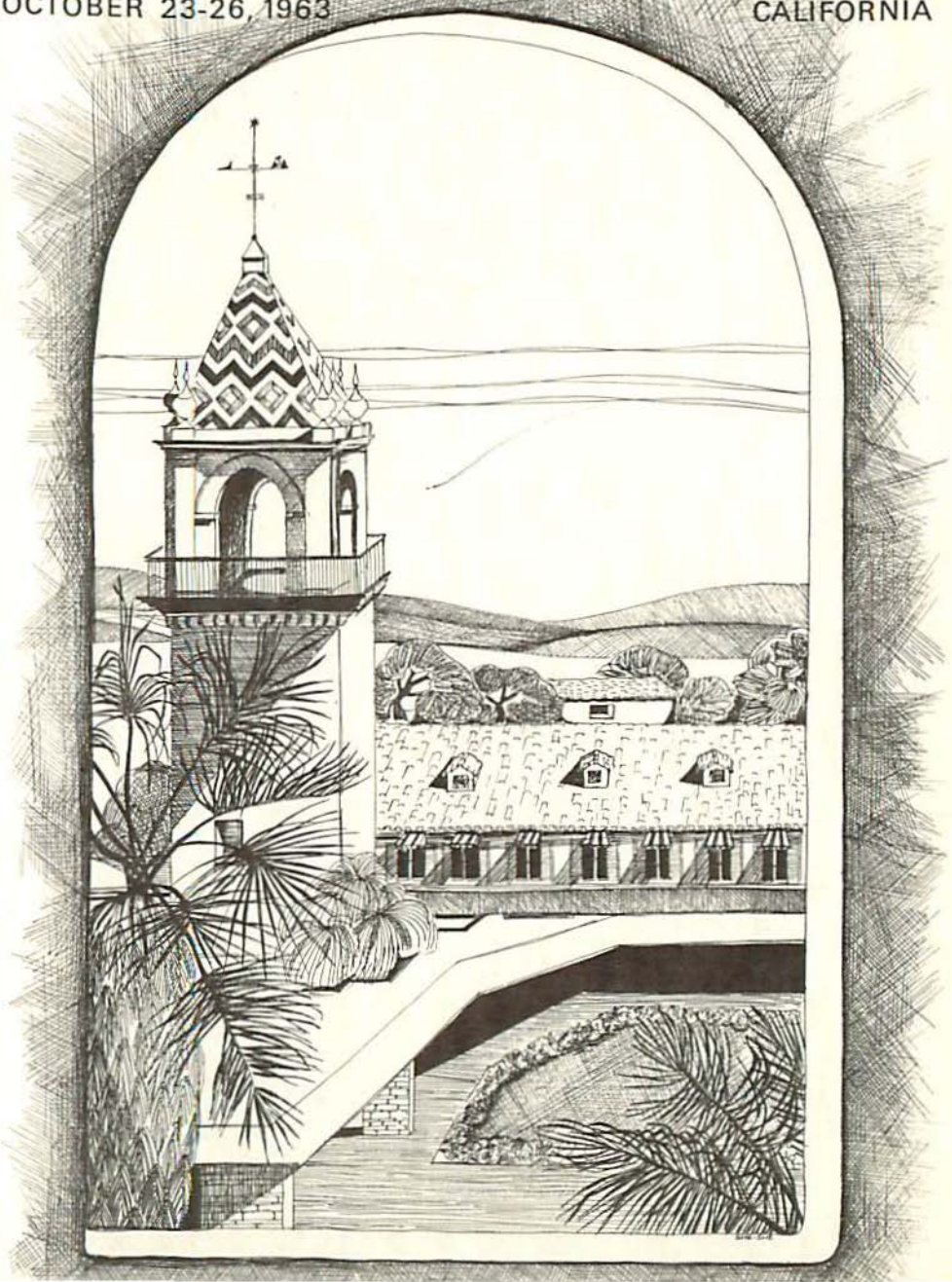
AMERICAN ACADEMY OF NEUROLOGICAL SURGERY

ANNUAL MEETING
OCTOBER 23-26, 1963

PALM SPRINGS,
CALIFORNIA



The American Academy of Neurological Surgery
Officers 1963

President . . . . . Samuel R. Snodgrass
President-Elect . . . . . Theodore B. Rasmussen
Vice-President . . . . . Eben Alexander, Jr.
Secretary-Treasurer . . . . . Edward W. Davis
Historian . . . . . Howard A. Brown
President of Women's Auxiliary . . . . . Mrs. Aidan A. Raney

Committees

Executive Committee
Samuel R. Snodgrass, *Chairman*
Aben Alexander, Jr.
Theodore B. Rasmussen
Edward W. Davis
C. Hunter Shelden
John R. Green

Academy Award Committee
Henry Heyl, *Chairman*
Wesley Gustafson
J. Lawrence Pool

Program Committee
William Sweet, *Chairman*
Eldon Foltz
Frank Nulsen

Membership Advisory Committee
George Baker, *Chairman*
C. Hunter Shelden
Samuel R. Snodgrass
Edward W. Davis
F. Keith Bradford
W. Keasley Welch

Round Robin Committee
David Reeves, *Chairman*
Henry Schwartz
Eben Alexander, Jr.
Robert Fisher

Local Arrangements Committee
Aidan A. Raney, *Chairman*
Robert Pudenz
John French
Ernest Mack

Silver Anniversary Meeting—1963

El Mirador Hotel — Palm Springs

Wednesday, October 23

12:00 Noon to 5:00 P.M. ..... Registration, Lobby

6:30 to 7:30 P.M. ..... Cocktail Party, Safari Room
(Dinner On Your Own)

Thursday, October 24

8:00 A.M. to 12:00 Noon ..... Registration, Lobby

9:00 A.M. ..... Scientific Session, Conference Rooms No. 2 and 3

12:00 Noon to 1:30 P.M. ..... Luncheon, Silver Palm

12:00 Noon (Women's Auxiliary) .. Coffee or Cocktails, Safari Room
Luncheon, Starlite Court

2:00 to 5:00 P.M. .. Scientific Session, Conference Rooms No. 2 and 3

5:00 P.M. ..... Executive Meeting

6:30 P.M. ..... Outdoor Cocktail Party, Palm Terrace and Gardens—Hotel Grounds

7:30 P.M. ..... Outdoor Steak Fry, Palm Terrace and Gardens—Hotel Grounds

Friday, October 25

9:00 A.M. ..... Scientific Session, Conference Rooms No. 2 and 3

12:30 P.M. ..... Busses Leave El Mirador Hotel

1:30 P.M. ..... Luncheon, El Dorado Country Club

6:00 P.M. ..... Cocktail Party, Safari Room

7:00 P.M. ..... Silver Anniversary Banquet, Silver Palm and East Room. (Black Tie Optional)

Saturday, October 26

9:00 to 11:00 ..... Scientific Session, Conference Rooms No. 2 and 3

11:15 A.M. ..... Executive Meeting

Scientific Program

THURSDAY MORNING, OCTOBER 24, 1963

9:00 A.M.

