

MEDICAL BULLETIN



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The Class of 1951

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Staff Meeting Report

Teratogenic Effects of Some Hypoglycemic Agents in Mice*†

Morris Smithberg, Ph.D.‡

INTRODUCTION

The importance of congenital malformation as a medical problem cannot be minimized. Estimates of the incidence of living malformed human neonates obtained from hospital surveys vary from 3.8¹ to 7.0 per cent.² The percentage of deaths directly attributed to malformations in infancy has been estimated at 14 per cent.³

The factors causing malformations in human beings may be artificially classified as genetic or nongenetic. Approximately 10 per cent of all human malformations have a genetic basis and follow Mendelian principles of transmission of defects from parents to offspring.⁴ Under this category one should consider the increased number of coincidental findings of chromosomal aberrations and congenital malformations. (For review see Goodlin.⁵) Some of the nongenetic agents of malformation include radiation, growth inhibitors, hormones and endocrine factors, and some infections, particularly the *Rubella* virus. A more complete account of the factors causing malformations in man and animals can be found in the paper of J. G. Wilson.⁶



Morris Smithberg

Some teratogenic agents produce malformations in other animals as well as in man. For this reason, a fruitful approach to the over-all problem of congenital anomalies has been to treat pregnant animals with various agents during gestation. An excellent review of this subject was presented by Kalter and War-kany⁷ in 1959.

*This report was given at the Staff Meeting of the University of Minnesota Hospitals on September 29, 1961.

†Supported by research grant RG-8131, National Institutes of Health, U.S.P.H.S.

‡Assistant Professor, Department of Anatomy

The present study is concerned with teratogenic treatments in three inbred strains of mice. Each of the teratologic agents used is known to produce hypoglycemia. The treatments included insulin, tolbutamide, or fasting for 24 hours during the ninth day of pregnancy. The purpose of the experiments was to determine: 1) whether or not the various treatments produced the same kind of anomaly within a single strain of mouse, and 2) whether or not the various treatments produced different defects among strains of mice. Only skeletal defects were considered in this study.

Attempts were also made to reverse the teratogenic effects of insulin or tolbutamide by the administration of nicotinamide. The choice of nicotinamide was suggested by the experiments of Landauer,⁸ who showed that nicotinamide reversed some of the teratogenic effects of insulin in the chick.

MATERIALS AND METHODS

Prepuberal (P) and adult (A) females of inbred strains 129, BALB/c (C) and C57 B1/6 (B) were used. They were mated to adult male mice of their respective strains.

Experimental animals

Prepuberal mice. Prepuberal females of the three strains were induced to ovulate and to mate following intraperitoneal injection of gonadotropic hormones according to the method described by Runner and Gates,⁹ and Smithberg and Runner.¹⁰ Beginning two days after mating, subcutaneous injections of 1 or 2 mg. progesterone† (Smithberg and Runner¹⁰) were given daily to insure maintenance of pregnancy. One day before term, —i.e., on day 18 *post coitum*, pregnant females were killed and fetuses were usually removed.

Adult mice. Females in spontaneous estrus, after being placed into the cages of males in the late afternoon, were observed for the presence of the copulatory plug on the following morning. The day of the observation of the copulatory plug was designated as day 0 of gestation.

Adult mice of strain 129 which were used in the experiments on fasting were carrying their third litters at the time of treatment. All females of the other strains were primigravid at the time of treatment.

Induction of estrus in adult females

Some of the adult females, particularly those of strains C and B were induced to ovulate by a procedure similar to that

†Progesterone (Proluton®) supplied by the Schering Corporation, Bloomfield, New Jersey.

described by Edwards and Fowler.¹¹ The females were given intraperitoneal injections of 6 I.U. of Pregnant Mares' Serum^o and 4 I.U. of Human Chorionic Gonadotropic Hormone^o spaced about 45 hours apart and were then introduced into the male's cage. Two days following mating, the female mice each received a daily injection of 2 mg. progesterone to insure that a larger proportion would carry fetuses to term (Runner¹²).

Treatment procedures

All treatments were performed on the ninth day of gestation:

1. *Fasting: Strain 129 (P and A).* Females were deprived of food for 24 hours following the technique described by Runner and Miller¹³ and by Runner.¹⁴ Food was removed on the morning of the ninth day and was returned the morning of the tenth day, water being given freely.

2. *Insulin: ‡ Strain 129 (P and A); Strain C (P and A).* Mated females received a single intraperitoneal injection of 0.1 Units of protamine zinc insulin (4.5 Units/Kg) in 1 ml. distilled water. Distilled water alone was given to the control animals.

3. *Tolbutamide: § Strain 129 (P), Strain C (P and A), Strain B (P and A).* Females received approximately 1 mg/gm body weight of tolbutamide (sodium salt) in a single intraperitoneal injection, prepuberal mice receiving 15 mg. and adult mice receiving 20 mg. tolbutamide in 0.5 ml. saline solution.

4. *Nicotinamide: ¶ All strains.* An intraperitoneal injection of 10 mg. nicotinamide (0.4-0.5 g/Kg) in 0.5 ml. saline solution was administered immediately following the injection of insulin or tolbutamide. Nicotinamide alone was given to other animals in the control experiments.

Autopsy procedures. All pregnant females were killed on day 18 or day 19 *post coitum*. Fetuses were removed from uteri and observed for obvious skeletal defects such as exencephaly or fused ribs. The fetuses were fixed in 95 per cent alcohol for 24 hours. Following maceration in 2 per cent potassium hydroxide, the skeletons were stained with alizarin red and cleared in gradual changes of varying proportions of potassium hydroxide and glycerin. The skeletons were stored in pure glycerin until detailed observations were made for skeletal defects. No detailed observations were made on the soft internal tissues.

^oSupplied by Ayerst Laboratories Incorporated, New York, N.Y.

‡Protamine Zinc Insulin, Eli Lilly and Company, Indianapolis, Indiana.

§Orinase®, brand of Tolbutamide (as sodium salt), The Upjohn Company, Kalamazoo, Michigan.

¶Nicotinamide, Eastman Chemicals, Rochester, New York.

RESULTS

Physiologic effects on the pregnant mothers

Although these experiments were concerned ultimately with congenital malformations in the fetus, a few remarks on the effects of the treatments on the pregnant mouse are of interest. Only treatments employing insulin or tolbutamide—alone or in combination with nicotinamide—produced any obvious physiologic effects on the mother. The blood sugar levels of these females were found to be abnormally low; e.g., they fell from a normal mean of 175 to a mean of 64 mg. per 100 ml. glucose in three to four hours following an injection of tolbutamide plus nicotinamide.

After receiving insulin or tolbutamide treatment, the females of all strains behaved in a similar, characteristic fashion. In about half an hour, the animals became relatively motionless yet hypersensitive to tapings on the metal cage. They were lethargic for two to three hours and appeared to be quite helpless, occasionally jerking as in shock. At the end of six hours, food (which had been removed just prior to the injection) was returned to the cage. Generally, the effects of tolbutamide were not as prolonged as those of insulin. All treatments involving insulin or tolbutamide produced some fatalities in the treated mothers of all strains. The highest percentage of fatalities (42 per cent) resulted from the administration of insulin plus nicotinamide in strain 129.

Production of fetal abnormalities

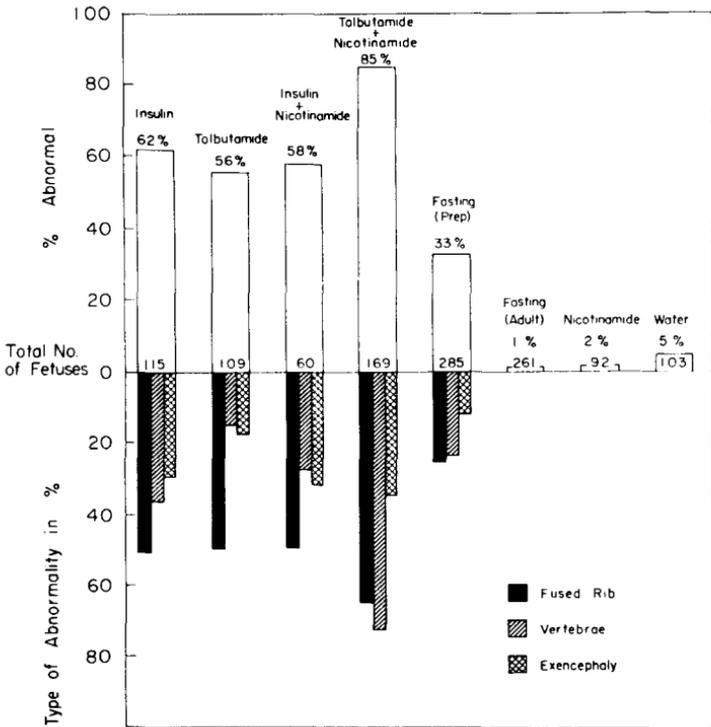
Strain 129. The effects of the various treatments upon production of congenital malformations in mice of strain 129 are indicated in Figure 1. All hypoglycemia-producing treatments, as well as fasting of prepuberal mothers, produced a significant number of malformations. Abnormalities varied from 33 per cent for fasting to 85 per cent for the combined treatment of tolbutamide and nicotinamide. The other three treatments—namely, insulin, tolbutamide, and insulin plus nicotinamide—produced abnormalities varying only slightly between 56 and 62 per cent. Statistical analysis of the data (using Chi-square) revealed significant differences between fasting (prepuberal) and all other teratogenic treatments, and between tolbutamide plus nicotinamide and the other treatments. (See footnote, Fig. 1). Fasting (adults), nicotinamide, and water produced no teratogenic effects.

