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- FLEXNER REPORT ON MINNESOTA
- INTESTINAL OBSTRUCTION
- MALIGNANT LYMPHOMA
- VITAMIN E DEFICIENCY

VOLUME XXXVII, NUMBER 7

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HISTORY OF THE MEDICAL SCHOOL

Part V

The Flexner Report

The historic report on U.S. and Canadian medical schools published in 1910 by Mr. Abraham Flexner changed the course of medical training forever. The study, commissioned by the Carnegie Foundation, was designed to help establish then-nonexistent standards among the medical institutions.



Among other things, the Flexner Report revealed (1) “. . . an enormous over-production of uneducated and ill trained medical practitioners in the last 25 years . . .”, (2) “. . . existence of a very large number of commercial (medical) schools . . .”, (3) “. . . conduct of a medical school as a profitable business . . .”, etc.

Flexner visited each state in the U.S. and each Canadian province and submitted a report on the status of medical education in each of them. With rare exceptions, these reports were harshly critical, and forced the closing of many schools. Minnesota, however, was singled out as being one of the best states in its approach to medical education. Here is what Flexner said about the State of Minnesota:

Minnesota

Population — 2,162,726

Number of Physicians — 2,204

Ratio — 1:981

Number of Medical Schools — 1

Minneapolis-St. Paul, Population — 552,211

UNIVERSITY OF MINNESOTA
COLLEGE OF MEDICINE AND SURGERY

Organized in 1883, it has step by step absorbed all other medical schools in the state, including (1909) the homeopathic department of the university. Elective courses in homeopathic materia medica and therapeutics are offered on condition that students following them shall receive the degree of Doctor of Medicine in Homeopathy.

Entrance requirement: Two years of college work, specifically including the fundamental sciences and a modern language.

Attendance: 174, 83 per cent from Minnesota.

Teaching staff: 49 professors and 71 of other grade — total, 120.

Resources available for maintenance: State appropriations. The budget calls for \$71,336. The income from fees is \$16,546.

Laboratory facilities: Excellent, exceedingly attractive, and well organized laboratories are provided for all the scientific branches. The State Laboratory of Public Health is practically part of the school plant. The instruction is in charge of fulltime teachers, generously supplied with books, apparatus, and material.

Clinical facilities: The school has hitherto relied on the municipal hospitals and unpaid clinical teachers, with the usual results. Teaching opportunities were both limited in extent and precarious in character. These institutions are in fact not organized, equipped, or conducted with educational requirements in mind. An appropriation has now been made to build a teaching hospital; and a small temporary hospital has been started. Simultaneously, the clinical teaching has been reorganized by placing the chiefs in medicine and surgery respectively on salaries that command the interest and effort of active teachers. The same policy must be applied generally throughout the clinical department.

The dispensary, well attended and long loosely conducted, has recently been reconstructed along the same lines.

Date of visit: May, 1909.

General Considerations

Minnesota is perhaps the first state in the Union that may fairly be considered to have solved the most perplexing problems connected with medical education and practice except as to osteopathy. It has indeed still to realize its plans for an adequate clinical establishment of modern character; but there is little doubt that this is only a question of time — and of a short time, at that. Meanwhile medical education has, with the active co-operation of the state board, been concentrated in the hands of the university, fortunately situated in the heart of the largest community of the state; the state has got rid of rival school, regular and sectarian, the latter by a perfectly fair provision for separate instruction in sectarian dogmas for any student who is willing to accept a diploma qualified so as to mark that fact. Since all else — anatomy, physiology, surgery — are common to and the same for all "schools" of medicine, there is one standard of admission to the department, one quality of instruction, one examination for the degree for all alike. Finally, the educational preliminary qualification of the state medical school has become the practice preliminary of the state. In future, any person desiring to practice medicine in Minnesota must get as good an education — preliminary and professional — as the state furnishes and requires of its own sons: a regulation both fair and wise, whether viewed from the standpoint of the student or from the broader standpoint of public interest, to which all else is properly subordinate. Henceforth, the success of the school will depend largely on the generosity of the state in developing the clinical teaching, and on the character of the hospital and dispensary which it organizes with that in view.

Reprinted courtesy The Carnegie Foundation for the Advancement of Teaching, Bulletin Number Four, *Medical Education in the United States and Canada*, by Abraham Flexner.

Staff Meeting Report

Clinical Experience with Intestinal Obstruction in the University of Minnesota Hospitals*

1952 - 1961

Arnold S. Leonard, M.D., Ph.D.† and
Richard F. Edlich, M.D.‡

Ten years of clinical experience in treating intestinal obstruction at University Hospitals is presented here with emphasis on our newer modalities of treatment aimed at reduction of the mortality rate. Cases of intestinal obstruction in this institution from 1952-1961 were evaluated under 6 categories (see Table).

1. Simple Non-Cancerous Small Bowel Obstruction

There were 250 cases of simple non-cancerous small bowel obstruction treated in the above period with 22 deaths, a mortality rate of 9.8%. Decompression was carried out by a variety of techniques including long tube (Smith and Miller Abbott), and trochar and needle aspiration of the bowel. Sixteen of these patients succumbed from some form of infection or peritoneal soilage, caused by either delay of surgery or spillage of intestinal content during surgical intervention. Six expired from cardio-respiratory embarrassment. A long coiled-spring intestinal tube was devised by one of us (ASL) in which a coiled-spring was placed in the distal portion to reduce mechanical forces of friction, thus permitting extraction of resilient flexible music wire stylet from the entire length of the tube. This apparatus has provided an effective means of rapid aseptic decompression at the time of surgery. In 93 patients operated

*From a report to the Staff Meeting of University Hospitals on January 14, 1966

†Assistant Professor, Department of Surgery

‡Fellow, Department of Surgery

upon for simple small bowel obstruction from 1961 to 1965, there were 4 deaths, three of which had bowel perforation with peritoneal soilage at the time of surgical exploration; the remaining patient died of pulmonary embolism. It is apparent therefore that use of this device, which obviates the necessity of enterotomy or enterostomy, may reduce the mortality rate to the range of 4% to 5%, or in simple acute intestinal obstruction to that of the primary causative lesion, by preventing peritoneal soilage, and by providing minimal manipulation of the distended coils.

