gas poisoning.

In the second group there were probably a few cases showing the combined action of mustard gas and phosgene.



Fig. 7. Typical Mustard Gas Burn of back. (Lieut. Cunningham's case.)

This study is based upon a series of 362 cases admitted to No. 1 General Hospital (Presbyterian U. S. A. British Expeditionary Force, in two convoys. In the first convoy 32 cases of mustard gas poisoning were examined by the writer.

The Questionnaire

Patient's Name.
 Date of Admission.
 When gassed. Day or night attack.
 Kind of Gas.
 Interval before Onset of Symptoms.
 First symptom.
 Was Gas Mask applied and how soon?
 Walked or carried to Aid Station.
 How soon after being gassed were you seen by a Medical Officer?
 Was the gas smelled? Yes. No.
 Kind of treatment given on way to Base.

*Symptoms**(Underline Symptoms Complained Of)*

Eye—Burning, photophobia, lachrymation, swelling of the lids, temporary loss of vision.
Ear—
Nose—Burning, sneezing, discharge.
Throat—Choking sensation, tickling, cough, hoarseness, partial or complete loss of voice.
Bronchi and Lungs—Cough, dyspnoea, pain in chest, sputum.
Burns of Skin (Location and degree)—
Gastro-Intestinal Tract—Nausea, vomiting, diarrhoea, anorexia.

Physical Examination

Eyes—
Ears—
Nose—
Pharynx—
Larynx—
Trachea—
Heart—
Lungs (Brief report)—
Skin Lesion—

(Treatment at No. 1 General Hospital)

The following statistics are based upon a series of 330 cases of mustard gas poisoning.

The first and most striking observation is that in mustard gas poisoning there is always an appreciable interval between the time when the individual is gassed and the onset of his symptoms. In 37.6 per cent. this latent period varied from 8-12 hours. In 27 per cent. it was from 4-8 hours; in 12.6 per cent. 12 hours or longer. 9.6 per cent. developed symptoms in 2 hours or less, while 1 per cent. of the soldiers showed the first sign in from 2-4 hours. One man claimed he had no symptoms for 48 hours, and another for 36 hours.

The question as to the first symptom complained of, elicited the following replies:

Burning and smarting of the eyes.....	47.6%
Lachrymation	18.6%
Vomiting	9.6%
Nausea	4.0%
Irritation of the throat.....	3.6%
Cough	1.6%
Choking sensations in the throat.....	1.3%
Diarrhoea	0.6%
Headache	0.6%
Sneezing	0.3%

212 men, or 64.4 per cent., said they applied their gas masks immediately upon being bombarded with gas shells. Twenty, or 6.3 per cent., stated that they put on the mask immediately after smelling the gas. Twelve per cent. did not apply the mask, while 15 per cent. wore the mask at intervals.

93 per cent. of the men walked to the aid stations, while 6 per cent. were carried on stretchers.

86.1 per cent. stated that they smelled the gas, which they compared to the odor of mustard, pineapple, garlic or onions. 13.1 per cent. failed to notice any odor. In some cases this may be explained by the promptness with which the respirators were put on when the command was given.

At the Casualty Clearing Stations and at the hospital trains

90.1 per cent. had their eyes treated by irrigation or bathing, while 9.2 per cent. had cold packs applied. One officer told me he was given a perforated inhaler resembling the Robinson, zinc inhaler used by us.

The following table gives the percentages of cases showing symptoms referable to the various organs:

Eye Symptoms—98.5 per cent. showed one or more of the following symptoms: burning, photophobia, lachrymation, swelling of the lids, temporary loss of vision.

Ear Symptoms—5.2 per cent.

Nose—Burning, sneezing, discharge 71.1 per cent.

Throat—Choking sensations, tickling, cough, hoarseness, partial or complete loss of voice 93.3 per cent.

Bronchi and Lungs—Cough, dyspnoea, pain in chest, sputum; 8.6 per cent.

Cutaneous Burns—First Degree—5.1 per cent. Second degree—0.9 per cent. Other burns (degree not stated)—11.4 per cent.

Gastro-Intestinal Tract—Anorexia, nausea, vomiting, diarrhoea 80.3.

Smell—Of 92 men questioned as to the loss of smell and taste, 82 noted a loss of the sense of smell, 62 lost their taste. The loss of smell and taste is apparently temporary, both usually returning in a few days.

Examination of the Eyes

Practically all cases showed a conjunctivitis, varying in intensity from a mild inflammation to a severe form, with redness and swelling of the lids, accompanied by a purulent secretion and excoriation of the skin at the inner and outer canthi. One severe eye inflammation had some elevation of the epithelium of the bulbar conjunctiva, while many cases exhibited photophobia out of proportion to the amount of inflammation present. Redness of the mucosa of the lower lids often persisted after the subsidence of the redness of the bulbar conjunctiva.

The average mild case was seen walking about on the streets with an eye-shade seven or eight days after being gassed.

In a couple of weeks many were almost normal, and able to dispense with their eye-shades.

No corneal lesions were seen in this series.

Other observers have noted superficial corneal ulcers in rare instances.

Examination of the Ears

Ear complications are rare, about 5 per cent. The most common is acute tubal catarrh with tinnitus, caused by the inflammation extending from the mucous membrane of the rhino-pharynx to the Eustachian tube. One man who presented a chronic purulent otitis media with a large central perforation and some pain in the ear, stated that the present exacerbation of his old ear trouble dated from the gas attack.

In cases of perforated ear drum, of course the gas enters directly into the tympanic cavity, where it produces an inflammatory reaction unless the ear is protected by cottonwool in the canal.

Another case of chronic purulent otitis media was admitted with considerable pain, and some mastoid tenderness, which cleared up with irrigations. A third case showed a myringitis, with a large bleb on the tympanic membrane.

Nose, Pharynx, Larynx and Trachea

The conditions found on examination of these organs were almost identical in the great majority of cases. There was redness and swelling of the mucous membrane of the nose, pharynx, epiglottis larynx and trachea, varying in degree only, and associated with increased secretion. The mucosa in some cases was slightly reddened, while in the more severe cases it was fiery red.

In the nose the entire mucous membrane was involved, particularly that covering the inferior turbinates and nasal septum, which were often in contact. The nasal secretion was usually increased in quantity.

In the pharynx the mild cases showed redness of the posterior pharyngeal wall, with swelling and redness of the follicles. The more severe cases exhibited, in addition, inflam-

mation of the tonsil, tonsillar pillars and uvula. Lateral pharyngitis was common. The mouth and tongue were unaffected. One case showed swelling and reddening of the lingual tonsil. One man had a grayish slough on the posterior pillar of the tonsil.

In the larynx, as already stated, the majority of cases showed a mild or moderate degree of laryngitis, the entire larynx being uniformly reddened.

Reddening and inflammation of the epiglottis was quite uniform, and seemed distinctive to this form of laryngitis, in contrast to the usual findings in acute catarrhal laryngitis as seen in civil life.

In some of the more severe forms, the redness and edema of the false vocal cords was considerable, and out of proportion to the amount of involvement exhibited by the true cords.

Four cases showed spots of superficial necrosis or ulceration of the laryngeal mucosa.

In one patient these necrotic spots were seen on the false vocal cords, and on the right true cord. A second case had a superficial white necrosis involving the margin of the epiglottis for a considerable area. A third man showed a superficial small necrotic spot on the left arytenoid cartilage, of which no trace could be discovered on laryngeal examination one week later. In two other patients the margins of the true vocal cords were slightly irregular in outline, evidently due to a slight superficial ulceration of the epithelium.

In a number of men who developed "late aphonia"—4-6 days after being gassed, the laryngeal examination showed a picture similar to that of the cases of early aphonia already described, viz., more or less severe inflammation of the larynx. None of these late cases exhibited any areas of superficial necrosis.

Examination of the Heart

The cases examined here did not show any heart lesions, with the exception of a patient of Capt. Peters' who had a slightly dilated heart, accompanied by tachycardia and extrasystole.

In 100 cases, mostly from the medical wards, bronchitis was present in 30 per cent. In the last convoy of about 340 cases admitted to this hospital there was not a single case of pneumonia. It is possible, of course, that pneumonia cases may have been kept at the Casualty Clearing Stations.

Most of the cases of bronchitis clear up quickly, although the after effects on the lungs, such as dyspnoea on exertion, are often protracted.

One man admitted to this hospital at an earlier date died from lobar pneumonia.

Skin Lesions

As stated above, 20.9 per cent. of the cases presented cutaneous burns, and of these 5.1 per cent. were first degree burns and 0.9 per cent. second degree. In the remaining 14.8 per cent. the character of the burn was not stated.

When first seen at the Casualty Clearing Stations many cases are said to have a dull red rash, which disappears on pressure, and which tends to persist in patches. In the centre of these reddened areas blisters are often observed.

The scrotum, back, inner sides of the thighs, and other moist surfaces are the usual sites for burn. Two of my patients had burns of the buttocks from sitting on latrines.

Fig. 7 shows a typical burn of the back. This man was admitted to Lieut. Cunningham's ward March 15th. He had been shelled with mustard gas shells off and on for six nights. When first observed he presented three small blebs on the back, surrounded by a small area of erythema. The burn was treated with 1 per cent. soda bicarbonate solution. On March 20th the erythematous area increased to about twice its original size, the margins became sharply defined and the blisters broke down. The reddened area then assumed a slightly brownish tinge.

A late bronzing of the skin, particularly of the face, neck, forearms and hands was observed in a number of cases, coming on from four to five days after the gas attack. The appearance is not unlike the bronzing of Addison's disease.

Phosgene poisoning differs from mustard gas poisoning as follows:

(1) The eyes are very slightly, if at all, affected by phosgene poisoning. Mustard is an intense eye irritant.

(2) Phosgene produces cyanosis of the skin, while mustard gas causes a cutaneous redness, with bronzing after a few days.

(3) Phosgene is not a skin irritant. Mustard is a severe skin irritant.

(4) Phosgene is said never to produce a pseudo-membrane in the trachea and bronchial tubes. Mustard, on the contrary, as will be shown later, may cause a complete cast of the bronchial tree.

(5) Phosgene is apt to produce edema of the lungs. Mustard is associated with broncho or lobar pneumonia. Both poisons sometimes cause emphysema.

Before leaving the symptomatology of mustard gas poisoning, let us consider for a moment a typical history of the type of case admitted to the base hospital, which is somewhat as follows:

The soldier was bombarded with gas shells during the night for several hours. Perhaps he was slow in putting on the gas mask, perhaps he took it off too soon. Or, again, he may have been shelled for several nights in succession, and the trenches, shell-holes, bushes, etc., have a certain amount of gas lying about, particularly if there is very little wind.

Sometime after the bombardment ceases, the individual goes to sleep feeling perfectly well; the following morning, i. e., 6-12 hours later, he is seized with intense burning and watering of the eyes, accompanied by great photophobia and swelling of the lids. There is usually some irritation and discharge from the nose. Or, again, the first intimation that he has been gassed may be an attack of nausea and vomiting. There is apt to be some irritation of the throat, with cough and dyspnoea upon exertion. 12-36 hours later a partial or almost complete aphonia ensues. Diarrhoea is rare. Cutaneous blisters are fairly common about the moist surfaces of the skin, inner sides of the thighs, scrotum, back, etc.

Such is the usual picture presented by the ordinary mild case of mustard gas poisoning.

Temperature in Mustard Gas Poisoning

In my own wards there was an occasional mouth temperature of 99 degrees Fahrenheit, which quickly fell to normal. Most of my cases, however, had normal temperatures.

Post-Mortem Findings in Mustard Gas Poisoning

Major Brewer and Lieut. Allison of this Unit both had opportunities of observing autopsies at British Casualty Clearing Stations in the vicinity of Ypres in the summer and fall of 1917.

The post-mortems observed by Major Brewer were on two men of a group caught without their masks, and hence they were severely gassed. Both autopsies showed the following:

A grayish pseudo-membrane representing a superficial necrosis of the mucosa of the larynx, trachea and bronchi to their finest ramifications, making a veritable cast of the entire bronchial tree; an extreme broncho-pneumonia of both lungs was also present.

The three autopsies observed by Lieut. Allison were upon men who died within 48 hours after being gassed.

They presented practically the same findings, viz: all died of broncho-pneumonia. All three had excessive cutaneous blisters.

The lungs presented diffuse broncho-pneumonia with a few collapsed areas due to the bronchioles running to these areas being plugged by bronchial casts.

The trachea and larger bronchi showed practically complete casts of the tubes. Here and there these casts were adherent to the superstructure. The casts themselves were formed by desquamated epithelium. The finer bronchioles showed the same thing, but to a slighter degree; in places there was simply an intense inflammation of the mucous membrane.

The spleen and kidneys were in a state of active congestion.

Pte. P. B., age 30 years.

(Autopsy by Lieut. Cunningham, who kindly furnished me with the following notes).

Clinical Notes:

January 30, 1918—Admitted to Casualty Clearing Station. Marked conjunctivitis. Cough. Pain in chest.

February 3, 1918—Admitted to No. 1 General Hospital. Gassed four days ago. Very marked conjunctivitis. Temperature on admission normal. Showed rough breathing at both apices. No dulness. A few rales. Pharyngitis and laryngitis. Tenderness in epigastrium. No burns. Within twenty-four hours developed temperature of 104, with signs over left lower lobe. Pulse 130 to 160, growing more rapid. Sputum smear and culture—Influenza Bacillus.

February 8, 1918—Patient died at 7.45 p. m.

Autopsy Notes:

The body is that of a well-developed and well-nourished man about 28 or 30 years of age. There is a slight palpebral swelling and injection of the ocular conjunctivae. The skin of the arms, particularly the inner humeral region, presents a bluish pink mottling. Slightly enlarged axillary lymph glands; epitrochlear palpable on right side, inguinal glands small. Abdomen somewhat distended and tympanitic. No free peritoneal fluid.

Lungs—There is over the lower lobe anteriorly what appears to be a thin yellowish white exudate—the lower lobe is solid throughout, of a reddish color. The upper and lower lobes are adherent with a fresh exudate. The upper lobe crepitates throughout, except for a very thin margin along its approximation to the lower lobe. Section shows the lower lobe to be very granular and grayish pink in color. The upper lobe is congested and somewhat edematous. Purulent exudate may be expressed from the smaller bronchi. The larger bronchi are injected and edematous. The bronchial lymphnodes are enlarged and anthracotic. The branches of the pulmonary artery are normal.

Right Lung—There are a few firm adhesions over the lower lobe laterally. There are a few old adhesions, lower portion of the upper lobe laterally. Some adhesion between the lower lobes by fresh exudate. The greater part of the lower lobe

and the outer portion of the middle lobe are solid. The upper lobe crepitates throughout. On section the lower lobe presents a similar picture to that on the opposite side, but is perhaps of a deeper red color. The bronchi show the same velvety congested appearance. The lymph nodes are enlarged. The middle lobe is solid.

Heart—The right auricle is dilated, otherwise the heart is normal.

Liver—The liver is relatively normal in size and color.

Spleen—The spleen is slightly enlarged. The capsule is smooth. The cut surface is mottled reddish-brown. The Malpighian bodies do not stand out prominently.

Kidneys—Normal except for injection.

Adrenal—The left adrenal is relatively normal in size. The cortex is paler than normal. The medulla is grayish-white and homogeneous. The right adrenal is somewhat larger than the left.

Bladder—There is a slight injection of the mucosa.

Prostate—The prostate is small. No gross change detected.

Rectum—The rectum contains, in the lower portion, a few dilated hemorrhoidal veins.

Stomach and Duodenum—Normal.

Aorta—The aorta presents numerous small sub-intimal plaques extending down almost to the bifurcation.

Neck organs—The tongue, posterior to the circumvallate papillæ, is very rough, injected and superficially edematous. The pharyngeal mucous membrane is somewhat injected laterally, but not to any marked degree. The tonsils are small, normal in appearance. The pharyngeal injection extends down into the esophagus as far as the hyoid bone. The epiglottis presents on its pharyngeal surface a few small hemorrhagic areas. The false vocal cords are edematous. The true vocal cords are slightly edematous. The upper part of the trachea is relatively normal. About 1 inch above the tracheal bifurcation it becomes more and more congested as you pass into the right and left bronchi.

Brain—There is injection of the cortical vessels; moderate

pial edema. On section the choroid plexus of veins is distended with blood. On section of the cerebrum of mid-brain no abnormalities are noted.

Microscopical Notes:

Lung—Section shows a uniformly solid appearance. There is edema, and the alveoli are filled with desquamated cells, large cells containing blood pigment and a few degenerate red cells with a small number of polynuclears. The pleura is thick, congested and edematous.

Another section shows a markedly thickened and edematous pleura with a small amount of surface exudate.

Heart Muscle—Negative.

Spleen—The capsule in places is thickened. The Malpighian bodies are scanty, and those seen are very small. The central blood vessel presents a thickened wall. There is an excess of blood and blood pigment in the organ.

Kidney—The kidney except for injection is normal.

Adrenal—There is a noticeable edema throughout the section. There are foci of degeneration of cortical cells.

Pancreas—The pancreas is normal.

Lymph nodes—*Mesenteric lymph nodes* normal. *Bronchial lymph nodes* show a dilation of sinuses which are rather sharply defined and contain large numbers of red blood cells and larger cells containing blood pigment.

Anatomical Diagnosis:

Lobar pneumonia—right and left.

Congestion of mucosa of pharynx, dorsum of tongue and esophagus.

Adhesive pleuritis—old.

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Edema of larynx—slight

Congestion of kidneys.

SUMMARY OF POST-MORTEM APPEARANCES IN MUSTARD GAS
POISONING

Respiratory Tract

Inflammation of larynx, epiglottis, trachea and bronchial tubes, sometimes associated with ulceration and necrosis of

the mucosa and the formation of casts. The bronchi often contain pus.

The lungs show bronchitis, sometimes emphysema.

