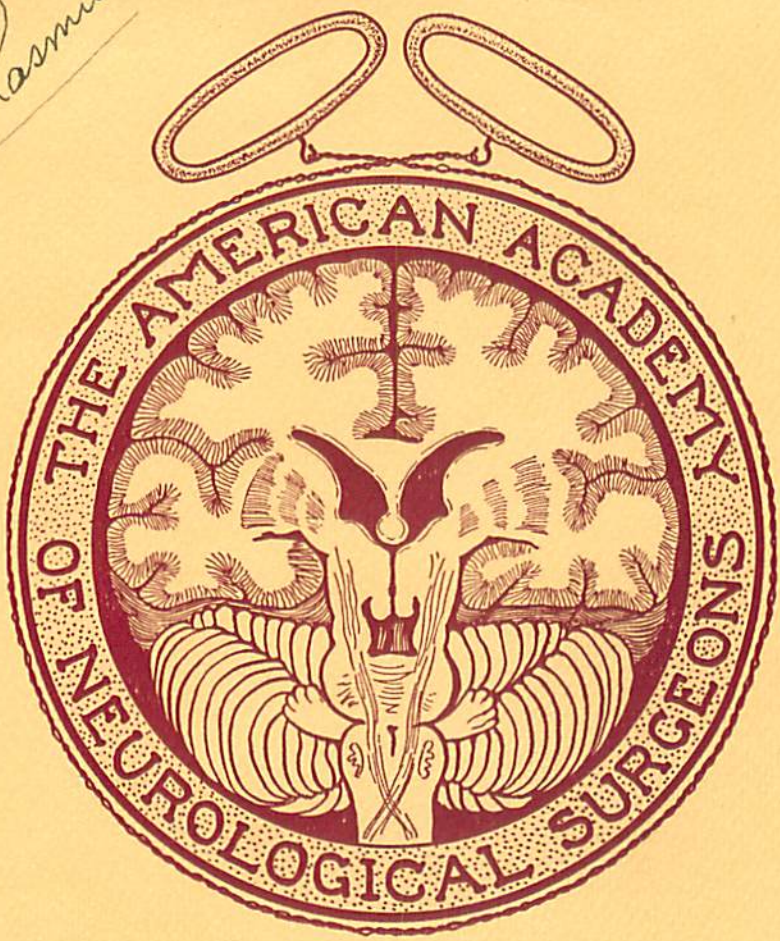
Theodore Rasmussen

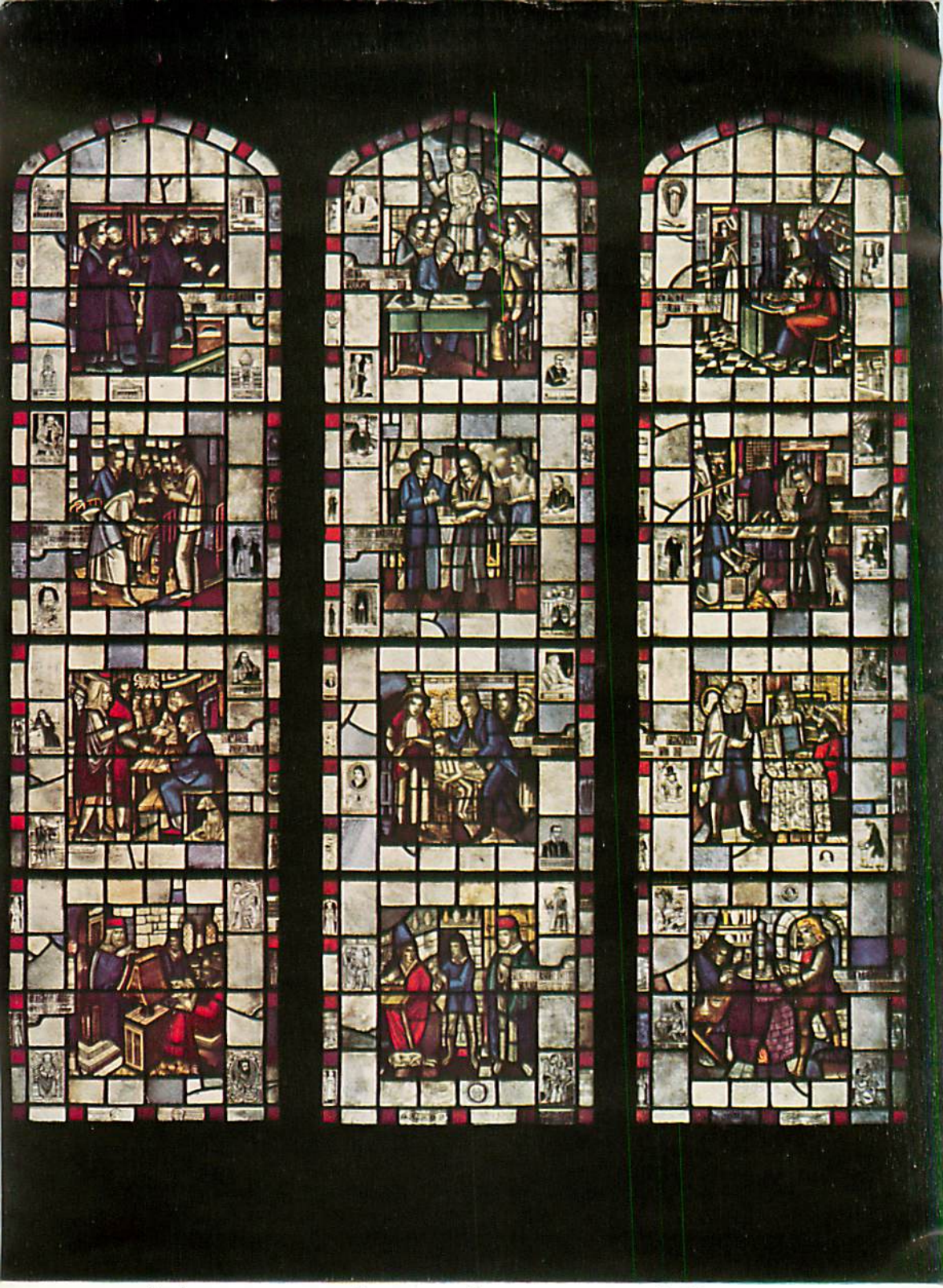


Twelfth Annual Meeting

MAYO CLINIC AND
MAYO FOUNDATION

ROCHESTER, MINNESOTA
SEPTEMBER 28, 29 AND 30

1950



Window in Mayo Foundation House

Explanation of Window

Column 1. MEDICAL EDUCATION.—The main subject of panel 1 (lowest in column 1) is a lecture room scene in some medieval medical school. The professor is reading from an ancient medical codex.

Subjects for borders are appropriately Hygeia, Asklepios, Celsus and SS. Cosmas and Damian. The inscription chosen for this panel. "Earth—Air—Fire—Water," represents the four elements of Greek philosophy and especially of Empedocles.

The main subject for panel 2 is Vesalius, the founder of modern anatomy, teaching at Padua. The three small blocks represent Paracelsus, Leeuwenhoek and Morgagni.

Panel 3 is devoted to bedside teaching. Osler is depicted in one of the small blocks; others are Laënnec and Sydenham.

The uppermost panel in this section is a representation of graduate medical education. The main subject shown is the conferring of higher degrees. The border pictures the shields of the University of Michigan (where W. J. Mayo obtained his medical degree) and Northwestern University (from which C. H. Mayo was graduated). The border continues with the shield of the United States Public Health Service and that of the University of Minnesota, of whose graduate school the Mayo Foundation is a part.

Column 2. MEDICAL PRACTICE.—The lowest scene is the interior of the office of a medieval physician as typical of the period. The scene shows a page boy presenting a bottle of urine to the urine caster, who was thought to be able to diagnose the patient's disease by the color of the specimen.

Panel 6 shows Edward Jenner performing vaccination for the prevention of smallpox.

Panel 7 shows Lord Lister preparing the operating room prior to an operation.

The smaller panels are representations of Dr. Gross, Theodor Billroth, Oliver Wendell Holmes, and old St. Marys Hospital, Rochester, Minnesota, where Dr. William Worrall Mayo and his two sons, early in their career, practiced antiseptic surgery.

Panel 8, the top panel of the middle section, is a representation of the modern era of preventive medicine.

Column 3. MEDICAL RESEARCH.—The progress of medicine depends upon successful co-ordination between education and research. Column 3, therefore, has been devoted to research.