2. *Simple Cancerous Small Bowel Obstruction*

There were 84 cases of simple small bowel obstruction due to carcinomatosis and the mortality rate in this group was 45% (38 cases). It is of interest that of 42 patients operated upon in whom an anastomotic procedure was carried out, 20 patients had anastomotic breakdown. Five patients died of perforation due to peritonitis and in 13 patients in this group, cardio-respiratory factors accounted for some of the mortality. Improvement in this group would seem to indicate investigation of a better means of fluoroscopic decompression, improved nutrition, as well as eventual chemotherapeutic control of the inoperable neoplasm.

One of us (RE) improved the operative coiled spring tube for non-operative intubation by addition of a balloon and directable tip. Of 25 patients in whom intubation was tried with the aid of the bendable tip, 23 had fluoroscopic passage beyond the proximal jejunum in less than 25 minutes. Only 15 of 29 patients were fluoroscopically decompressed with the coiled spring tube without the bendable tip. Thus, approximately 50% more patients were intubated using the movable device.

Successful intubation, however, could not always be correlated with successful decompression. Ineffective decompression was noted in 7 of the 38 patients. Technical improvement resulting in greater success in the use of a non-operative decompression technique, making operative intervention unnecessary, should improve the mortality from obstruction in the carcinomatosis group.

3. *Strangulated Small Bowel Obstruction*

There were 64 cases of strangulated small bowel obstruction with 20 deaths leading to a mortality of 31%; this death rate has not decreased over two decades. In 18 of these cases sepsis was present within the peritoneal cavity at the time of operation. Evolvement of new reliable objective diagnostic techniques for

early recognition appear to be absolutely necessary in accomplishing a significant reduction in the mortality of strangulating obstruction. Pneumoperitoneum as suggested by Perry, arteriography, radioactive scanning patterns, and evolvment of a chemical test of the so-called toxic substance in blood or peritoneal fluid would seem to be important techniques for evaluation or investigation to accomplish this reduction.

4. *Large Bowel Obstruction*

There were 248 cases of large bowel obstruction and 52 deaths leading to a mortality rate of 20.9%. In 36 cases the cause of death was peritonitis. It is apparent from this study that the large bowel obstruction must be treated as an emergency and early decompression be instituted in most instances. The risk of perforation through delay is well known, and exemplified by the mortality rate reported. In a group of patients reported by Dennis (1944) in this clinic, the mortality range was 7%, and remains so in this series if peritonitis was not present.

5. *Paralytic Ileus*

There were 50 cases in the group of paralytic ileus with 14 deaths (28% mortality). The main cause of death in this group was peritonitis or sepsis accountable for 10 of the deaths. Earlier diagnosis and more efficient and elective techniques of dealing with pre-existing peritoneal contamination constitutes the only promising and hopeful devices of coping with the serious threat posed by many patients in this group.

6. *Obstructions in the Pediatric Age Group*

In the pediatric obstruction group, there were 24 deaths among 84 patients. Better cooperation between surgical and

OPERATIVE MORTALITY OF INTESTINAL OBSTRUCTION
1952 - 1961

	Number of Cases	Deaths	Percent
Small bowel, simple, non-cancerous	250	22	9.8%
Strangulated small bowel	64	20	31 %
Paralytic ileus	50	14	28 %
Large bowel obstruction	248	52	20.9%
Small bowel carcinomatosis	84	38	45 %
Pediatric obstruction group	84	24	27 %

pediatric staffs, cultivation of an efficient pediatric surgical team and more judicious use of an aseptic means of decompression are important factors to which one must look to achieve a more acceptable mortality figure for this difficult group of obstructions.

The author acknowledges the assistance of James Tremann and Margaret Nelson in compilation of the data for this article.

Staff Meeting Report

Intrathoracic Manifestation of Malignant Lymphoma*

John A. Tobin, M.D.†

*A*ll of the malignant lymphomas have a similar radiographic appearance when they involve the thorax. It is important to recognize the thoracic patterns of this group of diseases so that they are not confused with other commonly associated intrathoracic diseases such as pneumonitis and pulmonary infarction. This recognition will lessen the chance of a patient with an infection being treated for an exacerbation of his tumor, and, conversely, the likelihood of tumor being mistaken for pneumonia or infarction.

The charts, autopsy protocols and chest films of 150 patients at University Hospitals with the diagnosis of malignant lymphoma were reviewed and correlated. The patients were selected only on the basis that the final diagnosis at autopsy was malignant lymphoma or that they had had a previous tissue biopsy which yielded that diagnosis. The only requirements in regard to X-ray examination was that a chest film had been made

*From a report to the Staff Meeting of University Hospitals on March 4, 1966

†Assistant Professor, Department of Radiology

within four weeks preceding the patient's death. Most of these patients, however, had been examined within the week of death.

As might be expected, Hodgkin's disease was the most frequent diagnosis and represents 55 of these 150 patients. Also studied were: reticulum cell sarcoma, 26 patients; lymphoblastoma, 8 patients; lymphosarcoma, 41 patients; and unclassified malignant lymphoma, 20 patients. Since no apparent difference in the appearance of the lesions in these entities has been noted, they will be referred to as a group and designated malignant lymphoma. Chronic lymphatic leukemia has not been included in this study and will be considered later in a separate study.

As recorded at autopsy, the frequency of involvement of different areas in the chest is as follows:

Lymph nodes	51%	Pneumonitis	30%
Pleural effusion	64%	Abscess	5%
Visceral pleura	21%	Bronchial obstruction	2%
Parietal pleura	9%	Pericardium	11%
Subpleural nodules	21%	Heart	10%
Parenchymal nodules	29%	Diaphragm	6%
Bronchovascular infiltrates	24%		

The radiographic changes corresponding to the above lesions are seen less often due to the small size of some of the lesions and in large part to the frequency of pleural effusions which obscure the lung and chest wall.

The necessity for making portable-type examinations on seriously ill patients also contributes to the obscuration of some of the above findings. It is our general impression that autopsy-described findings will be seen in about one-third of the same patients' films.

Lung involvement may be placed in three general groups:

1. *Nodular lesions.* These may be exceedingly small or so large that they present as masses. They usually have poorly defined margins and are multiple. They commonly present in a subpleural position.

2. *Bronchovascular infiltration.* Lymphomatous involvement of the lymphatic channels accompanying blood vessels or bronchi tends to accentuate and thicken the walls of these vessels giving them an infiltrative, linear appearance when viewed longitudinally and a nodular appearance when seen on end.

3. *Pneumonic type.* When lymphoma invades the alveolar spaces the result is consolidated lung giving a dense appearance. This type is always the result of coalescence of nodular or infiltrative lesions.