Treatments of similar potency seemed to produce similar proportions of some types of abnormalities. Fused ribs, for ex-

ample, were found to occur with equal incidence (50 per cent) in the three treatments of similar potency;—insulin, tolbutamide, and insulin plus nicotinamide (Fig. 1). Some variation was obtained between two of the three treatments—namely, insulin and tolbutamide—with regard to the incidence of vertebral and skull defects. The differences between the incidence of skull defects—30 per cent in the insulin treated group and 18 per cent in the tolbutamide treated group—may be more meaningful, since

Fig. 1

EFFECTS OF TREATMENTS ON PRODUCTION OF MALFORMATION (STRAIN 129)¹



¹Treated day 9 of gestation

χ^2 test for significance between treatments:

Tolbutamide vs. Tolbutamide + Nicotinamide $P < .0005$

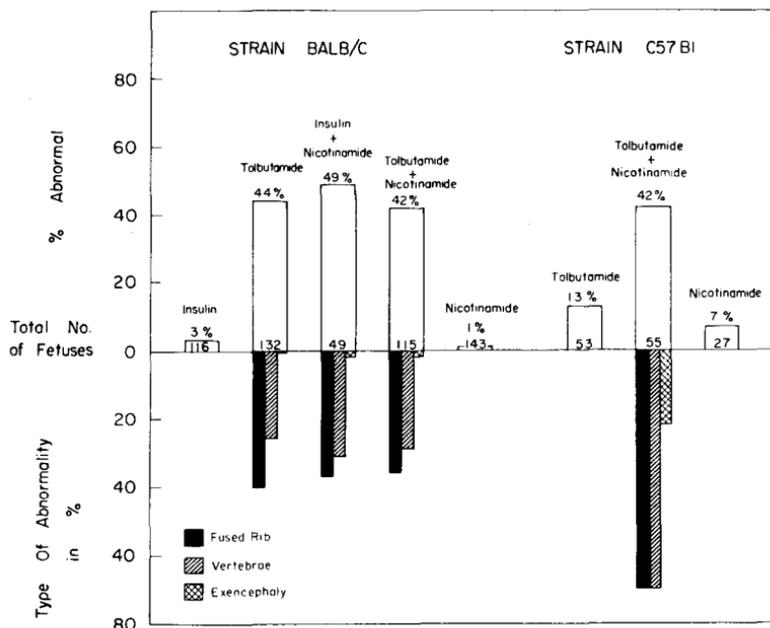
Insulin + Nicotinamide vs. Tolbutamide + Nicotinamide $P < .0005$

Fasting (Prep.) vs. all other teratogenic agents $P < .005$

the vertebral defects were more difficult to classify. Even at this late stage of development, when the fetuses were recovered, the amount of stained (ossified) tissue in the vertebral column was small and variable. (See illustrations)

Treatments of higher potency (tolbutamide plus nicotinamide) or of lesser potency (fasting [Prepuberal]) respectively increased or decreased the incidence of fused ribs, skull defects, and possibly also vertebral defects (Fig. 1).

Fig. 2
EFFECTS OF TREATMENTS ON PRODUCTION OF MALFORMATIONS



Treated day 9 of gestation

X_2 test for statistical significance between treatments, Strain C:

Insulin vs. Tolbutamide $P < .0005$

Insulin vs. Insulin + Nicotinamide $P < .0005$

Strain B:

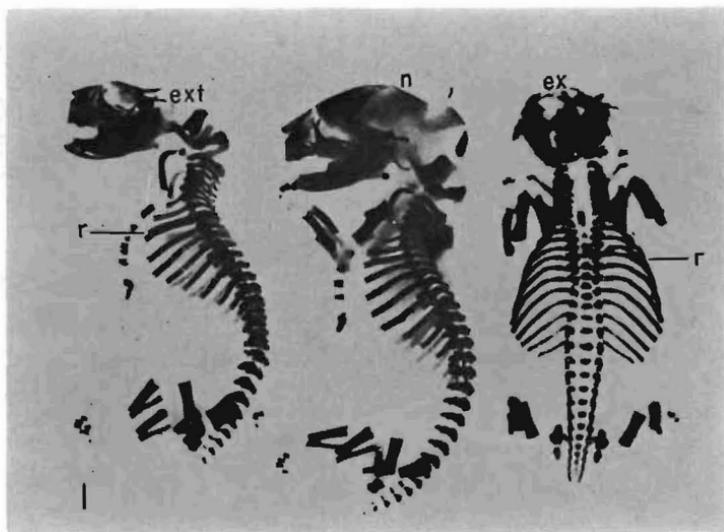
Tolbutamide vs. Tolbutamide + Nicotinamide $P < .005$

Strain C. The most striking result obtained in strain C mice (Fig. 2) was the ineffectiveness of insulin treatment in producing malformations. Insulin plus nicotinamide, or tolbutamide with or without nicotinamide did have teratogenic effects, however. Quite remarkable was the consistency in quantity and kind of defects obtained with teratogenic treatments.

The developing mice of strain C, unlike those of strain 129, obviously were not susceptible to cranial defect, since all the teratogenic treatments failed to increase the incidence of exencephaly among these mice. On the other hand, it was equally obvious that the developing ribs and vertebrae were as susceptible to defects in strain C as in the other strains of mice used.

Strain B. Because of the small number of animals involved the results obtained from the few treatments employed in mice of strain B (Fig. 2) are merely suggestive. However, results of treatment with tolbutamide plus nicotinamide definitely showed that the developing ribs and vertebrae were subject to defect. The incidence of exencephaly was greater than that found in strain C and less than that in strain 129. Treatment with tolbutamide plus nicotinamide produced a significant increase in the percentage of defective fetuses when compared to treatment with tolbutamide alone. This situation, it may be recalled, also existed in strain 129 mice.

Fig. 3



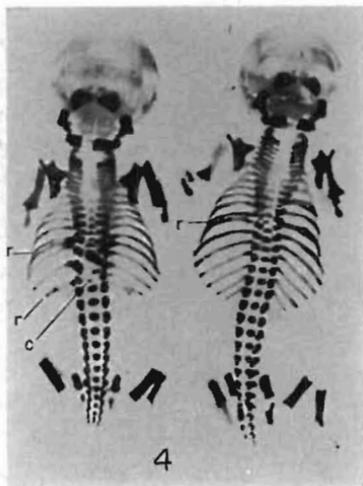
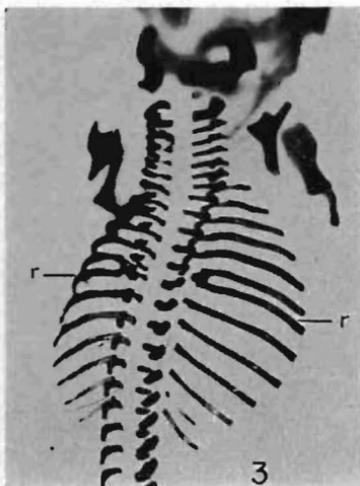
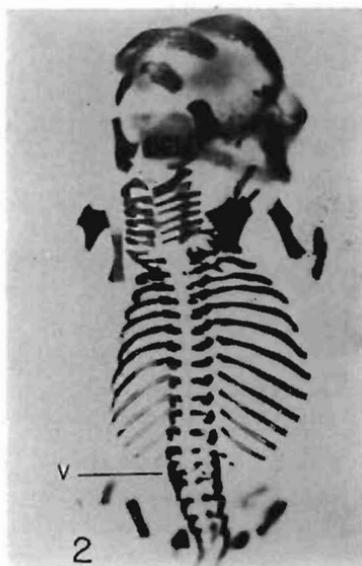
1. Strain 129, insulin treatment. Three fetal skeletal preparations stained with alizarin red. The fetuses on the left and on the right show exencephaly (ex), (absence of anterior skull bones); compare to middle fetus which has a normal (n) skull. Note unilateral rib fusion (r) in fetus on the right.

Fig. 3—(continued)

2. Strain BALB/c, tolbutamide treatment. This fetus is normal with the exception of fused vertebral arches (v) in the lumbar region.

3. Strain C57B1/6, tolbutamide treatment. A fetus which shows bilateral rib fusions (r).

4. Strain BALB/c, tolbutamide plus nicotinamide treatment. Fetuses which exhibit various rib malformations (r). Fetus on right has multiple rib fusions and an abnormal centrum (c).