Panel 9 is a scene showing a medieval alchemist in his laboratory.

The main subject of panel 10 is Harvey demonstrating the circulatory system to King Charles I.

Panel 11 shows Pasteur in his laboratory.

The modern laboratory is the subject of panel 12. The emphasis is here placed on the role of physics, chemistry and related sciences in preventive medicine.

City of Rochester

Rochester, county seat of Olmsted County, is situated in the heart of southern Minnesota's rich agricultural and dairying section, approximately 75 air miles southeast of Minneapolis and Saint Paul, and 352 air miles northwest of Chicago. Rochester was settled in 1854. From a population of less than 50 in 1856, it has grown to become a city of some 35,000 residents, with an estimated transient population in excess of 200,000 annually.

How the Streets are Laid Out

The streets run east and west; avenues run north and south. Broadway is the dividing line between east and west; Center Street is the dividing line between north and south. The city has four geographic zones, all laid out in reference to the point at which Broadway and Center Street intersect. For instance, the zone lying north of Center Street and west of Broadway is called "Northwest." A convenient means of orienting oneself in Rochester is to picture the dial of a compass, the needle of which is Broadway, and the east and west line of which is Center Street. All four geographic zones then become immediately apparent. The map at the end of this program will assist the reader, although current construction projects, as noted in this text, are slightly changing some of the relationships shown in the map.

Hospitals, Hotels, Schools, Churches

Hospitals.—There is a total of five hospitals for the private practice of medicine, and the number of private hospital beds is more than 1,600. The Mayo Clinic does not own or operate any hospital. The largest hospital for the private practice of medicine is Saint Marys, founded in 1889 by the Sisters of Saint Francis and still conducted by them. It is located on Second Street Southwest, and has 860 hospital beds. The Colonial Hospital, on First Avenue Northwest, with 380 beds; the Worrall Hospital, on Third Street Southwest, with approximately 200 beds; the Kahler Hospital, in the upper three floors of the Kahler Hotel, with 130 beds, are operated by the Kahler Corporation. Part of a new addition to the Colonial Hospital temporarily is devoted to hotel uses. The Curie Hospital on First Street Southwest receives outpatients for x-ray treatment.

The Samaritan Hotel on Seventh Street Northwest is a convalescent hotel operated by the Church of Peace; provision is made there for medical and nursing care.

The Rochester Diet Kitchen, on First Street Southwest, is operated for patients who require special diets and dietary instructions. It is owned and conducted by the Kahler Corporation.

The Rochester State Hospital, a mile and a half east of the city, is owned and operated by the State of Minnesota. It is an institution for the insane, and has more than 1,500 beds. The hospital, opened in 1879, was the second institution for the care and treatment of the insane to be established in Minnesota, and for many years was known as the "Second State Hospital for the Insane."

Hotels.—There are 38 hotels. The largest are the Kahler, with 300 rooms; the Zumbro, with 165 rooms; the Damon with 125 rooms; and the Carlton, with 120 rooms. Others are the Martin, with 115 rooms; the Arthur, with 90 rooms; and the Campbell, with 80 rooms. A new annex to the Colonial Hospital temporarily provides 44 hotel rooms for transient guests.

Other facilities for housing include 60 apartment houses and 19 cabin camps, as well as a large number of rooming houses.

Schools.—In addition to public and parochial schools, there are a municipal junior college, two schools of nursing, a school of aeronautics, a school of music and a school for the deaf. The Rochester Junior College is said to have offered the first course in medical secretaryship in the world; medical secretaries trained in this college now are working in all parts of the country, as well as in Rochester. The Mayo Foundation for Medical Education and Research, with offices on the fifteenth floor of the Clinic building, is a part of the Graduate School of the University of Minnesota. The Mayo Forestry and Horticulture Institute, situated at the fair grounds south of the city, is affiliated with the University of Minnesota.

Churches.—There are 25 churches in Rochester, and approximately 30 religious denominations. Several of these have hospital chaplains who serve in the hospitals of the city.

Parks

The largest park in the city is Soldiers Field, a tract of 167 acres situated off South Broadway. It contains an outdoor swimming pool, tennis courts, a softball diamond and an 18-hole golf course, and is a favorite resort of thousands of both citizens and visitors to Rochester.

Mayo Park is the original park of the city of Rochester. It lies a short distance east of Broadway; it is easily reached by proceeding east from Broadway on First or Second Street Southeast. Band concerts are held regularly in the park in the summer. The park contains a statue of Dr. William Worrall Mayo (1819-1911), father of Dr. William J. Mayo (1861-1939), and Dr. Charles H. Mayo (1865-1939). This park is also the site of a Mayo Memorial which it is planned to erect. A branch of the Zumbro River borders part of the park. Mayo Field, a tract of 15 acres, contains a baseball diamond and skating rink. It is located on East Center Street and the Zumbro River.

Silver Lake Park is located on the Zumbro River in the northeastern zone of the city. It is a much-favored site for picnics.

Points of Interest

The Mayo Civic Auditorium, erected in 1938 as a gift to the city of Rochester from Dr. C. H. Mayo and the Mayo Association, consists of four large units, the largest of which is the arena. Other units are a theater of 1,500 seats, and two halls for smaller gatherings. It is located in Mayo Park, and is easily visible from Broadway and First Street Southeast. Ice skating and ice shows open to the public are held in the auditorium during the summer and these, as well as other events presented in this auditorium, have proved to be important attractions.

The Rochester Country Club, Rochester Tennis Club, Rochester State Hospital and the Rochester Airport all are located within a short distance from downtown Rochester. A University Club is situated in the Kahler Hotel.

The Rochester Art Center, at Center Street and Third Avenue Northwest, contains the work of local artists. It also presents, from time to time, exhibits of the work of artists and craftsmen in various parts of the country, and offers courses in the arts and crafts. The Rochester Public Library, which possesses about 48,000 volumes, is situated at Second Street and Third Avenue Southwest. The Little Green House, three blocks north of the Clinic on Second Avenue Northwest, is devoted to occupational therapy.

The Mayo Foundation House on Fourth Street Southwest, originally the home of Dr. W. J. Mayo, has an especially notable large stained-glass window depicting several epochs in the history of medicine **(see reproduction).** The window is situated in Balfour Hall, on the top floor of the edifice. The Foundation House is used for various local and regional medical and scientific gatherings, and provides quarters for visiting speakers or observers in these two fields.

The Mayo Clinic Annex, opened in 1947, is situated on First Street and Third Avenue Southwest. It is a two-story building now occupied by the Department of Neurology and Psychiatry, the Section on Neurologic Surgery, the Section on Ophthalmology, the Section on Urology and the Section on Postoperative Care. This building is connected to the Mayo Clinic by a subway.

The Biblioteca Hispano-americana, a collection of more than 1,200 books, most of which are by Spanish-American authors, is located in Room 217, near the elevators on the main floor of the Clinic. A major part of this collection was donated by Senor Rafael Larco Herrera, of Lima, Peru. New additions to this library are being made constantly.

The Mayo Clinic Library, which has more than 75,000 volumes of medical and scientific works, is located on the twelfth floor of the Clinic. Especially attractive is the Browsing Room, which is fitted out to appeal to the person who is interested in reading for pleasure in an atmosphere of informal comfort. A Science Room is set aside specifically for works dealing with the several sciences ancillary to medicine and surgery.

The Mayo Foundation Museum of Hygiene and Medicine is temporarily situated on the northwest corner of First Street and First Avenue Northwest, across the street from the Colonial Hospital. It will be located in the present Clinic building when the new building is completed.

The Medical Sciences Building on Third Street Southwest is connected to the Clinic by a subway. It houses a blood bank, physiology department and other research units of the Clinic. An addition to this building is under construction, and will provide much-needed laboratory and shop facilities when it is completed.

The Institute of Experimental Medicine, a short distance from Rochester, is maintained by the Mayo Foundation for a wide variety of research endeavors.

The Franklin Heating Station, located half a block south of the Clinic on Second Avenue Southwest, furnishes heat, light, power and water to the Clinic and to the properties of the Kahler Corporation.

Several different companies offer sight-seeing tours of the city; many points within the city can be reached by the local bus lines. Radio-dispatched taxicabs are readily available.