Pleural involvement presents as either a sharply defined local mass protruding into the lung, or as an encrustation of pleural thickening over the lung surface. When the parietal pleural is affected, there is commonly associated rib destruction. Pleural effusion is quite common and does not necessarily mean that the pleural surface is involved by tumor. The effusion itself is not distinctive.

The esophagus is rarely obstructed although it is commonly deviated by enlarged nodes. Likewise, endobronchial lesions are unusual and when atelectasis occurs, it is usually from other causes such as aspiration or pneumonitis. Pericardial, heart and diaphragmatic lymphoma could not be diagnosed on the films of any of the patients so affected in this series. Cavitation did not occur in any of the lymphomatous lesions observed and when seen should be considered infectious until proven otherwise.

Pneumonitis is often seen as a preterminal infection and can usually be distinguished from lymphoma by the rapidity with which it appears.

*This time, like all times, is a very good
one if we but know what to do with it.*

EMERSON

Staff Meeting Report

Neuropathological Evidence of Vitamin E Deficiency in Man*

Joo Ho Sung, M.D.†

It has been well documented that deficiency of fat soluble vitamins occurs in patients with diseases associated with intestinal malabsorption, such as mucoviscidosis and biliary atresia. Along with the malabsorption of fats in these patients, the absorption of vitamin E (tocopherol) is impaired and the concentration of tocopherol in the plasma is consistently low. The decreased resistance of erythrocytes to peroxide-induced hemolysis and creatinuria in patients with malabsorption syndromes, related to the low concentration of tocopherol, can be reversed by raising the plasma level of the vitamin. In patients with intestinal malabsorption, deposition of lipid pigment (ceroid or lipofuscin) occurs in the tissues, particularly within the smooth muscle. This alteration has been proffered as a pathological evidence of vitamin E deficiency.

Experiments with a variety of animals have clearly demonstrated that vitamin E deficiency can affect many organs or tissues. Neuropathological changes in rats deprived of vitamin E for a long period of time have also been demonstrated by a number of investigators. The neuropathological alterations described by the earlier investigators were degeneration of the dorsal columns of the spinal cord and deposition of the lipid pigment within the cytoplasm of nerve cells. In 1962 Pentschew and Schwarz demonstrated an additional and striking change in vitamin E-deficient rats, axonal dystrophy, within the sensory nuclei of the spinal cord and medulla, particularly in the gracile and cuneate nuclei.

*From a report to the Staff Meeting of University Hospitals on March 11, 1966

†Assistant Professor, Division of Neurology

In the last few years we have observed in our Laboratory of Neuropathology similar axonal dystrophic changes in the medullas of two groups of patients with malabsorption syndromes. The first group consisted of six patients who had prolonged mucoviscidosis and died at ages ranging from 3 10/12 to 22 1/2 years. The second group consisted of eight patients who had congenital biliary atresia and died at ages ranging from 6 to 28 months.

The characteristic neuropathological alteration common to all of the patients in the two groups was axonal dystrophy in the sensory nuclei of the medulla. In the six patients with mucoviscidosis the axonal change was marked and involved the gracile, cuneate and trigeminal nerve nuclei, in that order of decreasing severity. In the second group of patients, the change was minimal or mild and was mainly in the gracile nucleus in the four younger patients. In the four older patients, the axonal dystrophy was, however, severe and involved the three sensory nuclei in a manner similar to that in the patients with mucoviscidosis.

Thus, the axonal dystrophy is common to both diseases, as is the deposition of the lipid pigment in the smooth muscle. The nature and distribution of the axonal dystrophy in the medulla of these patients is remarkably similar to those in vitamin E-deficient rats. On the basis of this pathological similarity and the other known evidences of vitamin E deficiency in these patients, it is strongly suggested that this axonal dystrophy is a reflection of longstanding vitamin E deficiency.

Axonal dystrophy, however, is not limited to conditions in which there is known vitamin E deficiency. Axonal dystrophy is encountered as the major neuropathological change in a heredo-degenerative disease of the central nervous system, Hallervorden-Spatz disease (infantile, juvenile, and adult forms). The axonal alteration in this disease, however, is far more widespread than that in vitamin E deficiency. Moreover, excessive deposition of iron in the globus pallidus and reticular zone of the substantia nigra occurs in juvenile and adult forms of the disease. Vitamin E metabolism in patients with this disease has never been studied, and whether or not vitamin E deficiency plays any role in the pathogenesis of the axonal change in this disease is not known.

Examination of the medullas of more than 500 patients, autopsied at the University Hospital and Minneapolis V.A. Hospital, revealed axonal changes in the sensory nuclei comparable to those seen in vitamin E deficiency in a large number of

patients. These patients died with a variety of diseases and at varying ages. This alteration appeared to be, however, an age-related phenomenon, much as is the accumulation of the lipid pigment within the cytoplasm of nerve cells (which has been known as the most consistent alteration of nerve cells associated with advancing age). The axonal dystrophy is exceedingly rare in the first and second decades of life, and when it occurs, only few axonal bodies are encountered. The change gradually becomes more frequent and increasingly more severe from the third through the fifth decades of life. Beyond the sixth decade of life, this alteration is almost invariably present and is often severe. With rare exceptions, axonal dystrophy in the medulla can be seen as a consistent feature of advancing age. The axonal dystrophy associated with vitamin E deficiency contrasts with this age-related variety by virtue of its occurrence and unusual severity very early in life. In a preliminary study similar axonal dystrophy was seen in old rats and mice, but not in young ones. This suggests that the axonal dystrophy may be an age-related phenomenon in animals as well.

In view of the morphological similarity in these diverse conditions, vitamin E deficiency and aging in particular, one may wonder whether or not there is any common pathogenesis. Interestingly enough, Tappel's antioxidant theory of vitamin E function and Harman's theory of aging based on free radical and radiation chemistry suggest that "a disturbed balance between peroxidation and antioxidation" is the feature common to both vitamin E deficiency and aging.



Staff Meeting Report

Prediction of Neurological Change in Cerebrovascular Disease with Psychological Tests*

Manfred J. Meier, Ph.D.† and Joseph A. Resch, M.D.‡

Perhaps more than any other class of cerebral lesions encountered in the neurological setting, cerebrovascular occlusion provides a wide range of interpatient variability in the reversibility of neurological symptoms. Although maximal and relatively permanent neurological deficits occur in a fair percentage of patients, as many as 20 to 30% who show even profound hemiparesis and hemihyesthesia may recover much of the lost functions in the weeks following onset of symptoms.