1. **Electrical Control of Pain.**
C. Hunter Shelden, Enrique J. Carregal and James Doyle, Pasadena, California.

9:15 A.M.

2. **A Clinical and Neurohistological Study of Hyperpathic Spots.**
Herbert Lourie and Robert B. King, Syracuse, New York.

A series of patients with hyperpathia due to a variety of lesions in the central and peripheral nervous system have been studied by recording careful sensory examination, noting the natural history of the particular lesion and, where applicable, by excising hyperpathic spots for neurohistological analysis. Silver stains and methylene blue techniques were utilized for the histopathologic studies.

We have observed eight clinical features common to most hyperpathic states, and these will be listed and discussed in detail.

9:30 A.M.

3. **The Transfer of Water Across the Choroid Plexus.**
Keasley Welch and Gerald Gold, Denver, Colorado.

The permeability of the choroid plexus to water, judged from the measured net flux of water in response to imposed osmotic gradients across the Diamox paralyzed plexus, is insufficient by a factor of 6 or 8 to account for the observed flux during normal secretion. Although forces other than osmotic need not be invoked, the passage of water accompanying the movement of solute is facilitated by the latter.

Two forces (at two efficiencies) regulate the net transfer of water, (1) the difference in osmotic pressure across the plexus to which water responds poorly and to which the rate of secretion by the plexus is insensitive, and (2) the difference in concentration of Na Cl across the plexus, which drives the rate of secretion and thus the movement of water. It can be demonstrated that under certain conditions, net transfer of water takes place up its activity gradient.

9:45 A.M.

4. **The Radioisotope Cerebrogram in the Evaluation of Intracerebral Abnormalities in Man and in the Monkey.**
John C. Kennady, D. E. Johnson and G. V. Taplin, Los Angeles, California.

Over one hundred patients were studied and were divided into the following categories: I. Occlusive Vascular, II. Carotid tie-off, III. Aneurysms, IV. Trauma, and V. Tumor. Comparison was made

with the results from cerebral angiograms and electroencephalograms.

The radioisotope cerebrogram, a graphic presentation of the dilution curves recorded simultaneously from both anterior cerebral hemispheres by external scintillation counting and stored in the 512 channel analyzer, provides a simple method for detecting differences between the vascular patterns of the two hemispheres. A precordial dilution curve run simultaneously gives an index of cardiac output in relation to cerebral blood flow.

The arteriogram and cerebrogram demonstrate a close correlation. The latter aids in the interpretation of the arteriogram by showing the functional significance of structural defects.

Basic studies are in progress on monkeys using the Selverstone clamp and the electromagnetic flowmeter on the carotid vessels. The cerebrogram correlates well with partial and total occlusion of these vessels.

10.00 A.M.

Coffee Break.

10:30 A.M.

5. **Intra-arterial Pyelography—A Bonus in Cerebral Angiographic Studies.**
Eben Alexander, Jr., Winston-Salem, North Carolina.

10:45 .A.M.

6. **Carotid Artery Replacement with Reinforced Autogenous Vein Grafts.**
Charles Sparks, Mark Melgard and John Raaf, Portland, Oregon.

An operative procedure is described whereby a diseased segment of carotid artery is excised and replaced with a Teflon reinforced vein graft. In nineteen animals, segments of canine carotid arteries were removed and replaced by segments of femoral vein reinforced with a covering of teflon mesh. Arteriograms were done five weeks to six months post-operatively. In patients, this procedure was performed in 5 cases utilizing the saphenous vein. Subsequently, the operative technique was altered in that the superficial femoral vein was used instead of the saphenous vein and a three-eighths inch tube of crimped teflon used for reinforcement instead of the teflon mesh. This revised method has been employed in 4 patients. Postoperative arteriograms were done on 7 patients. The authors feel that a live intima to live intima anastomosis allows the optimum in vascular replacement without the use of synthetic materials in contact with the flow of blood. The crimped teflon tube avoids the danger of aneurysmal dilatation and minimizes the possibility of early thrombosis by virtue of its increased resistance to external compression.

11:00 A.M.

7. The Results of Surgical Treatment in Carotid Occlusion and Carotid Stenosis.

William M. Lougheed, Toronto, Canada.

The case material for this presentation has been collected over a nine year period from 1954-1963. These patients were operated upon by the members of the Toronto General neurosurgical staff.

The case material is divided into three main categories:

1. Carotid occlusion—early (less than three days)
   Carotid occlusion—late (greater than three days)
2. Stenosis—unilateral or bilateral
3. Advanced disease—stenosis on one side, thrombosis on the other, or varying degrees of intracranial carotid vertebro basilar disease.

The results of operative treatment along with indications and contraindications will be discussed.

11:15 A.M.

8. A Follow-up on Carotid Endarterectomies, 1956-1963.

Francis Murphey and Donald A. Maccubbin, Memphis, Tennessee.

The results of carotid endarterectomy on approximately 170 patients, some of whom had double lesions, are discussed. The mortality and morbidity rate, and the long-term follow-up from 1956 to the present will be presented.

THURSDAY AFTERNOON, OCTOBER 24, 1963

2:00 P.M.

9. Stereoscopic Photography of the Optic Fundus.

A. Ray Irvine, Jr., C. Hunter Shelden, Robert Pudenz and Zolton Yuhasz, Pasadena, California.

Lesions of the optic nerve and fundus, of interest to the neurosurgeon, will be projected stereoscopically. These include: 1. Normal variations in the anatomy of the optic disc and fundus. 2. Papilledema and certain pathological disorders that simulate papilledema. 3. Congenital lesions of the optic nerve and retina. 4. Miscellaneous lesions of interest to the neurologist and neurosurgeon.

2:15 P.M.

10. Evoked Cortical Responses in Man.

Sidney Goldring, St. Louis, Missouri.