The Doctors Mayo

Dr. William Worrall Mayo (1819-1911), born near Manchester, England, was a pioneer physician who in 1855 came to Saint Paul in what was then the Territory of Minnesota. He moved first to Le Sueur, Minnesota, and then to Rochester. In 1889 he became physician to the newly opened St. Marys Hospital where two sons, Dr. William James Mayo (1861-1939) and Dr. Charles Horace Mayo (1865-1939), assisted him. Both sons were born in Minnesota, Dr. Will in Le Sueur and Dr. Charlie in Rochester. After 1900, when the desirability of the group practice of medicine in relation to medicine and medical research began to be evident, what is now the Mayo Clinic took form by a process of gradual evolution.

Mayo Clinic

The Mayo Clinic is a voluntary association of physicians, the primary interest of which is the conduct of the co-ordinated group practice of medicine. The Mayo Clinic, as an operating organization, owns no hospitals, buildings or other real property. The building which houses the Mayo Clinic is owned by the Mayo Association which likewise will hold title to the new ten-story diagnostic unit.

Fellows of the Mayo Foundation, who are graduate students in the University of Minnesota, use the educational and other facilities of the Mayo Clinic. The Mayo Clinic is administered by a Board of Governors consisting of nine members of the staff, and by several standing committees composed of members of the staff. Permanent members of the professional staff of the Mayo Clinic now number in excess of 250.

Mayo Foundation

In 1914 the president of the University of Minnesota suggested that a plan be evolved whereby educational work and research in the Mayo Clinic could be made part of the work offered by the Graduate School of the University of Minnesota. The Mayo Foundation for Medical Education and Research was formed in 1915. Fellows of the Mayo Foundation are registered as graduate students of the University of Minnesota. If they complete the requirements for either a master's degree or a doctorate while in postgraduate work in the Mayo Foundation, that degree is conferred by the University of Minnesota. Usually, the tenure of a fellowship in the Mayo Foundation is three years. Former fellows of the Mayo Foundation now are engaged in practice or in teaching, or both, in each of the 48 states, in every province of Canada, in the possessions of the United States, and in 41 cities of foreign countries. Mayo Foundation House, the former home of Dr. and Mrs. William J. Mayo, on Fourth Street and Seventh Avenue Southwest, was dedicated by them in 1938 to serve "as a meeting place for the exchange of ideas for the good of mankind." The Institute of Experimental Medicine is maintained by the Mayo Foundation, as is the Museum of Hygiene and Medicine. Offices of the director and the associate director of the Mayo Foundation are situated on the fifteenth floor of the Clinic building, as are quarters for clerical and other personnel. Many members of the staff of the Mayo Clinic serve as members of the faculty of the Mayo Foundation, and as such are instructors or professors in the Graduate School of the University of Minnesota.

Mayo Association

The Mayo Association, founded in 1919 as the Mayo Properties Association, is essentially a trusteeship. It operates as a charitable, benevolent, educational corporation. It has no stock of any kind; it is governed by a board of nine persons known collectively as the Board of Members. It is entirely distinct, as an entity, from either the Mayo Clinic or the Mayo Foundation for Medical Education and Research.

To this association the founders transferred, by gift, not only large parts of their personal funds but also all assets of the institution then called the Mayo Clinic, with the exception of those funds earlier given to the University of Minnesota for the establishment of the Mayo Foundation as part of the Graduate School of that university.

The Mayo Association as trustee holds title to all the varied assets, including the buildings, machines, instruments and records, used by the Mayo Clinic. The articles of incorporation of the Mayo Association state that "no part of the net income of this corporation or of its property or assets upon dissolution or liquidation shall ever inure to the benefit of any of its members, or of any private individual."

THE AMERICAN ACADEMY

OF

NEUROLOGICAL SURGERY

TWELFTH ANNUAL MEETING

ROCHESTER, MINNESOTA

SEPTEMBER 28, 29 AND 30, 1950

WEDNESDAY, September 27—

Check in at hotels and have dinner as desired. Each member and guest is to register for the meeting in the lobby of the Hotel Kahler as soon as possible after arrival. Programs, badges, et cetera, will be supplied at Registration desk in Hotel Kahler.

8 P. M.—Informal assembly for members, guests and wives at the home of Dr. Alfred Uihlein, 612 Tenth Avenue S. W., Rochester. Informal motion pictures will be shown of the lion hunt in New Mexico which was attended by Doctor Raney and associates in 1949. Other informal motion pictures will be shown at this time by those who care to bring them.
Music, dancing, refreshments.

THURSDAY, September 28, A. M. Program—

Operative Neurosurgery and Clinical Demonstrations by the Staff of the Mayo Clinic.

8:30-10:30—Neurosurgery Sixth Floor St. Marys Hospital, operating rooms 9, 10, 11 and 12. Dr. A. W. Adson, Dr. G. S. Baker, Dr. C. S. MacCarty and Dr. H. J. Svien.

10:30-12:15—Little Theatre, Sixth Floor St. Marys Hospital.

CHAIRMAN: Dr. Alfred Uihlein

10:30—Cerebral angiography—method and technique.
Dr. J. D. Camp of the Department of Roentgenology and Dr. Alfred Uihlein of the Department of Neurosurgery.

11:15—The importance of roentgenograms in diagnostic and therapeutic nerve blocks.
Clinical evaluation of the hypospray or jet injector (first mass trial).
Nonsurgical procedures for the relief of hip pain.
Dr. J. S. Lundy of the Department of Anesthesiology.
Supportive intravenous therapy with a new category of materials:
A. Dextran
B. Gelatin
C. Periston
Dr. R. W. Ridley of the Department of Anesthesiology.

12:15—Bus leaves St. Marys Hospital for the luncheon.

12:30-2 P. M.—Luncheon at Mayo Foundation House.
Master of Ceremonies—Dr. W. McK. Craig.
Speaker—Dr. Donald Balfour.

Scientific Session 2 P. M. at Mayo Foundation House

PROGRAM CHAIRMAN: DR. GUY ODOM

1. Radiological Investigation of Trauma of the Upper Cervical Spine. Dr. Delbert Wollin and Dr. E. Harry Botterell, Toronto. (15 minutes).
2. The Cervical Ruptured Disc: Report of Eighty Operated Cases. Dr. R. L. McLaurin, Dr. W. B. Scoville and Dr. B. B. Whitcomb, Hartford. (15 minutes).

Presentation is made of a statistical survey of eighty cases of cervical ruptured discs which have been submitted to surgery, including three central herniations with cord signs, emphasizing the lateral herniations. Diagnosis and myelographic and surgical technique are discussed. The laterally placed ruptured cervical disc constitutes a specific syndrome of neck, shoulder and arm pain with radiation into the hand and usually the thumb and first two fingers. The incidence is common, being in the ratio of one cervical disc to six lumbar discs. In all but two cases, the location has been either the 5th or 6th cervical interspace, involving the

6th root with diminished biceps or the 7th root with diminished triceps function respectively. Myelography has been performed in nearly every case and has always been positive in the cases of ruptured discs proved by surgery. The majority of these have been slight root sleeve defects. Surgery has been done in the upright position under procain root block anesthesia, using power drill and making a limited keyhole shaped extradural decompression of the root and adjacent dura. The surgical results have been gratifying in all of the cases of lateral herniation, being consistently superior to the results in lumbar discs in the early postoperative phase. To date, there have been no recurrences. In conclusion, the authors tend to resort to surgery in preference to prolonged conservative treatment because of the evident superiority in the degree and rapidity of relief and the permanence of cure with its consequent economic saving to the patient.

Discussion of papers 1 and 2 by Dr. Guy Odom, Durham, and Dr. Wesley Gustafson, Chicago. (15 minutes).

3. Intracranial Actinomycosis: Report of an Unusual Case.
   Dr. George L. Maltby, Portland, Maine. (15 minutes).

An up-to-date review of the literature on intracranial actinomycosis was prompted by experience with what was believed to be a rare case of cerebral abscess due to the organism of actinomycosis. Having reviewed the literature, this case has proved to be very unusual for at least two reasons: first, its course of spread and entry into the intracranial cavity and, secondly, because of the opportunity to follow the spread over a period of several years. Cerebral metastases from pulmonary diseases are not too uncommon but the direct spread of the infection along cranial nerves into the cerebrum is extremely rare. The spread in this instance was unquestionably along the divisions of the 5th cranial nerve into the ganglion producing a ganglionitis and from there a pachymeningitis and thus to a temporal lobe abscess which was unrecognized until post mortem examination.

Discussion by Dr. Henry G. Schwartz, St. Louis. (5 minutes).