As an extension of the neurological examination to higher-order intellectual and perceptual functions, psychological test batteries administered early in the recovery period might provide a basis for predicting such longitudinal changes over varying time periods and illuminate some of the temporal dynamics of infarction-induced cerebral lesions at the behavioral levels of analysis. Our investigations constituted a preliminary attempt to explore the validity of psychological test deficits for predicting evolving changes in neurological status following acute onset of cerebrovascular symptoms.

The sample consisted of 93 patients admitted for study in the Minnesota Center for Cerebrovascular Research within 14 days of symptom onset. Complete physical and neurological examinations, psychological assessment, electrophysiological studies and four-vessel angiography were done during a 7 to 10-day period of hospitalization. The psychological tests were administered on the second day. Freedom from cerebral hemor-

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†Associate Professor, Division of Clinical Psychology

‡Professor, Division of Neurology

rhagic disease was inferred from absence of cerebrospinal fluid blood and of angiographic indications of intracerebral bleeding. Neurological examination was repeated on the day of discharge. Each patient was rated for change in neurological status on the basis of alteration in objective neurological deficits over the hospitalization time period on a 4-point scale as follows:

- I — No significant change or regression in neurological status (N = 44)
- II — Significant improvement with major neurological residuals (N = 26)
- III — Considerable improvement with only minimal residuals or even complete remission of symptoms (N = 23)
- IV — Age equivalent volunteer group with no indications of neurological involvement (N = 58)

From a broader test battery it was decided to select those tests which appeared to have considerable predictive utility, required a total administration time of approximately one hour, and could be scored easily. Tests and measures included for analysis were as follows:

Porteus Maze Test — Test age as computed from directions in the manual for the test

Trail Making Test — one or more errors was defined as "fail" for each section (A and B)

Seguin-Goddard Form-board — Inability to place ten forms into the board while blindfolded within five minutes was scored "fail."

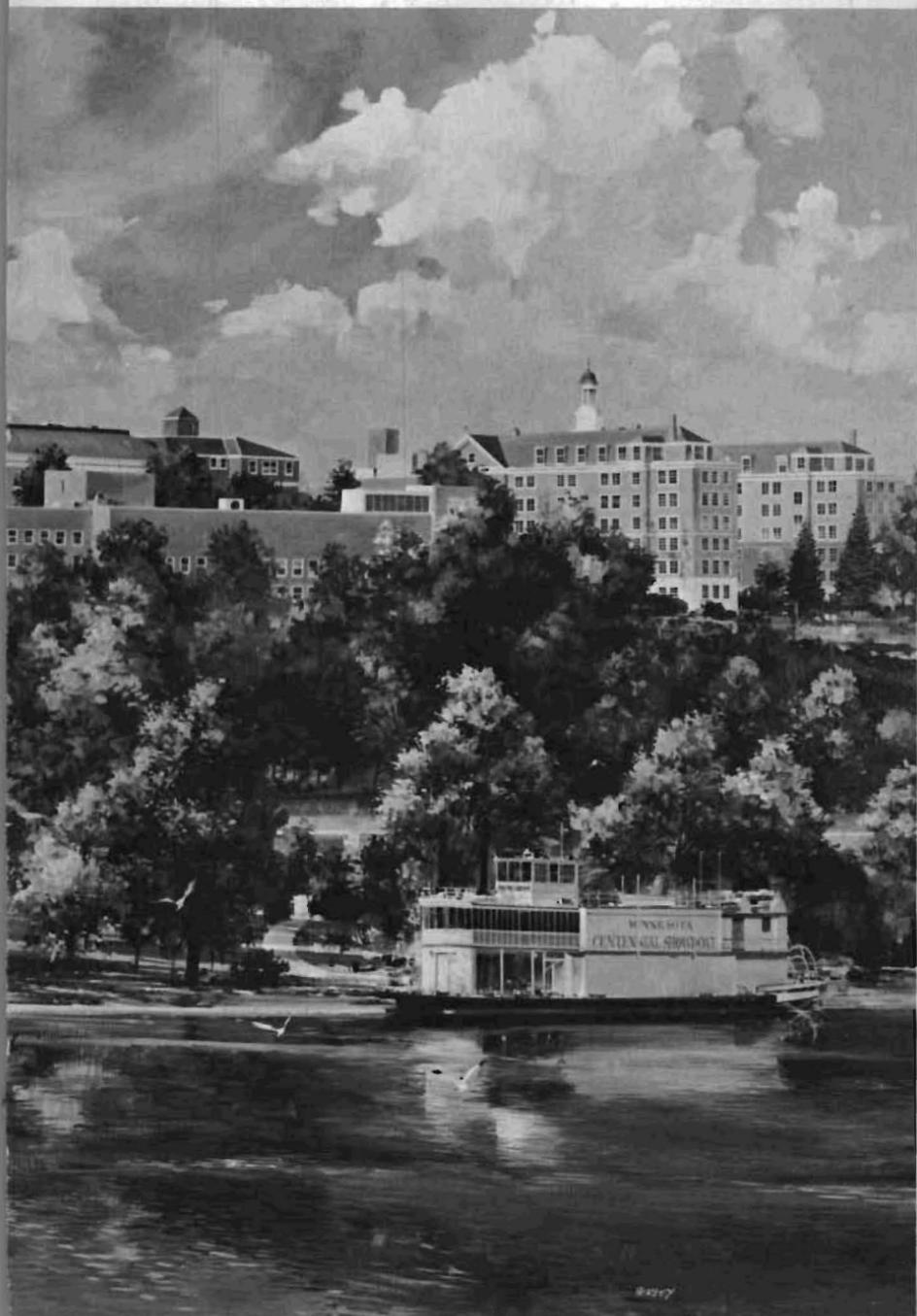
Visual Space Rotation Test — "fail was defined as the inability to draw an X within a $\frac{3}{4}$ " square in five minutes under each of three conditions of visual space rotation (90° to the right; 90° to the left; 180° inversion)

Table 1 shows the psychological test variable distributions statistics for the neurological change and normal groups. It can be seen that level of these behavioral functions on the second day of hospitalization varies in a linear fashion with rated neurological change from the first to the final day of hospitalization.