During 63 neurosurgical procedures cortical bioelectric responses have been evoked by electrically stimulating either the cortical surface or the subcortical white matter. The critical recording electrode was located on the cortical surface immediately adjacent to the stimulating one or directly above the stimulus site in the

white matter. The neuronal elements responding to such stimuli are limited to within a few mms. of the recording electrode and thus it is possible to examine and compare neuronal function of very small areas of cerebral cortex. For example, detailed comparisons between adjacent gyri may be made or changes may be discerned as the stimulus and recording electrodes are moved along the same gyrus. Parallel observations have been carried out in animals and the results derived therefrom serve as a base for interpretation of our findings in man.

In both animal and man responses from motor and somatosensory cortex are readily distinguished from those of frontal association cortex. Of special interest is the finding that some of the human responses have no analog in the experimental animal. This observation could relate to the unique elaboration of cerebral cortex in man, especially those areas concerned with speech and associative processes. Striking differences also exist between responses obtained from infant cortex and those recorded from the adult. Finally, responses from epileptogenic foci show a characteristic appearance and can be easily distinguished from those of normal cortex.

2:30 P.M.

11. Congenital Interparietal Cephaloceles: Embryologic and Clinical Considerations.

Robert L. McLaurin, Cincinnati, Ohio.

This would include an analysis of 13 cases of congenital midline parietal defects, particularly with regard to the associated intracranial abnormalities and their prognostic significance. In addition, the clinical material is compared with experimentally produced lesions in rats, in an attempt to clarify the embryologic processes involved.

2:45 P.M.

12. Subdural Hematoma in Infants—Report of an Unusual Case with Late Complications.

Howard A. Brown, San Francisco, California.

The principles of subdural hematomas in infants are briefly discussed with particular attention given to the need for extensive removal of the membrane over the brain.

An unusual case is reported where operation was carried out on an infant at one month of age with widespread removal of membrane. Recovery and development thereafter were excellent for sixteen years and the patient was not only an honor student but a very good athlete.

Following a head injury increased intracranial pressure developed and x-rays showed two skulls, one within the other, and angiographic study verified the size of the brain.

Operation revealed extensive bilateral subdural hematomas and the inner skull was some two inches away from the outer skull.

The operative problems are described and discussed for need for membrane removal is pursued further.

3:00 P.M.

Coffee Break.

3:15 P.M.

13. Further Studies on Surgical Exploration of Tumors in the Thalamus and Hypothalamus, with Particular Reference to Catheter Guidance in Exploration.

James Greenwood, Houston, Texas.

A follow-up on an original paper, given in 1955 before the Academy, entitled "Radical Surgery of Tumors of the Thalamus and Hypothalamus." This original paper was never accepted for publication, the reason being given that it was too radical and concepts of pathology were not generally shared by other neurosurgeons.

It is still felt that gliomas in this area tend to behave in a more benign fashion, even when malignant, and are less likely to be of the malignant type, and surgery therefore, although more difficult from the standpoint of surgical approach, may be somewhat more rewarding than tumors in the hemispheres. The operative mortality from biopsy alone was exceedingly high, while adequate removal of tumor resulted in an acceptable operative mortality of about one-third, good and excellent results in about one-third and poor results in the remainder.

Continued study of lesions in this area indicates that the effects of ventricular drainage and bypass operations are preferable to direct surgery as long as they are effective, supplemented in some cases by radiation therapy. Direct approach should be considered when conservative measures fail. Biopsy without removal is justified only when a highly malignant tumor is found and destruction of personality is so far advanced that useful recovery seems impossible. The use of catheter placement under X-ray guidance to allow rapid approach to deep tumors is described.

3:30 P.M.

14. Transphenoidal Approach to the Sella.

Henrick J. Svien, Rochester, Minnesota.

We have employed this approach to the sella in 15 cases. In seven instances hypophysectomy was carried out for various conditions. Hypophysectomy was satisfactorily accomplished in all instances. Cerebrospinal fluid rhinorrhea developed in three instances, with death from meningitis in one instance. Comments on this procedure for hypophysectomy in light of this experience will be made.

In five instances this procedure has been carried out for large pituitary tumors with very gratifying results as far as morbidity and improvement in visual fields are concerned. In two instances this procedure has been employed for chordoma originating from the

clivus and presenting into the sphenoid sinus. In one instance this procedure was used for a metastatic tumor involving the sella and sphenoid sinus.

It is our opinion that for pituitary tumors in which the sella is unusually large, this procedure is the procedure of choice. Our studies with the transfrontal operation in such cases indicate that the mortality and morbidity are considerably higher, and that the results on visual fields are not as good as could be desired.

3:45 P.M.

15. Operative and Postoperative Problems in Management of Parasellar Tumors.

William H. Sweet, Boston, Massachusetts.

Details of operating instruments, the technique of their use, and my errors in technique and judgment will be discussed in connection with such parasellar tumors as craniopharyngiomas, gliomas of the optic pathways, meningiomas and chordomas. Symptoms of imbalance in total fluids, specific electrolytes and blood volume, and of hemorrhagic diathesis in the postoperative period will be presented and tactics for their avoidance suggested. The effects of these lessons on our morbidity and mortality figures for radical extirpation of these lesions will be summarized.

4:00 P.M.

16. Academy Award Presentation.
The Uptake of Radioiodinated Human Serum Albumin by Intracranial Neoplasms.

Charles H. Tator, Toronto General Hospital, Ontario, Canada.

5:00 P.M.

Executive Meeting (Members Only).

FRIDAY MORNING, OCTOBER 25, 1963

9:00 A.M.

17. Congenital Lesions of the Odontoid Process.

Richard L. De Saussure, Memphis, Tennessee.

Congenital atlanto-axial dislocations may occur as a result of failure of fusion of the odontoid, absence of the odontoid or from abnormal laxity of the ligaments. Three patients with failure of fusion of the odontoid will be discussed. Fusion was performed on two of the patients. The third has refused any operative procedure. It seems likely that many cases reported as fractures of the odontoid process are actually congenital failure of fusion. Patients with this condition, who present with symptoms, should have fusion. Fusion should probably be recommended for patients who are asymptomatic. A short film demonstrates the abnormal motion seen at fluoroscopy.

9:15 A.M.

18. Some Thoughts on Cervical Discs.

John J. Lowrey, Honolulu, Hawaii.