4. Tracheotomy in the Management of Head Injuries.
   Dr. Dean H. Echols, Dr. Raeburn C. Llewellyn, Dr. Homer D. Kirgis, Dr. Frederick C. Rehfeldt and Dr. Frank Garcia, New Orleans. (15 minutes).

The use of tracheotomy in fifteen patients with serious respiratory complications following head injuries is described. The authors believe that tracheotomy is superior to any other method of maintaining efficient aeration of the lungs in unconscious patients. Tracheotomy should be performed promptly and without hesitation in every patient unconscious from a head injury if it seems likely that the coma will persist more than twenty-four hours, and if nonsurgical methods of maintaining a good airway appear to be inefficient.

5. Chronic Subdural Hematoma from Indirect Trauma: Report of Two Cases
   Dr. John M. Meredith, Richmond. (10 minutes).

Two patients, a middle aged woman and an elderly man, were both operated upon recently at approximately the same time. Each proved to have a large subdural hematoma overlying the left cerebral hemisphere. Accurate histories, with particular emphasis on recent or remote traumatic episodes in the history, revealed that in each instance a fall on the buttocks had been the only traumatic episode, producing immediate progressive symptoms in one patient, and delayed symptoms and signs in the other one. No direct head injury occurred in either case.

In view of the currently held concept of the usual formation of a subdural hematoma, i.e. a blow on the anterior or posterior aspect of the head, producing an agitation of the brain and tearing of one or more short bridging veins that traverse the subdural space from the cortex to the inner surface of the dura near the falx, these cases are of considerable interest; they are certainly unique in our experience.

Both patients recovered postoperatively, one within a short period, the other with a much longer period of disabling aphasia.

Discussion of papers 4 and 5 by Dr. William F. Beswick, Buffalo, and Dr. Joseph P. Evans, Cincinnati. (10 minutes).

6. Intraspinal Epidermoid Tumor: Case Report and Discussion.

   Dr. William M. Moore and Dr. Exum Walker, Atlanta. (10 minutes).

The paper discusses the features of various types of intraspinal embryonal tumors and an additional case of intraspinal epidermoid tumor is presented, bringing to 62 the number of cases now recorded. The importance of considering these lesions in the diagnosis of long-standing cases of spinal cord involvement is emphasized.

Discussion by Dr. Arthur R. Elvidge, Montreal. (5 minutes).

EXECUTIVE SESSION FOR MEMBERS ONLY

4:30-5:15 P. M.

6:30-8 P. M.—Cocktails in the Georgian Room, Mezzanine Floor, Hotel Kahler.
Members and official guests.

8 P. M.—Formal Banquet at Kahler Hotel Cafe, Main Floor.
Members and official guests.
Toastmaster—Dr. David Reeves.
Speaker—Dr. Harry Botterell (Presidential Address).
Mayo Foundation Male Quartet.
Magician's Show.

FRIDAY, September 28, A. M. Program—

Operative Neurosurgery and Clinical Demonstrations by the Staff of the Mayo Clinic.

8:30-10:30—Neurosurgery Sixth Floor St. Marys Hospital, operating rooms 9, 10, 11 and 12. Dr. W. McK. Craig, Dr. J. G. Love, Dr. Alfred Uihlein and Dr. H. J. Svien.

10:30-12:15—Little Theatre, Sixth Floor St. Marys Hospital.

CHAIRMAN: Dr. George S. Baker

10:30—A plan for control of fire and explosive hazards in the operating room.

Some observations on the recognition and treatment of anoxia. Dr. Albert Faulconer, Jr. and Dr. R. W. Ridley of the Department of Anesthesiology.

11:00—Demonstration and discussion of various types of surgical cameras for use in surgery.

Mr. L. A. Julin, Director of the Photographic Department.

11:30—Control of anesthesia by electroencephalography.

Dr. R. G. Bickford of the Department of Electroencephalography.

12:15—Bus leaves St. Marys Hospital for the luncheon.

12:30-2 P. M.—Luncheon at Continental Room, Carlton Hotel.

Master of Ceremonies—Dr. G. S. Baker.
Speaker—Dr. A. W. Adson.

Scientific Session 2:15 P. M. at Mayo Foundation House

PROGRAM CHAIRMAN: DR. JOSEPH EVANS

1. Neurological Complications Associated with Coarctation of the Aorta.

   Dr. Robert H. Pudenz, Dr. Leland Brannon and Dr. C. Hunter Shelden, Pasadena. (15 minutes).

The paper deals with two young adult males with coarctation of the aorta and associated intracranial aneurysm. The various problems encountered in management of these patients are discussed and the literature is reviewed to determine the incidence of intracranial aneurysm and subarachnoid hemorrhage associated with coarctation of the aorta. In addition, there is considered the influence of coarctation on intracranial arterial pressure.

Discussion by Dr. Edward W. Davis, Portland, Oregon, and Dr. Jesse Edwards,* Rochester, Minnesota. (15 minutes).

2. The Results of Simple Ligation of the Carotid Artery in the Neck for Intracranial Aneurysms of the Internal Carotid Circulation.

   Dr. Francis Murphey, Memphis. (15 minutes).

A review is presented of thirty-seven cases of intracranial aneurysms treated by ligation of the common carotid, internal carotid, or common and external carotid arteries in the neck. It is suggested that this procedure is the simplest and safest, resulting in lessened mortality and morbidity rates.

3. The Effects of Permanent and Temporary Occlusion of the Middle Cerebral Artery in the Monkey.

   Dr. John Harvey and Dr. Theodore Rasmussen, Chicago. (15 minutes).

*By invitation.

The right middle cerebral artery was occluded in 9 monkeys permanently, and in 13 monkeys temporarily for periods varying from 10 minutes to 52 minutes. During each experiment a continuous cortical electrogram was obtained, and electroencephalograms were made at intervals postoperatively. The infarcts were later studied histologically.

An adequately extended series of electroencephalograms was obtained from 17 of the animals. In 9 of these animals no marked electrographic changes accompanied occlusion of the vessel. In the remaining 8 animals the degree of change was roughly proportional to the size of the lesion found at autopsy. The characteristic changes in order of their relative frequency of occurrence were (1) a reduction of the amount of normal rapid activity, (2) a reduction of cortical potentials, and (3) the appearance of slow wave activity.

Occlusions of less than 15 minutes' duration produced only temporary motor weakness. To produce a degree of impairment as severe as that associated with permanent occlusion, it was necessary to occlude the vessel for at least 50 minutes.

Clinical seizures were observed in 3 animals, following occlusions of 40, 40 and 30 minutes respectively.

No gross cortical infarction occurred following occlusions of less than 30 minutes' duration.

Hemorrhagic infarction occurred in only 2 animals; in each instance the vessel had been occluded for 50 minutes.

4. Surgical Experiences with the Superior Longitudinal Sinus and the Rolandic Veins.

Dr. Homer S. Swanson, Atlanta. (15 minutes).

It appears, from a review of the literature, that there is general agreement that the superior longitudinal sinus can be ligated anterior to the point of entrance of the Rolandic veins with impunity and that resection of a previously occluded sinus posterior to this point in most instances is not fraught with additional neurological deficit. Whether a patent sinus may be resected posterior to the point of entrance of the Rolandic veins can only be conjectured; there exists no reported instance of a deliberate ligation of the patent sinus to support or to deny this claim. Merwarth has clearly delineated the syndrome of the Rolandic veins but there is no comparable appreciation of the physiological end results which follow the ligation of a patent superior longitudinal sinus.

A review of our personal clinical material has demonstrated that perhaps our previous pessimistic view regarding the neurological handicaps which follow the ligation of a patent sinus or the Rolandic veins might not be correct. This material consists of four instances in which, in order to effect a complete removal of a parasagittal new growth, it became necessary to ligate the major Rolandic veins, three instances of thrombosis of the superior longitudinal sinus and two of thrombosis of the Rolandic veins and four instances of ligation of the superior longitudinal sinus posteriorly for either tumor problems or traumatic lesions. The improvement noted in those cases which survived was in striking contrast to the results previously reported, leading to a revision of our

former ideas of the pathological physiology of the Rolandic veins and superior longitudinal sinus.

Discussion of papers 2, 3 and 4 to be opened by Dr. Wallace Hamby, Buffalo and Dr. Edwin B. Boldrey, San Francisco. (15 minutes).

5. A Pediatric Assessment of Carotid-Jugular Anastomosis.
   Dr. Charles F. McKhann, Cleveland. (40 minutes).
   Discussion to be opened by Dr. Haddow Keith, Rochester, Minnesota. (20 minutes).