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DISCUSSION AND CONCLUSIONS

The general conclusions drawn from these experiments were based on certain assumptions. First all the embryos in every strain of mice were assumed to have reached approximately the same stage of development at the time of treatment. Second, the development of the skeletal system in each of the different strains of mice was assumed to occur at the same time and at the same rate.

The following conclusions were drawn:

1) Some hypoglycemic agents are more effective teratogens in one strain than in others. Thus insulin was not teratogenic in strain C but caused a high percentage of malformations in strain 129.

2) Some agents, although ineffective or weakly teratogenic when administered alone, can sometimes be potentiated by the addition of a second agent. This was best exemplified in strain C. Insulin or nicotinamide, neither of which was teratogenic when used singly, produced abnormalities when used in combination. Nicotinamide also enhanced the teratogenicity of tolbutamide in strains 129 and B but not in strain C. In the 10 mg. dose nicotinamide alone was not teratogenic in any of the strains used. Raising the dosage from 10 to 20 mg., however, was found to produce malformations when tested in strain 129 mice (data not shown). This finding makes it appear that 10 mg. nicotinamide was a subteratogenic dose.

In none of the experiments involving combined treatments of nicotinamide and insulin or tolbutamide was any protection against skeletal deformity obtained. This evidence observed in mice contrasts with that reported by Landauer,⁸ who found that in the chick a portion of the skeletal syndrome of defects produced by insulin could be reversed with nicotinamide.

3) The incidence of one or more defective structures appears to depend on the interplay of the susceptibility of the developing system involved and the potency of the environmental agent. The susceptibility (or resistance) of the developing system is without doubt genetically controlled. The variability of the three developmental systems among the three strains was most marked in regard to exencephaly, the lowest susceptibility to this skull defect being observed in strain C mice, and the greatest susceptibility in strain 129.

The resistance to rib and vertebral defects also showed some variation among the three strains used. In strain C, for example,

although insulin treatment did not induce malformations of the ribs or vertebrae, the addition of a subteratogenic dosage of nicotinamide produced a high percentage of these defects. But the resistance to exencephaly in this strain was not overcome by any of the teratogenic treatments.

It is apparent then that the interplay of genes and environment is to be found not only in normal development but also in teratogenesis.

4) The age, weight, and parity of the pregnant mouse may play a role in the incidence of malformation. An impressive difference in proportion of malformed fetuses—1 per cent in adults as compared to 33 per cent in prepuberal mice—was obtained in the fasting experiments in strain 129 (Fig. 1). The effects of fasting in this highly susceptible strain are probably more severe in the younger, lighter animal than in the older, heavier adult. No differences were found in prepuberal or adult animals of strain C or B, but the differential in age (35 days compared to a minimal age of 115 days) between prepuberal and adult mice of strain 129 was considerably larger than that of the other strains used. The adult mice of strain 129 were carrying their third litters as compared to the adult (and prepuberal) females of strains C and B, which were carrying their first litters. Further investigations of the relative effects of age, weight, and parity differential of the mothers on the production of malformations should help to establish the validity of these preliminary results.

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Special Address

Korea — A New Venture in International Medical Education*

N. L. Gault, Jr.†

Two years of residency in Korea serving as a technical adviser in medical education and internal medicine at the College of Medicine, Seoul National University, has created a new interest for me in the American university's role in our nation's international affairs. American universities have contributed greatly to the advancement of living standards in America. Emerging nations, many of which have traditionally respected education, look to the reorganization of their educational systems as indispensable to sustaining their newly gained independence and to the technological development of their societies. The Ford Foundation's committee report on *The University and World Affairs* clearly states the role of education in today's world: "Education has taken a new and prominent place, alongside military, political and economic affairs, in the councils that determine nations' policies. The very attributes of nationhood and the vitality of national purpose depend upon it."



N. L. Gault, Jr.

The development of human resources through education is essential in the advancement of society. Health, of course, is a keystone to effective manpower resources. For poor health reduces man's productivity, low productivity hinders economic growth and improved standards of living, and poor standards of living perpetuate poor health. Medical education, teaching the application of modern scientific methods, will provide the professional manpower to improve and maintain the health of a nation's people. As a goal in assisting nations to raise

*Minnesota Medical Foundation Day Address, September 25, 1961

†Assistant Dean, College of Medical Sciences, University of Minnesota, and former Adviser in Medicine, USOM, Seoul National University College of Medicine, Seoul, Korea

their standards of living, our government has used the improvement of health as an instrument of international policy. Whether or not it has been utilized as fully as it should have been is questionable. But in the future, I believe, health and medical education will be increasingly recognized as imperative in our foreign aid programs.

The University of Minnesota Medical School has been involved for years in international medical education, admitting many physicians and scientists from countries from all over the world to its graduate programs. Members of our faculty have traveled the world sharing scientific knowledge with physicians of other nations. The public purpose of this university, particularly in its role as a land-grant institution, has demanded services to our society beyond the traditional teaching and scholarship functions. Recognition of this faculty's and its graduates' contributions to medical sciences is statewide, national, and even international. With the broadening of our nation's foreign aid policies following 1945 and during the cold war period, it was inevitable that our government seek the assistance of universities in pursuing its international programs. Since science has international scope without ideological barriers and provides the foundation for technological advancement, universities are peculiarly prepared to provide our government with the resources to help emerging nations.

In 1954, the Office of Economic Cooperation, now known as the International Cooperation Administration, approached the University of Minnesota to undertake an educational aid project at war-torn Seoul National University. Representatives of the university, including Dr. Gaylord W. Anderson of this college, surveyed the conditions at Seoul National University and reported the practicability of the proposal to our faculties.

In this way our college began a new venture in international medical education and for the first time entered into a "sister relationship" with a medical school in a foreign land. The successful association between Johns Hopkins University and Peiping Union Medical College when China was open to the free world was an example of what could be accomplished. The federal government financed the program; our faculty in cooperation with the Korean faculty designed the program to meet the educational objectives to sustain Seoul National University College of Medicine as the leading center of medical education in Korea.

This college's project objective was to provide technical advice and assistance in the development and strengthening of the educational, research, and extension programs and of the

organization, administration and basic operating facilities of Seoul National University in the fields of medicine, nursing, and public health. The program began on September 28, 1954, and was terminated on June 30, 1961. Many factors influence the progress in medical education in Korea, and I should like to discuss a few issues that I believe must be appreciated in order to evaluate the success of our efforts.

News of the unrest in Korea since her liberation from Japan in 1945 has crowded the headlines. In the past two years, the April 19, 1960, revolution saw the overthrow of the Rhee regime and the May 16, 1961, *coup d'état* unseated the duly elected constitutional government. Such changes should not be too surprising when they occur among people who are trying to shape a democratic government, the concept of which is entirely new to them. Adult Koreans today have known nothing but forcible control by the Japanese and—even more important, I believe—the autocratic patriarchal control of the family system. Recent liberation from foreign domination and relatively rapid dissolution of the family system left the Korean citizen drunk with freedom and oblivious of his citizenship responsibilities in a free society. Frequent government changes obviously influenced the development of the nation's education system but only occasionally affected the College of Medicine directly.

The cultural values of people determine the application of newly gained skills and knowledge, particularly in traditional societies like Korea. Appreciation of many of these values was essential for the technical adviser to work effectively, and these values must be considered when evaluating the results of this project.

For example, in education the Korean teacher or professor traditionally has held a high social position—far exceeding that accorded the teacher in America. For centuries he has been appointed, and more recently elected, to governing positions. Students are overawed in his presence, for they consider him omnipotent. Their duty is to listen in reverence, memorize his teachings, and gain status through recognition as his students. The student never thinks of questioning the validity of the teachings, for he is confident that his teacher speaks only the truth.

Another cultural factor is the attitude of the people in Korea toward health and medicine. In a survey of the most important problems in 75 Korean villages, 860 informants failed to list health among their 15 greatest needs.* In contrast, today in America, despite the high quality of medical care offered, a

*Hodgdon, Linwood L.: Community Development in Korea. USOM, Korea, 1961.

similar survey would unquestionably find health and medical care acknowledged as one of the greatest problems confronting our people. But since in Korea the people live from day to day seeking to solve immediate problems, they do not understand that modern scientific medicine and public health measures can improve their lives. They accept illness and early death as the inevitables of life. When illness strikes, they first turn to the herb doctor or witch doctor. If herbal concoctions, acupunctures, dermal cauterizations, and loud wailing accompanied by frenzied dance and deafening drumming by the *moodong* (witch doctor) do not bring relief, the patient eventually may be carried to a regular practitioner of medicine.

An appreciation of man's limited capability of adopting change is essential. Psychologically man varies in his attitude towards change. Security in the known of the past and insecurity in the unknown of the future unfortunately confuse and impede us in our interpretation of the gains and losses ahead of us in this changing world. But we must have the assurance of our convictions that the gains will be greater than the losses. This is a significant factor influencing the rate of change in any organization of men, large or small, in Korea or in America.