Alimentary Tract

Pharynx and fauces present inflammation with or without a pseudo-membrane or slough. The inflammatory reaction sometimes extends downwards into the esophagus, as in case quoted above. Acute congestion of the stomach with submucous hemorrhages is occasionally present.

The *heart* is often dilated.

The *brain* shows simple congestion.

The *skin lesions* are superficial, blisters being the commonest type.

AFTER EFFECTS OF MUSTARD GAS POISONING

The conjunctivitis, in the vast majority of cases, clears up fairly rapidly. In one to two weeks the eyes give very little trouble and the patients begin to enjoy life once more. One man observed recently had a severe conjunctivitis with considerable inflammation and photophobia three weeks after being gassed.

The laryngitis cases vary considerably. Some clear up rapidly, others are obstinate. In one patient with superficial necrosis of the mucosa of the arytenoid cartilage, there was no trace of the necrotic spot one week later, as already stated above, but he was still quite hoarse from his laryngitis.

We have not yet had an opportunity of examining the larynx, bronchi and lungs of these men after the lapse of a fairly long period, say several months. However, it certainly seems reasonable to suppose that where there has been an intense chemical irritation and inflammation of the larynx and bronchial tree, in some cases, at least, more or less permanent symptoms will persist, such as dyspnoea upon exertion, with cough and hoarseness.

Treatment:

(1 *Prophylaxis.*

Failure to carry the box respirator, and slowness and lack

of practice in putting it on quickly, are responsible for many cases of gas poisoning. Then, too, it is self-evident that one should not wait to smell the gas before adjusting the mask, but should do so the moment the alarm is given, or a gas attack suspected.

Adequate protection of the mouths of dug-outs, and a good system of gas alarms are highly important.

Immediate Treatment:

All severe cases of gas poisoning should be carried on stretchers and not allowed to walk to the dressing stations. As soon as the patient reaches a Field Hospital or Casualty Clearing Station, the clothing should be removed from the immediate vicinity of the patient, and taken outdoors to be hung on ropes in the air for 2-3 days.

The patient himself should be put in a bath of sodium carbonate solution, or if very sick bathed on a rubber blanket.

If there is much respiratory distress, ammonia ampules and oxygen followed by heart stimulants are used. Venesection may occasionally be of value. The eyes should be bathed with 1 per cent. sodium bicarbonate, after which a bland liquid paraffin oil is dropped in, and a bandage applied.

The new American hospital teams are fitted with oxygen tanks and electric fans to blow oxygen toward the patients.

Treatment at the Base Hospital

The cases treated by us have had the following:

Rest in bed.

Soft or liquid diet.

No smoking. (The patients do not care to smoke if their eyes are closed.)

Bicarbonate of soda t. i. d. in thirty grain doses.

Eye bandage or eye-shade.

Eye irrigations with 1 per cent. soda bicarb. followed by liquid albolene. After two or three days substitute normal saline for the soda solution.

Cough is treated by the Robinson perforated zinc inhaler, on which is placed 3 or 4 drops of a solution containing equal parts of chloroform, alcohol and creosote.

Maw's steam inhaler with compound tincture of benzoin is used at regular intervals for laryngitis and bronchitis.

Codein is a useful drug in controlling the paroxysms of coughing.

Local treatment of the larynx and trachea was not tried during the acute stages.

In one subacutely inflamed larynx argyrol applications seemed to aggravate the subjective symptoms, and its use was abandoned.

The application of a bland mineral oil to the inflamed mucous membrane of the nose, pharynx, larynx and bronchial tree seems to be the logical method of treating these cases.

This could probably best be accomplished by a compressed air oil vaporizer, fitted with a mouth and nose piece, something like that of the Bennett ether inhaler. A portable apparatus of this type could be used by the ward nurse, and would not necessitate the personal services of the medical officer.

Written in France, April, 1918.

Candidate's Thesis

INFECTIONS OF THE PARANASAL SINUSES IN INFANTS AND YOUNG CHILDREN, WITH SPECIAL REFERENCE TO ADENOIDS AND CHRONIC TONSILITIS AS ETIOLOGICAL FACTORS

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All pathological work here reported was done by Doctor M. Armstrong. Doctor W. J. Foster assisted with the clinical observations.

Sinusitis in infants and young children presents many differences as compared with sinusitis in the adult, from a diagnostic and therapeutic standpoint. The examination of the sinuses in this class of patients by some of the ordinary procedures used in the adult is quite out of the question. The probing and irrigation of the upper sinuses is especially difficult. The examination of the interior of the nose in any way further than by anterior rhinosecopy, is very difficult. Because of such anatomical conditions as the smallness of the sinuses, and the thickness of their walls, as for instance the Highmorian antrum due to unerupted teeth, translumination is not trustworthy.

The difficulty of investigating and diagnosing lesions of the sinuses in infants and young children may perhaps be responsible for the opinion more or less current that such conditions are not common. The importance of the study of the sinuses in these patients approaches that of its study in the adult.

We believe that sinusitis in children two years of age, or more, is common. We also feel that it can produce just as deleterious results as sinusitis in the adult; and furthermore that it may produce these results without presenting symptoms which would be suggestive of its presence. It is possible for a child to have a suppurative discharge from the sinus into the nose which passes into the nasopharynx and is swallowed, and whose presence is

not suspected. A much less discharge in an adult would give the usual history of a postnasal discharge. Even in an adult, occasionally, is the presence of diseased sinuses overlooked. It is not to be wondered at, in children where the diagnosis is so much more difficult, that this condition is sometimes not discovered.

We were influenced to make a special study of this subject by the investigation of several cases of infective multiple arthritis, where the focus of infection was in the nasal sinuses, and had been overlooked.

The first of these cases was a little girl eight years of age. She was referred to us for examination for the focus of infection causing her joint trouble. The examination showed chronically diseased tonsils, a small bunch of adenoids, and a slight anterior cervical adenitis. The mucous membrane of the nose was somewhat chronically inflamed. No free pus was found in the nose. The transillumination of the antra and frontals was negative. The X-ray of the sinuses gave no distinct blurring of any sinus. Several teeth were badly diseased, and were removed. It was presumed that badly diseased tonsils and adenoids constituted the focus of infection.

On September 21, 1917, the tonsils and adenoids were removed; at the time of the operation each antrum was irrigated by inferior meatal puncture and no pus was secured.

Some time after the removal of the tonsils and adenoids, we received a letter from Doctor Byfield saying that since the removal of the tonsils and adenoids there was a slight, but distinct improvement in the symptoms; that the pain was still present in the joints, and he felt because of the continuance of the acute symptom there was still a focus of infection which had not been reached. At this time the following joints were involved: Ankles, knees, elbows, the small joints of the hands and neck.

Upon receipt of this letter a second examination of the sinuses, not however including the puncture of the antra, was carried out with a negative result so far as diagnosing any sinus disease was concerned. The gravity of the case together with the probability of a focus of infection somewhere about the upper

respiratory tract, led us to explore the various sinuses under general anaesthesia. Each Highmorian antrum was operated through the inferior meatus; there was no pus in either antrum. The floor of the right antrum was covered with a much thickened and softened lining. The underlying bone in the floor was superficially necrosed. Having found what was probably the focus of infection, the other sinuses were not opened. Pieces from the floor of the sinus were removed, examined, and the following is the pathological report:

Chronic purulent inflammation of the lining wall of the antrum.

Gross examination: The specimen consists of a very small bit of bony tissue curetted from the antrum of Highmore.

Microscopic examination: The section contains small spicules of bone, surrounded by a loose connective tissue in which many fibroblasts, lymphocytes, plasma cells, and polymorphonuclear cells can be seen. The blood vessel walls are thick and near them is a round cell infiltration. No gland or epithelial tissue was found in the section, but the diagnosis of purulent inflammation was made because of the increase in fibroblasts, round cells, and polymorphonuclear cells.

Note, here was a sinus that was negative on puncture, gave a negative X-ray picture; a sinus that contained no pus, but had in its floor a chronic purulent inflammation. The lining wall of the antrum had an underlying superficial necrosis. A condition meeting all of the qualifications of a focus of infection.

Two weeks following the operation Doctor Byfield reported that the acute pain in the patient's joints had entirely left her; some joints were markedly decreased in size. We felt that the focus of infection of the joints had been found. Further progress of the case proved this to our satisfaction.

Unfortunately, when the focus of infection is in the paranasal sinuses, as a rule we do not get the sudden and remarkable improvement following the operation upon the sinus that we get when the focus is in the tooth, or tonsil. When we operate upon a diseased tooth, or tonsil, the offending organ is cut out and thrown away. The best we can do with a sinus is to thoroughly drain and clean it out, and remove necrotic bone

from its walls; with the very best of treatment, a purulent discharge will occasionally persist for a long time, and after it has disappeared, will recur. The secondary manifestation disappearing and reappearing with the disappearance and reappearance of the pus. The proper treatment of such cases we will take up later.

A second case was to us even more instructive. This patient, a boy ten years of age, came into our service on January 17, 1917, with an acute suppurative otitis; at this time he had a multiple arthritis.

An examination of the nose, throat, and teeth, was carefully made. The examination was negative except for chronic tonsillitis, and adenoids; these were thought to be the focus of infection, and were removed. Two months later the patient had an acute exacerbation of his arthritis, and was referred to us again for examination. A second complete examination of the sinuses was made, including anterior rhinoscopy, antrum puncture, translumination, and X-ray examination. The only indication of sinus disease was a slight discharge in the upper posterior nasal cavity. A negative report in so far as the sinuses was concerned, was returned.

Four months later I received a communication from Doctor Steindler saying that practically all of the joints except those of the spinal column were involved; that there was a focus of infection somewhere, and if it were not found all joints, including those of the spinal column, would soon be rigid, and the child would be utterly helpless.

A third examination was made, and the findings were the same as before. It was decided to make an exploratory opening of the various sinuses.

The right side was operated first. Neither antrum, frontal, nor posterior ethmoidal sinuses were diseased; an anterior ethmoidal cell was found to contain pus. Soon after, the sinuses on the left side were explored; both the anterior and posterior ethmoids contained pus. There was also a very small amount of purulent material in the Highmorian antrum. In each side of the nose from the diseased sinuses a hemolytic streptococcus was secured.

Two weeks after the operation a letter was received from Doctor Steindler saying that the patient had had a constant progressive improvement since the drainage of these sinuses.

We realize full well that chronic tonsilitis and adenoids are far more commonly the focus of infection in multiple arthritis in children than is suppurative sinusitis. Since our experience with these two cases we have never expressed the opinion, when asked to find the focus of infection in a child, that diseased tonsils and adenoids constituted the only probable focus in the upper respiratory tract. In such patients with chronic tonsilitis, and adenoids, where the examination of the sinuses is negative, we always ask for the return of the patient for further examination, if, after the removal of the tonsils and adenoids, acute symptoms suggestive of continued infection, persists. We believe that exploratory opening of the sinuses in children in severe cases of systemic infection is indicated, providing there is no other focus of infection found. Only do we believe such exploratory openings to be contraindicated when the nose is perfectly free from discharge and the mucous membrane of the nose is normal. Such a condition should exclude sinusitis. The absence of pus in the sinuses does not exclude them as being foci of infection.

We are also of the opinion that in every child, where, following the removal of diseased tonsils and adenoids, the parents are not satisfied with the improvement in the child's condition, an examination of the paranasal sinuses is indicated.

Coffin, one of the early writers on this subject, gives as the symptoms of sinusitis in children, persistent discharge from the nose, repeated colds, intermittent stoppage of the nostrils, reflex cough, pain in head, an unaccounted range of temperature, and anaemia. He says the diagnosis is made by finding purulent or catarrhal secretion in the nose, or nasopharynx, cleansing, using the suction and finding it again.

Wood² gives a most excellent description of the pathology of sinusitis in children. He says the difference between sinusitis in children and infants is due to two anatomical facts:

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1. Coffin, *Trans. Amer. Laryn. Ass'n.*, 1914.
 2. Wood, *Trans. Amer. Laryn. Ass'n.*, 1914.

1. In childhood the sinuses are in an undeveloped state.
2. The surrounding bone is softer, with diploe—hence it is more open to extensive involvement.

He concludes that involvement in the early years of life is less frequent, and only seldom chronic; that when it does occur, the destructive lesion of bone is more frequent.

He says that in maxillary sinusitis, the mucous membrane may become so edematous as to fill the cavity. This we have noted in an X-ray examination, and the finding has been confirmed on operation. Later in this paper the pathology of such a thickened membrane is described.

He further says that chronic sinusitis may be cured by hyperplastic tissue becoming sclerosed and filling the cavity with fibrous tissue.

Coakley³ concludes:

1. Sinusitis in children is as common as in the adult.
2. Because of shallow cavities, it has a greater tendency to spontaneous cure.
3. He concludes that in a child without adenoids, and with a profuse nasal discharge, the patient has sinusitis. Our observations show that a large percentage of cases with adenoids have chronic sinusitis.

He is an advocate of nonoperative treatment, suction, cleansing the nose, diet, and attention to the general health.

Mosher⁴ has given us some very practical points in connection with this subject. He says that the sphenoid in children is larger than we ordinarily expect it to be. In a boy of twelve he has found one of adult dimensions. We have seen such a sinus in a boy nine years of age. Warren Davis, in his specimens, showed me two cases of complete bony sphenoids at birth.

Mosher⁴ also says that from the third year on the antrum is large enough for surgical treatment. We have had several cases under two years of age where it seemed to be advisable to operate the antra. In one case eleven months old it was necessary to drain them.

A statement which I believe to be original with Mosher, I

3. Coakley, *Trans. Amer. Laryn. Ass'n.*, 1914.

4. Mosher, *Trans. Amer. Laryn. Ass'n.*, 1914.

think should be the basis of all of our clinical observations on the sinuses of children is as follows; Precocious development of the sinuses may make any, or all sinuses of surgical size earlier in life than we expect.

Casselberry⁵ feels that a certain class of chronic sinusitis in children requires conservative intranasal operation.

Myles⁶ thinks that intranasal operation in children is more frequently indicated than is recognized at this time.

Oppenheimer⁷ calls attention to the fact that at birth we may have antral sinusitis from injury (forceps), or infection from vaginal discharge.

Emil Mayer⁸ in one of the earliest articles in American literature on this subject, concludes that the apparent rarity of sinus disease in children is due to difficulty in diagnosis.

Hubbard⁹ has discussed the question of sinusitis and infectious diseases.

Haike¹⁰ gives a most excellent description of radiography of sinuses in children. He finds the antrum most often diseased; next to the antrum, the ethmoids.

Skillern¹¹ considers all sinusitis under the age of five as an ethmoiditis, or as an osseous infection.

In this investigation of sinusitis in children we have confined ourselves to a study of those latent cases of chronic sinusitis which are so apt to be foci of systemic infection. We have not included cases with marked local complications due to osteomyelitis. These complications are more common with infections of the upper sinuses, than with the Highmorian antra; although in our latent cases of antral sinusitis it was common to find sinusitis with necrosis of the floor without, however, external manifestations of such an involvement. We have also excluded cases due to recent acute infectious diseases, or to syphilis; ozena cases were not considered. In every case of sinusitis studied syphilis was excluded in so far as the Wassermann test would

5. Casselberry, *Trans. Amer. Laryn. Ass'n.*, 1914.

6. Myles, *Trans. Amer. Laryn. Ass'n.*, 1914.

7. Oppenheimer, *N. Y. Med. Record*, 1914.

8. Emil Mayer, *N. Y. Med. Record*, 1901.

9. Hubbard, *Jour. Diseases Children*, 1911.

10. Haike, *Archiv. Für. Laryn. u. Rhin.*, 1910.

11. Skillern, *Journal A. M. A.*, Vol. 69, No. 11.

exclude it. In some of the more severe cases the same test was applied to the parents.

The production of superficial abscesses about the orbits, and the discharge of the pieces of bone from these abscesses, is much more common in sinusitis in children than in the adult. This is due to the bone surrounding the sinuses being more cancellous in the child. In our investigations we have found so few cases of chronic sinusitis with this complication as compared with the rather large number without the complication, that we feel this should not be considered as one of the important diagnostic points of sinusitis in children.

We feel from a review of our cases that anatomical knowledge of the average size which any sinus should have at a certain age is not so important as to be imbued with the fact that there may be a precocious development of any sinus, so that it might be a surgical sinus much sooner than one would expect.

Ordinarily, we may expect that under the age of two years, we are only dealing with the ethmoidal labyrinth; that the sphenoidal sinus developing as it does from the posterior superior lateral angle of the nasal fossae, may be considered so far as its diagnosis, symptoms and treatment is concerned, as an ethmoidal cell; that the frontal sinus not having extended into the frontal bone, may be viewed in the same way. Exceptionally, there may be a precocious development of the sphenoid, so that at birth there is a true bony sinus, separate and distinct from the ethmoidal mass. A study of the excellent Davis collection of specimens, shows a true bony sphenoidal cell present at birth, and a true frontal sinus before the age of two.

Dr. Davis says that we may ordinarily expect the sphenoidal sinus to be so fully developed at the age of five years that sphenoidal infections might involve the second branch of the fifth, and that at this age the floor is usually low enough to approach the vidian. He reminds us that in a precocious sphenoid, the nerves mentioned may be involved very much earlier.

Sluder¹², from a study of Davis' specimens, concludes that

12. Sluder, Trans. Sec. Otol. and Laryn. A. M. A., 1913.

the sphenoidal sinus may be separated by only an eggshell thickness, from the second branch of the fifth nerve at the age of three years; and from the vidian at the age of five years.

The relation between the involvement of the sinuses, and the sphenopalatine neuralgia so well described, Sluder¹² applies to children as well as adults. The examination of sinuses in children with headache is indicated just as much as the examination of the sinuses in adults with a similar condition. We are never safe in assuming, without having before us at least the X-ray plate of the patient, that the various sinuses are not large enough to produce headache if they are diseased. The relation between sinusitis and systemic disease in children is very intimate. We have seen nephritis, cardiac lesions, pernicious vomiting, headache, asthma, arthritis, pulmonary lesions, chorea, hay fever, recurring coryza, neurotrophic disturbance, laryngitis, mild systemic sepsis, persistent fever, relieved by the treatment of sinus disease. I do not think we should be guilty of the common error, and even suggest that we have found a panacea for all these ills.