EXECUTIVE SESSION FOR MEMBERS ONLY
4:30-5:30 P. M.

6:30-12 P. M.—Cocktails, Buffet Supper and Dance at the Rochester Country Club. Members, guests and local medical associates of the Neurosurgical Section of the Mayo Clinic. Dress optional.

SATURDAY, September 30, A. M. Program

9:00-11:00—Scientific Session in Plummer Hall, Fourteenth Floor Mayo Clinic Building.

PROGRAM CHAIRMAN: DR. THEODORE RASMUSSEN

1. The Reticular Substance of the Brain Stem and Its Relation to Wakefulness.
   Dr. Charles W. Taylor, Toronto and Dr. H. W. Magoun, Chicago. (15 minutes).

2. Studies on the Absorptive Processes of the Cerebrospinal Fluid with Radioactive Phosphorous (P^{32}) and Its Clinical Applications.
   Dr. John E. Adams, San Francisco. (15 minutes).

The uptake of P^{32} in the form of $Na_2H_2PO_4$ by the superior longitudinal sinus has been followed in dogs, in patients undergoing prefrontal lobotomy and in hydrocephalic infants, after instillation into the lateral ventricle and cisterna magna. Curves for the rate of uptake have been established for presumably normal individuals which have been correlated with the rate of excretion of the isotope in the urine.

Evidence has been obtained which suggests that overproduction of cerebrospinal fluid is a casual factor in some cases of communicating hydrocephalus. Further studies indicate that the entrance of the cerebrospinal fluid into the vascular system takes place distal to the pacchionian granulations.

3. Ultrasonic Ventriculography.
   Dr. H. Thomas Ballantine, Jr., Boston. (15 minutes).

Work will be reported applying the principles of ultrasonics to the delineation of ventricular pattern.

4. Changes of Plasma Enzyme Patterns Following Lobotomy, Chordotomy and Shock Therapy.
   Dr. John D. French, Long Beach, California. (15 minutes).

West has shown that the amounts of 2 proteolytic enzymes in the blood are considerably increased by malignancy and by certain non-malignant conditions which effect physical or mental stress. The pattern displayed by periodic determination of such enzymes (chymotrypsin and rennin inhibitors) affords a valuable objective means of following the course of malignant diseases and of evaluating the effectiveness of surgical and non-surgical treatment.

The mechanism behind the alteration of these patterns and the significance of the changes is now under investigation by West. In the course of this investigation it became necessary to study the effect on the patterns of pain and anxiety in patients with cancer.

For this reason, 6 patients with cancer, all of whom manifested severe pain and anxiety, were followed before and after lobotomy (4 cases) and chordotomy (2 cases). All those who received lobotomy showed improvement (in 2 instances, striking) in their patterns while in those who had chordotomy no improvement occurred.

To control the experiment, the same operations were made on people with non-malignant disease. Thus, chordotomy was done on 5 paraplegics with severe pain in the lower extremities and lobotomy on 2 patients with severe emotional stress. The results again showed that chordotomy did not affect the enzyme systems while lobotomy produced considerable improvement.

As a further control, 5 patients with severe despressive-anxiety states, but no pain, were followed during the course of electroshock therapy. In all cases improvement in the enzyme patterns was prompt and correlated directly with clinical improvement.

The impressions gained from these preliminary data are that anxiety influences the enzyme patterns considerably and also, possibly, the course of the disease while pain itself has little direct influence as a stress-producing agent. The initial study appears to justify further investigation to clarify the following considerations: (1) The mechanism involved in the alteration of the enzyme system, (2) the usefulness of the test in neuropsychiatric diagnosis and treatment.

5. Spontaneous High Voltage and Rhythmic Low Voltage Discharges from Isolated (and Partially Isolated) Human Cortex.

Dr. Francis Echlin, New York City. (15 minutes).

Using Jasper-Penfield electrodes and a four channel electroencephalograph, electrocorticograms have been made from areas of human cerebral cortex (of schizophrenic patients) after partial or complete isolation of these areas from the surrounding brain except for preservation of their pia-arachnoidal circulation.

Partial neuronal isolation of a block of cortex resulted in a depressing of the spontaneous activity and the appearance of spontaneous bursts of relatively high voltage waves.

Complete neuronal isolation of a block of cerebral cortex caused a marked depression of the spontaneous activity but low voltage rhythmic activity similar to that in the surrounding brain persisted. After 20 to 50 minutes spontaneous paroxysmal bursts of high voltage waves began to appear from the isolated cortex.

Some evidence is presented that the paroxysmal dicharges are not due to ischemia or injury. One chronic preparation is under study. The theoretical implications of the findings are discussed.

6. Cerebral Pedunculotomy for the Relief of Involuntary Movements.
Dr. A. Earl Walker, Baltimore. (15 minutes).

Report will be made of clinical cases of involuntary movement treated by partial section of the cerebral peduncle. The physiological basis of the relief of the abnormal movements and the preservation of practically normal motor function will be discussed.

SATURDAY, September 30, P. M.

Annual Golf Championship—Rochester Country Club. Golfers' luncheon at the Club 12:30 P. M. Eighteen holes will be played in foursomes. Your home course handicap applies. Low net score wins the Silver Championship Trophy to be competed for annually. Chairman of the golf program—Dr. George Baker. Bring your golf clubs and shoes if possible. **Please sign up for this at time of registration.**

Tennis at the Rochester Tennis Club.

See Dr. H. J. Svien for appointments.

National Golden Retriever Club Field Trials.

Dr. C. S. MacCarty will arrange for transportation.

Horseback riding, sight-seeing, shopping, fishing, trap shooting, boating on Lake Pepin.

Coon hunting and other big game enterprises available at all times. See Chairman, Dr. R. Raney.

PROGRAM OF THE LADIES' AUXILIARY AND WIVES OF THE OFFICIAL GUESTS

WEDNESDAY, September 27

8 P. M.—Informal evening at the home of Dr. Alfred Uihlein, 612 - 10th Ave. S. W., Rochester.

Movies of former meetings will be shown, and the famous lion hunter, Dr. R. Raney of Los Angeles, California, will lecture, by use of a technicolor film, on his experiences with big game in 1949.

Music, dancing, refreshments.

THURSDAY, September 28

10 A. M.—Annual meeting of the Ladies Auxiliary, and wives of the official guests, at the home of Dr. and Mrs. George S. Baker, Orchard Acres, Rochester, Minnesota.

Coffee and canapes a la matin.

Official photographs.

Transportation will be furnished by bus from Hotel Kahler for entire group to and from the meeting. Bus leaves the hotel at 10 A. M. and returns by 12 noon.

1 P. M.—Luncheon at the Rochester Country Club.
Bridge, Canasta, gin-rummy and golf.
Shopping, sight-seeing, sports as desired.
Transportation will be furnished to and from the club.

6:30 P. M.—Formal cocktail party, Georgian Room, Mezzanine Floor, Hotel Kahler.
Members and official guests.

8 P. M.—Formal Banquet at Kahler Hotel Cafe, Main Floor.
Members and official guests.

FRIDAY, September 29

The wives of the members of the Neurosurgical Staff have arranged the day.

10 A. M.—Tour through Mayo Foundation House and the Mayo Clinic.
Guides will be waiting in main lobby of the Clinic building at 10 A. M.

11:30 A. M.—Leave Hotel Kahler for beverages at the lake cottage of Dr. and Mrs. J. G. Love, Oronoco, Minnesota.

1:15 P. M.—Luncheon at Carroll's White House, Lake Shady.
Transportation will be furnished by the wives of the Staff of the Neurosurgical Section at the Mayo Clinic from the Hotel Kahler.

3:30-6 P. M.—Shopping, appointments for special necessities, rest.

6:30 P. M.—Cocktails, Buffet Supper and Dance at the Rochester Country Club.
Members, guests and local medical associates of the Neurosurgical Section of the Mayo Clinic.
Dress Optional.

SATURDAY, September 30

A. M.—Golf at Rochester Country Club.
Tennis at Rochester Tennis Club.
Shopping for presents to take home to the kids.

P. M.—Informal luncheons at "hot spots" of your own selection.
Boating on Lake Pepin.
Fishing, if arranged for.
Horseback riding.
Informal dinner.
Coon hunt arranged by Dr. R. Raney.
Informal parties at Rochester Country Club, night clubs, et cetera.