Turning now to our College of Medical Science's part in this project, our faculty contributions have been many; members of the Graduate School faculty have had the opportunity to advise one or more of the 77 Korean faculty members who have studied in our college under the terms of the contract. Dr. Gaylor W. Anderson, coordinator of the project in this college, received from many of our faculty members assistance that contributed greatly to the success of the program.

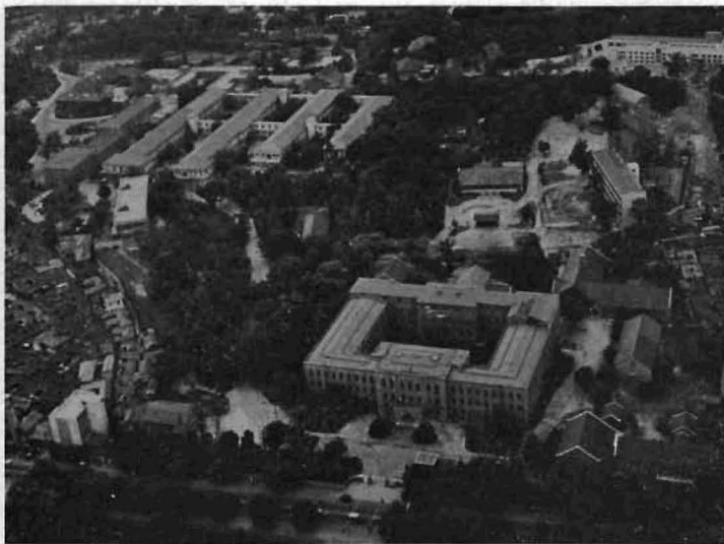
From March 1956 to the termination of the contract, our college dispatched 11 advisers to Korea for various lengths of time. Dr. William F. Maloney and I were primarily interested in the administration of the college, although all advisers were drawn into this area when it required their attention. Dr. Eldon Berglund in Pediatrics, Dr. E. B. Brown, Jr., in physiology, Dr. Edmund B. Flink in internal medicine, Dr. James H. Matthews in anesthesiology, Dr. George Schimert in surgery, Miss Margery S. Low in nursing education, Miss D. Joan Williams and Miss Florence J. Julian in nursing services, and Mr. Glenn R. Mitchell in hospital administration have provided advisory services during the past four and one-half years. At times as many as three advisers were working together as a team to demonstrate the cooperation and coordination required of their respective specialties for the operation of a modern medical center.

Special technical information and skills possessed by our ad-

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visers were transmitted to the Korean staff in such a way as not to displace any Korean faculty member. A major role of every adviser was to stimulate the faculty and students to accept new values upon which the principles of modern medical education and medical care could be established. Thus advisers served as a symbol of needed change.

Through this project, advisers, both here in Minnesota and in Korea, undoubtedly have become more aware of the international scope of our profession. Those of us who participated actively in the project are better equipped, in turn, to prepare *our* students for the increasing responsibilities they will have in international health and medical education.



Aerial view of College of Medicine campus, Seoul National University. In the foreground is the Main Basic Science building, housing classrooms, laboratories, and administrative offices. Nearby (upper left) is SNU's Attached Hospital, a 519-bed capacity clinical teaching facility. Rehabilitation program in recent years has refurbished old but strongly constructed buildings.

That phase of the contract that provided for the rehabilitation and improvement of the physical plant and for equipment and supplies for teaching, research, and hospital operation required the closest cooperation between our two faculties. In 1954 the college returned to its campus in Seoul from Pusan,

whence it had fled ahead of the Communist drive south. The buildings were standing, but the classrooms, laboratories, and hospital rooms were devoid of all furnishings. Even the plumbing and electrical fixtures were missing. Many windows were smashed, wooden floors were broken through, the roofs were damaged. The rehabilitation of this large campus has progressed slowly because of logistical problems in obtaining supplies and shortages of Korean funds to pay local labor. Thus far the expenditure of \$786,200 and hwan 1,089,376,000 (hwan 1,300 = \$1) has provided the college and hospital with essential repairs to permit operation. A new school of Nursing building, a nurses' dormitory, and extra floors for the library and the School of Public Health are the only major new constructions. Additional funds have been approved in part for further renovation during the next few years.

Teaching, research, and hospital equipment costing \$741,300 was procured after the requests of the Korean faculty were screened by their own committee, the adviser, and the appropriate department here at Minnesota. At least 95 per cent of the equipment delivered to the college is in use. As a result of the project, sufficient equipment has been restored to permit teaching, research, and patient care to be carried out in accord with modern scientific methods.

Such rehabilitation and re-equipment of the college, important as it is, does not meet the essential need of upgrading the course of education. This task the faculty itself must perform by making the necessary changes in the curriculum and in teaching methods. Therefore the phase of our contract that provided opportunities to the faculty for advanced study and observation in the United States may well hold the key to the success of the entire project.

One must recall that during the Korean War many faculty members were killed or kidnapped by the Communists, and others had their scientific pursuits interrupted by the war. The all-important need was to acquaint the staff with the recent advances in medical sciences and to demonstrate the teaching methods in our universities. The first Korean faculty member came to our campus in February 1955. Since then 50 have spent a year or less on our campus; 22 spent two years here; three came for three years each, and two for four years. Eight have been awarded Master's degrees; two have earned Doctor of Philosophy degrees; and additional advanced degrees are contemplated by three of the seven faculty members currently studying with us. The senior faculty members were not encouraged to pursue a degree program, since many already had advanced

degrees from Asian universities. But we did think it important to bring them to our campus to observe and participate where possible, so that they, being responsible for the college and hospital policies, might have more understanding and security in the changing scene at their college. The wisdom of this policy is illustrated by that fact that a number of these faculty members have demonstrated leadership in adopting significant changes since they returned.



Doctorless areas of Korea are visited by teams of Korean medical students during summer vacation months under teaching program approved by government's Minister of Health and Social Affairs. Traveling by train and government ambulance, students bring medical care to remote villages and rural regions. Trips average 10 days in length and involve 10 to 12 persons such as the typical team shown above with the author (right, rear). A physician from the faculty accompanies each unit. Advance word of unit's visit is relayed by local Korean political leaders. Patients flock to greet the mobile medical unit on its arrival.

In general, the younger faculty members have been most effective in introducing the teaching methods and some of the administrative concepts prevalent in our American universities. The students, who reported such progress to the Dean, were outspokenly critical of faculty members who failed to abandon their traditional teaching methods for newer ones. This represents a significant change in the student-faculty relationship, a change occurring in all levels of education—the liberation of the student's mind to observe, evaluate, and judge for himself. The young person of Korea is better informed today through books,

newspapers, magazines, and radio. What he reads and hears is often contradictory, and he is stirred to know the truth. In keeping with the spirit of a university in a free society this trend must be fostered, and teaching methods that mold the mind into a mechanism capable of regurgitating what it is fed must be abandoned.

As a result of the faculty's training, significant changes were made in the curriculum and in teaching methods. The basic science departments now offer more laboratory experiences to the students. Previously, demonstration experiments conducted by the staff sufficed. Now the students, singly or in small groups, actually conduct classical experiments, thereby improving their ability to observe, record, and interpret the results. The faculty is eager to expand laboratory exercises for students, but an increased budget for expendable supplies is needed for a fuller laboratory program.

One example of the faculty's curriculum revision is this year's change in the Department of Anatomy. After carefully reviewing the recommendations of the Association of American Medical College's Institute on Teaching Anatomy, the department reduced its lecture hours and increased its laboratory hours so as to offer two to three hours of laboratory work for every hour of lecture.

The faculty in all departments have adopted audio-visual techniques in presenting lectures. In addition to using flip charts and available motion pictures, each department has accumulated in its teaching collection a number of illustrated slides ranging from several hundred to two thousand.

Use of patients in the teaching of clinical subjects is increasing, with some departments programming their ward rounds and conferences as effectively as our own departments do. The clinical curriculum now provides only two hours of lecture a day rather than the seven that were scheduled five years ago. Students are responsible for recording clinical workups on both inpatients and outpatients and for presenting histories and physical examinations. The clerkships incorporate clinical conferences, such as the clinicopathological conference, x-ray conference, grand rounds, and the interdepartmental conference. (This last, initiated in 1960, provides a weekly hour and a half conference at which the basic scientists and the clinical specialists discuss a clinical entity.)

The administration of the College of Medicine has greatly improved; in fact, some faculty members regard what has taken place as an "administrative revolution." Previously each department was more or less autonomous. Today, I believe it is fair

to say, most of the faculty recognize the interdependence of each department in the college. A few departments are still unconvinced of the need to coordinate their efforts with the majority of the departments and probably will continue to hold this view until personnel changes remove the barriers. College committees are progressive in their study of problems; junior staff members have been named to some committees. The administration is dedicated to the objectives of our project and has sincerely tried to make improvements as rapidly as possible.