Psychometric signs were derived empirically for maximizing separations between the neurological change groups. As shown in Table 2, separation of Group I from Groups II and III was reasonably well achieved by determining the percentage of patient within each group which fulfilled at least two of



Reproduction of a new oil painting of the University of Mississippi northeastward across the Mississippi river. E. R. Squibb March 16, 1966. A full color reproduction is being sent



Minnesota Medical School complex by Mr. John Berkey. View
B & Sons presented the original to the Medical School on
t to each graduate of the school by Squibb.

TABLE I

Psychological Test Score Distributions as a Function of Short-term Neurological Change

Measure		Neurological Change Groups			
		I (N = 44)	II (N = 26)	III (N = 23)	IV (N = 58)
Porteus Test Age	Mean	5.45	7.98	11.33	12.57
	Sigma	2.41	3.31	3.79	2.65
Trails A	% Pass	25	72	87	97
Trails B	% Pass	3	15	48	64
Formboard	% Pass	7	35	61	97
VFR - frequency	3 Fail	33	16	4	3
	2 Fail	2	4	2	6
	1 Fail	0	0	4	10
	0 Fail	2	2	11	36

TABLE 2

Proportion of each Neurological Change Group Showing Group I Differentiating Signs

Predictor	Groups			
	I	II	III	IV
Porteus TA < 6	.61	.11	.04	.00
Fail Trails A + B	.73	.27	.13	.00
Fail Formboard	.93	.61	.39	.03
Two or more signs	.77	.19	.08	.00

the following criteria: Porteus Test Age < 6; failure on Parts A and B of the Trail Making Test; failure on the Seguin-Goddard Form-board.

Separations of Groups I and II from Group III was achieved by determining the percentage of patients for each group which fulfilled at least two of the following criteria: Porteus Test Age equal to less than 8; failure on Part B of the Trail Making Test and on the Seguin-Goddard Form-board; failure on two of the three positions of the Visual Space Rotation Test. Table 3 reveals the combined effectiveness of these signs in maximizing group differentiation. Over 90% of the less recovered groups could be identified while only misclassifying 19% of the Group III patients.

TABLE 3
 Proportion of Each Neurological Change Group
 Showing Group III Differentiating Signs

Predictor	Groups			
	I	II	III	IV
Porteus TA < 8	.84	.65	.21	.09
Fail Trails B and FB	.91	.62	.30	.00
VFR — Fail 2 or more	.95	.91	.29	.16
Two or more signs	.95	.91	.19	.06

These data would appear to confirm the hypothesis that extent of short-term neurological change in cerebrovascular disease is correlated with magnitude of selected behavioral test performances. Furthermore, preliminary attempts to predict such neurological changes for individual patients on the basis of psychometric signs of behavioral deficit seem worthy of cross-validation on new samples. Since longer-term outcomes are of greater clinical significance, this approach should be applied longitudinally in the assessment of the natural course of cerebrovascular occlusive disease. If the levels of predictive accuracy reached with the short-term criterion are maintained, such psychological test measures may provide a valid basis for estimating adaptive and neurological outcomes in cerebrovascular disease.



Staff Meeting Report

Amebiasis*

William C. Bernstein†

Amebiasis, or infestation of the gastrointestinal tract with *Entamoeba histolytica* organisms, is a relatively uncommon disease in the United States. Some clinicians feel, however, that a large number of cases of amebiasis are not diagnosed because of inadequate studies, poor laboratory techniques and the lack of well-qualified diagnosticians in the field of parasitology. Carriers of *Entamoeba histolytica* are known to exist and, for one reason or another, do not manifest symptoms of the disease.

Amebiasis is a very common disease in Mexico and the Central and South American countries. Many theories have been advanced to explain this situation. Firstly, living standards, public health measures and education of the masses in personal hygiene have not kept up with similar projects in the United States. Secondly, the high carbohydrate diet of the low income groups in the southern hemisphere probably contributes to the high incidence of the disease. Corn and corn products are the basic items of food in Mexico; rice and rice products in Panama; and tubers, such as potatoes, sweet potatoes, etc., are the common items of food in South America.

It is interesting to note that chronic ulcerative colitis, a rather common disease in the United States and a frequent cause of diarrhea, is a very uncommon disease in Mexico and the South American countries. Amebiasis, on the other hand, accounts for a high percentage of the cases of diarrhea in those countries. An analogous situation is present in the case of rectal and colonic tumors. Amebic granulomas of the large intestine are frequently seen in the southern hemisphere while adenocarcinoma of the colon and rectum are very infrequently seen. The reverse is true in the United States.

*From a report to the Staff Meeting of University Hospitals on March 25, 1966.

†Clinical Professor and Director, Division of Protozoology

Carriers of *Entamoeba histolytica* are very common in Mexico and southern countries. Many people develop a marked immunity to the organism and may live for many years without developing serious symptoms of the disease. It is not uncommon for a patient to have loose stools for 20 to 30 years before complications of the disease develop. Invasion of the host by other bacterial organisms (staphylococci, streptococci, salmonella) probably accounts for the rapid onset of symptoms and late complications of the disease; and determines the ultimate fate of the patient.

Textbooks on the subject of intestinal parasites list seven identifiable species of amoebic organisms. The two most common forms which are seen in this country are *Entamoeba histolytica* and *Entamoeba coli*. *Entamoeba polecki* is common in pigs and monkeys but may be found in man. It is non-pathogenic. *Iodamoeba butschlii* is non-pathogenic. *Endolimax nana* is a small species of amoeba. It is very common and harmless. *Dientamoeba fragilis* is not common. It does not destroy tissue and can be found anywhere in the world. *Entamoeba gingivalis* is found only in the oral cavity. It thrives in the presence of gingivitis, pyorrhoea alveolaris and diseased tonsils. Morphologically it is similar to *Entamoeba histolytica*.

A SYMPOSIUM ON LIVER DISEASE honoring Dr. Cecil J. Watson, Distinguished Service Professor of Medicine, will be held May 23, 24, and 25, 1966 at the University of Minnesota Medical Center. The Symposium is open to all physicians without charge. Registrations may be directed to:

DR. M. J. MURRAY, Coordinator
Box 385, University Hospitals,
Minneapolis, Minnesota 55455

Medical School News

Class of 1966 Fund Begins

'66!

The Class of 1966 at the Medical School is creating a unique endowment fund which will eventually result in a major class gift to medical education.