The American Academy of Neurological Surgery

President	*Vice President*	*Secretary and Treasurer*
Edmund H. Botterell	David L. Reeves	Wallace B. Hamby

Honorary Members

Dr. Winchell McK. Craig
Mayo Clinic
Rochester, Minn.

Dr. R. Glen Spurling
405 Heyburn Bldg.
Louisville, Ky.

Active Members

Dr. George S. Baker
Dept. of Neurosurgery
Mayo Clinic
Rochester, Minn.

Dr. William F. Beswick
140 Linwood Ave.
Buffalo 9, N. Y.

Dr. Edwin B. Boldrey
Univ. of Calif. Medical School
Room 11-C
San Francisco 22, Calif.

Dr. Edmund H. Botterell
Medical Arts Bldg.
280 Bloor St., W.
Toronto 5, Ontario, Canada

Dr. Spencer Braden
1342 Hanna Bldg.
Cleveland, Ohio

Dr. Keith Bradford
410 Hermann Professional Bldg.
6410 Fannin St.
Houston 5, Texas

Dr. Howard Brown
384 Post St.
San Francisco 8, Calif.

Dr. Harvey Chenault
200 West Second St.
Lexington 6, Kentucky

Dr. Donald F. Coburn
221 Plaza Time Bldg.
Kansas City 2, Mo.

Dr. Edward W. Davis
806 S. W. Broadway
Portland, Oregon

Dr. Francis A. Echlin
555 Park Ave.
New York 21, N. Y.

Dr. Dean Echols
3503 Prytania St.
New Orleans, La.

Dr. Arthur Elvidge
3801 University Ave.
Montreal, Quebec, Canada

Dr. Theodore C. Erickson
1300 University Ave.
Madison 6, Wisconsin

Dr. Joseph P. Evans
Cincinnati General Hospital
Cincinnati 29, Ohio

Dr. James G. Galbraith
1117 South 22nd St.
Birmingham, Ala.

Dr. Everett Grantham
405 Heyburn Bldg.
Louisville 2, Ky.

Dr. Wesley A. Gustafson
700 North Michigan Ave.
Chicago 11, Ill.

Dr. Wallace B. Hamby
140 Linwood Ave.
Buffalo 9, N. Y.

Dr. Hannibal Hamlin
270 Benefit St.
Providence 3, R. I.

Dr. Jess D. Herrmann
521 N. W. 11th St.
Oklahoma City 3, Okla.

Dr. Olan R. Hyndman
621 First National Bldg.
Davenport, Iowa

Dr. William S. Keith
208 West Block
Medical Arts Bldg.
Toronto 5, Ontario, Canada

Dr. George L. Maltby
203 State Street
Portland 3, Maine

Dr. Frank H. Mayfield
1502 Carew Tower
Cincinnati 2, Ohio

Dr. Augustus McCravey
Medical Arts Bldg.
Chattanooga, Tenn.

Dr. John M. Meredith
1200 E. Broad Street
Richmond 19, Va.

Dr. Edmond Morrissey
330 Medical Bldg.
909 Hyde St.
San Francisco 9, Calif.

Dr. Francis Murphey
Suite 525
Physicians & Surgeons Bldg.
Memphis 3, Tenn.

Dr. Guy L. Odom
Duke University
Durham, North Carolina

Dr. J. Lawrence Pool
710 W. 168th St.
New York 32, N. Y.

Dr. Robert Pudenz
696 E. Colorado St.
Pasadena 1, Calif.

Dr. John Raaf
912 Medical Dental Bldg.
Portland 5, Oregon

Dr. Aiden Raney
1136 W. Sixth St.
Los Angeles 14, Calif.

Dr. Ruper Raney
1136 W. Sixth St.
Los Angeles 14, Calif.

Dr. Theodore Rasmussen
The University of Chicago
University Clinics
Chicago 37, Ill.

Dr. David L. Reeves
316 W. Junipero St.
Santa Barbara, Calif.

Dr. R. C. L. Robertson
411 Hermann Professional
Bldg.
6410 Fannin St.
Houston 5, Texas

Dr. Stuart N. Rowe
3700 Fifth Ave.
Pittsburgh, Pa.

Dr. Henry G. Schwartz
Dept. of Surgery
Washington University
St. Louis 10, Mo.

Dr. William B. Scoville
56 Garden St.
Hartford, Conn.

Dr. Hunter Shelden
Suite 505
Professional Bldg.
Pasadena, Calif.

Dr. Samuel R. Snodgrass
Univ. of Texas Medical
Branch
Galvaston, Texas

Dr. Homer S. Swanson
Emory University Hospital
Emory University, Georgia

Dr. Alfred Uihlein
Dept. of Neurosurgery
Mayo Clinic
Rochester, Minn.

Dr. A. Earl Walker
Johns Hopkins Hospital
Baltimore 5, Md.

Dr. Exum Walker
133 Doctors Bldg.
Atlanta 3, Georgia

Dr. Thomas A. Weaver
Suite 521
Third National Bldg.
Dayton 2, Ohio

Dr. Benjamin B. Whitcomb
85 Jefferson St.
Hartford 6, Conn.

Dr. Barnes Woodhall
Dept. of Surgery
Duke University
Durham, North Carolina

Corresponding Member

Dr. O. William Stewart
Ward 5-B
Queen Mary Veterans' Hospital
Montreal, Quebec, Canada

GUESTS OF THE ACADEMY - 1950 MEETING

Dr. A. W. Adson
Rochester, Minnesota

Dr. Kenneth Abbott
Columbus, Ohio

Dr. John E. Adams
San Francisco, California

Dr. Eben Alexander
Winston-Salem,
North Carolina

Dr. H. T. Ballantine, Jr.
Boston, Massachusetts

~~Dr. Harold F. Buchstein~~
~~Minneapolis, Minnesota~~

Dr. John Eisenbeiss
Phoenix, Arizona

Dr. John D. French
Long Beach, California

Dr. Lyle French
Minneapolis, Minnesota

Dr. W. James Gardner
Cleveland, Ohio

~~Dr. Jerome E. Grunnagle~~
~~Pittsburgh, Pennsylvania~~

Dr. Henry L. Heyl
Hanover, New Hampshire

Dr. Curwood R. Hunter
Cincinnati, Ohio

Sir Geoffrey Jefferson
Manchester, England

Dr. J. Grafton Love
Rochester, Minnesota

Dr. Collin S. MacCarty
Rochester, Minnesota

Dr. Donald Matson
Boston, Massachusetts

Dr. William F. Meacham
Nashville, Tennessee

Dr. Peter Murphy
Washington, D. C.

Dr. William Peyton
Minneapolis, Minnesota

Dr. Wallace Ritchie
St. Paul, Minnesota

Dr. H. J. Svien
Rochester, Minnesota

Dr. Gordon Strewler
Duluth, Minnesota

Dr. Charles W. Taylor
Toronto, Ontario, Canada

Dr. Leonard Titrud
Minneapolis, Minnesota

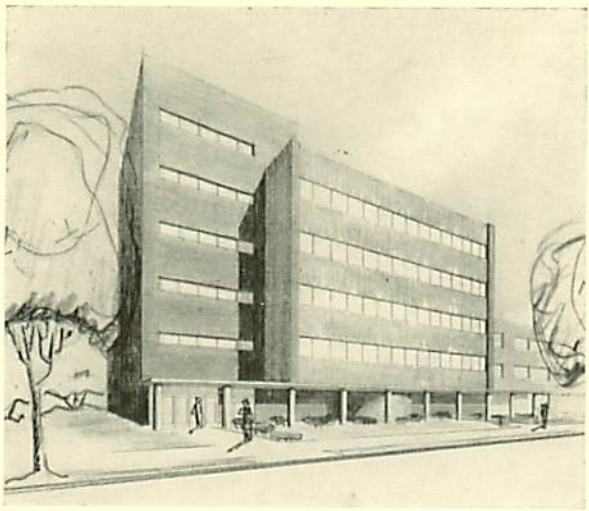
Dr. Delbert Wollin
Toronto, Ontario, Canada

THE MAYO FOUNDATION HOUSE

Mayo Foundation House, at Seventh Avenue and Fourth Street Southwest, was the home of Dr. and Mrs. William J. Mayo until November, 1939, when it was presented by them to the Mayo Foundation for Medical Education and Research as a place in which fellows of the Foundation, members of the staff of the Mayo Clinic, visiting physicians, surgeons, scientists, teachers and distinguished guests would always be welcome.