An attempt is made to compare results of operations for cervical discs by the posterior and anterior approaches in a small personal series. Indications for one or the other approach are suggested. The choice of various diagnostic tests depends to some degree on the surgical approach to be used. Reasons for preferring the anterior approach in most cases are given. The need for long-term follow-up is stressed.

9:30 A.M.

19. Progressive Thorotrast Myelopathy.

George L. Maltby, Portland, Maine.

The opportunity to personally follow four cases of progressive myelopathy to paralysis and in one instance to death following the use in the early 1940's of thoratrast for myelography has stimulated this report. Having watched three of these patients develop painful progressive paralysis of the lower extremities, plus loss of bladder and bowel control made me feel that perhaps a word of warning was in order in this era of the almost unlimited use of contrast media for neurological diagnoses. Has the art of history taking and careful examination been superseded by injecting various dyes, oils and radioactive materials?

The neurological and neurosurgical literature is fraught with reports of the complications of almost all diagnostic procedures—air, lipoidal, pantopaque, hypaque, methylene blue, etc., almost ad nauseum. Many of these have their place, but one by one they seem to be less frequently used because of the delayed recognition of their dangers. Are we really sure, in spite of encouragement by our colleagues in the physical sciences, how our patients with negative isotope scans will be twenty years from now.

Four cases of progressive thoratrast myelopathy will be reported in this paper—x-rays will be shown and the literature about thoratrast complications will be briefly reviewed.

9:45 A.M.

20. Observations on the Treatment of Meningocele and Myelomeningocele.

Byron C. Pevehouse and Edwin B. Boldrey, San Francisco, California.

10.00 A.M.

Coffee Break.

10:15 A.M.

21. Use of Resorbable Cuffs in Peripheral Nerve Repair.

David G. Kline and George G. Hayes, Bethesda, Maryland.

The protection of a neurorrhaphy site from infiltration with fibrous tissue and neuroma formation by the use of cuffs of various materials has been advocated by many. Most materials fail because they incite a foreign body reaction, produce constricting scar tissue, are technically difficult to apply, or require secondary operation for their removal.

Collagen wrappers processed from bovine deep flexor tendons were found to be transparent, flexible, and easy to apply. To determine the response of intact chimpanzee nerves to wrapping with collagen, histologic and conductive studies were performed. These experiments demonstrated that the collagen cuff evoked a minimal cellular response without residual fibrosis or change in threshold and that cuff resorption time could be regulated by variation in the tanning process. Collagen was then given a trial as a cuff for peripheral nerve repair. Both peroneal nerves of 12 adult chimpanzees were severed and sutured using a standardized technique. The sutured nerve of one side was cuffed with a lightly tanned, irradiated collagen film while that of the opposite side was left uncuffed. Nerves were removed at intervals up to nine months and graded for multiple gross, histologic, and conductive characteristics. The cuffed nerves had less disorganization at the repair site and axonal carry through was more orderly and concentrated than the controls. The cuffs were resorbed at 6-8 weeks. A series of animals were also subjected to multiple implants of collagen and studied for immunologic response.

The results of these studies as well as the conclusions reached will be discussed.

10:30 A.M.

22. Studies of Afferent Functions of Unmyelinated Peripheral Nerve Fibers in Man.

William F. Collins and Frank E. Nulsen, Cleveland, Ohio.

The sural nerve in twelve human subjects was exposed and a segment of the myelinated fibers was blocked by induction current and cooling to 12-15° C. With oscillographic monitoring of the action potential to control the degree of myelinated fiber block, electrical stimuli were applied to the nerve distal to the block and sensations in response to single stimuli and trains of stimuli were recorded.

When single stimuli evoked strong "C" fiber but only "C" fiber activity, the subjects reported either no sensation or an unrecognizable "feeling" which was poorly localized to the correct extremity. On repetitive stimulation there was severe pain after two to four seconds' delay. Some subjects had an unrecognizable sensation just prior to the onset of pain.

The technique, its difficulties, and our interpretation of the results will be discussed.

10:45 A.M.

23. Experiences with Intrathecal Use of Methylprednisolone Acetate in the Treatment of Acute and Chronic Low Back Pain and Sciatica.

Ernest W. Mack, Reno, Nevada.

Experience with fifty patients having acute or chronic low back pain with sciatica treated with intrathecal methyprednisolone acetate is submitted. A review of the methods, usefulness and complications is considered.

11:00 A.M.

24. Presidential Address.
Galveston's First European Visitor, Cabeza de Vaca: Soldier, Trader, Medical Man and Explorer.

Samuel R. Snodgrass, Galveston, Texas.

SATURDAY MORNING, OCTOBER 26, 1963

9:00 A.M.

25. Red Cerebral Veins.

William Feindel and Phanor Perot, Montreal, Canada.

Arteriovenous anastomoses have not been identified anatomically in the normal brain. But red arterial blood can sometimes be seen at operation flowing in what are undoubtedly cortical veins. In addition to their obvious presence in arteriovenous malformations, such red veins have now been observed in association with a variety of pathological lesions. These include tumors which may be highly vascular or, paradoxically, tumors of almost avascular nature, as well as cysts, scars, and infarcts.

The purpose of this report is to review the history of the occurrence of red cerebral veins, to classify the various conditions under which they appear, and to discuss this phenomenon in relation to regional changes in cerebral circulation.

9:15 A.M.

26. Some Experimental Approaches to the Problem of Cerebral Aneurysm.

John F. Mullan, Chicago, Illinois.

Normally the intima of an artery is electrically negative relative to the adventitia. During hemorrhage the intima becomes positive and simultaneously thrombus formation commences. Artificial creation of a positive intima will also induce thrombus formation. Occlusion of the femoral artery has been produced in forty dogs by the use of an electric current, measured in millionths of an ampere.

This paper discusses the physical factors involved, the duration of the thrombi produced and the effects of antifibrinolysin upon these thrombi. The method has been successfully applied to the treatment of saccular aneurysm, arteriovenous fistula and hemangioma.

9:30 A.M.

27. Subarachnoid Hemorrhage—Factors in Prognosis and Management.

S. A. Stornelli and John D. French, Long Beach, California.

This study analyses associated changes in angiographically visualized cerebral vessels, systemic blood pressure and intracranial pressure in patients with subarachnoid hemorrhage.