All of these cases mentioned are patients who have been studied by a Pediatricist, and by myself, where a distinct relation between the sinusitis and the disease was found. It goes without saying there have been many more cases similar to these that have not had any sinusitis. Because of the occasional relationship between the conditions mentioned, and the sinusitis, we feel that the sinuses should be carefully looked into from the etiological standpoint in all such cases when the etiological factor is not plain. All such cases should be studied by the head specialist and the pediatricist together.

Such a working arrangement we have found to have been absolutely essential; in short, most of our very interesting cases are those which have been referred to us by the pediatricist for examination of the sinuses.

The relation between sinusitis and pulmonary conditions is very definite. Naturally, purulent infections of the upper respiratory tract would exert an influence upon the lower respiratory tract. The following are the opinions held by Doctor Scarborough regarding the relationship between infections of the upper respiratory tract and pulmonary lesions:

The infections of the respiratory tract, sinusitis, adenoids and diseased tonsils, are a part of the vicious circle in pulmonary tuberculosis. These infections in children have a deleterious action upon the lungs just as do poor hygienic surroundings, poor food, or over-work. The removal of these infections has a beneficial influence similar to that of the removal of any of the other conditions mentioned. Sometimes the removal of tonsils and adenoids, or sinusitis, results in an apparent cure of the pulmonary lesion. The cure is really due to the organism having only one infection to combat, rather than two.

Since July 1, 1917, we have studied the sinuses of 234 children suffering from adenoids who have come into our service, and in those cases referred to us by Doctors Byfield, Steindler, Scarborough, and others, to ascertain if possible the cause of some systemic disturbance. As these observations have been made since July 1, last, in many cases the study has not yet been completed.

We have been surprised at the results of our investigations of sinuses in children suffering from adenoids and chronic tonsilitis. 234 children, thirteen years of age, or younger, with adenoids were examined; many of them also had chronic tonsilitis. The examination consisted of an anterior rhinoscopy followed by radiography. When sinus trouble was even suggested by the X-ray plates, a more complete examination was carried out. 34 cases out of 234 children, or in about 15 per cent of the cases, a chronic empyema of one or more sinuses was found. In every case where a diagnosis of chronic empyema was made, a Wassermann test was applied, and if positive, that case was excluded from our list. None of the 34 cases mentioned above had a positive Wassermann.

We have been led to believe by a study of cases of sinusitis where the adenoids and tonsils had been removed for some time and a persistent sinusitis was present, that the increase in adenoid tissue so frequently noted in the pharynx and nasopharynx, following adenoidectomy and tonsilectomy, which is sometimes referred to as compensatory adenoid tissue, was the result of infection from these sinuses. In every case where we have noted the presence of this adenoid tissue a chronic sinusitis has been

present. All cases of chronic sinusitis have not, however, had this increased adenoid tissue in the pharynx.

We will divide the study of our cases into the following subdivisions:

1. Pathology.
2. Diagnosis: This we will divide into
 - A. History.
 - B. Presence of nasal and postnasal discharge.
 - C. Condition of the mucous membrane of the nose.
 - D. X-ray examination.
 - E. Examination with the nasopharyngoscope.
 - F. Puncture and irrigation of the Highmorian antra, and exploratory opening of the other sinuses.
3. Treatment:
 - A. Non-operative
 - B. Operative
 - C. Postoperative.
4. Results.

Pathology: A survey of the literature shows that very little has been written upon the microscopic findings in sinusitis of children. With the exception of one very excellent article by Wood¹³ no one seems to have dealt directly with this subject. There are probably two reasons for this: first, the pediatricists and even the rhinologists have not recognized the probability of finding sinusitis in children, and second, because it has not been pointed out that there is an essential difference between the histological findings in children and in adults.

Wood, however, in the article just referred to, mentions one point of difference which seems worthy of further study. The bones in early childhood are softer and more easily attacked than in the adult. Our observations tend to establish the fact that in cases of equal clinical severity and with equally marked changes in the mucous membrane, there is much more apt to be an involvement of the underlying bony wall in the child than in the adult.

The findings in the case of F. R., age eight years, will serve

13. Wood, George B., Empyema of the Nasal Accessory Sinuses in Children under Fourteen Years of Age, Pathological Considerations. Trans. Amer. Laryn. Ass'n., 1914.

as an example. The antrum was practically empty, containing only a small amount of mucous. A small bit of tissue removed from the floor of the antrum at the time of operation and prepared for microscopical examination gave a typical picture of granulating ostitis. This question of bone involvement is one of great importance.

Zuckerkandl¹⁴ makes the statement that he has never observed bone caries as a result of an empyema. Where he finds an empyema accompanied by necrosis or disease of the bone, he takes the position that the bone caries existed and is the cause of the empyema. Grunwald¹⁵, on the other hand, takes the position that the empyema usually exists first and that the bone necrosis is secondary to it.

Hajek¹⁶ states that an acute empyema may end in three ways: There may be complete restoration of the tissue; the process may become chronic; or there may be an ulceration of the mucous membrane with caries of the underlying bone and the formation of abscess with or without a fistulous opening. The latter condition is, he says, seldom seen and that only following the most severe infections. In the footnote he adds that Zuckerkandl and E. Frankel have not seen such a condition. Dmochowsky speaks of it as a not infrequent ending.

Under "unusual pathological complications or sequelae of chronic inflammation," Skillern¹⁷ mentions new formation and ulceration of bone, caries, and necrosis. Concerning ulceration of bone he says, "The condition seems to be dependent upon an especially virulent infection, being always accompanied by ulceration of the superimposed mucous membrane. Actual destruction of the osseous wall is relatively rare."

These authors dealt very largely with sinusitis in adults. It is more than probable that had their observations been confined to sinusitis in children, bone involvement would have been noted far more frequently.

In children it is probable that the primary infection is usually

14. Zuckerkandl, E., *Normale und Pathologische Anatomie der Nasenhöhle*, Bd. I, Auflage, 1893.

15. Grunwald, *Nasal Suppuration*, 1900, Wm. Wood & Co., New York.

16. Hajek, *Pathologie der entzündlichen Erkrankungen der Nebenhöhlen der Nase*, Leipzig und Wein, 1899.

17. Skillern, *The Accessory Sinuses of the Nose*, 1913.

overlooked and it is, as a rule, only those cases where there is destruction of bone and subsequent spreading of the inflammation to the soft tissues of the face, that come to the notice of the physician.

All of our cases have been of the chronic latent type. In only this particular, the high percentage of cases of periostitis and inflammation of bone, have they differed from the classical description given by Dmochowsky and followed by Hajek and many other writers.

The membrane is thickened, due to an increase in the fibrous tissue elements, especially in the form of young fibroblasts, and to an edematous infiltration into the connective tissue interspaces. The basement membrane is usually very prominent and in the upper portion of the connective tissue there is a more or less marked cellular infiltration. The majority of these cells are lymphocytes. Plasma cells, polymorphonuclear neutrophile leukocytes and eosinophiles are occasionally seen. This infiltration is especially marked just below the basement membrane. The mucous glands when present often show signs of increased activity as indicated by enlarged cells containing globules of mucus. Round cell infiltration and fibrous connective tissue thickening are often very prominent about them. The epithelial layer varies in structure from the normal, ciliated columnar epithelium to a stratified, cuboidal epithelium—very closely approaching the stratified squamous in type. Frequently the epithelium is very largely desquamated, leaving the basement membrane bare or sparsely covered with a few ragged cuboidal cells. When the epithelium is columnar in type, many beaker cells are seen along the surface. Lymphocytes and polymorphonuclear leukocytes are often seen infiltrating the epithelial layer and lying upon the surface. Several instances have been observed where the superficial layer of the mucous membrane has been replaced by granulation tissue.

History: Perhaps the most common symptom in our cases of sinusitis has been sneezing; other prominent symptoms, are, recurrent stoppage of the nose, frequent colds, discharge and headaches. The history of postnasal discharge so common in the adult is conspicuous by its absence.

Nasal and postnasal discharge: The finding of mucopurulent discharge in the nose, anteriorly, or in the nasopharynx, is always very suggestive of sinusitis.

The condition of the mucous membrane of the nose: A dark red thickened, boggy mucous membrane, or enlarged boggy turbinates are suggestive of sinusitis. We have never found sinus disease present in the nose of a child, free from pus, and with a normal mucous membrane. We have found present a slight amount of discharge with diseased mucous membrane where we have been unable to find sinus disease. We are inclined to feel that these cases have had sinus disease which could not be located.

The first step in our examination for sinusitis is to note the condition of the mucous membrane of the nose, and the presence, or absence of discharge. In our earlier studies translumination was used as a diagnostic method. We still use it in children over eight years of age. In children under eight years of age, the translumination of the frontals has been very misleading. The very thickened floor of the antrum with the unerupted teeth interferes with the translumination of these sinuses.

X-ray Examination: Immediately following the examination of the nose by anterior rhinoscopy an antero-posterior, and a lateral X-ray picture is taken. It is much more difficult to get a satisfactory X-ray picture of sinuses in children than in the adult. The children are unruly, and with infants and young children it is necessary to administer an anaesthetic. Even with the child anaesthetized the difficulties are greater. The outlines of the sinuses in children are not so distinct as in the adult because the bone surrounding the sinuses is cancellous, consequently soft, and does not give the distinct outline to the sinus which we get with the hardened bone of the adult. Nevertheless, the X-ray picture of the infant plays a much more important part in the diagnosis of sinus disease than in the adult. In the infant and child we are not safe in assuming from our anatomical knowledge that any sinus is or is not a surgical one. One X-ray picture gives to us this definite information. The information regarding the size of the sinus is

a very important step in the clinical diagnosis. If there are no sinuses, or if they are too small to be surgical, our minds are relieved; if the sinuses are large, then we must find out whether or not they are diseased.

In infancy and later, until the frontal sinus invades the horizontal plate of the frontal bone, the picture of the frontal sinus is confused with that of the ethmoids. As soon as the sinus extends into the horizontal plate of the frontal, then the X-ray picture distinguishes it from the ethmoids, and it can be separately diagnosed. Such a picture we have found present at the age of two years. Haike says that at the age of five years 25 per cent of the children have the frontals distinguishable in the X-ray plate. The ethmoidal sinuses show particularly plainly in children, at least as compared with other sinuses.

Valuable information, even in infants just a few months old, can be secured regarding the Highmorian sinuses in connection with their location, size, and as to whether or not the floor of the sinus extends below the inferior turbinate. Disease of the sinus is usually diagnosed. We have found markedly diseased Highmorian sinuses in an infant eleven months old. This case was operated upon. The antra were filled with thick white pus. The patient had a posterior cleft. It was advisable to eradicate the sinus disease before closing the cleft. In this case two streams of pus could be seen flowing down on the posterior wall of the pharynx; the ethmoids were also diseased. The patient gave a negative Wassermann. We have had two other cases under the age of two years in which it seemed advisable to operate upon these sinuses. We have noted in the X-ray plates of the antra of children what seemed to be a fluffy mass. Such sinuses we have found to be almost filled with a very thickened edematous membrane, the pathology of which is as follows:

The microscopic section shows a tissue four to eight times as thick as the normal mucous membrane. The connective tissue is increased in amount and has wide interspaces which may be filled with a homogeneous, faintly pink staining material. The mucous glands are increased in size, the acini often distended with mucus. The upper layer of the connective tissue is more or less infiltrated with cellular elements, the majority of which

are lymphocytes; a few plasma cells and eosinophiles and sometimes polymorphonuclear cells are present. The basement membrane is usually very prominent. The epithelial covering may be normal in appearance, or may be composed of stratified cuboidal cells.

The sphenoidal sinus is so covered with bone in young children and infants that I doubt if its diseased condition can be definitely diagnosed from the X-ray plate. We may, however, determine whether or not it is present; and approximately its size, the most important thing. We have also felt that a clear sphenoid picture excluded sinus disease, and that we secured definite negative information.

In one case, a girl fourteen years of age came under our observation where we wrongly interpreted the sphenoid shadow. The sphenoid was exceedingly large, and was clear. The examination with the nasopharyngoscope, however, revealed pus coming from its ostium. Operation upon the sphenoid revealed a very large cell, badly diseased.

A blurred sphenoid may be so because of overlying bone, and is not necessarily positive for a diseased sinus.

The examination of the middle and superior meatus of the nose in young children and infants, with the nasopharyngoscope, presents several difficulties. It is difficult to hold the child's head quiet; the mucous membrane is very delicate and bleeds easily, with a resultant blurred field. We have tried using adrenalin in the nose before making the examination and, while adrenalin spoils the typical picture, have felt that we secured the best information after its use because we avoided hemorrhage and could get a fairly good view.

When a general anaesthetic was administered for the removal of tonsils and adenoids, or for the taking of an X-ray picture, we have tried to use the nasopharyngoscope; we use only ether for anaesthetic, and it soon fills the nose with mucus which has interfered with a successful examination.

Notwithstanding the difficulties in using the nasopharyngoscope in this class of patients, we have found it a most important aid in the diagnosis of sphenoidal and posterior ethmoidal disease.

In one patient, aged eleven years, sphenoid trouble was diagnosed as present on one side, and absent on the other, the diagnosis being confirmed on the operating table.

Diagnostic puncture and irrigation of the Highmorian antra, and exploratory opening of the other cells: Puncture of the antrum of Highmore in infants and young children is a routine procedure with us with patients suffering from adenoids, where the X-ray picture is suggestive of Highmorian sinus disease. The puncture is made at the time of the adenoid operation. If reasonable care is exercised we do not feel there is danger of puncturing the orbit, going through the outer wall of the antrum, or of injecting fluid into the cancellous structure of the bone. In all of our cases where puncture has been made, we have had before us an X-ray picture showing the location of the sinus. In every case we have had, the antrum could be punctured by inserting the needle upwards from the inferior meatus.

A study of Warren Davis' specimens shows that in all of them the antrum may be entered from the inferior meatus. If an antrum should be so highly located that this could not be done, the X-ray picture would reveal the fact.

Since July 1 last, we have punctured 140 antra in children and have not had any bad results. The pus comes from the antrum in a small mass and we do not believe it can be confused in any way with the discharge that may be left in the nose after it is cleansed, even in young children. The presence of pus in the antra has established a positive diagnosis.

In cases where a simple drainage of pus into the Highmorian sinus was suspected, the lining of the sinus has been examined and found diseased. Usually there was bone involvement in the floor of the sinus. The absence of pus does not exclude sinus disease. With no pus there may be diseased membrane, and underneath it, necrotic bone.

Treatment—Non-operative: We have not had opportunity of pursuing the non-operative treatment as far as we would like. Naturally, only those patients were operated upon in whom irrigation of the sinus, together with the removal of the postnasal obstruction, did not bring about a cure. Our patients were

charity cases living far from the hospital, and requiring relief in a minimum amount of time. In many of the cases the sinuses were foci of systemic infection, and it was advisable to hasten the cure as much as possible.

Operative: The operative treatment we have divided into two classes:

A. Removal of the cause of the sinusitis.

B. The operation upon the sinuses themselves.

In none of the young children or infants studied have we found deflected septa, or exostoses that we thought could be responsible for the sinusitis.

From our series of cases with adenoids, most of them having diseased tonsils, we found 34 cases having suppurative sinusitis. Of the 34 cases of sinusitis in children with adenoids 13 had previously had an acute infectious disease. So many of these patients became well after the removal of the tonsils and adenoids that we felt the acute infectious disease was not a very important etiological factor.

In some of Warren Davis' specimens I noted that large masses of adenoids extended from the nasopharynx downward and forward so far as to form with the roof of the nose an angle of about sixty degrees. Such a condition is naturally the best kind of a trap for the collection of secretion which is driven backwards in the nose to the nasopharynx. Adenoids in this way may retain in the upper posterior part of the nose constantly a mass of secretion which being stagnant, would soon become mucopurulent. This is one of the ways in which adenoids may cause sinusitis.

In three cases of bony posterior atresia of the nares, two had pansinusitis on the side occluded. I have recently had the opportunity, through the courtesy of Doctor Prentiss, of examining a marked case of complete bilateral bony anterior atresia in an adult. The specimen was found in the anatomical laboratory. The sinuses were perfectly developed and normal, and quite different from my findings in posterior atresia.

In all of our cases of chronic sinusitis here related, when the sinus disease was not acting as a focus of systemic infection, our procedure has been the removal of the tonsils and adenoids,

without any after treatment whatsoever. After five or six weeks, we make a second examination. These cases have only been studied during the last six months, and may have not yet returned for examination. A later report will be more comprehensive. Of seven cases where chronic suppurative sinusitis accompanied adenoids and diseased tonsils, five patients on returning several weeks after the removal of the tonsils and adenoids, were found to be apparently well. So in children and in adults, the main thing in the treatment of chronic sinusitis is the removal of the cause. The operative procedures we have used are as follows:

Position: In operating on the antra the patient lies on the back, and the pharynx is kept clean with the suction apparatus. In operating on the frontals, ethmoids, and sphenoids, the same position is used, but two pieces of suction apparatus are necessary, one to keep the pharynx and nasopharynx clean, the other with a nasal attachment, for cleansing the interior of the nose. Even in very young children this gives us a clear field. For the sphenoidal, ethmoidal and frontal sinuses we use very small curettes to break down and cleanse the cavities. Sluder's operation gives excellent results. In most of our cases we have only operated upon the Highmorian antra, the upper nasal sinuses being treated by suction after the operation.