The building has a number of rooms in which dinners, seminars and the like can be held, and facilities are provided on the second floor for the overnight lodging of distinguished guests of the Mayo Foundation or Mayo Clinic. Dr. William J. Mayo's library, likewise presented to the Mayo Foundation House, is situated in the northeast corner of the first floor.

On the third floor of the Mayo Foundation House is Balfour Hall, so named in November, 1948, in honor of Dr. Donald C. Balfour, director emeritus of the Mayo Foundation. Dr. Balfour came to the Mayo Clinic in 1907 as an assistant in pathology; in 1912 he became head of a section of surgery, and in 1937 he became director of the Mayo Foundation for Medical Education and Research. He retired in October, 1949. One of the unusual features of Balfour Hall is a great stained-glass window in which the salient events in the history of medicine are presented in many colors.



THE MEDICAL SCIENCE BUILDING

Construction of the new addition to the Medical Science Building at Third Avenue and Third Street Southwest began in April, 1949, and is expected to be completed in 1951. It is a five-and-a-half story building 130 by 152 feet, and more than doubles the size of the Medical Building proper, which was completed in 1941.

The new addition to the Medical Science Building will provide quarters for the Section on Pathologic Anatomy, a section concerned with research chemistry, the Section on Anatomy, the Section on Physiology, the Section on Biophysics, a laboratory of dental histopathology, the Section on Engineering and many other units or special endeavors of the Mayo Clinic or Mayo Foundation. The famous human centrifuge, which at the time it was built was the only one in the United States, has been preserved and is a part of the new addition. Both the Medical Science Building proper and the new addition to it are connected to the Mayo Clinic by a subterranean tunnel system.

Directly across the street from the present Mayo Clinic building may be seen the excavation, begun in August, 1950, for the new ten-story diagnostic building. A sketch of this new diagnostic building appears elsewhere in this program. The site of the new diagnostic building was occupied from about 1868 to the summer of 1950 by a large square brick building which originally was a public school and in 1935 became the headquarters of the Mayo Foundation Museum of Hygiene and Medicine. The Museum presently is housed in a temporary structure; when the new diagnostic building is completed the Museum may be moved to the present Mayo Clinic building.

NOTES

The Clinic Building

The main building of the Mayo Clinic, completed in 1929, was designed specifically to make it possible to carry on efficiently the co-ordinated practice of group medicine. Within the terms of this definition, the building is structurally a prototype. It is essentially what has become known as "functional" in design and arrangement.

The physical system which permits the co-ordinated practice of group medicine is perhaps more important than the mere fact of the building itself. A single patient, for instance, may be seen by a number of physicians, yet each of these physicians is provided with rapid access to the patient's record by means of a conveyor system, planned as an integral unit of the building, which will deliver needed information efficiently and rapidly. The conveyor system is associated intimately with the history file rooms, some of which can be seen opposite the elevators on the main floor. Examining rooms, waiting rooms, laboratories and other facilities all were planned to enhance, as much as possible, the efficiency of the co-ordinated group practice of medicine.

The central structure of the Mayo Clinic now consists of two main buildings, side by side. The first of these is a red brick building, five stories high, directly opposite the Kahler Hotel on First Street Southwest. The cornerstone bears the date 1912. This building, which was planned largely by Dr. H. S. Plummer (1874-1936), of the Mayo Clinic, now houses the administrative offices and certain laboratories. The first, second and third floors are continuous with the first, second and third floors of the new building.

The second, or new, building adjoins the 1912 building on the south. This edifice, also conceived and largely planned by the late Dr. H. S. Plummer, was completed in 1929. The building, best described as "a modern twentieth century American building with surface details inspired by Romanesque architecture," has a height equal to that of a twenty-story building. It is 295 feet high from sidewalk to top, and has 500 rooms, not counting those given over to the public. A revolving beacon, to guide airplanes, surmounts the tower. Other buildings which are parts of the Mayo Clinic have been described in the section entitled "Points of Interest."

Decorative Details.—The two great bronze doors at the main entrance of the new Clinic depict six basic activities of man: domestic arts, applied arts, fine arts, mathematics, construction and agriculture. They were designed and cast specifically for the building.

The bronze elevator doors in the main lobby of the new Clinic represent various branches of the healing art. Diagnosis, x-rays, pharmacology, laboratory science and medical education may be readily recognized.

Set into the exterior wall along the front of the building are a series of carved panels which are, in effect, cartoons in stone. One of these,

at the southwestern corner of the building, is a caricature of Dr. H. S. Plummer, poring over the plans of the building which he helped to design. Other panels deal with a wide variety of subjects.

The interior of the building is decorated with marble, terrazzo and tile. The floors of the public spaces on the main floor are made of art marble. Each piece was individually cut and fitted before it was shipped to Rochester. Seven colors are used: red and yellow Numidian marble from Algeria, rose Travernelle marble from Italy, tan Siena marble from Italy, light green (sylvan green) marble from Pennsylvania, dark green (Alps green) marble from Italy and black Belgian marble.

The interior walls are faced of Notre Dame marble from France; counters of built-in desks in the various reception rooms are made of Italian black-and-gold marble. In the elevator lobbies from the fourth floor to the eleventh floor, inclusive, brecciated black-and-gold base and Montenelle marble, both from Italy, are used.

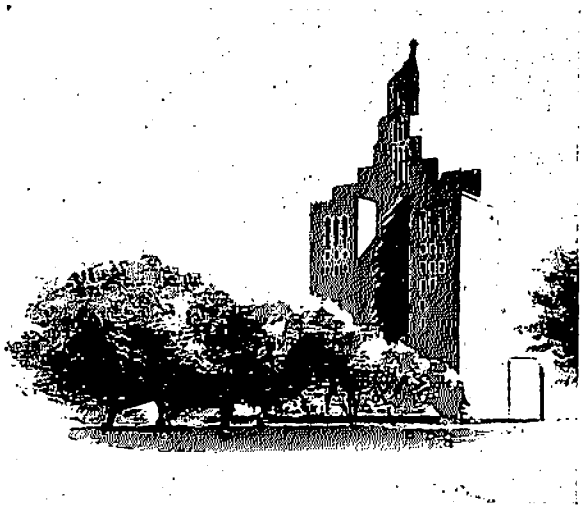
Plummer Hall, on the fourteenth floor of the Clinic, is built of massive carved oak. The ceiling in this large hall is gesso work. It was cast in sections, and the sections were hoisted to the correct height and then joined to each other, in the final position, by a special bonding medium. The hall is used for weekly meetings of the staff of the Clinic and Foundation and for meetings of special societies.

Structural Details.—The Mayo Clinic main building rests upon bedrock. It is a steel skeleton building with concrete floors and curtain walls of masonry. These curtain walls may be compared to the "skin" of a Zeppelin airship, in that they serve no purpose other than that of keeping the elements out. They support nothing; this function is exercised by the steel beams which are the essential structural elements of the buildings, as aluminum ribs are the essential structural components of a Zeppelin.

Between the exterior curtain walls of brick and the plaster walls on the interior of the building is a space about 2 feet wide. This space contains pipes, conduits for electric light and power lines, and radiators and ducts for fresh air. Fresh air reaches the rooms by way of ducts below each floor, and enters the rooms by passing up through the concealed radiators and out by the way of the horizontal grille which is seen directly below and in front of each window. This system was in itself an innovation when the building was erected in 1929.

An interesting minor aspect of construction of the building is the fact that when the steel structural columns surrounding the elevator shafts were completed, they were found to be only ⅛ inch out of plumb. The usual limit of tolerance in this particular instance is 1 inch.

Carillon.—A carillon composed of 23 bells, ranging from 168 to 7,840 pounds, or a total of 36,988 pounds, is located in the tower of the Clinic. This carillon was dedicated in 1928 to "the American soldier" by Dr. William J. Mayo and Dr. Charles H. Mayo. The bells were cast at the Gillett & Johnson works at Croydon, England. An automatic



The Mayo Clinic

keyboard is installed on the twelfth floor of the Clinic. The automatic mechanism will play a number of melodies and can be used to strike the hours, but concerts are played by a trained carillonneur.

The keyboard of the carillon or clavier is located on the nineteenth floor one floor below where the bells are hung in the Clinic building. It looks a little like an organ keyboard except that the keys are much larger and much heavier to push down. The keys are connected with steel rods which in turn are connected with the clapper on each bell. There are swivel attachments on these rods which must be readjusted before the carillonneur gives a recital, since they are affected by heat and cold.

Each bell is made with two clappers, one on each side. One clapper is for automatic playing such as the striking of the hours and the other is for manual playing by the carillonneur.