Forty-two consecutive patients with subarachnoid hemorrhage were evaluated. Angiography revealed 27 with aneurysms, four with A-V malformations and 11 in whom no abnormality was visualized. Fifteen of these patients died, four of whom had been treated surgically and 11 conservatively. Twenty-seven patients recovered, nine of whom were treated surgically and 18 conservatively. Of 15 patients who died, 14 had severe vasospasm, while of 27 who did well, 25 were free of spasm.

When the clinical course was characterized by systemic hypertension and increased intracranial pressure (as evidenced by high spinal fluid pressures), spasm occurred in all cases. Contrastingly, patients with normal blood pressures and spinal fluid pressures did not exhibit spasm. However, when the angiogram displayed spasm, hypertension and intracranial pressure were always present.

It was concluded that vasospasm, and the ensuing pathophysiology associated with it, was the principal cause of death in patients with subarachnoid hemorrhage. Therefore, signs of vasospasm (hypertension and increased spinal fluid pressure) have important prognostic value as well as critical therapeutic implications in directing timing of angiography and of surgical intervention.

9:45 A.M.

28. Ruptured Intracranial Aneurysms—The Role of Arterial Spasm.

Charles G. Drake and John Allcock, London, Canada.

The authors have expressed previously their view that arterial spasm is the main cause of post-operative morbidity and mortality in patients with ruptured intracranial aneurysms. The records of 176 such patients will be analyzed with respect to any parameter that could conceivably be related to the development of this spasm. The results suggest that early operation, the production of hypothermia, and the use of controlled ventilation, in various combinations, may contribute to the occurrence of spasm. The patients will also be considered with regard to the effect that the presence of spasm appears to have, both pre- and post-operatively, on the immediate clinical condition and on the ultimate outcome.

10:00 A.M.

Coffee Break.

10:30 A.M.

29. Arteriovenous Malformations: Results in Operated and Non-Operated Patients.

Homer S. Swanson, Atlanta, Georgia.

This report deals with a long term follow-up in a series of forty-five proven cases of arteriovenous malformation of the brain. The patients varied in age from two months to sixty-five years and all but two of the lesions involved the cerebral hemispheres. There were two located in the posterior fossa. In this group, twenty-one presented with manifestations of either focal irritative or degenerative phenomenae while twenty-four exhibited evidences of hemorrhage. Twenty-two patients were subjected to surgery with three operative deaths whereas three non-operative cases succumbed as a result of their disease, two of massive hemorrhage and one of pneumonia following status. The most interesting feature of this survey is the amazing longevity without disabling disability in many of these patients in contrast to the aneurysmal group. This survey has led us to the conclusion that surgery in this type of malformation should be reserved for the patient presenting with significant hemorrhage or in those cases in which, as a result of previous hemorrhage, a persisting neurological deficit exists which might not be anticipated to be increased by surgical intervention.

10:45 A.M.

30. Experiences with Aneurysms of the Vein of Galen.

Anthony S. Susen, Pittsburgh, Pennsylvania.

This is a report of our experiences with fourteen cases of aneurysms of the vein of Galen studied at the Children's Hospital of Pittsburgh during the past ten years.

These children presented themselves in one of three ways—an enlarged head with obstructive hydrocephalus, cardiac failure shortly after birth due to high output, or rarely, subarachnoid hemorrhage. Characteristic physical findings consisted of an enlarged head, dilated scalp veins, and a marked cranial bruit noted mainly over the right transverse sinus. Oxygen saturation of the carotid, internal jugular, scalp vein, and the femoral blood afforded us a preoperative index as to the size of the shunt. Angiography was carried out on all but one case, and surgical attack carried out on all but one case. The original procedures consisted of transventricular approach with extirpation of the aneurysm. This, however, did not prove feasible, as it carried a high mortality. More recently, we have been carrying out a sagittal approach through the corpus callosum without extirpation. To date, we have not had any mortality with this approach.

Cineangiography and an operative movie will be shown.

11:00 A.M.

31. Carotidcavernous Fistula: Review of 36 Cases.

Wallace B. Hamby, Cleveland, Ohio.

The physics of the carotid cavernous fistula is reviewed. Thirty-six cases are reviewed and the results are summarized of surgical attack upon 32 patients. Various combinations of progressive proximal and distal arterial ligations resulted in a high rate of failure, as is true of such lesions elsewhere, and in one death. Simultaneous isolation of the cerebral circulation from the fistula and ligation of its afferents proves most effective.

A definitive one-stage operation is proposed. This consists of intracranial carotid clipping, followed by embolization of the fistulous carotid segment with muscle and occlusion of the common, external and internal carotids in the neck.

11:15 A.M.

Executive Meeting (Members Only).

Academy Award

Because of the general excellence of the manuscripts submitted, the Committee asks that their names and titles be printed in the program as a tribute to these applicants.

Perry Black, Johns Hopkins Hospital, Baltimore, Maryland —*"Interhemispheric Transfer Of Visual Learning In The Chimpanzee."*

Frederick Edelman, Albert Einstein, New York, New York— *"Studies On The Immune Mechanisms Of The Brain In Mice."*

H. William Goebert, Cleveland Clinic, Cleveland, Ohio— *"Intraspinal Corticosteroids In The Treatment Of Sciatica."*

Philip Levin, Mt. Sinai Hospital, New York, New York— *"Multiple Meningiomas."*

Donlin M. Long, University of Minnesota, Minneapolis, Minnesota—*"The Electron Microscopic Appearance Of Treated And Untreated Cerebral Edema."*

D. Ross MacTavish, Toronto General Hospital, Toronto, Ontario—*"Communicating Hydrocephalus. An Experimental Study In The Dog."*

John C. Misko, Good Samaritan Hospital, Portland, Oregon— *"Selective Cerebral Hypothermia: Physiology And Technique."*

Melvin Shafron, University Hospitals of Cleveland, Cleveland, Ohio—*"Ascending Spinal Pathways of Centre Median Nucleus In Cat: An Experimental Method For The Study Of Pain."*

C. Norman Shealy, Western Reserve, Cleveland, Ohio and MGH, Boston, Massachusetts—*"Unusual Vascular Malformations And The Falsely Localizing Air Study"* and *"Gallium-68 As A Scanning Agent For Intracranial Lesions."*

George Varughese, University of Saskatchewan, Saskatoon, Canada—*"Cancer Cultivation."*

R. Lewis Wright, MGH, Boston, Massachusetts—*"Measurement Of Maximal Permissible Cerebral Ischemia And A Study Of Its Pharmacologic Prolongation."*