We have never performed an operation through the canine fossa in young children or infants. We never expect to do such an operation because of the injury to unerupted teeth. Except in two cases, all operations upon the Highmorian antra were performed without loss of turbinate tissue. In two infants it was necessary to remove a very small piece from the anterior end of the inferior turbinate bone. Our procedure for intranasal drainage of the antra is as follows:

Using a pair of blunt Knight's forceps the whole of the inferior turbinate is rotated outwards and upwards. After this rotation is complete, the inferior margin of the turbinate points up and out. This gives as good an exposure of the inferior meatus as the removal of the inferior turbinate. After the operation is completed, the inferior turbinate is replaced, and retains its original position without any apparent ill effect

whatever from having been turned upward. The turbinate is elastic. There is no noticeable fracturing of it when this is done.

The size and location of the antrum, and the position of its floor, are accurately determined from the X-ray picture. After the turbinate is turned up and out, an opening is made through the inferior meatal wall; hypertrophied and necrotic areas within the antrum are curetted, the floor being specially examined for such conditions. The opening in the inferior meatus remains open usually long enough for healing; if it closes it is readily reopened. Eventually, the meatal opening always closes, and as a final result, we have the nose apparently intact and normal.

In infants about one year old, in draining the antra, one finger is placed in the orbit. A very small curette enters the antrum above the middle turbinate. The curette can be felt by the finger in the orbit when it strikes the very elastic wall of the sinus. The ethmoids are removed with a ring curette.

Postoperative Treatment: Suction, irrigation of the nose with salt water, followed by some oily spray, is our routine treatment in all cases. If the antrum is operated, it is irrigated daily with argyrol; if this is not sufficient, 5 per cent silver nitrate is used. The suction treatment has been used even with infants. The best postoperative treatment is plenty of sunshine and out of door life. In the late fall, winter, and spring, it is best if the patient can go to a climate with abundance of sunshine and warm air. Many of our patients are not able to do this, and a long course of postoperative treatment is necessary.

Results: With the exception of two cases, the result has been good. In two cases, after weeks of treatment, pus reappears as soon as the treatment is discontinued. The cases in this series, however, have all been studied since July 1, last, and the fact that the sinuses at this time are apparently well does not mean they are permanently cured. The following are some of the interesting things noted in our work:

It is not uncommon in removing tonsils and adenoids, or operating on the sinuses in children with joint infections, to have joint trouble made more acute, accompanied by a rise of temperature. These results we have assumed to be due to local manipulations

of the focus, resulting in increased systemic infection; this we believe is not always the case. In two cases of acute multiple arthritis where there was a persistent sinusitis after operation and it was necessary to use silver nitrate, etc., it was found that following each treatment there was a rise in temperature; cessation of the treatments prevented these excursions. The treatments were given again, great care being used not to traumatize the joints, without any rise of temperature whatever. Our conclusion is that in operating on cases with arthritis, the greatest care should be exercised not to traumatize the joints.

In cases of severe systemic infection and inability to localize the focus of infection, an exploratory operation of the sinuses, especially the ethmoids, is indicated unless the complete absence of discharge in the nose, perfectly normal turbinates and mucous membrane contraindicates sinusitis. In the adult, sphenoidal disease cannot positively be excluded except by opening the sphenoids; in children the same is true of the ethmoids.

The following are a few cases which present points of interest:

B. A. Age 16 months.

This baby was in the pediatric service with a diagnosis of unresolved pneumonia. The patient was referred to us for examination because of a very purulent discharge from the nose. Adenoids were present. The Wassermann examination was negative. Owing to the patient's condition, an X-ray examination was not advisable. Diagnosis, adenoids. Two weeks later the baby died. The autopsy revealed frontal sinuses absent, the ethmoidal cells filled with polypoid membrane and bathed in pus. The sphenoidal sinus was very minute, with no microscopic evidence of disease. The antra contained no pus or other fluid. This was one of the earlier cases and it was assumed that the adenoids were responsible for the nasal discharge. The true suppurative condition was revealed only at autopsy.

Baby L. O. Age 19 months.

Referred by the Department of Pediatrics for examination of the nose. The diagnosis was neurotrophic disturbance; the condition of the child was quite critical. Our diagnosis was suppurative ethmoiditis, Highmorian sinusitis, and probably sphenoiditis. No adenoids were present. The Wassermann was

negative. All of the diseased sinuses were drained. The sinusitis would disappear with postoperative treatment, and reappear with the stoppage of the treatments. We were informed by the pediatricist that the benefit to the general condition from the treatment of the sinusitis was eminently satisfactory.

I. H. Age 7 years.

This is such an interesting case that I take the liberty of reporting the history in full.

The patient entered our service December 13, 1917. Since one year of age he has had a tendency to develop a temperature of 101 without apparent cause; more noticeable when he has a cold, but present when he does not have one. Last spring the tonsils and adenoids were removed. Since then there has been considerable improvement in this elevation of temperature. He was referred to us by Doctors Scarborough and Byfield for examination. Intracutaneous tests for tuberculosis were positive; other tests were negative; chronic bronchitis as a very old process.

We found chronic bilateral pansinusitis, with marked cervical adenitis.

December 15, 1917, *Treatment*: Drainage of all the sinuses, followed by suction and irrigation.

The following abstract from Doctor Byfield's history was taken on December 21, 1917:

Has had attacks of fever, with respiratory infection and enteritis since one year of age; only two attacks since the removal of the tonsils and adenoids in May, 1917. For many years chronic nasal discharge which has had a tendency to become purulent. The patient has had in the last few months a very irregular temperature; sometimes going to 102 without evidence on the part of the patient. Lungs: Numerous rales which improved very much within five days following the drainage of the sinuses.

Under the date of January 15, 1918, just one month following the operation, we received a letter from the boy's father saying that since the operation there had been no fever.

This case is mentioned only as a patient incompletely observed. It would be difficult for us to conceive with the post-

operative history today that the disease of the sinuses was not exerting a decided influence upon the condition of the patient. It will be interesting to observe the future progress of the pulmonary condition and temperature.

Conclusions

I. Sinusitis in young children is not rare.

II. Where there seems to be a focus of infection in the upper respiratory passages causing a systemic disease, and the removal of tonsils and adenoids does not check the acute process, the sinuses must be carefully examined.

III. Adenoids are a common cause of sinus disease. Their removal usually effects a cure.

IV. In arthritis cases, increased joint trouble following operation on the nose and throat is not always due to increased infection, but may be due to traumatizing the joints.

V. Intranasal drainage of the Highmorean antra may be done in infants and young children without injury to turbinate tissue.

Candidate's Thesis

SURGICAL TREATMENT OF CHRONIC LARYNGEAL
STENOSIS

FIELDING O. LEWIS, M.D.

Since Heryng, in 1894, first described his method of treating a stenosed larynx by soft rubber dilation, a great many methods have been tried and various kinds of canulas devised for the operation known as laryngostomy or laryngo-tracheostomy, until now, after the development of Sargnon and Balatier, Jackson and others, this operation has been accorded a permanent abode in the surgery of the larynx.

When the operation is successful, as it has been in the majority of cases, the patients who have suffered so long from the presence of their tracheotomy tubes are most appreciative and grateful for their decannulation and relief from the annoying symptoms and enforced ostracism.

The writer wishes to report four cases operated on after the method described by Dr. Chevalier Jackson in his recent edition on *Peroral Endoscopy and Laryngeal Surgery*.

Case I—G. W., aged 19, was referred by Dr. J. J. Moony, of Buffalo, N. Y., to Dr. Jackson, who was kind enough to refer the case to me and assisted me in the operation and by valuable suggestions. The patient was admitted to the Jefferson Hospital, October 23rd, 1917, with the following history.

On January 6th, 1913, the patient, while playing basket ball, fell, striking his larynx across the sharp edge of a stage landing. The larynx was crushed in so that the patient could not speak, and breathed with great difficulty. He was cared for at the time of the injury by his family physician, who treated him for a period of one month and later referred him to Dr. Moony, who performed the operation of tracheotomy in February, of the same year.

The physical examination was normal. Wassermann test made at the time of his admission was negative.

Indirect examination of the larynx showed a thickened condi-

tion of the mucous membrane of the larynx and a web-like formation between the vocal bands, with no breathing space when the tracheotomy tube was closed.

On October 30th, 1917, the patient was operated on under local anesthesia, in the following manner:

The patient was placed in the combined Trendelenburg-Rose position to prevent aspiration of blood and secretions. The skin

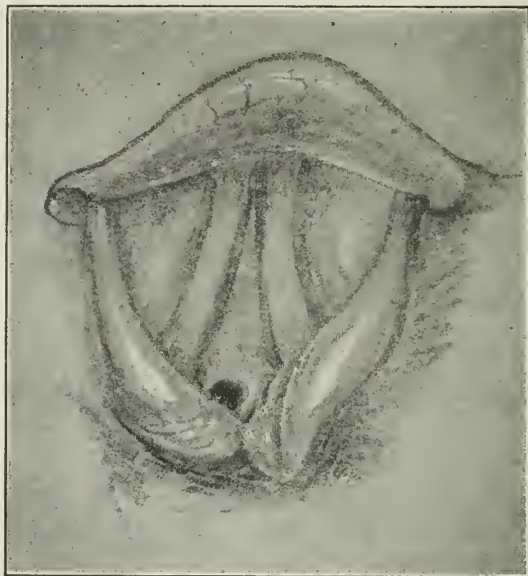


Fig. 1a. Showing condition of larynx in Case I by indirect examination before operation.

was then infiltrated with a one per cent solution of novacaine with the addition of one drop of solution of adrenalin chloride 1 to 1,000 to each dram, beginning at the tracheotomic fistula and extending well above the thyroid cartilage. The interior of the larynx was anesthetized by the local application of a twenty per cent solution of cocaine applied through the tracheal fistula. An incision was then made through the skin and fascia, exposing the larynx, and the larynx was opened by inserting one blade of a Jackson's turbinotome through the tracheal fistula, by one clip of the instrument. With the larynx

held open by means of small retractors, the interior of the larynx was eviscerated by means of small curved nasal scissors and thumb forceps, being careful not to injure the cartilages. A Jackson's laryngostomy tube was placed in position, with a soft rubber tube of sufficient size and length attached to the upper end of the laryngostomy tube by means of a braided silk cord passed through the wall of the lower end of the rubber tubing and tied, the ends being carried outward and made fast, one

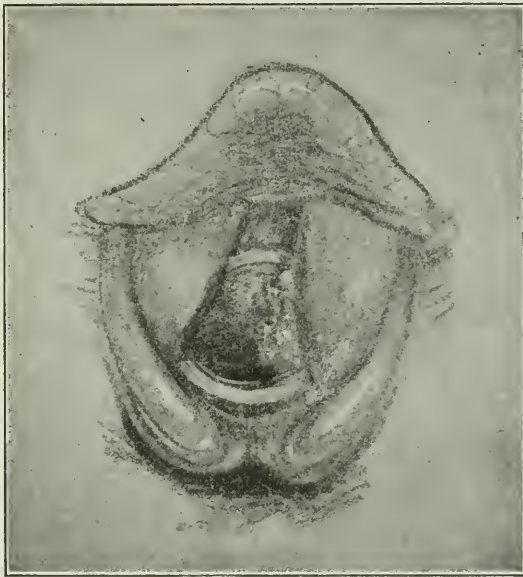


Fig. 1b. Condition of larynx in Case I by indirect examination after operation.

end to the right and the other to the left end of the tube holder of the tracheal cannula. This was done in such a way that the soft rubber tubing could not slide in an upward direction from the vertical end of the cannula. The laryngostomy tube with rubber tube attachment was introduced into the larynx and trachea and dressed with strips of sterile gauze moist with a 1 to 10,000 solution of bichloride of mercury, the sides of the larynx being kept apart by the use of small gauze plugs.

The dressings were changed as soon as they became blood-stained or soiled with the secretions of the larynx, and the entire

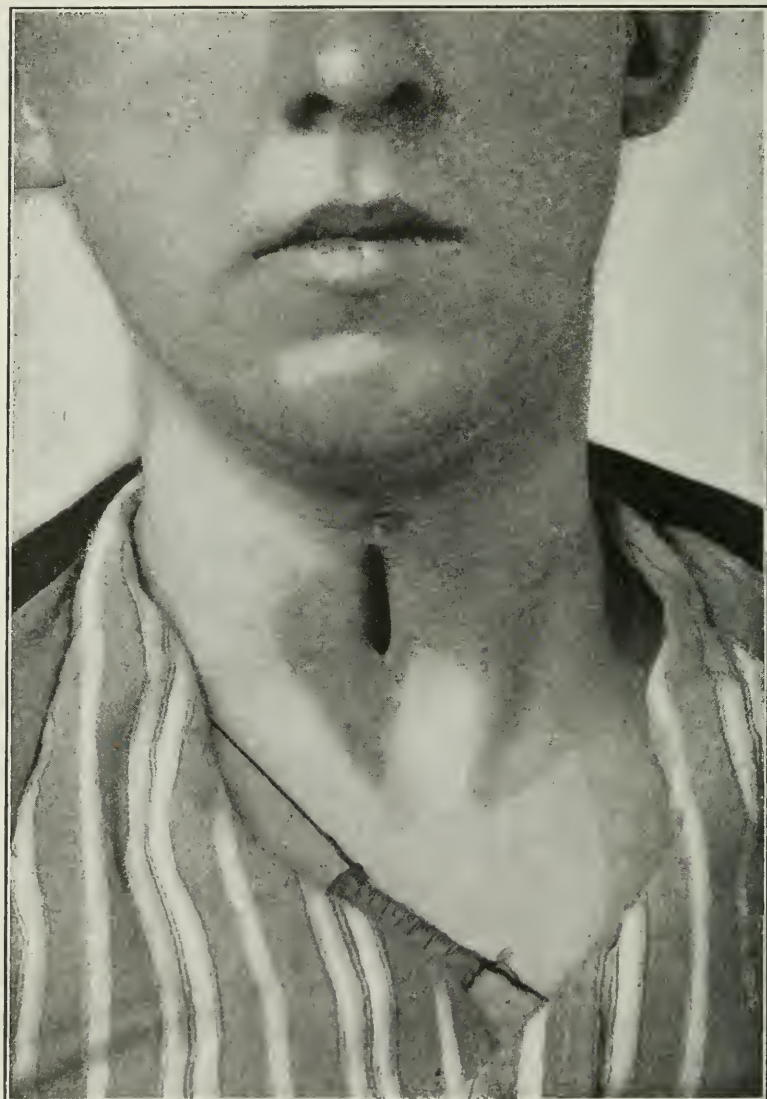


Fig. 2. Photograph of Case I at completion of treatment.

tube was changed each day for a period of several weeks.

After dermatization was well under way, the laryngostomy tube was removed and a Jackson's self-retaining dilating intubation tube was introduced and changed twice a week for a period of two months, during which time the patient was allowed to leave the hospital and pursue a light occupation. The dilating intubation tube was removed about five months follow-

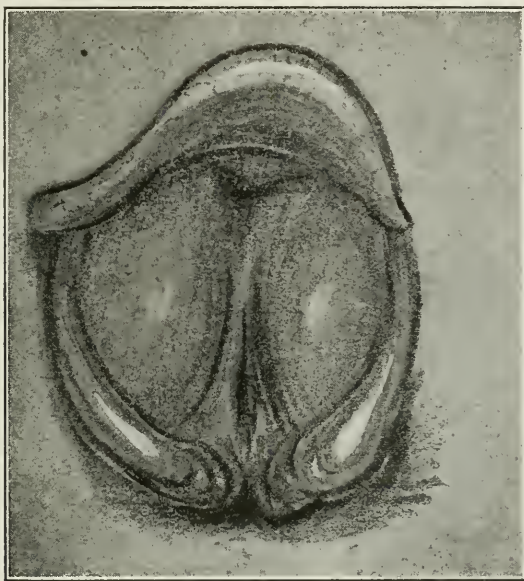


Fig. 3a. Showing condition of larynx in Case II by indirect examination before operation.

ing the operation, at which time the patient was able to breathe perfectly with the laryngeal fistula completely closed.

This patient made an uninterrupted recovery without presenting any difficult problems during the course of his treatment, and is now enjoying good health and able to attend to his daily vocation as bookkeeper.

Case II.—William A. W., aged 32. Occupation, railroad brakeman. Was referred to Jefferson Hospital by Dr. Walton, of Altoona Pa., with the following history:

The patient had always had excellent health. Smoked mod-

erately. Never used alcoholic beverages. Denied venereal infection. Had typhoid fever at the age of 23. Had motorcycle accident four years previous to admission to hospital, as a result of which he was unconscious four days. Has had frequent railroad accidents, but no history of laryngeal injury.

Present Illness: After a motorcycle accident four years previous to his admission to the hospital, patient had lost ninety pounds of weight in about six months. He began to have night sweats and grew short of breath on slight exertion. Had no

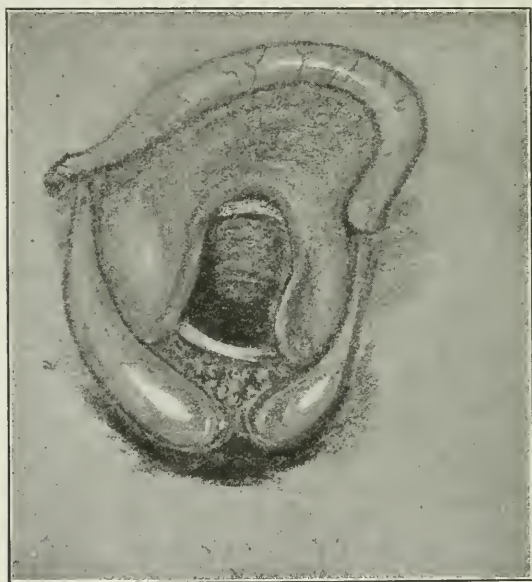


Fig. 3b. Showing condition of larynx in Case II by indirect examination after operation.

cough during the day; at night had attacks of coughing and difficult breathing simulating asthma. About ten months previous to his admission, the patient went to Denver, Colorado for his health on the supposition that he had pulmonary tuberculosis. His attacks of difficult breathing grew more severe and he left Denver in about two weeks. On returning home the patient had such marked dyspnoea that Dr. Walton found it

necessary to perform tracheotomy on February 10th, 1917, in the Altoona Hospital, which gave him marked relief, and since the operation the patient had gained 66 pounds in weight and was much improved in general health and appearance. On admission to the Jefferson Hospital the patient was well nourished and vigorous. Physical examination revealed no abnormalities. Blood examination showed Wassermann positive, plus 3. Upon examining the larynx it was found to be almost completely stenosed by thick, indurated tissue.