"There is no carillon music written," a carillonneur has said. "The music which is played must all be transcribed from piano or organ numbers. This means taking a piano number, for example, written for 88 keys and transcribing it for the 23 carillon keys.

"None of the tonal qualities are lost because of the richness of the carillon tones. Music from two up to six-part harmony can be played besides the single notes."

Thus far, almost 2,000 week-day recitals and 1,000 Sunday recitals have been given. On December 31, 1947, records showed that 27,588 numbers had been played since the bells were installed.

Formal dedication of the carillon took place on September 16, 1928. Members of the American Legion in particular, took part in the ceremonies, since the largest bell bears the inscription: "Dedicated to the American soldier by William J. and Charles H. Mayo."

New Clinic Building

New Diagnostic Unit

A new ten-story diagnostic unit, to be the equivalent of an office building with 1,150 rooms, is under construction on the site formerly occupied by the Mayo Foundation Museum of Hygiene and Medicine directly across the street from the present Mayo Clinic building. The site is denoted as No. 3 in the map at the end of this booklet.

The first studies concerned with the need for a new building began in 1938. At that time the physical space which was devoted to physicians and patients seemed adequate. Nonetheless, surveys were started and continued, and they soon showed that although the number of patients and the number of physicians to care for them increased, the physical space available for diagnostic purposes remained constant. The result was that there was not space enough to accommodate the increased number of patients who came to the Clinic for medical care. Delays in appointments, disconcerting as they are to all concerned, became inevitable. The new diagnostic unit, it is believed, will greatly increase the efficiency of the diagnostic facilities of the Mayo Clinic and the rapidity with which they can be called into play for the benefit of the individual patient.

The new diagnostic unit will be 150 feet high. The present Mayo Clinic building is 295 feet high from sidewalk to top. The new building, however, will occupy almost an entire city block. Seen from directly above, it will have the form of a Greek cross. This design permits the use of landscaped open areas at each of the four corners of the building. The architect's conception of one of these areas, namely,

the northeast corner, is shown in the drawing. Only two wings of the building are shown in the illustration. Each floor of the new ten-story building will be considerably larger than twice the size of a floor in the present Mayo Clinic building.

The new building will be a steel frame, bolted together, rather than riveted or welded, with concrete floor slabs. The structure has been planned so that four to six additional floors, if necessary, can be added to it. Final details of the exterior decorative scheme are not yet completed, but it can be said that although the architecture will not duplicate that of the present Mayo Clinic building, it will embody elements of harmony with it.

When the new diagnostic unit has been completed, it will house the general and special diagnostic sections and x-ray diagnosis, in addition to the registration and records departments and the business and administration offices. The present building will then be devoted to therapeutics and medical education, providing expanded facilities for the Mayo Foundation for Medical Education and Research and the medical library, permanent housing for the Mayo Foundation Museum of Hygiene and Medicine, and enlarged quarters for the Section on Publications, the Section on Physical Medicine, the sections concerned with radium and roentgen-ray treatment, and other sections or units.

The red brick building, with the cornerstone bearing the year, 1912, will be devoted to clinical and research laboratories, some of which are already located there, as are the present registration, business and administration offices.

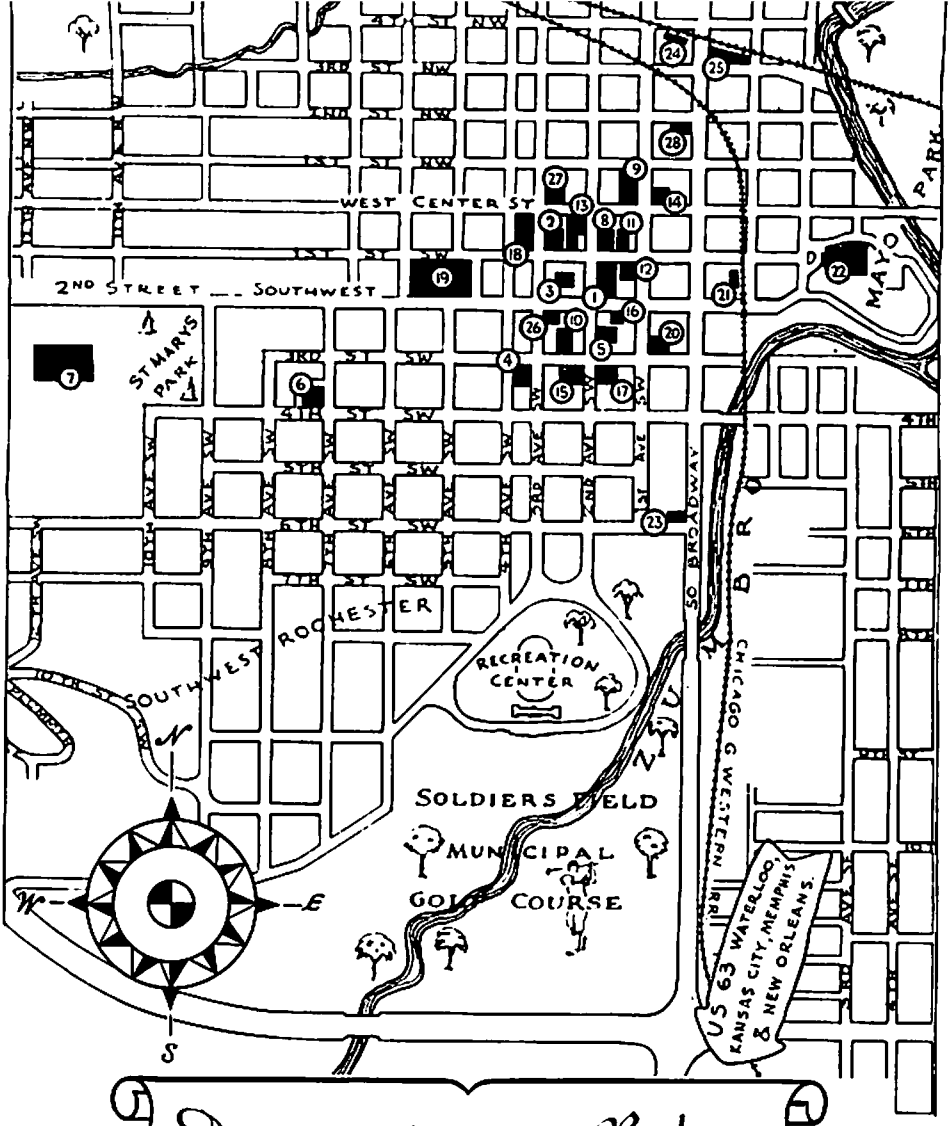
The new ten-story diagnostic unit will have 12 elevators for patients, one of which will be a special elevator for patients in wheel chairs. Space will be provided for an additional 6 elevators to accommodate patients if the need arises. Facilities also will be provided for 8 other elevators for the use of members of the staff.

The entire building will be air-conditioned. Chilled water used in the air-conditioning process will be furnished, as will be heat, light and power, from a central source, which is the Franklin Heating Station, just south of the present Mayo Clinic building.

Each floor devoted to diagnosis likewise will have a seminar room, equipped with projection lanterns, blackboards and other articles or apparatus commonly found in such rooms. Adequate cloakrooms and locker space will be available for all personnel on each floor, and a refreshment room for each level similarly is planned.

Since the concept of unification and integration of facilities for the treatment of patients has always been important to the institution, the new diagnostic unit will be linked to the present Mayo Clinic building by a broad underground concourse. The pneumatic tube and other conveyor systems which connect to the downtown hospitals and to St. Marys Hospital will be extended throughout the new building.

Memoranda



Downtown district in Rochester

1 Mayo Clinic
2 Mayo Clinic Annex
3 Mayo Foundation Museum of Hygiene and Medicine
4 Medical Science Building
5 Franklin Heating Station
6 Mayo Foundation House
7 Saint Mary's Hospital
8 Hotel Kahler and Hospital
9 Colonial Hospital
10 Worrall Hospital
11 Curie Hospital
12 Zumbro Hotel
13 Hotel Damon
14 Carlton Hotel
15 Hotel Arthur
16 Hotel Martin
17 Hotel Campbell
18 U. S. Post Office
19 Court House
20 City Hall
21 C. G. W. R. R. Depot
22 Mayo Civic Auditorium
23 Fire Hall
24 C. & N. W. R. R. Depot
25 Steam and Electric Plant
26 Public Library
27 Rochester Art Center
28 Armory