Wearing label of "student doctor," Korean medical student administers care to Korean family gathered in Myung (town) hall. Dermatological and ear, nose, and throat complaints were most common. White-clad students recorded histories and performed physical examinations. Treatment was limited to minor procedures. Referrals were made to provincial hospitals where indicated.

Not only the equipment and the curriculum and administration have improved, but access to medical knowledge also has increased greatly. The college library, a new fourth floor addition to the basic science building, is now without a doubt the finest and most extensive medical library in Korea. Both students and faculty read English texts and journals. About twenty-five medical journals, but few textbooks, are published in Korean. The library currently receives 227 scientific journals and contains twenty thousand volumes. In addition, 4,500 volumes of texts and monographs are catalogued. Contract funds and donations

by the China Medical Board and the American Korean Foundation have met the needs of the library to date. During the past two years students have had full access to the library.

Another essential factor in strengthening an educational program is the student. Fortunately, the Korean students who are successful in the competitive examinations and interviews for admission to the university are students of high ability. More than 600 usually apply for the 120 positions in each class of the six-year medical course. The first two years are taught in the College of Liberal Arts. Today faculty members of the College of Liberal Arts and of the College of Medicine serve as the pre-medicine course committee and are responsible to the Academic Dean of the University. This committee establishes the curriculum and admits students to the course. Successful completion of the two-year course automatically admits the student to the freshman class in medicine. This project procured equipment for teaching the premedical courses in chemistry, biology, and physics. Although the courses have been improved, the faculty of the College of Medicine and our advisers recognize the need for better staffing of the premedical courses.

The Seoul National University Attached Hospital, too, has expanded its services and teaching opportunities. In 1960 its outpatient clinics served a daily average of 118 new patients and 240 return patients. Because of economic pressures and possibly cultural influence, the daily average on inpatients was only 300 in 1960. These services were greater than ever rendered by this 460 bed hospital in previous years. Rehabilitation of the hospital began with basic repairs such as new flooring and roofing, rewiring of electrical circuits, installing water and steam systems, and screening of windows. Even though the contract has been terminated, further work in this area will continue over the next few years.

Other major changes have occurred as a result of the improvement in the administration of the hospital. Housekeeping has been made much easier since the interior painting brightened up the rooms and halls. The nurses have found it easier to keep the wards clean since families are no longer permitted to live in with the patients. Visiting regulations—a notion entirely new to Koreans—have been difficult to enforce. The administration has finally succeeded in prohibiting the families from cooking meals over charcoal stoves in the patients' rooms; the central kitchen now serves all meals for patients.

The hospital is "doctor centered" but is less so today with the nursing staff making an effort to direct its services primarily to caring for patients rather than solely to serving the doctors. The

administration has initiated an incentive program to recognize employees who perform their duties with exceptional excellence.

In the past the importance of necropsy and the pathologic examination of surgical specimens was not sufficiently appreciated by the staff. Advisers stressed the principle that these examinations form the foundation of scientific medicine; they repeatedly demonstrated that all the equipment for teaching and rendering modern medical care would be of little value unless recognized scientific procedures were adopted. A response on the part of the house staff during the last half of 1960 brought the total number of autopsies to 46, which is two and one-half times the number performed in 1959. By May 15 of this year, 608 surgical specimens had reached the pathologist, as compared to 358 during the same period a year ago. Certainly these are encouraging trends.



Student doctor fills prescription from supply of free medication made available to the team by the government and Korean pharmaceutical companies. Patient watches closely to obtain instructions for using medication after team has departed. Medical students are all in clinical training years.

The organization and operation of a central supply room has demonstrated efficiency both in service and in the care of instruments and equipment. The postanesthesia room planned and supervised by the anesthesiologist trained in our center is

offering for the first time intensive care in the postanesthesia period. In fact, the care has so impressed the doctors that they are requesting to use the facilities and nursing staff for the care of seriously ill, nonsurgical patients.

The faculty in Korea traditionally has stressed research as a major responsibility of the scholar. The facilities and financial support available have limited the research output. But now, thanks to a newly remodeled Clinical Research Laboratory, the faculty and graduate students have opportunities to apply in their research the newest techniques—such as the use of radioisotopes. As a result, several investigators have had papers accepted for publication in American and British scientific journals. The faculty, of course, contributes a major portion of the articles published in Korean medical journals.

Today the college of Medicine at Seoul National University is a different institution from what it was seven years ago. Its faculty members, returned from studies abroad, have worked diligently to improve the quality of medical education, medical care, and research. The accomplishments have been theirs; our services have merely been supportive. The record made by the graduating class of Seoul National University on the qualifying examination in medicine given by the Educational Council for Foreign Medical Graduates illustrates more vividly than my descriptions the real progress our Korean colleagues have made in upgrading medical education. The certification of more than 90 per cent of the graduates who took this examination is a truly outstanding accomplishment.

An administrative decision by the United States Overseas Mission in Korea terminated our official contract relationship with the College of Medicine on June 30, 1961. Advisers in the health sciences recommended continuation of the contract on the grounds that the rehabilitation of the physical facilities, re-equipment for teaching, research, and patient care functions, and the return of the faculty from studies abroad had set the stage for more effective technical assistance. I believe continued technical assistance would insure our investment in the college and would support the Korean staff in their determination to develop a center offering modern, scientific medical education and care. Perhaps the International Cooperation Administration will recognize the advantages that continued assistance can offer and will negotiate for further assistance to the college.

I am sure I speak for this faculty when I express our sincere appreciation for the opportunity to work cooperatively with the Korean faculty in this project. Our Korean colleagues have made outstanding progress, and we are proud to tell of their achieve-

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ments. Our faculty in turn has had its interests and knowledge widened by the exchange of faculty members.

In conclusion, then, both our own college and our Korean sister college have benefited greatly from this new venture in medical education. The cooperative relationship between our colleges should continue through the personal friendships and common scientific interests shared by our faculties. The importance of our relationship to our nation's international affairs is certainly evident. The global struggle of nations to advance their standards of living calls upon our government for the assistance that American universities are peculiarly able to render.



Medical Foundation News

DR. CECIL J. WATSON HONORED BY MEDICAL FOUNDATION

Dr. Cecil J. Watson, Professor and Head of the Department of Internal Medicine, received the Distinguished Service Award of the Minnesota Medical Foundation in special ceremonies September 25, 1961. He became the third faculty member at the University of Minnesota Medical School to be named winner of the Foundation's major award which provides \$5,000.00 annually until retirement.

Dr. Watson's award was sponsored in full by the James F. Bell Foundation of Minneapolis. It was presented by Dr. Arnold Lazarow, President of the Minnesota Medical Foundation, in recognition of "exemplary achievement in teaching and research as a member of the faculty . . . and for steadfast devotion to the Medical School, the University, and to Medical Education."

Two previous recipients named by the Medical Foundation under its expanding faculty awards program were Drs. Maurice B. Visscher and Owen H. Wangensteen, honored with similar citations in 1960. Funds for their awards were provided by the Modern Medicine Publications Foundation and the Phillips Foundation.

Dr. Watson's award was presented at Minnesota Medical Foundation Day exercises marking the opening of the Fall academic term. He was a guest of honor at the Foundation's annual luncheon which followed, and later in the day was feted on "Cecil J. Watson Recognition Day." About 200 medical colleagues and former associates attended a scientific program during the afternoon and a banquet during the evening.

In accepting the Foundation's third Distinguished Service Award for faculty, Dr. Watson said he was "most happy and most humble," and that he was "particularly pleased to have my colleagues consider me worthy of having it." Dr. Watson thanked the sponsoring foundation, and said he was grateful for the "many opportunities afforded me by the University of Minnesota."

Dr. Watson is a native of Minneapolis. He received his degree from the University of Minnesota Medical School in 1925. He joined the faculty in 1932, and rose to full professor in 1940, becoming Head of the Department of Internal Medicine in 1943.

He is known internationally as a medical educator and research scientist, particularly in the field of liver diseases, pigments and blood metabolism.



Dr. Cecil J. Watson (right) receives Distinguished Service Award from Dr. Arnold Lazarow, President of the Minnesota Medical Foundation.

Dr. Robert B. Howard, Dean of the Medical School, announced that he would recommend the designation of "Distinguished Service Professor of Medicine" be conferred upon the 60-year-old medical educator by the University's Board of Regents.

Following the award, Dr. Lazarow announced the establishment of three other types of Minnesota Medical Foundation awards for faculty members. To be enacted during the coming year are awards for outstanding performance by Medical School faculty members at three other academic levels.

SCHOLARSHIPS AWARDED

Fifty Medical School students received Minnesota Medical Foundation scholarships for the 1961-62 academic year. The awards were distributed by Dr. Arnold Lazarow, Foundation President, in Foundation Day ceremonies. The scholarships were worth a total of \$26,250.00, and brought to 265 the number of scholarships given since the Foundation's program was launched in 1949. A total of \$136,250 has been distributed. Most of the funds have been provided by direct gifts from various medical organizations, other foundations, business firms, physicians, and private citizens. The 1961-62 scholarships were all \$500.00 each, except five, which were \$750.00 each.