For the first time in Medical School history, a "class fund" of substantial consequence is being established prior to graduation. Richard E. Carlson, president of the 129-member Senior Class, said seniors are pledging annual gifts to the *Class of 1966 Fund* for an undetermined period, probably 20 years. The assets will be invested and reinvested, and when the Fund has reached adequate maturity, the participants will assemble at a class reunion and will turn over a gift of "major importance for a fitting purpose" to the Medical School.

Carlson said the Minnesota Medical Foundation will serve as trustee of the *Class of 1966 Fund*, and will invest all contributions for growth and earnings toward the ultimate objective of a class gift "in the range of perhaps \$100,000." Those contributing to the Fund, he said, will direct the ultimate disposal of the class gift.

Fifty members of the Class of 1966 have already pledged minimum annual gifts of \$15.00 to the Fund. They represent more than 40% of the Senior Class. A group of about a dozen class leaders has actively promoted the Fund. It is hoped that nearly the entire class will pledge participation before graduation occurs on June 11, 1966.

After graduation, an elected committee of management will help maintain and promote the fund through the years with the assistance of the Minnesota Medical Foundation.

A Statement of Purpose of the *Class of 1966 Fund* reads:

"We believe in becoming shareholders in the future of our Medical School. We seek an effective way of giving to further Minnesota medical education, to ensure the proper place of the student in the Medical School, and to convey to others our sense of pride in our education.

EDITORIAL:

The significance of the Class of 1966 Fund is not unnoticed by the faculty and administration of the Medical School. There is applause for this courageous effort by neo-alumni to set a new standard of pride in the institution.

If successful, the plan may pioneer an era of unlimited alumni support for the Medical School, heretofore regarded as impossible. The concept of winning alumni involvement among individual classes is relatively unused at Minnesota; other colleges and universities learned this secret of success years ago. Few of the professional schools, however, have seen such programs launched prior to graduation.

The Class of 1966 Fund will be watched with unusual interest by present and future alumni.

— W. A. S.

25 Students Elected to A.O.A

Twenty-five medical students at the University of Minnesota have been elected new members of Alpha Omega Alpha, national honor medical fraternity. Cited in recognition of academic achievement and high personal qualification, they will be inducted into the Minnesota Chapter of A.O.A. at a banquet on May 3, 1966 at the University Club, St. Paul, Minn.

Senior electees are:

Paul D. Bandt, Reville, South Dakota
Paul E. Carlson, Cambridge, Minn.
Richard E. Carlson, Sandstone, Minn.
Ronald J. Elin, Minneapolis, Minn.
T. Dean Gillund, Preston, Minn.
Terrence P. Horrigan, Virginia, Minn.
John R. Krohn, Jr., Cloquet, Minn.
Charles L. Johnson, Bovey, Minn.
Robert J. LaPerriere, Minneapolis
James M. Layer, Minneapolis
Marguerite H. McKay, St. Paul
Thomas O. McNamara, St. Paul
Joseph G. Perpich, Hibbing, Minn.
Jack S. Resnick, St. Paul
Jan C. Sarnecki, St. Paul
Richard C. Strand, St. Paul

Juniors include:

James N. Bertelson, Virginia, Minn.

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Thomas M. Donndelinger, New Trier, Minn.
Lee M. Espeland, Granite Falls, Minn.
Stephen N. Haas, Volga, South Dakota
Steven C. Marker, Two Harbors, Minn.
Sarah Ann Nunneley, Minneapolis
Madelyn E. Olson, Minneapolis
Michael T. Spilane, Minneapolis

Seven other seniors had been elected to A.O.A. during their junior year in the Medical School. They are:

Nancy B. Beecher, Fargo, N.D. (President)
John R. Goetz, Minneapolis (Vice President)
Aaron E. Parkhurst, Albert Lea, Minn. (Secretary)
Roger A. Rabold, South St. Paul, Minn.
Gaylan L. Rockswold, Madison, Minn.
David E. Sutherland, North St. Paul, Minn.
Louise A. Town, St. Cloud, Minn. (Treasurer)

Dr. W. A. Sullivan, Jr., associate professor of surgery, is faculty adviser to A.O.A.



Judy Bergfalk

Judith F. Bergfalk, Rush City, Minn., a member of the Junior Class, has been named the winner of a 1966 Smith, Kline & French Foreign Fellowship. She was among 35 junior and senior U. S. medical students who have received appointments to elective study in relatively underdeveloped areas of the world. Judy will spend her 3-month fellowship this year at the Harisinga Hospital, Assam, India, starting in December.

Ted J. Buselmeier, a junior class member, is in England on a Rotary International fellowship, studying at Birmingham University. His photo and the following about him appeared recently in the *Birmingham Evening Mail*. "The friendliness that British doctors show to their students is 'quite overwhelming,' says Mr. Ted Buselmeier. He is a 24-year-old medical student from Buffalo, Minn. In his eighth year at the University of Minnesota, he hopes to hear next June that he has qualified. He is in Birmingham at the General Hospital on a nine-month study course under a Rotary Foundation Scholarship.

'I like the good manners of the English,' he says. 'They keep them in spite of the rain!' 'And the kindness and interest shown by the consultants is almost unbelievable.' "

SURGERY

Dr. William J. Kane, assistant professor of orthopedic surgery, and Dr. Eugene Grim, professor of physiology, won the 1966 Kappa Delta award for outstanding scientific contributions in the field of orthopedic surgery.

They shared in the \$1,000 prize which was awarded them at the annual meeting of the American Academy of Orthopedic Surgeons for their award winning paper, "Blood Flow to Bone: A Quantitative Method and its Validation."

Dr. C. Walton Lillehei, professor of surgery, was recently elected president of the American College of Cardiology.

SCHOOL OF PUBLIC HEALTH

Dr. Harry Foreman, associate professor, has been chosen by the University of Minnesota to be associate dean of its Office of International Programs. He joined the faculty of the University in 1962.

HEALTH SERVICE

Dr. Benjamin B. Reiter, former assistant director of the Health Service, died recently in Miami, Florida. He was on the staff of the University of Miami Health Service, and served on the faculty at the University of Minnesota from 1956 to 1964.



Vice President Hubert H. Humphrey appeared at a press conference during his recent tour of University Hospitals research facilities. With Mr. Humphrey are Miss Darlene Gates, 1966 Minnesota Heart Fund Queen and a former heart patient here, and Dr. Reuben Berman, (Med. '32) president of the Minnesota Heart Association.