Guests of the Academy 1963

Dr. John Allcock ..... London, Ontario
Dr. Patricio Beltran-Goni ..... Mexico City, Mexico
Dr. William Collins, Jr. ..... Richmond, Virginia
Dr. Sidney Goldring ..... St. Louis, Missouri
Dr. Carl Graf ..... Buffalo, New York
Dr. Hale Haven ..... Seattle, Washington
Dr. John Kennady ..... Torrance, California
Dr. David Kline ..... Washington, D. C.
Dr. Herbert Lourie ..... Syracuse, New York
Dr. John Lowrey ..... Honolulu, Hawaii
Dr. Don Maccubbin ..... Memphis, Tennessee
Dr. Mark Melgard ..... Portland, Oregon
Dr. John Mullan ..... Chicago, Illinois
Dr. H. R. Oberhill ..... Chicago, Illinois
Dr. Anselmo Pineda ..... Long Beach, California
Dr. James St. John ..... Santa Barbara, California
Dr. James Shelden ..... Lakeland, Florida
Dr. S. A. Stornelli ..... Long Beach, California
Dr. Anthony Susen ..... Pittsburgh, Pennsylvania
Dr. Charles H. Tator ..... Toronto, Ontario
Dr. Karl Von Hagen ..... Los Angeles, California
Dr. Samuel Weaver ..... Santa Ana, California

Past Presidents

Dean Echols	1938-39
Spencer Braden	1940
Joseph P. Evans	1941
Francis Murphey	1942
Frank H. Mayfield	1943
A. Earl Walker	1944
Barnes Woodhall	1946
William S. Keith	1947
Howard Brown	1948
John Raaf	1949
E. Harry Botterell	1950
Wallace B. Hamby	1951
Henry Schwartz	1952
J. Lawrence Pool	1953
Rupert Raney	1954
David L. Reeves	1955
Stuart N. Rowe	1956
Arthur Elvidge	1957
Jess D. Herrmann	1958
Edwin B. Boldrey	1959
George Baker	1960
C. Hunter Shelden	1961-62

Past Vice-Presidents

Francis Murphey	1941
William S. Keith	1942
John Raaf	1943
Rupert B. Raney	1944
Arthur Elvidge	1946
John Raaf	1947
Arthur Elvidge	1948
F. Keith Bradford	1949
David L. Reeves	1950
Henry Schwartz	1951
J. Lawrence Pool	1952
Rupert B. Raney	1953
David L. Reeves	1954
Stuart N. Rowe	1955
Jess D. Herrmann	1956
George Baker	1957
Samuel Snodgrass	1958
C. Hunter Shelden	1959
Edmund Morrissey	1960
Donald Coburn	1961-62

Past Secretary-Treasurers

Francis Murphey	1938-39-40
A. Earl Walker	1941-42-43
Theodore C. Erickson	1944-46-47
Wallace B. Hamby	1948-49-50
Theodore B. Rasmussen	1951-52-53
Eben Alexander, Jr.	1954-55-56-57
Robert L. McLaurin	1958-59-60-61-62

Past Meetings of the Academy

Hotel Netherland Plaza, Cincinnati, Ohio ..... October 28-29, 1938

Roosevelt Hotel, New Orleans, Louisiana ..... October 27-29, 1939

Tudor Arms Hotel, Cleveland, Ohio ..... October 21-22, 1940

Mark Hopkins Hotel, San Francisco, California and
Ambassador Hotel, Los Angeles, Calif. .... November 11-15, 1941

The Palmer House, Chicago, Illinois ..... October 16-17, 1942

Hart Hotel, Battle Creek, Michigan ..... September 17-18, 1943

Ashford General Hospital,
White Sulphur Springs, West Virginia ..... September 7-9, 1944

The Homestead, Hot Springs, Virginia ..... September 9-11, 1946

Broadmoor Hotel, Colorado Springs, Colorado ... October 9-11, 1947

Windsor Hotel, Montreal, Canada ..... September 20-28, 1948

Benson Hotel, Portland, Oregon ..... October 25-27, 1949

Mayo Clinic, Rochester, Minnesota ..... September 28-30, 1950

Shamrock Hotel, Houston, Texas ..... October 4-6, 1951

Waldorf Astoria Hotel, New York City ..... Sept. 29-October 1, 1952

Biltmore Hotel, Santa Barbara, California ..... October 12-14, 1953

Broadmoor Hotel, Colorado Springs, Colorado .. October 21-23, 1954

The Homestead, Hot Springs, Virginia ..... October 27-29, 1955

Camelback Inn, Phoenix, Arizona ..... November 8-10, 1956

The Cloister, Sea Island, Georgia ..... November 11-13, 1957

The Royal York Hotel, Toronto, Ontario ..... November 6-8, 1958

Del Monte Lodge, Pebble Beach, California .... October 18-21, 1959

Hotel Sheraton Plaza, Boston, Massachusetts ..... October 5-8, 1960

Royal Orleans, New Orleans, Louisiana ..... November 7-10, 1962

The American Academy of Neurological Surgery
Founded October 28, 1938

Honorary Members

	Elected
Dr. Percival Bailey 1601 West Taylor St. Chicago 12, Illinois	1960
Dr. Kenneth G. McKenzie 430 Medical Arts Bldg. Toronto 5, Ontario, Canada	1960
Dr. Wilder Penfield Montreal Neurological Institute 3801 University St. Montreal 2, Quebec, Canada	1960
Dr. R. Eustace Semmes 899 Madison Ave. Memphis 3, Tennessee	1955
Dr. R. Glen Spurling 405 Heyburn Bldg. Louisville 2, Kentucky	1942

Senior Members

Dr. Olan R. Hyndman Veterans Administration Hospital Iowa City, Iowa	1941
Dr. Donald F. Coburn 221 Plaza Time Bldg. Country Club Plaza Kansas City 2, Missouri	1938

Corresponding Members

Dr. John Gillingham Boraston House, Ravelston Edinburgh, 4, Scotland	1962
Dr. Kristian Kristiansen Oslo Kommune Ulleval Sykehus Oslo, Norway	1962