Students receiving the 1961-62 awards were:

Seniors: Daniel Baker, Centuria, Wis. (Ebin Foundation); Ronald H. Dietzman, St. Paul (Ruth Cranston Scholarship); William B. Erickson, Jamestown, N.D. (George MacPherson Fund); Robert D. Flaig, Alexandria, Minn. (Minneapolis Guild of Catholic Physicians); Stanley A. Gall, Bismarck, N.D. (Alpha Omega Alpha); Ronald Logemann, Bricelevn, Minn.; Nancy R. Lund, Hibbing, Minn. (Adam's Clinic); Lawrence B. Pearson, Bloomington, Minn.; Laurence S. Rivkin, Minneapolis (Avalon Foundation); and Lawrence J. Schut, Maple Lake, Minn. (Minneapolis Gas Co.)

Juniors: Roger D. Ambrosen, Robbinsdale, Minn. (Joseph Foundation); Terrance D. Capistrant, St. Paul (Melamed Foundation); Dennis C. Frisbie, Belgrade, Montana (Harris Foundation); H. Thomas Hobday, LeCenter, Minn., (Nu Sigma Nu-Erling S. Platou Scholarship); James H. House, Wood Lake, Minn., (Avalon Foundation); Dennis Jacobsen, Arco, Minn.; Bruce L. Jensen, Ellendale, Minn.; Dale R. Kave, Minneapolis (Minnesota Academy of Medicine); H. David Knudsen, New Effington, S.D. (Dr. Charles N. Hensel Memorial Scholarship); Robert N. Lindholm, Minneapolis; David O. Monson, Climax, Minn. (Avalon Foundation); Alyson P. Rieke, Mankato, Minn. (Ebin Foundation); Hugh A. Scanlon, St. Paul (Rowell Laboratories Scholarship); Adolph H. Walser, Minneapolis, (Avalon Foundation); and John W. Wheeler, Minneapolis (Minneapolis Society of Internal Medicine).

Sophomores: Alan C. Allison, Minneapolis (Ruth Cranston Scholarship); Eugene R. Bagley, Madelia, Minn. (Interstate Clinic of Red Wing, Minn.); Ralph Bergstrom, Jr., Hutchinson, Minn.; Robert S. Brown, St. Paul (Minnesota Academy of Medicine); Jan P. Dawson, Buhl, Minn. (Mesaba Clinic Scholarship);



MEDICAL SCHOLARSHIP WINNERS—Fifty medical students shown above were the recipients of Minnesota Medical Foundation scholarships for the 1961-62 academic year. Chosen for academic excellence and financial need from among 165 applicants, this year's winners constitute the largest group in the 12-year history of the scholarship program. Gifts of \$26,250.00 by various medical organizations, business firms, foundations, private citizens, and physicians made possible the record program. The Medical Foundation now provides scholarship aid for 10 per cent of all medical students at the University, and expects to have 100 scholarships available annually for the 500-member student body within a few years.

John R. Huberty, Sleepy Eye, Minn. (Avalon Foundation); John W. Karrow, Mankato, Minn. (Avalon Foundation); Dennis M. Leahy, Maple Lake, Minn. (Avalon Foundation); John W. Stewart, Lead, S.D., (Avalon Foundation); Wayne E. Tate, Jackson, Minn. (Avalon Foundation); and John V. Tyberg, Grantsburg, Wis., (Avalon Foundation).

Freshmen: Yossef Aelony, Minneapolis (Avalon Foundation); Darla Ann Bjork, Austin, Minn.; David Collin, Minneapolis (Minneapolis Gas Co.); James S. Good, Faribault, Minn. (Avalon Foundation); Marian Karlstrom Larson, Minneapolis (Avalon Foundation); Darrel L. Lary, Northfield, Minn. (Avalon Foundation); Daniel Murphy, Dallas, Tex. (Minneapolis Foundation); James J. Nordlund, White Bear Lake, Minn. (Tozer Foundation); Guy E. O'Grady, Minneapolis (Lisa Brooks Gregory Memorial Scholarship); David Raetz, Maple Lake, Minn. (Bayport Foundation); David Thompson, Minneapolis (Avalon Foundation); Paul Vander Kooi, Herman, Minn. (Rowell Laboratories Scholarship); Dale Von Ruden, St. Paul (George MacPherson Fund); and Elton Wing, Trimont, Minn. (Avalon Foundation).

Following the award ceremonies and an address by Dr. N. L. Gault, Jr., (published elsewhere in this issue) the Foundation's annual business meeting and luncheon was held at Coffman Memorial Union. About 145 persons attended.

FOUNDATION TRUSTEES ELECTED

The Minnesota Medical Foundation elected nine members to its Board of Trustees for four year terms beginning Oct. 1, 1961. Named were:

Dr. Karl W. Anderson (Med. '23), Mr. James Harris, and Mr. B. C. Gamble, Minneapolis; Dr. Vernon D. E. Smith (Med. '30) and Mr. James E. Kelley, St. Paul; Dr. Russell O. Sather (Med. '32), Crookston, Minn.; Dr. John B. Moyer (Med. '43), Duluth; and Dr. Herman E. Drill (Med. '28), Hopkins, Minn. Dr. Arnold Lazarow, current president of the Foundation, was re-elected a Trustee.

There are 29 members on the Board of Trustees and 1,500 members of the Foundation.

The Foundation's annual report for 1961 noted dues, gifts, and commitments of more than \$90,000 had been received during that year. Total assets of the Foundation have now passed the \$300,000, according to Mr. Eivind Hoff, Jr., executive secretary.

Professional Courtesy

Recently a new kind of gift has strengthened the Minnesota Medical Foundation.

Physicians are donating to the Foundation in recognition of professional services rendered by a medical friend or colleague. This new approach to an old problem is warmly applauded by the Minnesota Medical Foundation, for the Foundation's program of medical education and research at the University of Minnesota is substantially aided.

Here's how it works:

Example 1: "Dr. Jones," married and the father of three children, needed medical care for members of his family on several occasions last year. The care was provided by a professional medical colleague. As is customary, no professional fees were charged. The problem: How to adequately and appropriately compensate the colleague?

Example 2: "Dr. Smith" needed personal medical attention during the past year when he developed pneumonia. His friend and colleague, "Dr. Johnson," hospitalized and attended him during his recovery. The problem: How to adequately and appropriately compensate Dr. Johnson?

Both doctors solved their problems by contributing an appropriate amount to the Minnesota Medical Foundation **in the name of their benefactor**. The benefactor received a notice from the Foundation that a gift had been received in his name. The donor received an acknowledgment for his contribution.

These "professional courtesy" gifts are especially appropriate for the Holidays. If you wish to make one, notify the Minnesota Medical Foundation, 1342 Mayo Memorial Building, University of Minnesota, Minneapolis 14, Minn. Send your list of names and addresses with your check.

Medical School News

CLASS OF 1951 SURVEYED

Ten years have passed since the Class of 1951 graduated from the University of Minnesota Medical School. The MEDICAL BULLETIN recently surveyed all 1951 graduates, and presents here a roundup of their locations, type of practice, family status, etc. This is the first in a series to be devoted to various graduated classes. The editors would be pleased to receive your suggestions as to what other classes might be featured in future issues of the MEDICAL BULLETIN.

Meet Dr. John Q. Average.

He's a 1951 graduate of the University of Minnesota Medical School. Ten years after receiving his medical degree, Dr. Average has reached 38 years of age, is married, has exactly 2.7 children, and practices general medicine in a non-metropolitan area of Minnesota. He didn't say so, but is presumed to be "doing well."

One hundred and six of the 113 graduates of 1951 compose his profile. "Dr. Average" is the product of these statistics from those who answered the survey:

Fifty-four are practicing in Minnesota. Of these, 27 are practicing general medicine, and 27 are specialists.

Forty-eight are practicing outside Minnesota. 18 of these are generalists, and 30 are specialists.

Four (all women) are not practicing.

By percentages:

Forty-three per cent of all graduates are in general practice.

Nineteen per cent, the next largest individual grouping, are internists.

Ten per cent are surgeons.

Twenty per cent hold medical teaching positions, and three per cent are full time medical educators.

Class members were all presently married except five. They have produced a total of 274 children, including seven sets of twins. The oldest children are 25; the youngest was due to arrive as we went to press.

Only one doctor reported he was "doing well." The editors assume no comment from the others reflects only modesty.

Here's news of 106 who responded:

Shirley Adler is a pathologist at the Samuel Merritt Hospital, Oakland, Calif. She is married to Mr. Glenn Howard. Their home is at 5808 Merriewood Drive, Oakland.

Kenneth E. Ahola is associated with the Mesaba Clinic, Hibbing, Minn. in general practice. His wife's name is Helen. Children are Karen, 3, and Michael, 1.

James P. Akins is in solo general practice at 1055 E. Central Ave., LaHabra, Calif. His wife is Polly Akins, their children are Gary, 8, and Mark, 5.