Operation for laryngostomy was performed on November 8th in the same manner as described above.

In this case the laryngostomy tube was removed about the fourth month, and the intubation dilating tube was worn by the patient about three months. Epidermatization of the larynx was a great problem in this instance, due to rapidly growing granulations, caused no doubt by his disease, and these were treated by various kinds of caustics without much success. Since the removal of the tube and by keeping the laryngeal fistula patulous by daily dilation with a Trousseau dilator, and wearing a plug made from a tracheotomy tube, epidermatization has progressed more satisfactorily. While he is now able to sleep comfortably through the night and has no difficulty in breathing during the day, and seems to be improved to a slight degree weekly, yet the result is not as good as we expect to obtain. He is still under observation. Specific medication has been continued throughout his treatment.

Case III.—C. C., aged 28 years, Italian laborer, came to the Jefferson Hospital, Nose and Throat Department, in May, 1917, with the following history: Had typhoid fever two and one-half years previously, and during the beginning of his illness drank some Sloane's Liniment for a cold. Was taken to the Pennsylvania Hospital where a diagnosis of typhoid fever was made, and during his convalescence developed a laryngeal perichondritis and a tracheotomy was performed to relieve his marked symptoms of stenosis. Several attempts had been made for decannulation, but each time the tracheotomic cannula had to be reintroduced because of the marked dyspnoea. He came to the Jefferson Hospital for removal of the tube.

On admission his general physical examination was found to be normal. Wassermann blood test negative. On direct exami-

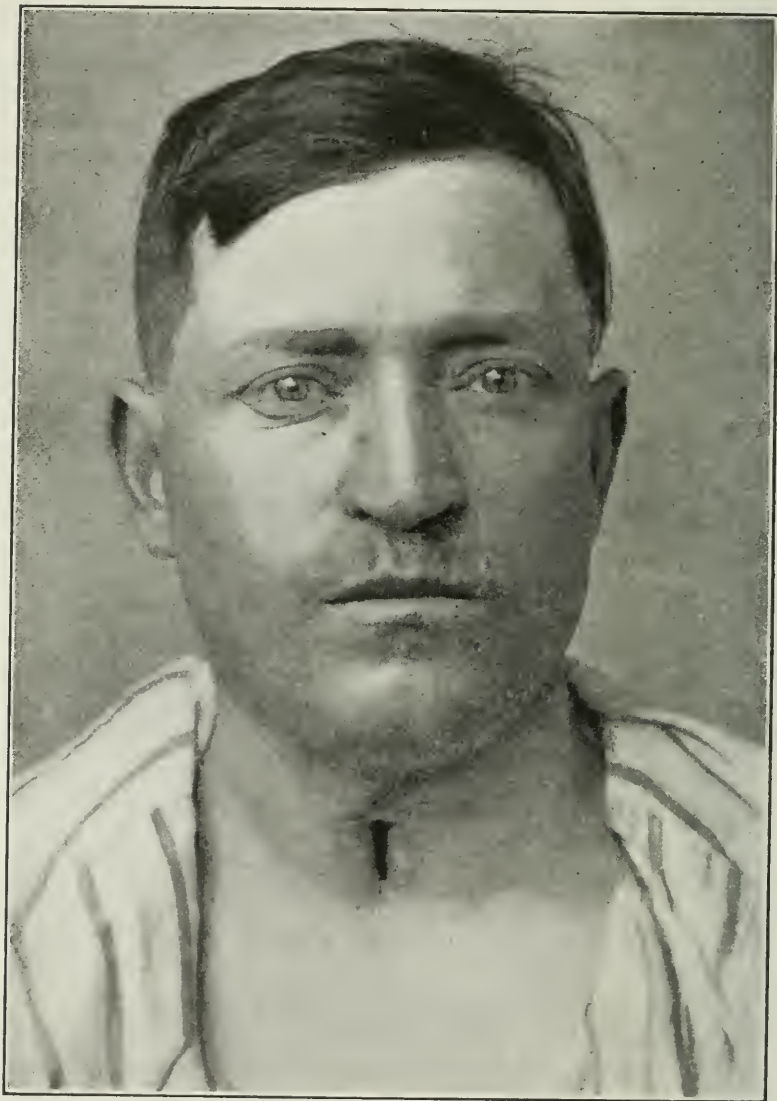


Fig. 5. Photograph of Case III at completion of treatment.

nation of the larynx there was a very small opening posteriorly, which admitted a limited amount of air when the tracheotomy canula was closed. The whole larynx seemed to be greatly indurated and the mucous membrane adherent.

In June, 1917, the operation for laryngostomy was performed as already described. When the larynx was opened it was found necessary to remove a great amount of thickened mucous membrane, and a spur which had formed at the upper part of the tracheotomic fistula, composed chiefly of fibrous tissue. This was thoroughly removed by small nasal seissors. His laryngostomy tube was worn for about four months and the dilating intubating tube was discarded after wearing it for a period of five months. A longer period of dilation was required in this patient because of a tendency to contraction of the trachea at the point of the old tracheotomic fistula. Dermatization progressed rather slowly, and granulations within the larynx were frequently removed by tissue-forceps and the occasional application of a ten per cent solution of nitrate of silver. The final result seems to be very satisfactory, and the patient is now able to breathe comfortably when the laryngeal opening is completely closed. He is now working daily and enjoying the best of health, and has not had a tube of any sort inserted for three months.

Case IV.—A. C., aged 4, was admitted to my service at the Philadelphia Hospital, in August, 1917, with a history of having been tracheotomized one and one-half years before, at the Municipal Hospital in Philadelphia, following an attack of diphtheria, and was admitted to the Philadelphia Hospital for decannulation.

Under rectal anesthesia the operation for laryngostomy was performed in the same manner as above described.

This little patient was permitted to wear his laryngostomy tube much longer than was necessary in the above cases, because it was found impossible to see him as frequently as is necessary with such patients. He was later removed to the Jefferson Hospital where he could be under constant observation, and owing to the difficulty in having tubes made properly, due to the manufacturers being extremely busy with other forms of work,

we have not been able until now to have made a suitable sized intubation dilating tube. He is now being intubated by the direct method, and bids fair to have an excellent result and freedom from his tube within a reasonable length of time.

RECEPTION AND LECTURE MONDAY EVENING

On Monday evening an informal reception was held by the President and Mrs. Halsted, in the drawing room of the Hotel Chelsea. Following this Dr. Delavan gave an illustrated lecture entitled "Some old friends of Laryngology and of our Association."

ANNUAL DINNER

THE ANNUAL DINNER

Tuesday Evening, May 28, 1918.

From the earliest days of the Association, when Dr. Cohen in Philadelphia established an almost unattainable precedent, the Reception given by the President and the Annual Dinner have been its chief social events. Under no circumstances has the holding of the Dinner ever been omitted; the attendance has invariably been large, and the tone of the occasion bright and most genial. In no other similar gathering has the spirit of friendship and of mutual esteem been so strongly developed or so evidently manifested, while with the ever growing traditions of the passing years the interest has steadily increased. Indeed, these occasions have been intellectual as well as social landmarks in our history, for they have given opportunity for the expression of views relating to the welfare of the Association and the conduct of its affairs as well as for the interchange of friendly sentiment and of inspiring encouragement. In connection with them certain names stand out pre-eminent as upholders of the dignity and altruism of the institution.

It is earnestly to be hoped that the standards given us by these men be perpetuated, in order that the value of the opportunity may never be lost sight of and that it may remain in the future, as it has been in the past, a source not only of keen enjoyment and substantial benefit, but of continued inspiration to higher and better things.

The Dinner of 1918 brought together a notable company, foremost among whom was our distinguished Honorary President. The occasion was eminently a military one, the speakers, in addition to Dr. Cohen, being Colonel Herbert S. Birkett of Montreal, just returned from nearly four years of arduous and brilliantly successful service, most of it at the seat of war; Colonel Lyster, the guest of the Association, and Colonel Harris P. Mosher. The speakers were introduced by the President of the Association, Dr. Halsted, himself about to depart upon an important Red Cross Mission to France.

ADDRESS OF DR. J. SOLIS COHEN

The President, turning to his left, addressed the Honorary President, remarking that the Fellows would be glad to learn from him the personal history connected with the series of patriotic insignia that ornamented the left breast of his coat; and Dr. Cohen responded practically as follows:

Mr. President, Fellow members of the American Laryngological Association: These things to which allusion has been made are culminations of a series of personal events which began with my study of the History of the United States as taught in the public schools of Philadelphia. Like every other boy I became thrilled with the glamour of the exploits of Washington, of Putnam, of Anthony Wayne, and of all the other Revolutionary heroes, and wished that I had lived in those stirring times to have participated in them. Not long after that period the Mexican War broke out. My father tried to enlist as a soldier, and I tried to enlist as a drummer boy, but my mother drew my father back, and my father drew me back, and so neither of us got to go.

Then early in 1861 the uncivil war broke out between the States, and as a patriotic unionist, I applied to the United States Government for a position as Assistant Surgeon in the Army, and received a reply from Washington, stating that so many similar applications had been received from the States of Pennsylvania, New York and Virginia that it would be impossible to take my request into consideration. Well, there I was, stranded for the moment. I could not get in as a doctor so I determined to go in as a private. At that time the President of the United States had called upon the country for seventy-five thousand troops with which to crush secession in ninety days. The way these troops were raised, in Pennsylvania, at least, was a caution. Almost any man succeeding in getting together a regiment of volunteers could get a commission as Colonel of that regiment whether he was ignorant of military

affairs or not. All he had to do was to raise the proper number of men, offer them to the State, name his subordinate officers and receive an official sanction. Similarly any man who could raise a company could be appointed its Captain and any man raising a certain complement for that Company could obtain his commission as first or second lieutenant as might be. Any two men who would help the Colonel raise his regiment and loan him money to help pay their keep until reimbursed by the Government on their being mustered into the U. S. Service, could be rewarded with commissions as Lieutenant-Colonel, and Major respectively. And the Colonel appointed the Surgeon and the Assistant Surgeon to his own regiment.

In one of these companies I enlisted, intending to look out for a medical appointment in some regiment and then get transferred, or if this failed, try to get a commission in the regiment in which I had enlisted. So I sent in an application for a Lieutenancy to the Governor of Pennsylvania and after a few days of drilling as a private received the official document commissioning me a First Lieutenant in the Regiment. Before I had time to buy my uniform, a medical friend met me and told me he could get me a position as assistant surgeon in a regiment in which he was the Surgeon. So I went with him to the Colonel, was introduced, and was promised the appointment. That regiment had just been beaten back from Baltimore, mobbed as it tried to pass through to Washington to receive its equipment; and there were a number of cut heads and broken limbs to be attended to in the abandoned Post Office of Philadelphia where they were assembled, and I went to work immediately.

On reporting to the Colonel of the regiment in which I was a Lieutenant that I had accepted an Assistant Surgeonship in another regiment as more congenial, I was told it was all right. My commission was handed in, my name scratched out, and that of another aspirant inserted; and curiously enough a few months later I came across that man doing duty on the opposite side of the Bladenburg road out of Washington which separated his regiment from mine. He came across to see me and was doing efficient work.

The regiment with which I was mustered into the U. S. Service as Assistant Surgeon was the 26th Pennsylvania Infantry, the first regiment enlisted "for three years or the war," after all hopes of crushing the rebellion within ninety days had been given up. We were sent to Washington to help guard that city.

Just before the first battle of Bull Run I received a communication from the U. S. Government at Washington stating that if my application for an assistant surgeoncy in the U. S. Army still held good I could apply for examination by the Army Medical Board then in session at New York. Obtaining leave of absence for the purpose, I started for New York, but in Baltimore I heard of the Bull Run affair and deemed it my duty to hurry back to my regiment. Reversing my route I reappeared at Camp near Washington, and a few days later became the recipient of a written request signed by all the officers of the regiment that I would remain with them and not enter the regular service, so I stayed.

A few months thereafter a medical friend in the regular service came to see me and told me that a Naval expedition was being organized to go to the Southern Coast, and that Judge Kelley of Philadelphia, the great iron Congressman who "never forgot the rock from which he had been hewn," had requested him to call and find out whether I would not like to go along as he wanted as many Philadelphians in the expedition as he could get, and if so, he would manage the exchange. Well, we still looked upon the war as a sort of picnic, and as I had passed a few months in the army, I thought it would be a good thing to get some experience in the navy too, before the war ended, and so I said I'd be glad to make the exchange.

In a few days I received a notice from headquarters ordering me to appear at Washington on the following Saturday at the office of the Secretary of the Navy for a permit to go before the Medical Examining Board for the position of Acting Assistant Surgeon in the U. S. Navy. Getting leave of absence for a day from General Hooker our brigade commander, I rode to Washington and presented myself at the office of the Secretary of the Navy. On explaining my business and replying to a question

that I had been sent by Congressman Kelley, the Secretary called in an officer and directed him to take me over to the office of the Bureau of Medicine and Surgery and introduce me to the Chief with his compliments. So I came to the Head of the Medical Staff of the Navy under very good auspices. When I explained my business to the Chief of the Bureau of Medicine and Surgery—there was not any Surgeon-General of the Navy in those days—he asked me when I would be ready for examination and I said: “I’m ready now, that’s what I’ve come here for.” “I’m very sorry,” he replied, “but the Board has just adjourned and they won’t meet again for several days.” Noticing my dejection, he said, after a moments thought, “Suppose I examine you myself? Will that do?” “Admirably,” said I. So he asked me my whole name, the whole name of my father, the whole name of my mother, the name of my clergyman, and asked me to mention the names of any of my friends prominent in the medical or legal professions, or in commerce. Then, having quieted my agitation, he said, “Well, Doctor, suppose you were called to a patient who was bleeding internally from a bullet wound in his lung, what would you do?” “I’d bleed him at the arm,” I responded. “Why?” said he. “To reduce the force of the flow of blood in the entire organism, and thus favor clotting at the seat of the internal hemorrhage.” “So,” said he, “and suppose that it did not avail, what would you do then?” “I’d bleed him at the other arm,” “and why?” said he. “For the same reason that I had bled him in the first place.” “Well,” said he, “I’m satisfied. Now go back to your regiment and you’ll hear from us before long.” On Monday the report of the Board of Examiners was published, and in deference to the Chief of the Bureau of Medicine and Surgery, the candidate whom he had passed in a special examination headed the list as number one in the record. In a few days I received my commission in the Navy and showed it to General Hooker, who gave me permission to go to Washington again where I presented the document to General McClellan and he ordered me an honorable discharge from the U. S. Volunteers “in consequence of an appointment by the President of the United States as an acting Assistant

Surgeon in the U. S. Navy." Up to this moment I had been for several days in both branches of the Military Service at once, and had been drawing double pay.

I was sent down with the expedition to Port Royal, as Surgeon of the Florida, and my entire Naval Service was with the South Atlantic Squadron, in the course of which the vessel participated in several engagements. At one time the Flag Ship was ordered home, and as my Captain was left the Senior Officer on the Station, I became for a time Acting Fleet Surgeon of the Squadron—subsequently I was transferred to the old line battleship Vermont which was used as a Hospital and Store ship, and finished my naval career on that vessel. After nearly three years service I was compelled to resign from the Navy and returned to my home. Sometime afterwards I received a communication from Washington requesting me, if able, to accept an appointment as Acting Assistant Surgeon in the U. S. Army for duty in the Army Hospitals in Philadelphia, was assigned to two hospitals in succession and finished my military career in the Turner's Lane Hospital.

Now, while in the volunteer service I was attached to the Army of the Potomac. After the war the Society of the Army of the Potomac was established, and having served in that army, I became entitled under certain payments to become a life member of the Society, and hence this decoration on my coat. After the war, too, the Naval Order of the United States was organized, and having served in that Navy I became entitled to this service medal on which is represented the battle between the iron-clads, Monitor and Merrimac, and having joined the Naval Order of which I had been an officer in its Pennsylvania Commandery, I became entitled to wear this other naval decoration. After the war some of the Army and Navy officers organized the Loyal Legion of the United States, to membership in which I was also entitled and so I gained this insignia of the Loyal Legion in the Pennsylvania Commandery of which I am at present Senior Vice-Commander. Finally, I became initiated into the Grand Army of the Republic, which, unlike the other organizations which are to be perpetuated by admissions of members by inheritance, is to die out of existence with

the final breath of its last surviving member, and so I became entitled to wear this insignia of that unique body. And so, Mr. President, I have accounted for all these "toy things" on my bosom.

And now Mr. President, Fellow members of the American Laryngological Society, Military, Native, and Foreign Guests, let me proceed to some considerations more serious.

The Grand Army of the Republic as the representative of the loyal military forces in the war of the Secession may be regarded as the great riveting link which clinched the chain of events extending from the conception of our independence to our adult maturity as the greatest and noblest Republic thus far evolved among the nations. That Grand Army of the Republic! which, on the call of President Lincoln more than half a century ago rallied to the flag to prevent its desecration by disruption of the Union. After considerable disasters, many reverses, distressful suffering at home and afield, and great losses of life, the armies and navies of the Republic accomplished the purpose of that great and good patriot—the murdered Savior of the Union—the one man to whose memory we pay the same tribute of affectionate reverence theretofore reserved for the Father of his Country.