Active Members

		Elected
Dr. Eben Alexander, Jr. Bowman Gray School of Medicine Winston-Salem 7, North Carolina	Betty 521 Westover Avenue Winston-Salem, North Carolina	1950
Dr. George S. Baker 200 First Street, S.W. Rochester, Minnesota	Enid Salem Road, Route 1 Rochester, Minnesota	1940
Dr. H. Thomas Ballantine, Jr. Massachusetts General Hospital Boston 14, Massachusetts	Elizabeth 30 Embankment Road Boston 14, Massachusetts	1951
Dr. William F. Beswick 685 Delaware Avenue Buffalo 9, New York	Phyllis 59 Ashland Avenue Buffalo, New York	1949
Dr. Edwin B. Boldrey University of Calif. Medical School San Francisco 22, California	Helen 924 Hayne Road Hillsborough, California	1941
Dr. E. Harry Botterell Faculty of Medicine Queen's University Kingston, Ontario, Canada	Margaret Apt. 601, 150 Balmoral Avenue Toronto, Ontario, Canada	1938
Dr. Spencer Braden 1130 Hanna Building 14th & Euclid Avenues Cleveland 15, Ohio	Mary 2532 Arlington Road Cleveland Heights, Ohio	Founder
Dr. F. Keith Bradford 435 Hermann Professional Bldg. 6410 Fannin Street Houston 25, Texas	Byra 3826 Linklea Drive Houston 25, Texas	1938
Dr. Howard A. Brown Franklin Hospital 14th and Noe Streets San Francisco 14, California	Dorothy 127 San Pablo Avenue San Francisco, California	1939
Dr. Harvey Chenault 200 West Second Street Lexington 6, Kentucky	Margaret 2105 Nicholasville Road Lexington, Kentucky	1949
Dr. Edward W. Davis 806 S.W. Broadway Portland 5, Oregon	Barbara 1714 N.W. 32nd Avenue Portland 10, Oregon	1949
Dr. Richard L. De Saussure Suite 101 B 20 S. Dudley Street Memphis, Tennessee	Phyllis 74 Pinehurst Memphis 17, Tennessee	1962
Dr. Charles G. Drake 450 Central Avenue, Suite 301 London, Ontario, Canada	Ruth R.R. 3, Medway Heights London, Ontario, Canada	1958
Dr. Francis A. Echlin 164 East 74th Street New York 21, New York	Letitia 164 East 74th Street New York 21, New York	1944
Dr. Dean H. Echols Ochsner Clinic 3503 Prytania Street New Orleans, Louisiana	Fran 1428 First Street New Orleans 13, Louisiana	Founder

		Elected
Dr. Arthur R. Elvidge Montreal Neurological Institute 3801 University Street Montreal 2, Quebec	1465 Bernard Avenue, West Outremont, Quebec, Canada	1939
Dr. Theodore C. Erickson University Hospitals 1300 University Avenue Madison 6, Wisconsin		1940
Dr. Joseph P. Evans University of Chicago Clinics 950 East 59th Street Chicago 37, Illinois	Hermene 1234 East 56th Street Chicago 37, Illinois	Founder
Dr. William H. Feindel Montreal Neurological Institute 3801 University Street Montreal 2, Canada	Faith 492 Argyle Avenue Westmount Province of Quebec, Canada	1959
Dr. Robert G. Fisher Hitchcock Clinic Hanover, New Hampshire	Constance 11 Ledyard Lane Hanover, New Hampshire	1957
Dr. Eldon L. Foltz Div. of Neurosurgery University Hospital Seattle 5, Washington	Catherine 3018 E. Laurelhurst Drive Seattle 5, Washington	1960
Dr. John D. French The Medical Center University of California Los Angeles 24, California	Dorothy 1809 Via Visalia Palos Verdes Estates, California	1951
Dr. Lyle A. French University of Minnesota Hospitals Minneapolis 14, Minnesota	Gene 85 Otis Lane St. Paul 4, Minnesota	1954
Dr. James G. Galbraith 909 S. 18th Street Birmingham 5, Alabama	Peggy 4227 Altamont Road Birmingham 13, Alabama	1947
Dr. Everett G. Grantham 405 Heyburn Building Louisville 2, Kentucky	Mary Carmel 410 Mockingbird Hill Road Louisville 7, Kentucky	1942
Dr. John R. Green Park Central Medical Bldg. 550 West Thomas Road Phoenix, Arizona	Georgia 88 North Country Club Drive Phoenix, Arizona	1953
Dr. James Greenwood, Jr. 1117 Hermann Professional Bldg. 6410 Fannin Street Houston 25, Texas	Mary 3394 Chevy Chase Blvd. Houston 19, Texas	1952
Dr. Wesley A. Gustafson First National Bank Bldg. McAllen, Texas	Jennie North Ware Road R.R. No. 1, Box 296-A McAllen, Texas	1942
Dr. Wallace B. Hamby Cleveland Clinic 2020 East 93rd Street Cleveland 6, Ohio	Hellyn 21300 Sydenham Road Shaker Heights 22, Ohio	1941

		Elected
Dr. Hannibal Hamlin 270 Benefit Street Providence 3, Rhode Island	Margaret 270 Benefit Street Providence, Rhode Island	1948
Dr. John W. Hanbery San Francisco-Stanford Hospital Clay and Webster Streets San Francisco 15, California	Shirley 70 Mercedes Lane Atherton, California	1959
Dr. George J. Hayes Box 236, Walter Reed Hospital Washington 12, D. C.	Catherine 6932 15th Street, N.W. Washington 12, D. C.	1962
Dr. Jess D. Herrmann 525 Northwest Eleventh Street Oklahoma City 3, Oklahoma	Mary Jo 1604 Glenbrook Terrace Oklahoma City 14, Oklahoma	1938
Dr. Henry L. Heyl Hitchcock Foundation Hanover, New Hampshire	Katharine Norwich, Vermont	1951
Dr. William S. Keith Toronto Western Hospital 399 Bathurst Street Toronto 2B, Ontario	Eleanor 55 St. Leonardi Crescent Toronto 12, Ontario, Canada	Founder
Dr. Robert B. King University Hospital Upstate Medical Center Syracuse 10, New York	Molly 2 Clara Road Fayetteville, New York	1958
Dr. William Lougheed 170 St. George Street Toronto 5, Ontario, Canada	Grace Eleanor 67 Ridge Drive Toronto, Ontario, Canada	1962
Dr. Ernest W. Mack 505 Arlington Ave., Suite 212 Reno, Nevada	Roberta 235 Juniper Hill Road Reno, Nevada	1956
Dr. George L. Maltby 31 Bramhall Street Portland 3, Maine	Isabella (sim) Bramhall Field Falmouth Foreside, Portland, Maine	1942
Dr. Donald D. Matson 300 Longwood Avenue Boston 15, Massachusetts	Dorothy 44 Circuit Road Chestnut Hill 67, Massachusetts	1950
Dr. Frank H. Mayfield 506 Oak Street Cincinnati 19, Ohio	Queenee 3519 Principio Avenue Cincinnati 26, Ohio	Founder
Dr. Augustus McCravey 102 Interstate Bldg. 540 McCallie Avenue Chattanooga 3, Tennessee	Helen 130 North Crest Road Chattanooga, Tennessee	1944
Dr. Robert L. McLaurin Division of Neurosurgery Cincinnati General Hospital Cincinnati 29, Ohio	Kathleen 2461 Grandin Road Cincinnati 8, Ohio	1955
Dr. William F. Meacham Vanderbilt Hospital Nashville 5, Tennessee	Alice 3513 Woodmont Blvd. Nashville 12, Tennessee	1952