Medical Foundation News



Medical Foundation Has 3,000 Members

Sixty-four persons have established membership in the Minnesota Medical Foundation since the last new registry was published in November, 1965. Their enrollment brings total membership in the Foundation to approximately 3,000 persons, which is the largest in history. The Foundation was established in 1939.

The dues and gifts of members and non-members support the work of the Foundation, which is a nonprofit organization devoted entirely to the Medical School of the University of Minnesota.

Membership in the Foundation is the privilege of any alumnus, non-alumnus, layman, or corporation interested in supporting its work in behalf of the Medical School. Dues and gifts are tax deductible.

The complete roster of Foundation members will be published in the June, 1966 issue of the MEDICAL BULLETIN. Some recently enrolled members:

Class of 1924

Alban F. Gaalaas

Class of 1928

Chalmer Davee

Class of 1929

R. Wayne Espersen

Class of 1930

Max J. Goodman

Class of 1931

Simon G. Sax

Class of 1932

H. J. Wolkoff

Class of 1935

*L. M. Hammar
Henry Silver*

Class of 1938

*Leonard A. Borowicz
William S. Eisenstadt
Philip Feinberg
F. E. Giles
Robert J. Richardson*

Class of 1939

Ivan C. Dimmick

Class of 1940

*J. F. Boettner, Jr.
James F. Zagaria*

Class of 1941

*Donald W. Freeman
Laurin J. Kaasa
Frederick Stiepan*

Class of 1942

Carl A. Peterson

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Class of 1943

Alan B. Skorneck

Class of 1945

*J. C. Breneman
George B. Lund
John A. Newman
William H. Ylitalo*

Class of 1946

Yoshio Sako

Class of 1949

John P. Sande

Class of 1950

*Leonard W. Goldman
Sherman N. Kieffer
Robert C. Meade
J. W. Strand*

Class of 1951

Conrad B. Frydenlund

Class of 1953

*James R. Jude
Robert O. Taylor*

Class of 1954

*George Hottinger
Sidney Nerenberg*

Class of 1956

*Harold B. Kaiser
Loren Rothstein*

Class of 1957

*John A. Nilsen
Martin W. Orbuch
Paul H. Pobor
John Shefveland*

Class of 1959

John D. Banovetz

Class of 1960

*Dale L. Eichelberger
Elizabeth Haaland Johnson
Roger H. Princell*

Class of 1963

*Robert F. Avant
Paul H. Engebretson
Creighton A. Holstad
James H. Quakenbush
Clinton E. Rhodes
Kenneth R. Williamson*

Class of 1964

*Daniel A. Johnson
James J. Tiede*

Non-Alumni

*T. R. Anderson
Sidney Averbach
C. V. Bologna
R. S. Burns
Sheldon W. Carlson
Ronald Edstrom
Arthur Kimber
Robert Luedke
Duane D. Miller
Inge Schullze-Mook*

*It is not enough to be busy; so are the ants.
The question is, what are we busy about?*

H. D. THOREAU

Alumni Notes

◆ 1897

Albert H. Moore, one of the oldest of the Medical School's living alumni, is residing in California, where he observed his 92nd birthday on February 6th. His wife, Evelyn, writes: "My husband retired 15 years ago . . . suffered a severe stroke 18 months ago." They live at 900 LaFiesta Lane, Lake San Marcos, San Marcos, Calif.

◆ 1927



C. J. Van Slyke

Cassius James Van Slyke, retired deputy director of the U. S. Public Health Service, recently received an honorary Doctor of Science degree from the University of Michigan. He was honored for his "foresight, spirit, and devotion to public welfare." Dr. Van Slyke is regarded as the "father" of the N.I.H. programs in research which were vastly expanded following World War II. He was first director of the National Heart Institute (1948) and received the Albert Lasker Award of the American Public Health Association in 1957. He has been ill recently at his home in Bethesda, Md. Dr. Van Slyke retired from U.S.P.H.S on December 15, 1959. A native of Benson, Minn., he also holds the Outstanding Achievement Award of the University of Minnesota.

◆ 1934

Jere W. Annis, Lakeland, Fla., internist, will be installed as new president of the American Association of Medical Clinics at the group's annual meeting next September in San Diego, Calif. Jere is managing partner in the Watson Clinic, Lakeland, Fla., and past president of the Florida State Medical Association.

◆ 1938

George E. Brown, active in the American College of Cardiology, was appointed college governor for the State of Idaho. He practices in Twin Falls.

◆ 1943

Forrest H. Adams, pediatrics professor at U.C.L.A., was one of 14 heart specialists honored recently by the American College of Cardiology for participation in the college's overseas teaching program. The program is conducted in cooperation with the U.S. State Department.



Forrest Adams



Jere Annis



Earl Opstad

◆ 1946

Harold Hermann is leaving his Minneapolis pediatrics practice this summer to become associate director of clinical research at Mead Johnson Co., Evansville, Ind. Harold writes that he is "looking forward to a more regular work schedule . . . more time with his family, etc." He has practiced in Minneapolis since 1949. He and his wife have five children and presently live at 5 Woodland Rd., Edina. After June 1, 1966, their address will be 1508 Red Wing Drive, Evansville, Ind.

Troy G. Rollins began the practice of dermatology last November with the Portland Clinic, Portland, Ore., and lives at 1216 S.W. Yamhill in that city. He is on the staff of three hospitals and is a member of the clinical faculty at the University of Oregon Medical School.

Adrian H. Bodelson writes: "After nine years of OB-GYN practice in Boulder, Colo., I have relocated my practice in Santa Fe, New Mexico. My wife and 10 children will soon be moving down here when housing is available. I never realized how difficult it could be to find a house for this sized family!"

Earl T. Opstad has been named medical director of Northwestern National Life Insurance Co. of Minneapolis. Formerly associate medical director, Earl succeeds Karl W. Anderson (Med. '24), who has retired following 35 years with the company. Earl is a native of Minneapolis and has been with NWNL since 1955. He now becomes chief medical officer and will be responsible for the administration of the medical department and medical underwriting of life and health insurance.

◆ 1949

Col. Nester M. Hensler, U.S.A.F. (MC), writes from Wiesbaden, Germany: "After three busy years in Europe, where my

medical activities have ranged from Warsaw to Bombay, I return to the U.S. in August, 1966. My address, barring a change of mind of the Air Force, will be U.S.A.F. Hospital, Scott AFB, Illinois.'