Like Moses of old, who from their land of bondage led the Israelites to their land of promise, Father Abraham was permitted a limited view of his completed mission and was debarred by death from taking part in its further development, and like the Biblical prophet of the Exodus, the secular prophet of the recession became destined to live throughout the ages of man spiritually enshrined in the hearts of his people and his people's posterity.

Under the sagacious counsel of that wise leader, "Honest old Abe," as we loved to call him, his courageous steadfastness, and his adroit deflections of perturbing strokes of interference, the United States escaped dismemberment. Loosened for a while were the bonds which encircled them, but amiable readjustment took place in due time, until now, thanks to past and passing events, their separate symbols sparkle in the international firmament as a brilliant constellation whose forty-eight bright stars

clustered on the true-blue field of our unsullied emblem, typify forty-eight sovereign states, united more cordially than ever. May they so continue in perpetuity!

In the frightful military crisis disturbing the serenity of this twentieth century, startling Europe with its abrupt brutal violence, alarming the world by its revolting disregard of conventionalized amenities of warfare between nations unbrutalized by culture,—which, in its tragic progress has tentacularly entangled Orient and Occident,—the most sanguinary, most destructive, most portentous crisis of all the centuries, it is our duty here to make sure that the patriotic spirit which animated the body of the immortal Washington, and the selfsame spirit which pervaded the soul of the equally immortal Lincoln shall thrill the blood of every resident of these United States, native born and foreign born, all of them, men, women, and children.

In facing the obligatory responsibilities of this appalling crisis, the surviving veterans of the early sixties of the last century are too feeble in the flesh, to take part in military service at the front. They must stay at home, and grieve that they must stay at home; but their patriotic spirit remains unimpaired,—strong as it was in 1861 when they sallied forth to fight for unity, for federal ethics, and for freedom from shackles of slaveholdery:—Strong as was the spirit of their predecessor of 1776, who fought for colonial freedom and for the rights of man; and so in 1917 they rejoiced to see their sons and grandsons, and the sons of and grandsons of their Confederate antagonists in the War of the Rebellion, and the patriotic male and female relatives and comrades of both sets of sons and grandsons for-gathering in a mighty military organization of the whole United States to fight for international freedom, for the brotherhood of man, for peace from warfare, and for the inherent right of all the peoples on the globe, great and small, to choose their own forms of government unhampered by any vestige of autocratic compulsion.

In their pursuit of these humanitarian objects, the hearts of the veterans are following the hearts of their successors to the limit, deeply deploring their physical inability to go with them in the body, hand in hand, foot to foot, to share their

perils, to divide their pains. Could but some supermedical leucocytologist infuse into their senile veins juvenile serum potent enough to neutralize the decays of old age, they would promptly face front with the marching batallions, and keep abreast in the procession. And when they set foot upon Belgian soil, they would gladly lend the Allies all their strength to help them chastise those pestiferous Prussians whose vile brains have devised and predeterminedly forced into practice the most abominably diabolic deeds of malignant malevolence that have ever debased mankind. They would strive to be in the very front rank of the front when the victorious Allies shall seize with iron grip the mailed fist raised to smash democracy, and see them crush it into such a pulp as shall put it (to pilfer a phrase coined by Fenimore Cooper) in a permanant "state of innocuous desuetude."

Then, then, perhaps, might our beneficent Goddess of Liberty soar on her Columbian pinions to the zenith, and poising there spread her celestial canopy of peace over *all* the nations of the earth, that Freedom and Friendship may flourish everywhere for evermore.

A SYNOPSIS OF THE ADDRESS OF COLONEL BIRKETT

MR. PRESIDENT AND FELLOWS:

Permit me to express to you, although in words quite inadequate, my warmest appreciation of the very kind reception you all have given me this evening upon the occasion of my return from France after an absence of three years on active service. I wish also to take this opportunity of reiterating what I expressed in a letter to you last year, my very grateful thanks for the splendid donation contributed by the Fellows to a fund devoted to adding more comfort to the wounded and sick soldiers. I know you all would have rejoiced could you have seen with what pleasure the men appreciated these comforts last Christmas Day.

You, sir, have referred in terms altogether too flattering to my work in France, and you have asked me to tell you a little more about it.

At the outbreak of war in 1914, being then on the Reserve of Medical Officers of the Canadian Militia. I made application to be restored to the active list, which was granted. The question then arose in my mind how best our medical services could be placed at the disposal of our Allies. The idea then conceived was a hospital on the Lines of Communication whose personnel would be drawn from the teaching staff of the Medical Faculty at McGill University, the nursing staff from the two hospitals (Montreal General, and Royal Victoria) in which institutions the clinical teaching of the Faculty is carried out. The rank and file were made up of students of all Faculties, with the majority from medicine, of the Universities.

Early in 1914, the bed capacity of a general hospital was 520 beds, and upon these lines the hospital was organized. And here I may state that this hospital, known as No. 3 Canadian General Hospital (McGill), was the first medical unit offered by any university in the British Empire. The example thus set was soon followed by others. The McGill Hospital, as it was generally known, was the first of all university units to take the Field.

The offer of this hospital to the Canadian Government by the University authorities was readily accepted, and passed on to the War Office where it was promptly given warm approval. No sooner was the hospital organized upon a basis of 520 beds, than we received instructions from the War Office that all General Hospitals would be increased to 1,040 beds, and with this organization we proceeded to France, landing at Boulogne on the 15th of June, 1915.

Our first resting place was at Camiers, where our hospital, entirely under canvas, was pitched. Shortly after our arrival we had as our close neighbor the Harvard Unit, amongst whose personnel we had many warm friends and with whom we had many interesting athletic contests.

Owing, however, to unsuitable arrangements and prevailing weather conditions, we had to strike our hospital tents and move into Boulogne. And here we took over the Indian Meerut Hospital, which was being evacuated because the Indian troops were being moved out of France. Our present site was originally a Jesuit College, and unfortunately in 1907, the beautiful buildings were destroyed by fire, and the loss of accommodation for hospital patients was made good by the erection of a large number of huts.

The hospital covered an area of twenty-two and a half acres, and our bed capacity was raised to 2,100 beds. The personnel was, to some extent, increased; and from 73 nursing sisters we now had 120.

The heaviest day which the hospital had was in July, during the Battle of the Somme, upon which occasion we admitted 893 patients, evacuated 1,000, and at midnight of the same day we had 1,100 in the hospital.

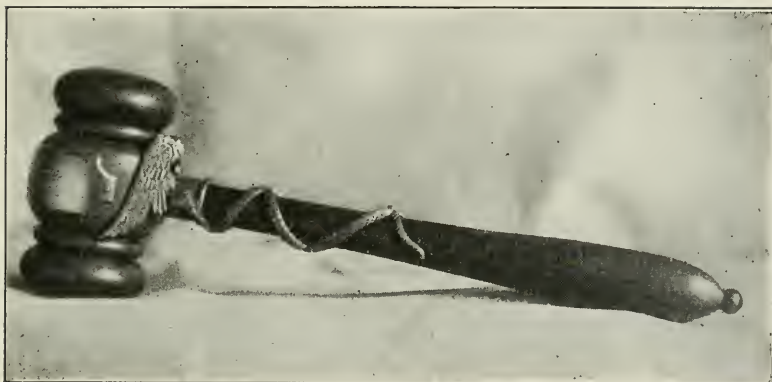
I am afraid I will weary you if I proceed much further, and I will therefore sum up the work by saying that in three years the hospital received and evacuated 210,000 patients; the general mortality was a half of one per cent. Over 8,000 operations were performed, with a mortality of 2.5 per cent. These results were obtained through the splendid team work which existed among all ranks, and it was through the loyalty and devotion to duty of

officers, nursing sisters, non-commissioned officers and men that such happy results were obtained.

In conclusion, Mr. President and Fellows, let me thank you once more for having listened so patiently to what I have said, and to express again my warmest appreciation of the heart-stirring reception accorded me this evening.

Eloquent addresses were made by Major Theodore F. Lyster, U. S. A., who, appointed by the U. S. Government to represent the Army as a member of the Committee of the National Societies representing the Department of Oto-laryngology, advisory to the Council of National Defense, had given invaluable encouragement and assistance to the members of the Committee in their efforts to organize the Special Services of Oto-laryngology in the Medical Service of the Army, and by Major Harris P. Mosher, who, as a member of the same Committee and through other patriotic services rendered at home and in Europe had splendidly merited appreciation and applause.

BUSINESS MEETINGS



GAVEL PRESENTED TO THE ASSOCIATION BY SAMUEL JOHNSTON, M.D.

REPORT OF FIRST COUNCIL MEETING

January 12, 1918

The Annual Meeting of the Council of the American Laryngological Association was held Saturday evening, January 12th, 1918, at the office of the Secretary, 44 West 49th Street, New York City, Dr. Halsted, President, in the Chair. In addition, there were present Drs. Clark, French, Goodale, Greene and Smith.

In view of the possibility of there not being a sufficient number of scientific papers to make the meeting a success, commensurate with former meetings, it was decided to accept the offer of the American Laryngological, Rhinological and Otological Society to overlap with them in their meeting on our last day. It was further decided that the Annual Meeting of the Association should take place at Atlantic City, Hotel Chelsea, beginning Monday, May 27th, 1918, including Tuesday, May 28th and the half of Wednesday, May 29th, the program to be based upon the following outline:

First, the President's address on Monday, May 27th, at 10:00 a. m.; second, papers or addresses from those participating in the Jubilee Celebration; third, election of new members. After 1 p. m., other papers or addresses by those participating in the Jubilee Celebration, and at 7:30 p. m., Monday evening, the Annual Dinner of the Association.

On Tuesday, May 28th, at 10:00 a. m., the Executive Session, in accordance with the Constitution, to be followed by scientific papers by the Fellows of the Association. Tuesday afternoon also to be devoted to scientific papers by Fellows of the Association.

Wednesday morning, May 29th, a conjoint meeting to be held under the auspices of the President's of the American Laryngological Association and the American Laryngological, Rhinological and Otological Society, the first three papers to be read by Fellows of the American Laryngological Association and the last three by members of the American Rhinological, Laryngological and Otological Society. During the latter half

of the morning session on Wednesday, the election and installation of officers of the American Laryngological Association.

The President and Secretary of this Society were appointed a Committee, empowered to arrange the program with the officers of the American Rhinological, Laryngological and Otological Society and with the Otological Society.

The Council recommended to submit to the Association for election to Emeritus Fellowship the names of Dr. John W. Farlow and F. Whitehill Hinkle.

To Active Fellowship: Dr. Gerard Hutchison Cox, of New York City; Dr. Lee Wallace Dean, of Iowa City, Iowa; Dr. Elmer L. Kenyon, of Chicago, Ill., and Dr. Otis Fielding Lewis, of Philadelphia, Pa.

The Council likewise wishes to present the resignation of Dr. Albert C. Getchell, of Worcester, Mass., which they have accepted, subject to the approval of the Association, with regret.

There being no further business, the Council adjourned.

DR. THOMAS H. HALSTED, *Chairman*.

DR. HARMON SMITH, *Secretary*.

SECOND COUNCIL MEETING

Monday, May 27th, 1918, at 9:00 a. m.

Present: Drs. Halsted, Rhodes, MacCoy, Goodale, Bryan, Clark and Smith.

Moved and carried that the Annual Dues of Active Fellows in War Service be remitted, upon the written request of the Fellow engaged. .

It was moved and carried that the incoming Secretary be authorized to have a proper and legal seal of the Incorporated Association made, and that he be authorized to affix this seal to the receipts required by the Attorneys of the Casselberry estate, and the same returned to Mr. Knox, the Association's Attorney, for collection of the Bonds now to become the property of the Association.

Further, it is advised that in view of the expenditure of \$118.14 by the Treasury as an inheritance tax upon the Five

Thousand Dollar legacy of Dr. Casselberry, that the General Fund of the Association be reimbursed from the accrued interest on the legacy.

Recommended to the Association that Dr. Stanton Friedberg's paper, "Bacillus Meningococcus in Adenoid Tissue" be read by title and appear in the Transactions, as the title came in too late to appear on the program.

Action of Secretary in ordering only 260 volumes of the Transactions instead of 300 as authorized by the Association. confirmed.

Likewise, action of Secretary in withholding Transactions from our Honorary and Corresponding Fellows residing in Prussia, Austria, and Hungary was confirmed.

Recommended that Dr. John W. Farlow and Dr. F. Whitehill Hinkle be honored by election to Emeritus Fellowship.

There being no further business, the Council adjourned.

DR. THOS. H. HALSTED, *Chairman*.

DR. HARMON SMITH, *Secretary*.

EXECUTIVE SESSION

First Day, Monday, May 27, 1918.

At the close of the regular morning session the Association went into executive session, the routine business being the election of Honorary, Corresponding, Emeritus and Active Fellows, the appointment of an Auditing Committee, and the election of a Committee for the Nomination of Officers of the Association for the Ensuing Year.

No Honorary or Corresponding Fellows were elected.

John W. Farlow, M.D., of Boston, Mass., and F. Whitehill Hinkel, M.D., of Buffalo, N. Y., were elected Fellows Emeritus.

Gerard Hutchison Cox, M.D., of New York, N. Y.; Lee Wallace Dean, M.D., of Iowa City, Iowa; Elmer L. Kenyon, M.D., of Chicago, Ill., and Otis Fielding Lewis, M.D., of Philadelphia, Pa., were elected Active Fellows. Dr. Kenyon, however, did not qualify, through failure to present the candidate's thesis required by the rules of the Association.

The President appointed as Auditing Committee Doctors Henry L. Swain and W. Scott Renner.

The Association then elected as Nominating Committee, Doctors H. L. Swain, Greenfield Sluder, D. Bryson Delavan, Joseph L. Goodale and Lewis A. Coffin.

The President announced that an informal reception would be held in the evening at which Dr. Delavan would give a lantern slide exhibition and lecture upon the subject, "Distinguished Representatives of American Laryngology, With Some Well Remembered Friends from Abroad," and that the Annual Dinner would take place Tuesday evening.

In view of the fact that the Surgeon-General of the United States Army would be retired by age limit in October unless re-appointed, and in view of his pre-eminent value at the present time in the highly responsible position which he is now holding, it was moved: "That it is the sense of the American Laryngological Association that Surgeon-General Gorgas should succeed himself and that a Committee of Three should be appointed to draft a set of resolutions to that effect, to be sent to the President of the United States." The motion was unanimously carried. Adjourned.

SECOND DAY

Tuesday, May 28

The Business Meeting was called to order promptly at 10 o'clock, a. m., the President in the chair, and the regular business of the Annual Meeting of the Association was transacted as follows:

REPORT OF THE SECRETARY

DR. HARMON SMITH

The Secretary begs leave to submit to the Association the following report:

Since our last Annual Meeting in Atlantic City, May 28, 29, and 30, 1917, there has passed from our active list our distinguished Fellow, Dr. E. Fletcher Ingals. From the remaining

lists of Honorary, Corresponding, and Emeritus Fellows, there have occurred no vacancies, as far as ascertained.

By resignation, we have lost Dr. Albert C. Getchell, F. Whitehill Hinkel, and John W. Farlow, thus reducing our active Membership to 79.

Dr. John W. Farlow and Dr. F. W. Hinkel have been honored by election to Emeritus Fellowship, and we have elected three new Active Fellows, bringing our number again to 82.

While "Quality, Not Quantity," is our watchword, yet 82 in a possible membership of 100 is apparently far too conservative when close observation reveals the fact that the allotted three score years and ten is fast approaching for a goodly number of our Fellows.

There are now 192 Libraries, Societies, and Periodicals receiving the Transactions, and from the grateful acknowledgments from most of them I infer that the volume is duly appreciated. No new Exchange has been added this year.

Following the reading of his report the Secretary addressed the Association as follows:

Fellows of the American Laryngological Association: For seven consecutive years it has been my pleasurable privilege to serve you in the capacity of Secretary. I had hoped to make it an equal time with that of my distinguished predecessor, Dr. James E. Newcomb, but circumstances over which the will has no control necessitate my being satisfied with a biblical "seven" rather than with the more modern number of "eleven." While my willing and untiring efforts have never enabled me to attain the success of that ideal Secretary, Dr. Newcomb, yet I feel a pardonable pride in having had presented to me for this long period the opportunity to serve you in this capacity. The position has yearly become more difficult, owing to the increased work in the production of the Transactions and the inefficiency of those having its publication in hand. Printers are becoming more unreliable, owing to labor disturbances, and the proof is delayed longer each year until it has become impossible to get the Transactions out the same calendar year in which the papers are presented. Again, the great question now being settled in Flanders, France, Russia and Italy is so absorbing that the

Fellows are loath to concentrate their attention upon the science of our specialty, thus making a full programme difficult.

I wish to emphasize the solace I have gleaned from the courteous regard which each and every Fellow has manifested toward the position of the Secretary, and I lay the flattering unction to my soul that a part, at least, has been donated to the individual holding that position. A longer tenure of office, I am sure, would not conduce to the efficiency of the post nor to the good of the Association. I believe the best efforts of a Secretary are given in the first five years of his office, when there is less staleness than afterwards.

Again I assure each of you that my pleasant personal relations have been the greatest satisfaction attendant upon the office, and that I shall always treasure your generous consideration of my shortcomings.

Following the report of the Secretary it was moved: That the annual dues of Active Fellows in war service be remitted upon the written request of the Fellow engaged. Carried.

It was also moved: That the incoming Secretary be authorized to have a proper and legal seal of the Incorporated Association made, and that he be authorized to affix this seal to the receipts required of the attorneys of the Casselberry estate, and the same returned to Mr. Knox, the Association's Attorney, for the collection of the bonds, now to become the property of the Association. Carried.

REPORT OF THE TREASURER

DR. J. PAYSON CLARK.