John W. Anderson is in general practice in association with the Blue Earth Medical Center, Blue Earth, Minn. His wife is Lorraine, his children Bill, 18; Nick, 13; Chris, 10; and Tim, 6.

Roger L. Anderson is affiliated as a general practitioner with the Crystal Medical Clinic, 5636 W. Broadway, Minneapolis 27, Minn. His wife's name is Agnes. A daughter, Nona, 19, attends Smith College. Other children are Christine, 14; and Sarah, 5.

Wallace E. Anderson writes that he is enjoying the advantages of a city group practice while raising his children on an 80-acre farm. He's at home on Route 2, Wayzata, Minn., with offices in North Minneapolis. The family includes his wife, Claire, and children Mark, 10; Michael, 9; Sarah, 6; Stephan, 5; Martha, 3; and Mary, 6 months.

James S. Barr is the lone physician in Elmore, Minn. where he lives with his wife, Jeanne, and sons James, 7; and Jeffrey, 6.

Robert B. Benjamin lives at 5205 Duncraig Road, Minneapolis 24, Minn. He does general surgery in affiliation with the St. Louis Park Medical Center. Children are Scott, 8; Diane, 6; and Laura, 3. Mrs. Benjamin is named Betty Mae.

Kenneth C. Berge is an internist at the Mayo Clinic, Rochester, Minn., and an instructor in medicine at the Mayo Foundation. His family includes his wife Aline, and children Elizabeth Ann, 9; William 5; and Keith, 3.

Ernest M. Berkas is chief of surgery at the Veterans Administration Hospital, 5500 E. Kellogg, Wichita, Kansas. His wife is Mary R. Berkas. Children: Nancy, 8; Mary Ann, 6; Paul, 4, and Carol, 2.

Russell S. Blanchard is a specialist in physical medicine and rehabilitation at the Rehabilitation Institute, 261 Brady Street, Detroit 1, Mich. He also teaches at Wayne State University College of Medicine. He and Mrs. Blanchard (Ruth Ann) have a twin son and daughter, age 25.

Owen C. Bolstad is a general practitioner at the Little Falls, Minn. Medical Center. His wife is the former Katie Miller. Their children are Roger, 9; Susan, 7; Carol, 5, and Anne, 3.

Arthur Bolter is in the private practice of pediatrics in Castro Valley, Calif. He lives at 5223 Crane Ave. with wife, Illene, and children Jonathan, 9; Howard, 7; and Laura, 4.

Jack R. Brokken is an internist who teaches at the University of Southern California Medical School, and practices in Los Angeles County. His address is 5826 Flambeau Road, Palos Verdes Estates, Calif. Family includes wife Dorothy, and Rachel, 8; Barbara, 7; Steven, 6; and Paul, 4.

Thomas P. Cannon and his wife, Patricia, toured Europe during October. They are now home with children Susan, 9; Nancy, 7; Janet, 6; Steven, 4; and Michael, 7 months, at 5016 Greenbrier S., San Diego, Calif. Dr. Cannon is engaged in the practice of internal medicine.

James B. Carey, Jr. is an associate professor of medicine at the University of Minnesota Medical School. He lives at 4751 Fremont Ave. S., Minneapolis 9, Minn., with wife Jean, and children Dana, 8; and Ellen, 6.

Harley C. Carlson is a radiologist at the Mayo Clinic, Rochester, Minn. He is married to Joyce Kvaalen Carlson. Their children are Hans, 10; Lisa, 9; Janna, 7; Leif, 6; and Baret, 2.

Vernon J. Carlson is in general practice at the Moorhead Medical Center, 1015 Seventh Avenue N., Moorhead, Minn. The family home at 1709 Third St. S. is "staffed" by his wife, Ruth, and David, 9; Cathy, 7; John, 5, and Mary, 3.

Shirley Joan Cedarleaf is the wife of Richard P. Doe, classmate, and the mother of two children. Until recently, she was active in the practice of Anesthesiology. (See next page).



BRUCE CHRISTIANSON

Bruce W. Christianson is a psychiatrist living at 3915 Deervale Dr., Sherman Oaks, Calif. His wife, the former Mary Faubion, is also a physician. They were married while residents in psychiatry in 1955 at the Mayo Clinic.

Leonard A. Cobb was to be married this month (November 1961). He is a cardiologist on the faculty of the University of Washington School of Medicine, Seattle 5, Wash.

E. Dale Cumming is a St. Paul pediatrician, living at 1285 W. Como Blvd. He and Mrs. Cumming (Margaret) are parents of Christine, 9; Dale, 8; and William, 5.

Francis DeMarais began a psychiatric residency at the University of Minnesota Hospitals this fall after holding a position in insurance medicine for several years. He is married to Dora DeMarais. Their children are Myrna, 13; and Renee, 11. The family lives at 3123 21st Ave. S., Minneapolis.

Richard P. Doe is Chief of the Metabolic Section, Minneapolis Veterans Hospital, and an instructor in internal medicine, University of Minnesota, specializing in metabolism and endocrinology. His wife is Shirley Cedarleaf Doe (See above). Children are Nancy, 8, and Charles, 4. "Shirley has temporarily retired from Medicine after finishing an anesthesiology residency. Our hobbies are bowling and fishing. I expect to receive my Ph.D. in 1961. My research has been mostly related to the adrenal glands."



J. E. DOUGLASS

Donald W. Deering is an ophthalmologist at 5055 N. Greeley, Portland 12, Oregon. He teaches at the University of Oregon Medical School, and is married to the former Patricia St. Clair. Their children are Michael, 8; Tim, 6; Patrick, 5; and Tomatine, 2.

Jesse E. Douglass, Jr. has been Medical Director of the Mineral Springs Sanatorium, Cannon Falls, Minn. since August, 1958. He has been engaged in the practice of chest diseases and tuberculosis treatment in Minnesota since 1954.

Willis M. Duryea is an internist practicing in association with two other physicians at 323 Marquette Bank Bldg., Minneapolis. His wife, Jean, and he are parents of Anne, 6; Lee Ellen, 4; and Kristen, 2.

Earl W. Eli practices general medicine with a group of physicians at 3620 Central Avenue N.E., Minneapolis. Mrs. Eli (Eunice) and Earl are parents of Janice, 12, and John, 10.

Calvin R. Elrod practices general medicine at 310 E. Angeleno, Burbank, Calif., since moving from Minnesota in 1960. He and wife Edith are parents of Kent, 12; Mary, 4; and Linda, now 10, who was a 2 lb. premie born at University of Minnesota Hospitals. "She's doing very well now."

Andrew C. Erlanson is pediatrician associated with the Adam's Clinic, Hibbing, Minn. He's a Diplomate of the American Board of Pediatrics and a former pediatric consultant, Minnesota Department of Health. He and his wife Lois moved to Hibbing in 1959. Their daughter, Lorella, was the first baby born in the Hibbing area in the year 1961.

Conrad B. Frydenlund writes that he is "doing well" in general practice at the Fallon Clinic, Fallon, Nevada. He is married to the former Hellen Lucy Priddy, and has a daughter, Lynne, 4, and son, Sammie, 1.

Theodore M. Gill is an ophthalmologist at 310 Medical Arts Building, Albert Lea, Minn. He passed his Boards in 1955. He and wife Suzanne have three children: John, 10; Anne, 8, and Peter, 4.



THOMAS R. GOOD

Thomas A. Good is Director of the Pediatric Metabolic Clinic, University of Maryland Hospital, Baltimore 1, Md. He received the 1960 Ross Award for Pediatric Research given by the Western Society for Pediatric Research. His wife is Joyce, his children Stephany, 8; Shelley, 6, and Gweneth, 5.

John M. Gunsolus is in solo general practice in Stuart, Florida. His family is composed of his wife, Flora Alice, and three children, Charlotte, 9; John M., III, 4, and Evelyn, 1. His office address is 835 E. Ocean Blvd., Stuart, Fla.

Christian P. Hald is in solo general practice in Ashland, Oregon (485 E. Main Street). His wife is Jean. Children are Christian, III, 10; Christine, 8; Theresa, 5, and Tamara, 3.

Milo Hansen is associated with a group in practice at the Little Falls, Minn. Clinic. His wife, Caroline, and he are parents of Timothy, 9; Phillip, 7, and Laura, 4.

John J. Heimark lives at 1228 Highland Avenue, Mankato, Minn. where he is an internist with the Mankato Clinic. He also teaches at the Mankato State College Nursing School. His wife is the former Ann Huntting. Their children are seven-year-old Craig, and four-year-old Laura.

Bernard E. Herman is a Fellow in Cardiovascular Surgery at Baylor Medical School, Houston 25, Tex. until July 1962. He has been a general surgeon in Riverdale, New York, and an

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assistant attending surgeon at Mt. Sinai Hospital, New York City. He is a Diplomate of the American Board of Surgery, and a Fellow of the American College of Surgeons. His wife's name is Joy.