		Elected
Dr. Edmund J. Morrissey 450 Sutter Street, Suite 520 San Francisco 8, California	Kate 2700 Vallejo Street San Francisco 23, California	1941
Dr. Francis Murphey Suite 101-B, Baptist Medical Bldg. 20 South Dudley Memphis 3, Tennessee	Roder 1856 Autumn Avenue Memphis, Tennessee	Founder
Dr. Frank E. Nulsen Division of Neurosurgery University Hospitals 2065 Adelbert Road Cleveland 6, Ohio	Ginny 21301 Shaker Blvd. Shaker Heights 22, Ohio	1956
Dr. Guy L. Odom Duke University School of Medicine Durham, North Carolina	Suzanne 2812 Chelsea Circle Durham, North Carolina	1946
Dr. J. Lawrence Pool 710 West 168th Street New York 32, New York	Angelina Closter Dock Road Alpine, New Jersey	1940
Dr. Robert W. Porter 5901 E. 7th Street Long Beach 4, California		1962
Dr. Robert Pudenz 744 Fairmount Avenue Pasadena 1, California	Mary Ruth 3110 San Pasqual Pasadena 10, California	1943
Dr. John Raap 1010 Medical Dental Building Portland 5, Oregon	Lorene 390 S.W. Edgecliff Road Portland 19, Oregon	Founder
Dr. Aidan A. Raney 2010 Wilshire Blvd. Los Angeles 57, California	Mary 125 N. Las Palmas Los Angeles 5, California	1946
Dr. Theodore B. Rasmussen Montreal Neurological Institute 3801 University Street Montreal 2, Quebec, Canada	Catherine 29 Surrey Drive Montreal 16, Quebec, Canada	1947
Dr. David L. Reeves 316 West Junipero Street Santa Barbara, California	Marjorie 595 Picacho Lane, Montecito Santa Barbara, California	1939
Dr. R. C. L. Robertson 437 Hermann Professional Bldg. 6410 Fannin Street Houston 25, Texas	Marjorie 5472 Lynbrook Drive Houston, Texas	1946
Dr. Stuart N. Rowe 302 Iroquois Building 3600 Forbes Street Pittsburgh 13, Pennsylvania	Elva 6847 Reynolds Street Pittsburgh 8, Pennsylvania	1938
Dr. Henry G. Schwartz 600 South Kingshighway St. Louis 10, Missouri	Reedie 2 Brair Oak, Ladue St. Louis 24, Missouri	1942
Dr. William B. Scoville 85 Jefferson Street Hartford 14, Connecticut	Helene 334 North Steele Road West Hartford, Connecticut	1944

		Elected
Dr. C. Hunter Shelden 744 Fairmount Avenue Pasadena 1, California	Elizabeth 1345 Bedford Road San Marino, California	1941
Dr. Samuel R. Snodgrass John Sealy Hospital Univ. of Texas Medical Branch Galveston, Texas	Margaret 1405 Harbor View Drive Galveston, Texas	1939
Dr. Henrik J. Svien 200 First Street S.W. Rochester, Minnesota	Nancy 827 Eighth Street, S.W. Rochester, Minnesota	1957
Dr. Homer S. Swanson 384 Peachtree Street, N.E. Atlanta 3, Georgia	La Myra 1951 Mt. Paran Road, N.W. Atlanta, Georgia	1949
Dr. William H. Sweet Massachusetts General Hospital Boston 14, Massachusetts	Mary 35 Chestnut Place Brookline 46, Massachusetts	1950
Dr. Alfred Uihlein 200 First Street, S.W. Rochester, Minnesota	Ione 21 Skyline Drive Rochester, Minnesota	1950
Dr. A. Earl Walker Johns Hopkins Hospital Division of Neurological Surgery 601 N. Broadway Baltimore 5, Maryland	Terrye 6007 Lakehurst Drive Baltimore 10, Maryland	1938
Dr. Exum Walker Suite 423, 340 Boulevard, N.E. Atlanta 12, Georgia	Frances 1819 Greystone Road, N.W. Atlanta, Georgia	1938
Dr. Arthur A. Ward, Jr. University of Washington School of Medicine Division of Neurosurgery Seattle 5, Washington	Janet 3922 Belvoir Place Seattle, Washington	1953
Dr. Thomas A. Weaver 146 Wyoming Street Dayton, Ohio	Mary 868 W. Alexandersville-Bellbrook Rd. Dayton 59, Ohio	1943
Dr. W. Keasley Welch 4200 E. Ninth Avenue Denver 20, Colorado	Elizabeth 744 Dexter Street Denver, Colorado	1957
Dr. Benjamin B. Whitcomb 85 Jefferson Street Hartford 14, Connecticut	Margaret 38 High Farms Road West Hartford, Connecticut	1947
Dr. Barnes Woodhall Duke University School of Medicine Durham, North Carolina	Frances 4006 Dover Road, Hope Valley Durham, North Carolina	1941

Deceased Members	Elected
Dr. Winchell McK. Craig (Honorary) 2-12-60 Rochester, Minnesota	1942
Sir Geoffrey Jefferson (Honorary) 3-22-61 Manchester, England	1951
Dr. John M. Meredith (Active) 12-19-62 Richmond, Virginia	1946
Dr. W. Jason Mixter (Honorary) 3-16-58 Woods Hole, Massachusetts	1951
Dr. Rupert B. Raney (Active) 11-28-59 Los Angeles, California	1939
Dr. O. William Stewart (Corresponding) Montreal, Quebec	1948


THE AMERICAN ACADEMY
OF NEUROLOGICAL SURGERY