Treasurer's Statement to May 1, 1918

Receipts

Balance from old account.....	\$902.68
Dues collected	1,230.40
Sale of Transactions	7.95
Interest on deposits	19.39
Part of moving pictures expense.....	10.00
	<hr/>
	\$2,170.42

Expenses

Stenographer, 1917 meeting	\$100.00
Waiters' fees, 1917 dinner	10.00
Stereoscope and moving pictures	36.00
Secretary's office expenses	306.26
Printing, postage, etc., Secretary	168.96
Transactions, 39th annual meeting	992.25
Treasurer's expenses	9.44
Inheritance tax, Casselberry legacy	118.14
Collecting checks30

\$1,741.35

By balance in bank 429.07

\$2,170.42

ASSETS OF THE ASSOCIATION

Invested

DeRoaldes Prize Fund	\$500.00
Interest to February 1, 1918.....	246.50

\$746.50

Current

Unpaid dues	\$120.00
Bank balance	429.07

\$549.07

Total assets \$1,295.57

Liabilities, none.

Respectfully submitted,

J. PAYSON CLARK, *Treasurer.*

Audited and approved:

HENRY L. SWAIN,

W. SCOTT RENNER,

Auditing Committee.

The Treasurer called attention to the fact that when the dies for striking the medal for the DeRoaldes prize were made, in 1912, it was voted by the Association that the cost be de-

frayed from the treasury of the Association and not from the DeRoaldes fund. The sum of \$175 was accordingly appropriated. In view of the present straightened condition of the treasury he suggested that it be reimbursed from the now accumulated surplus of the DeRoaldes fund. The question was fully discussed and a motion to the effect that the sum of \$175 be transferred from the accumulated interest of the DeRoaldes fund to the treasury of the Association was carried.

The Treasurer also stated that following the meeting of last year the sum of \$660, from sixty-six subscribers, had been transmitted by him to Col. Birkett, for use in the latter's military hospital in France.

REPORT OF THE LIBRARIAN

DR. JOSEPH H. BRYAN

The Librarian reported that owing to war conditions no additions had been made to the library during the past year.

REPORT OF THE AUDITING COMMITTEE

The Committee reported that they had audited the accounts of the Treasurer and had found them correct. Voted that the Report be accepted.

REPORT OF THE NOMINATING COMMITTEE

DR. HENRY L. SWAIN

The Nominating Committee reported the following list of candidates for membership upon the Board of Directors for the ensuing year:

CORNELIUS G. COAKLEY, M.D.	JOSEPH H. BRYAN, M.D.
GEORGE E. SHAMBAUGH, M.D.	ALEXANDER W. MACCOY, M.D.
JOHN R. WINSLOW, M.D.	THOMAS R. FRENCH, M.D.
D. BRYSON DELAVAN, M.D.	JOSEPH L. GOODALE, M.D.
J. PAYSON CLARK, M.D.	THOMAS H. HALSTED, M.D.

REPORT OF COMMITTEE ON CONTROL OF CANCER

DR. D. BRYSON DELAVAN

The Chairman reported that notwithstanding the transference of Mr. Curtis G. Lakeman, the very efficient Secretary of the Society, to an important department of the Red Cross in Washington, the work of the American Society for the Control of Cancer had been continued during the past year under the conditions described in the last report. A series of monthly bulletins had been published which contained complete reports of the activities of the Society throughout the country. These included the formation of new cancer committees, the expanding of the scope of old committees and the increase of their activities, the growth of research laboratories, and the development of the field of public instruction through lectures, both to physicians and civilians, through symposiums and discussions at medical meetings, and through articles and notices in the lay and medical press. The propaganda has been widely taken up by Health Boards, Hospitals, Insurance Companies, Associations of Nurses, Women's Clubs, Church Societies and Commercial and Manufacturing interests. Two important treatises on the early recognition of cancer have been carefully prepared, one for circulation among the general medical profession, the other for the laity. Notwithstanding the disturbing influences of the war and their effect upon the working staff of the Society, energy has not flagged nor has enthusiasm waned. The work is going on apparently with ever increasing success.

REPORT OF THE ABSTRACT EDITOR

DR. EMIL MAYER

The Abstract Editor of the Association begs to report that all original communications presented at the Thirty-ninth Annual Congress were either abstracted by the Authors, if they so desired, or by himself.

The Stenographer's report of the Discussions was received on July 4th, abstracted by your Editor and sent to the members for correction. One hundred and ten Discussions were sent to thirty-four members.

Their return was prompt, and on July 23rd the abstracted Proceedings were sent to the Editor of the *Annals of Otology* from whom galley-proofs were received on the 24th of September, and sent at once to the usual number of Journals.

Attention is called to the fact that these abstracted Proceedings are now not only official, but are correct.

There was no expense to the Association.

THE COMMITTEE ON PUBLICATION

Dr. George E. Shambaugh, Chairman, made no report.

THE DE ROALDES PRIZE FUND COMMITTEE

Dr. Delavan reported that the prize offered triennially would be open for competition next year.

REPORT OF THE COMMITTEE ON TONSIL INVESTIGATION

DR. GEO. L. RICHARDS

When this Committee was first appointed we had the feeling that much valuable information could be obtained from a laboratory study which should have as its object the determination of the functions of the tonsil, its pathological changes and the ultimate results of its removal.

As a result of a conference with Dr. Jonathan Wright who thought something valuable might be obtained in a year's time and at an expenditure of about one thousand dollars, your chairman made a personal appeal to the Fellows of the Society for funds for this purpose. This appeal did not meet with hearty response and as time has gone on we feel that it is doubtful if any valuable result would have been attained.

From our own experience covering many years of clinical observation we are convinced that the only worth while study of the tonsil must begin with a careful study of its anatomy, embryology, physiology and pathology to be followed by clinical studies from many standpoints. These latter should consist of

a good clinical history of a series of cases before operation, with a yearly detailed report for each year for say five years thereafter, so that the end result may be known. Children and adults should both be studied and preference given to those cases where focal infections are suspected. If 100 prominent American laryngologists were each to report ten cases, we should have the result in 1,000 cases and this should enable us to draw conclusions of some value. A carefully prepared questionnaire must be formulated and reports made on the ten cases to the Central Committee each year for five years. The time for such a study is opportune since in the mind of the laity at the present time there is a disposition to advocate the indiscriminate removal of every tonsil, a proposition which is to our mind not justified by facts as we at present have them. Every obscure infection is now laid to the tonsil or the teeth and Societies like ours can do much towards presenting a rational view of the subject to the general medical profession as well as to the laity.

With this end in view we ask that the Committee be enlarged by the addition of Drs. Geo. Fetterolf, Greenfield Sluder and Harry Barnes, and continue while the war lasts. It may not be possible to accomplish much at present but eventually valuable results should be obtained.

COMMITTEE ON THE TEACHING OF OTO- LARYNGOLOGY

Dr. E. Fletcher Ingals had been chairman of this Committee. Dr. Coakley reported that the recommendations of the Committee had been presented to the Association and were contained in the last volume of the Transactions, thus completing the Committee's work. It was therefore voted that the Committee be discharged.

THE CANDIDATES NOMINATING COMMITTEE

The members of this Committee were Drs. Sluder, Bryan, Coolidge, Delavan, Birkett, Hastings, Ingersoll, Levy, Lynch, Swain, Shambaugh and Wood.

The Chairman reported progress.

PETITION FOR A NEW ARMY MEDICAL MUSEUM

LT.-COL. CHARLES W. RICHARDSON

I suppose we all know something of the cramped condition of the Surgeon General's Library, as it is called, and the necessity that greater space be secured for it. This has become a pressing question within the last few years and Col. McCullough, the Curator of the Museum, and Col. Owens, the head of the Library, have had a bill introduced into Congress for the purpose of giving them a larger building, with more space for the Museum and Library, and also for the practical work that is done in the Army Medical Museum. In pathology and other fields, there is a great deal of practical work done in the Army Medical Library, work that was not thought of when the Library was instituted or built. The space is not adequate, nor is it appropriate for the purpose.

The genesis of this proposition has not come from me at all, except that our Secretary sent me a letter which Col. McCullough had written him, as the Secretary of the Laryngological Association, requesting him to have this Association take action. So, about two months ago, the Secretary forwarded the letter to me, requesting me to act upon it. That is why I offer this resolution and ask the Association to make a unanimous acceptance of it.

May 28th, 1918.

To Col. W. C. Owens, Librarian, Washington, D. C.:—

Resolved, That the American Laryngological Association, assembled at Atlantic City, New Jersey, unanimously indorses the plan for a new Army Medical Museum, and requests that therein be provided adequate space for the proper care and the efficient study of the material being furnished from the battle fronts of Europe.

The inestimable value of this material for immediate and future study and research cannot be appreciated even at the present writing. We strongly urge upon Congress most liberal provisions for this work. Military medicine and surgery have made such stupendous advances during the present warfare that it seems that for the maintenance of this progress adequate space should be forthcoming for proper study and continuance of this scientific work.

There is no place where this work can be so adequately conducted as in Washington. We therefore heartily approve the proposed plan, and urge most liberal appropriation for its consummation.

The resolution was unanimously carried.

REPORT OF THE DELEGATES TO THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

Dr. Bryan reported that neither he nor his alternate, Dr. Delavan, had been able to attend the first meeting, held in New Haven; but that he had been represented there by Dr. Swain. There was no quorum. Another meeting was subsequently held in New York at which Dr. Theobald Smith was elected president. Owing to war duties Dr. Smith declined the election. At a third meeting, also held in New York, the Association was represented by Dr. Delavan. Dr. Simon Flexner was elected to the Presidency and accepted.

It is Dr. Carmalt's opinion that there is a possibility of the Congress not meeting at Washington next year. The housing problem is most difficult there. It will be impossible for the delegates to get rooms and there will be no rooms or halls for the meetings. To hold it there is out of the question. The possibility is suggested of holding it, if this is approved by the constituent societies, at Atlantic City. It would be better not to have a hiatus, but to continue the meetings; and that if approved by the other societies, Atlantic City would be the best place for holding the meeting.

Dr. Bryan moved that it be the sense of the American Laryngological Association that the Congress should be held, and that Atlantic City would meet with the wishes of this Association. The motion was carried.

Dr. Coakley reported for the Committee appointed to draw up resolutions regarding the continuance of the present Surgeon-General of the Army in office as follows:

WHEREAS, In accordance with Army Regulations, Major-General William C. Gorgas, now Surgeon-General of the United

States Army, will reach the prescribed age for retirement in October, 1918, and

WHEREAS, By virtue of his scientific attainments and his statesmanlike vision, he has proved himself eminently qualified not only to meet the extraordinary exigencies of the present situation, but also to plan with wisdom and foresight the further development of the Army, and

WHEREAS, By his recognition of the important part that the various specialties in medicine have accomplished in relieving the suffering and reclaiming the afflicted, he has made it possible, so far as is consistent with Military Duties, to utilize physicians specially trained in Oto-Laryngology now enrolled in the Medical Reserve Corps, to render medical service in the fields in which they are best qualified,

Resolved, That it is the sense of the American Laryngological Association that it would be for the best interest of the Nation if General Gorgas were continued in his present office as Surgeon-General, and

Be It Further Resolved, That this expression of confidence in General Gorgas be communicated to the President of the United States.

The resolution was carried, with applause.

CORNELIUS G. COAKLEY,
GREENFIELD SLUDER.

DR. GREENFIELD SLUDER:

During my report as Chairman of the Candidates Nominating Committee I should have stated that we have a vacancy in that Committee caused by the death of Dr. Ingals. His successor should be from Chicago.

The nomination of Dr. Geo. E. Shambaugh was sustained by the Association.

DR. SLUDER: The Candidates Nominating Committee, as it will be recalled, was in no sense proposed as a substitute for nominations by individual members. It was proposed as a help to the Society. The gentlemen appointed upon it were more or less in touch with the younger, developing men, and it was thought that they should be at some pains to get acquainted with these men personally, if possible, and most certainly with their work. The names that were concluded to be satisfactory were to be submitted, I believe, to the Council.

DR. HARMON SMITH: Before this Executive Session is adjourned, I might say that the Council has had brought to its attention the fact that we have a considerable number of Corresponding and Honorary Fellows among the Austrians, Prussians and Hungarians. The Council did not feel that they should act on this, but felt that it should come before the Society as a whole in Executive Session. It was brought to my attention by Dr. Mayer. The question is, shall we consider the country that the man represents, or the scientific attainments which have qualified him for membership in this Association? I merely bring up the question as to whether we shall settle the matter now or abide a future time.

DR. HENRY L. SWAIN: In order to get the matter before the House, I move that it be referred to the Council for future action. We may suggest to the Council what the wishes of the Society are, but I move that it be referred to the new Council. (The motion was seconded.)

DR. JOSEPH H. BRYAN: I think that is throwing a considerable burden upon the Council, as its action might not meet with the approval of the Association. I think there should be some expression. There are certain members, particularly in Prussia, who are most inimical to the American people as a whole, and also to the members of this Association; but I am willing that the matter should be taken up deliberately by the Council. I think, however, that there should be an expression of opinion by the members of the Association.

DR. GEORGE L. RICHARDS: This is a serious problem, and should be treated seriously. While this body has a right to consider it in open session, yet important matters of policy of this magnitude should first be digested by our representative body of the Society, and brought to us in a concrete form; and then considered from every point of view. I know that this is imposing upon the Council a serious question for them to decide but that is what the Council is for. Fully appreciating the point Dr. Bryan has made, a concrete idea on the subject could be discussed more intelligently. It is not a question of passion, but one of dealing with an enemy as that enemy would deal with us, as he has already dealt with us, in the cruel and inconsiderate treatment of one of our Honorary Fellows. Given the opportunity we would be treated in the same way. I hope action will be taken by the Council at this Session. It is useless to delay. It is an act, not of passion, but of consideration of the way for us to act in the present situation. I think, Mr. President, that we have been entirely too considerate, militarily,

politically and civically, with regard to the Hun. We should now regard him as the real enemy that he is.

Dr. D. BRYSON DELAVAN: No one in this country has deeper reason to agree with the last speaker than myself. But there is another point with regard to these cases. Some of the names on our Corresponding and Honorary lists do not rightfully belong there through any pre-eminence in the scientific world. Several were placed upon our list through the personal influence of one of our members, who, in return for favors received abroad, nominated them. Not one of this particular group is of the quality that we desire and have always maintained in the selection of our Corresponding Fellows. So, aside from political considerations, we could part with these men without regret. One, at least, practically eliminated himself. Some of our other friends, of blessed memory, will hardly be surprised should this action ever come to their notice. Our very distinguished Hungarian representatives, however, are of a far different type. The necessity for their removal is a cause to me of sincere and deep regret.

Dr. HARRIS P. MOSHER: I do not see why the society cannot make up its mind to express its convictions now. I move that all Honorary and Corresponding Members who are residents of enemy countries be dropped. The motion was seconded and upon the withdrawal of the previous motion of Dr. Swain was unanimously carried, with applause.

The Executive Session was then adjourned.

EXECUTIVE SESSION

Wednesday, May 29, 1918

At the close of the Scientific Exercises of the Meeting the Association went into Executive Session.

The list of names of those presented by the Nominating Committee as Candidates for the Board of Directors was unanimously elected.

After a short recess the Board of Directors announced that the following had been elected officers of the Association for the coming year:

President, Cornelius G. Coakley, M.D., New York; First Vice-President, George E. Shambaugh, M.D., Chicago; Second Vice-

President, John R. Winslow, M.D., Baltimore; Secretary (Acting) D. Bryson Delavan, M.D., New York; Treasurer, J. Payson Clark, M.D., Boston; Librarian, Joseph H. Bryan, M.D., Washington.

COUNCIL

Alexander W. MacCoy, Philadelphia; Thomas R. French, Brooklyn; Joseph L. Goodale, Boston; Thomas H. Halsted, Rochester.

Adjourned.

LIST OF FELLOWS

Active

Honorary

Corresponding

Emeritus

Former Members

FINIS

LIST OF FELLOWS

1918

Active Fellows

1917. ARROWSMITH, HUBERT, 170 Clinton Street, Brooklyn, New York.
1915. BARNES, HARRY ALDRICH, 305 Beacon Street, Boston, Massachusetts.
1908. BARNHILL, JOHN F., 408 Penway Building, Indianapolis, Indiana.
1904. BERENS, T. PASSMORE, 35 Park Avenue, New York.
1893. BIRKETT, HERBERT S., 252 Mountain Street, Montreal.
1891. BRYAN, JOSEPH H., 818 17th Street, Washington, D. C.
1913. BUTLER, RALPH, 4606 Spruce Street, Philadelphia, Pa.
1915. CANFIELD, R. BISHOP, Ann Arbor, Mich.
1917. CHAMBERLIN, WILLIAM B., Osborn Building, Cleveland, O.
1897. CLARK, J. PAYSON, 71 Marlborough Street, Boston, Mass.
1902. COAKLEY, CORNELIUS G., 53 West 56th Street, New York.
1917. COATES, GEORGE MORRISON, 1736 Pine Street, Philadelphia, Pa.
1899. COBB, FREDERIC C., 11 Marlborough Street, Boston, Mass.
1918. COX, GERARD HUTCHINSON, 8 East 54th Street, New York.
1905. COFFIN, LEWIS A., 616 Madison Avenue, New York.
1903. COFFIN, ROCKWELL A., 234 Clarendon Street, Boston, Massachusetts.
1893. COOLIDGE, ALGERNON, JR., 613 Beacon Street, Boston, Massachusetts.
1913. DABNEY, VIRGINIUS, 1633 Connecticut Avenue, Washington, D. C.
1917. DEAN, LEE WALLACE, Iowa City, Iowa.
1881. DELAVAN, D. BRYSON, 40 East 41st Street, New York.
1901. FREEMAN, WALTER J., 1832 Spruce Street, Philadelphia, Pennsylvania.
1914. FETTEROLF, GEORGE, 134 South 20th Street, Philadelphia, Pennsylvania.
1905. FREER, OTTO T., 25 East Washington Street, Chicago, Ill.
1879. FRENCH, THOMAS R., 150 Joralemon Street, Brooklyn, New York.
1917. FRIEDBERG, STANTON A., Monroe Building, 104 South Michigan Boulevard, Chicago, Ill.
1897. FROTHINGHAM, RICHARD, 616 Madison Avenue, New York.
1913. GOLDSTEIN, MAX A., 3858 Westminster Place, St. Louis, Missouri.
1898. GOODALE, JOSEPH L., 258 Beacon Street, Boston, Mass.