◆ 1951

W. L. Pew returned to the University of Minnesota in 1965 where he is now a resident in psychiatry. He lives with his family at 2334 Como Ave., St. Paul, and reports that he sold his former pediatrics practice in Eugene, Ore. to **Jerome H. Dayton** (Med. '58).

◆ 1957

Avi Ben-Ora writes from 9200 N. 3rd St., Phoenix, Ariz.: "I am repeatedly impressed with the absence of correspondence from the Class of 1957. Such apathy must not pass without comment. Why is this group so different from all the other groups? I'd like to hear about the whereabouts of the other members of the class. Wouldn't you all?"

Avi is a GP in Phoenix. He continues: "Marcia and I now have three children. I have recently added an associate in practice. Seems as though all you Easterners send sick people to us. We can barely keep up with the demand!"

◆ 1958



Sidney W. Maurer is nearing the end of a 24-mo. tour of duty with the Peace Corps. He's a pediatrician stationed in Ankara, Turkey. Dr. N. L. Gault, associate dean of the Medical School, snapped this photo of Sid in January while on a consultancy trip for A.I.D. to the Middle East. Also in Peace Corps duty in Ankara is **Barry Grundlund** (Med. '61). The families of both men are there with them. Their address is c/o American Embassy, Ankara, Turkey, 00100. The Turkish lettering in the photograph reads "Peace Volunteers."

◆ 1958

Thomas J. Lehar has begun the practice of internal medicine, with subspecialty in hematology and oncology, at the Rees-Stealy Medical Clinic, 2001 Fourth Ave., San Diego, Calif.

◆ 1959

John B. Campbell and his family are now located in San Francisco, Calif., where Jack is busy with a three-year residency in radiology at Letterman General Hospital. Army service has taken the Campbells from North Carolina to Texas, to Honolulu, to South Carolina, and to Kansas. They now live at 38 Madera Blvd., Corte Madera, Calif.

Jerome C. Fluth writes from the Cameroon Baptist Mission, P.O. Box 1, Bamenda, West Cameroon, Africa: "... For the past several months I have been working in an old mission station . . . no hospital and no other doctor in over 1,600 sq. miles. One day we did a C-section for a hand presentation using a converted carpenter's bench. Our circulating nurses had never even seen an operation before. Mother and baby did well on their bamboo bed in a grass-roofed mud hut. It is amazing to me how God blesses our limited efforts and inadequate facilities."

◆ 1961

Joseph Westermeyer sent a postcard from Bangkok, Thailand, where he and his wife visited recently. He's assigned to the U.S.A.I.D. mission in Laos, "enjoying the work and very happy we've come." Joe says he's also very happy with the background from Medical School. "Must dredge up old knowledge for malaria, land mine amputations, nutritional deficiencies, bullet wounds, etc," he comments.

◆ 1963

Paul H. Engebretson is in Modesto, Calif., where he has completed 19 months of a "very rewarding and busy GP residency" at Stanislaus Co. Hospital. Paul says he is "expecting to be called to Army duty shortly." His address is 1437 Scenic Dr., Modesto.

Larry R. Erickson writes from Craig AFB, Ala., where he is a flight surgeon with the Air Force. "We've enjoyed our stay here but look forward to leaving for Colorado next October where I plan to do general practice." The Ericksons have a 21-mo. old daughter, Melanie.

◆ 1964

Frederick Ekberg is a resident in radiology at the Minneapolis

V.A. Hospital, and lives at 3235 38th Ave. S., Minneapolis. He reports the arrival of a third child, Peter, born in December, 1964.

◆ 1965

Wallace A. Rogers has accepted an appointment with the U.S. Public Health Service starting July 1, 1966 at the Communicable Disease Center, Atlanta, Ga. He is presently interning at W. Va. Univ. Hospital.

MEMORIALS

The Minnesota Medical Foundation acknowledges with gratitude recent contributions made in memory of:

Daniel Whetstone
Cutbank, Mont.

James G. Lyne
Cornwall Bridge, Conn.

Dr. Harold F. Walquist
Edina, Minn.

Hallan Huffman
Bemidji, Minn.

Dr. F. W. Hoffbauer
Minneapolis, Minn.

Arnold L. Guesmer
Excelsior, Minn.

Harry G. Barnes
St. Paul, Minn.

Memorial gifts are a thoughtful means of honoring the memory of a relative, friend, or colleague. They serve the living by strengthening medical education and research at the University of Minnesota Medical School. Gifts may be designated for specific purposes. The Minnesota Medical Foundation acknowledges all gifts to both donor and next of kin.

COMING EVENTS

University of Minnesota Medical School

CONTINUATION COURSES FOR PHYSICIANS

University of Minnesota
Center for Continuation Study

1966

- April 1 - 2 Trauma
April 22 - 23 Neurosurgery
May 2 - 3 Ophthalmology
May 19 - 21 Surgery
June 1 - 3 Anesthesiology
June 16 - 18 Hypnosis in Medicine

The University of Minnesota reserves the right to change this schedule without notification.

Courses are held at the Center for Continuation Study or the Mayo Memorial Auditorium on the campus of the University of Minnesota. Usual tuition fees are \$50 for a two-day course, \$60 for a 2½-day course, \$70 for a three-day course, and \$100 for a one-week course.

Specific announcements are sent out about two months prior to each course to all members of the Minnesota State Medical Association and to any physicians who request information for a specific course. For further information write to:

DIRECTOR
DEPARTMENT OF CONTINUATION MEDICAL EDUCATION
THE MEDICAL CENTER (Box 193)
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MINNESOTA 55455

You and Your Will

Legacies and bequests to the Minnesota Medical Foundation are an important source of long range financial strength for medical education and research at the University of Minnesota Medical School.

Alumni and members are urged to name the Foundation as a beneficiary in their will. The following form is suggested.

"I give to the Minnesota Medical Foundation, established in 1939 and incorporated by the Legislature of the State of Minnesota, and having its principal office at the University of Minnesota, Minneapolis, Minn., the sum of _____ dollars, to be applied to the benefit and use of the Foundation in such manner as may be directed by its Board of Trustees, in order to increase its efficiency and general usefulness."

Funds may be bequeathed for specific purposes within the Minnesota Medical Foundation. Your attorney, trust officer, estate planner or life insurance agent can advise you.

Specific information is available from the Executive Director, Minnesota Medical Foundation, 1342 Mayo Building, University of Minnesota, Minneapolis, Minnesota 55455. Telephone (area code 612) 339-7311, Ex. 2748.