1905. GRAYSON, CHARLES P., 262 South 16th Street, Philadelphia, Pa.
1906. GREENE, D. CROSBY, JR., 483 Beacon Street, Boston, Mass.
1917. GREENE, JOSEPH B., Asheville, N. C.
1905. HALSTED, THOMAS H., 831 University Block, Syracuse, New York.
1896. HARDIE, T. MELVILLE, 34 Washington Street, Chicago, Ill.
1903. HARRIS, THOMAS J., 104 East 40th Street, New York.
1915. HASTINGS, HILL, 924 Trust & Savings Bldg., Los Angeles, California.
1907. HOLMES, CHRISTIAN R., 8 East 8th Street, Cincinnati, O.
1893. HOPE, GEORGE B., 159 West 72d Street, New York.
1895. HOPKINS, FREDERICK E., 25 Harrison Avenue, Springfield, Mass.
1895. HUBBARD, THOMAS, 515 Nicholas Bldg., Toledo, O.
1904. INGERSOLL, JOHN M., 1021 Prospect Avenue, Cleveland, O.
1907. JACKSON, CHEVALIER, 1018 Westinghouse Bldg., Pittsburgh, Pa.
1878. JOHNSTON, SAMUEL, 204 West Monument Street, Baltimore, Md.
1894. LELAND, GEORGE A., 354 Commonwealth Avenue, Boston, Massachusetts.
1914. LEVY, ROBERT, Metropolitan Bldg., Denver, Colo.
1918. LEWIS, FIELDING OTIS, 261 S. 17th Street, Philadelphia, Pa.
1911. LOCKARD, LORENZO B., Metropolitan Bldg., Denver, Colo.
1913. LOEB, HANAU W., 537 N. Grand Avenue, St Louis, Mo.
1897. LOGAN, JAMES E., 1208 Wyandotte Street, Kansas City, Missouri.
1888. LOWMAN, JOHN H., 1807 Prospect Avenue S. E., Cleveland, O.
1915. LYNCH, ROBERT CLYDE, 634 Maison Blanche Bldg., New Orleans, La.
1896. MACCOY, ALEXANDER W., 1503 Locust Street, Philadelphia, Pa.
1914. MACKENTY, JOHN E., 43 West 54th Street, New York.
1883. MACKENZIE, JOHN N., 605 Washington Place, Baltimore, Maryland.
1896. MAYER, EMIL, 40 East 41st Street, New York.
1913. MCKIMMIE, OSCAR A. M., 1330 Massachusetts Avenue N. W., Washington, D. C.
1904. MOSHER, HARRIS P., 828 Beacon Street, Boston, Mass.
1914. MUNGER, CARL E., 81 North Main Street, Waterbury, Connecticut.
1901. MYLES, ROBERT C., 11 East 48th Street, New York.

1903. PACKARD, FRANCIS R., 304 South 19th Street, Philadelphia, Pa.
1906. PIERCE, NORVAL H., 31 Washington Street, Chicago, Ill.
1908. RANDALL, B. ALEXANDER, 1717 Locust Street, Philadelphia, Pa.
1903. RENNER, W. SCOTT, 341 Linwood Avenue, Buffalo, N. Y.
1897. RHODES, JOHN EDWIN, People's Gas Bldg., Chicago, Ill.
1884. RICE, CLARENCE C., 123 East 19th Street, New York.
1905. RICHARDS, GEORGE L., 84 North Main Street, Fall River, Massachusetts.
1902. RICHARDSON, CHARLES W., 1317 Connecticut Avenue, Washington, D. C.
1913. ROY, DUNBAR, Grand Opera House, Atlanta, Ga.
1907. SHAMBAUGH, GEORGE E., 122 S. Michigan Blvd., Chicago, Illinois.
1909. SHURLY, BURT R., 32 Adams Avenue W., Detroit, Mich.
1909. SLUDER, GREENFIELD, 3542 Washington Avenue, St. Louis, Missouri.
1908. SMITH, HARMON, 44 West 49th Street, New York.
1911. STOUT, GEORGE C., 1611 Walnut Street, Philadelphia, Pa.
1889. SWAIN, HENRY L., Colonial Bldg., 191 Church Street, New Haven, Conn.
1903. THEISEN, CLEMENT F., 172 Washington Avenue, Albany, New York.
1892. THRASHER, ALLEN B., The Groton, 7th and Race Streets, Cincinnati, O.
1892. WAGNER, HENRY L., 518 Sutter Street, San Francisco, California.
1892. WATSON, ARTHUR W., 126 South 18th Street, Philadelphia, Pa.
1908. WILSON, J. GORDON, 104 S. Michigan Avenue, Chicago, Illinois.
1906. WINSLOW, JOHN R., The Latrobe, Charles and Reade Streets, Baltimore, Md.
1905. WOOD, GEORGE B., 129 South 18th Street, Philadelphia, Pennsylvania.
1890. WRIGHT, JONATHAN, Windy Rock, Pleasantville, N. Y.

Honorary Fellows

1915. BOSWORTH, FRANCKE H., 41 Park Avenue, New York.
1914. COHEN, J. SOLIS, 2113 Chestnut Street, Philadelphia, Pa.
1914. DE LA SOTA Y LASTRA, RAMON, 7 Calle de Torqueros, Seville, Spain.
1914. LEFFERTS, GEORGE MOREWOOD, Katonah, N. Y.

- 1910. MOURE, E. J., 25 Cours du Jardin Public, Bordeaux, France.
- 1909. SEMON, SIR FELIX Rignalls, Great Missenden, Bucks, England.
- 1914. THOMSON, SIR ST. CLAIR, 64 Wimpole Street, W., London, England.

Corresponding Fellows

- 1901. COLLIER, MAYO, 145 Harley Street, Cavendish Square, W., London, England.
- 1893. DESVERNINE, CARLOS M., 52 Cuba, Havana, Cuba.
- 1901. GRANT, DUNDAS, 18 Cavendish Square, W., London, Eng.
- 1902. LERMOYEZ, MARCEL, 20 Rue de la Boetie, viiie, Paris, France.
- 1897. LUC, H., 15 Rue de Chanaleilles, viie, Paris, France.
- 1903. MCBRIDE, P., 20 South Drive, Harrogate, England.
- 1896. MACDONALD, GREVILLE, 85 Harley Street, Cavendish Square, London W., England.
- 1894. MACINTYRE, JOHN, 179 Bath Street, Glasgow, Scotland.
- 1896. MYGIND, HOLGER, 31 Havnegade, Copenhagen, Denmark.
- 1901. NATIER, MARCEL, 10 Rue de Ballechasse viie, Paris, France.
- 1894. SAJOUS, C. E., 2043 Walnut Street, Philadelphia, Pa.
- 1896. SCHMIEGELOW, ERNEST, 18 Norregade, Copenhagen, Denmark.
- 1903. TILLEY, HERBERT, 72 Harley Street, Cavendish Square, London W., England.
- 1913. TURNER, LOGAN, 27 Walker Street, Edinburgh, Scotland.
- 1901. WINGRAVE, WYATT, 11 Devonshire Street, Portland Place, London W., England.
- 1894. WOLFENDEN, R. NORRIS, The Grange, Kent, England.

Emeritus Fellows

- 1914. BROWN, J. PRICE, 28 College Street, Toronto, Can.
- 1914. DE BLOIS, THOMAS AMORY, 48 Gloucester Street, Boston, Massachusetts.
- 1918. FARLOW, JOHN W., 127 Bay State Road, Boston, Mass.
- 1918. HINKEL, F. WHITEHILL, 581 Delaware Avenue, Buffalo, New York.
- 1912. LINCOLN, WILLIAM, 210 Lennox Bldg., Cleveland, O.
- 1914. PORTER, WILLIAM, Ocean Springs, Miss.
- 1914. ROBINSON, BEVERLEY, 42 West 37th Street, New York.

PAST OFFICERS

Presidents

(Year of Election)

1879. Louis Elsberg	1899. Samuel Johnston
1880. J. Solis-Cohen	1900. H. L. Swain
1881. F. I. Knight	1901. J. W. Farlow
1882. G. M. Lefferts	1902. J. H. Bryan
1883. F. H. Bosworth	1903. J. H. Hartman
1884. E. L. Shurly	1904. C. C. Rice
1885. Harrison Allen	1905. J. W. Gleitsmann
1886. E. Fletcher Ingals	1906. A. W. de Roaldes
1887. R. P. Lincoln	1907. H. S. Birkett
1888. E. C. Morgan	1908. A. Coolidge, Jr.
1889. J. N. Mackenzie	1909. J. E. Logan
1890. W. C. Glasgow	1910. D. Braden Kyle
1891. S. W. Langmaid	1911. James E. Newcomb
1892. M. J. Asch	1912. George A. Leland
1893. D. B. Delavan	1913. Thomas Hubbard
1894. J. O. Roe	1914. Alexander W. MacCoy
1895. W. H. Daly	1915. G. Hudson Makuen
1896. C. H. Knight	1916. Joseph L. Goodale
1897. T. R. French	1917. Thomas H. Halsted
1898. W. E. Casselberry	1918. Cornelius G. Coakley

Vice-Presidents

1879. F. H. Davis	J. O. Roe
1880. W. C. Glasgow	W. Porter
1881. E. L. Shurly	E. F. Ingals
1882. C. Seiler	S. Johnston
1883. S. W. Langmaid	W. H. Daly
1884. J. H. Hartman	G. W. Major
1885. H. A. Johnson	J. N. Mackenzie
1886. E. C. Morgan	S. W. Langmaid
1887. J. N. Mackenzie	C. E. Sajous
1888. W. C. Glasgow	C. E. Bean
1889. E. Holden	J. H. Hartman
1890. J. O. Roe	S. Johnston
1891. M. J. Asch	J. C. Mulhall
1892. S. Johnston	W. E. Casselberry
1893. J. C. Mulhall	S. H. Chapman
1894. C. C. Rice	A. W. de Roaldes
1895. J. Wright	

1896.	T. M. Murray	D. N. Rankin
1897.	A. W. MacCoy	H. S. Birkett
1898.	J. W. Farlow	F. W. Hinkel
1899.	T. A. DeBlois	M. R. Brown
1900.	H. L. Wagner	A. A. Bliss
1901.	J. W. Gleitsmann	D. Braden Kyle
1902.	G. A. Leland	T. Melville Hardie
1903.	J. H. Lowman	W. Peyre Porcher
1904.	Thomas Hubbard	W. J. Freeman
1905.	J. L. Goodale	C. W. Richardson
1906.	G. H. Makuen	A. B. Thrasher
1907.	J. P. Clark	J. E. Rhodes
1908.	E. Mayer	F. R. Packard
1909.	C. G. Coakley	H. P. Mosher
1910.	Robert C. Myles	J. M. Ingersoll
1911.	F. C. Cobb	B. R. Shurly
1912.	A. W. Watson	W. Scott Renner
1913.	F. E. Hopkins	George E. Shambaugh
1914.	Clement F. Theisen	Lewis A. Coffin
1915.	J. Gordon Wilson	Christian R. Holmes
1916.	Thomas H. Halsted	Greenfield Sluder
1917.	John Edwin Rhodes	D. Crosby Greene

Secretaries and Treasurers

1879.	G. M. Lefferts	1900.	J. E. Newcomb
1882.	D. B. Delavan	1911.	Harmon Smith
1889.	C. H. Knight	1918.	D. B. Delavan (<i>acting</i>)
1895.	H. L. Swain		

Treasurer

1912.	J. Payson Clark
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Librarians

1879.	F. H. Bosworth	1903.	J. H. Bryan
1883.	T. R. French		

PAST MEMBERS

Honorary Fellows

- *1880. Senor Manuel Garcia, London, England
- *1883. Sir Morell Mackenzie, London, England
- *1907. Leopold von Schroetter, Vienna, Austria
- *1904. B. Fraenkel, Berlin, Germany
- *1910. Ferdinand Massei, Naples, Italy
- *1914. Clinton Wagner, New York

Corresponding Fellows

- *1892. Lennox Browne, London, England
- *1887. A. Gouguenheim, Paris, France
- *1894. Edgar Holden, Newark, N. J.
- *1881. Carlo Labus, Milan, Italy
- *1880. Wilhelm Meyer, Copenhagen, Denmark
- *1901. Moritz Schmidt, Frankfort-am-Main, Germany
- *1881. Pugin Thornton, London, England
- *1881. R. Voltolini, Breslau, Germany
- *1880. W. McNeil Whistler, London, England
- ‡1881. Sir Felix Semon, Bucks Co., England
- ‡1887. E. J. Moure, Bordeaux, France
- ‡1892. F. Massei, Naples, Italy

Emeritus Fellows

- ‡1912. Francke H. Bosworth, New York City
- 1914. J. Price Brown, Cranbrook Lodge, Wycombe, Ontario, Canada.
- 1914. Thomas Amory De Blois, Boston, Mass.
- *1914. Joseph W. Gleitsmann, New York City
- *1912. Charles H. Knight, New York City
- *1914. Samuel W. Langmaid, Boston, Mass.
- 1912. William Lincoln, Cleveland, Ohio.
- 1914. William Porter, Ocean Springs, Miss.
- *1913. Arthur W. de Roaldes, New Orleans, La.
- 1914. Beverley Robinson, New York City

Active Fellows

- *1880. Harrison Allen, Philadelphia, Pa.
- *1878. Morris J. Asch, New York
- *1895. J. E. Boylan, Cincinnati, Ohio
- *1883. C. W. Chamberlain, Hartford, Conn.
- *1882. S. Hartwell Chapman, New Haven, Conn.
- ‡1878. J. Solis-Cohen, Philadelphia, Pa.
- 1880. E. W. Cushing, Boston, Mass.
- *1878. Ephraim Cutter, West Falmouth, Mass.

*Deceased †Corresponding Fellow ‡Honorary Fellow §Emeritus Fellow

- *1880. W. H. Daly, Pittsburgh, Pa.
- *1878. F. H. Davis, Chicago, Ill.
- *1901. E. T. Dickerman, Chicago, Ill.
- *1878. Frank Donaldson, Baltimore, Md.
- *1878. William Carr Glasgow, St. Louis, Mo.
- *1879. Edgar Holden, Newark, N. J.
- *1882. Franklin H. Hooper, Boston, Mass.
- *1882. Frank L. Ives, New York City
- *1878. Hosmer A. Johnson, Chicago, Ill.
- *1879. Woolsey Johnson, New York City
- *1880. William C. Jarvis, New York City
- *1879. R. H. Kealhofer, St. Louis, Mo.
- *1901. Gordon King, New Orleans, La.
- *1885. Charles H. Knight, New York City
- *1878. Frederick Irving Knight, Boston, Mass.
- *1878. Rufus P. Lincoln, New York City
- *1881. G. W. Major, Montreal, Canada
- *1879. Charles McBurney, New York City
- *1885. H. Clinton McSherry, Baltimore, Md.
- *1881. E. C. Morgan, Washington, D. C.
- *1886. J. C. Mulhall, St. Louis, Mo.
- 1892. T. Morris Murray, Washington, D. C.
- *1881. H. Mynter, Buffalo, N. Y.
- *1893. James E. Newcomb, New York City
- *1895. J. E. H. Nichols, New York City
- ‡1879. H. K. Oliver, Boston, Mass.
- 1894. William H. Park, New York City
- 1892. W. Peyre Porcher, Charleston, S. C.
- *1880. D. N. Rankin, Allegheny, Pa.
- 1881. J. M. Robertson, Detroit, Mich.
- §1878. Beverley Robinson, New York City
- *1878. T. F. Rumbold, St. Louis, Mo.
- †1880. Charles E. Sajous, Paris, France
- *1879. Carl Seiler, Philadelphia, Pa.
- *1893. Charles M. Shields, Richmond, Va.
- *1879. Andrew H. Smith, Geneva, N. Y.
- *1879. Bernhard Tauber, Cincinnati, Ohio
- *1899. Max Thorner, Cincinnati, Ohio
- *1888. S. O. Van der Poel, New York City
- ‡1878. Clinton Wagner, New York City
- 1896. Marshall R. Ward, Pittsburgh, Pa.
- 1879. Whitfield Ward, New York City
- *1886. Benjamin F. Westbrook, Brooklyn, N. Y.
- 1896. Green V. Woolen, Indianapolis, Ind.
- ‡1878. George M. Lefferts, New York City

- 1901. Frank Hyatt, Washington, D. C.
- *1880. C. E. Bean, St. Paul, Minn.
- *1893. Arthur Ames Bliss, Philadelphia, Pa
- *1878. E. L. Shurly, Detroit, Mich.
- *1892. William Kelly Simpson, New York City.
- *1892. Moreau R. Brown, Chicago, Ill.
- *1907. Joseph S. Gibb, Philadelphia, Pa.
- *1880. Samuel W. Langmaid, Boston, Mass.
- ‡1878. Francke H. Bosworth, New York City
- ‡1893. Arthur W. de Roaldes, New Orleans, La.
- *1879. John O. Roe, Rochester, New York
- *1878. Jacob H. Hartman, Baltimore, Md.
- *1889. William E. Casselberry, Chicago, Ill.
- *1898. D. Braden Kyle, Philadelphia, Pa.
- *1898. G. Hudson Makuen, Philadelphia, Pa.
- *1878. E. Fletcher Ingals, Chicago, Ill.
- §1892. John W. Farlow, Boston, Mass.
- §1888. F. Whitehill Hinkel, Buffalo, N. Y.
- 1909. Albert C. Getchell, Worcester, Mass.

*Deceased †Corresponding Fellow ‡Honorary Fellow §Emeritus Fellow

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