William C. Hinkley is an internist at 1826 B Street, Hayward, Calif., and teaches at the Fairmont County Hospital in San Leandro. He and wife Eleanor also look after Dale, 4, and Wayne, 2.

Sarah K. Hochstetler is a radiologist at the Presbyterian Medical Center, San Francisco, Calif., and a clinical instructor at Stanford Medical School. She lives at 87 Bay Vista Drive, Mill Valley, Calif.

Wallace R. Holter is a radiologist at 3235 Fair Oaks Blvd., Carmichael, Calif., and teaches at Sacramento County Hospital. He and his wife, Ethel, are proud parents of their youngsters Monique, and twins Knute and Kent, 19 months.

Worth A. Hooper is also a California radiologist, at 1200 N. State St., Los Angeles 33. When not with his wife Georgia, and sons John, 7, and Scott, 6, he's an assistant professor of radiology at the University of Southern California Medical School.

William H. Houlton is a clinical anesthesiologist with a 7-member group at 1337 St. Clair Ave., St. Paul, Minn. His wife is Lovce J. Houlton, and children are Laif, 10; Joel, 9; Lise, 7, and Andrew, 5.

Joseph C. Houts practices general medicine in Dassel, Minn. in association with Dr. Marvin W. Johnson (Med. '52). Keeping an eye on Dad are his children Joel, 9; Jane, 6; Rebecca, 5; Barbara, 3, and Linda, 2. Mrs. Houts is named Eleanor.

Herb L. Huffington practices general medicine in Waterville, Minn. Wife Jean and he are parents of Carla, 12; Lori, 10; Paul, 8, and Mark, 6. Herb is executive director of the Minnesota Academy of General Practice, and a member of the Membership Commission of the American Academy of General Practice.

Edward W. Humphrey lives at 9734 Russell Circle S., Minneapolis, with his wife, Noreen, and three-months-old daughter, Katherine. He is a general surgeon at Minneapolis Veterans Administration Hospital, and an assistant professor of surgery, University of Minnesota Medical School.

Roger E. Kelley is associated in a group practice with the Cuyuna Range Clinic, Crosby, Minn., where he is engaged in

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general practice. Mrs. Kelley (Doris) and Roger are proud parents of Margo, 10, and Denise, 6.

Charles F. Kelly is engaged in the solo practice of general medicine in Minneapolis. Home address is 6226 Upton Ave. S., where wife Kathleen keeps watch on Charles, 8; Michael, 6; Ann, 5; Patricia, 3, and Thomas, 2.

Robert T. Kelly practices general medicine in association with the Itasca Clinic, Grand Rapids, Minn. His wife's name is Donna. Their children are Ruth, 16; Colleen, 4; and Theodore, 1.

Robert E. Kohlhase lives at 426 N. Westwood Drive, Minneapolis with his wife, Shirley. He practices general medicine in association with the Broadway-Suburban Clinic, Minneapolis. The children include Laura, 8; Bruce, 6; Brian, 4, and Mark, 2.

Theodore J. Konig is an internist with the Kaiser Foundation Hospital in Fontana, Calif. His address is 304 E. 6th Street, Ontario, Calif. He is also an instructor in medicine at the University of Southern California Medical School and the Los Angeles County Hospital.

Donna M. Knutson is not practicing at present. She's at home with her husband, Ward Edwards, at 3545 Glenhurst Avenue, Minneapolis 16, Minn. The children are Terrie, 10, and Laurie, 5. Mr. Edwards is administrator of Lutheran Deaconess Hospital in Minneapolis.

Walter E. Krafft is engaged in general practice at offices in the Southdale Medical Building, Minneapolis 24, Minn. He is presently employing an associate physician. Mrs. Krafft (Joan) and Walter are the parents of David, 8; Peter, 4, and Phillip, 1.

Lewis William Larson is an internist who teaches at the University of Oregon Medical School and practices at the Portland Clinic, 1216 SW Yamhill Street, Portland, Oregon. He is single.

Elliot Latts is associated with the Minneapolis Medical and Diagnostic Center, 2219 Chicago Avenue, in the practice of internal medicine. He also teaches at Mt. Sinai Hospital in Minneapolis. Mrs. Latts is named Shirley.

Van S. Lawrence is chief of anesthesiology at Minneapolis General Hospital, and an instructor in anesthesiology at the University of Minnesota Medical School. He returned to Minneapolis in March, 1960 after nearly three years in residency and practice in Tacoma, Washington. The family home is 1961 Kenwood Parkway, Minneapolis. Van's wife is named Dulcie;

their children are Robin, 10; Joe, 9; Chris, 7; Matthew, 5, and Rebecca, 4.

Will W. Lee has a solo practice of general medicine at 3315 Beacon Ave. S., Seattle 44, Washington. He and wife Nellie are parents of Kelvin, 20; Gwendolyn, 14; Clifford, 11, and Corwin, 8.

John H. Leversee, practicing general medicine in Bellevue, Washington, writes: "Since the Rose Bowl game it is increasingly difficult to convince these Washingtonians of the superiority of Big Ten and Gopher football." John's family includes his wife, Joan, and David, 18 mos. A new addition is expected in January 1962 at the family home, 3444 76th N.E. Seattle, Wash.

Richard C. Lillehei is now full time assistant professor of surgery at the University of Minnesota Medical School. Rich's proud honor was being named a Markle Scholar in July, 1960. The family home at 1905 Penn Ave. S., Minneapolis, shelters wife Betty Jeanne, and Richard, Jr., 7; Theodore, 6, and John, 18 months.

G. T. Midboe practices general medicine with the Doctor's Clinic, Forest Lake, Minn. He is married to the former Inga E. Larson. Their children are Cassandra, 9; Barbara, 7, and Cynthia, 6.

John E. Middlebrook is practicing internal medicine with another physician at 701 Physicians & Surgeons Building, Minneapolis, Minn. His wife, Phyllis, and children, John, 12; William, 9; Geoffrey, 6, and Christopher, 4, are home at 2409 Russell Ave. S., Minneapolis.

Herman Miller lives outside Austin, Minn., where he practices solo general medicine at 206 Second Ave. N.W. His wife's name is Helen. Their children are Geoffrey, 4; and Gregory, 2.



RUSSELL H. MITCHELL

Russell H. Mitchell and family live in Los Rios, Canal Zone, where he practices general medicine for the U.S. government. He can be reached at Gorgas Hospital, Balboa Heights, C. Z. Russ is a medical officer of the U.S. Navy Reserve, and president of the Archaeological Society of Panama. He has published several articles on archaeology in professional journals. Mrs. Mitchell (Dolores) is an artist (oils) who has shown at several exhibits, including her own. Their children are Kathy, 11; Gregory, 8, and Jill, 7.

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Robert E. Molenaar is in the solo practice of general medicine at Cannon Falls, Minn. His wife, Mary, and he are parents of Peter, 11; Nicky, 9; twins Kurt and Karl, 7, and Heidi, 4.

Howard Mortenson practices general medicine alone in Menahga, Minn. His wife, Carol Jean, is a former aviatrix. His children are Diane, 6 ("an accomplished ballet dancer"); Kurt, 4 ("an avid hunter and fisherman who cannot understand the necessity of medical practice"), and Jane, 2 ("who is all boss").

Stanley R. Norquist practices general medicine at 1653 Hudson Street, Longview, Wash. The family includes wife Ann; Bruce, 11; Scott, 10, and Todd, 3. Stanley is senior warden of his church vestry, and keeps busy as secretary of the Cowlitz County Medical Society, and the Longview Chamber of Commerce.

Ralph E. Nyhus is a pediatrician in Denver, Colo, practicing at 1955 Pennsylvania Avenue. His wife's name is Catherine.

William V. Owen practices general medicine with a group at 60 Gordon Park, Webster, New York. He and wife Jane are parents of Molly, 4; Sara, 2, and William, 1.

Harold P. O'Neill practices general medicine in association with the Albany Clinic, 1040 W. Seventh Avenue, Albany, Oregon. He is past president of the Linn County Medical Society and past chief of staff at Albany General Hospital. His hobby is flying. Mrs. O'Neill is the former Carol Evans. Their children include Patricia, 14; Charles, 9; Michael, 7, and Susan, 10, who won a junior Olympic Medal in 1961 swimming competition held around the state of Oregon.

George R. Pettersen is a partner in general practice with Dr. Richard Burman (Med. '56) in Aitkin, Minn. George and his wife, Eleanor, have a son, Charles, 13.

Wilmer L. Pew has recently acquired a partner in the practice of pediatrics in Eugene, Oregon, and construction of a new office building is underway. The family includes wife, Miriam, and children Becky, 13; Deborah, 7; William, 6, and Michael, 4. Another daughter, Barbara, 15, is studying in Denmark.

Kurt Pollak lives at 4416 Philbrook Lane, Minneapolis 24, Minn., with his wife, Martha, and children Deborah, 9, and David, 6. He is engaged in the practice of otolaryngology in Minneapolis, and is a clinical assistant professor at the University of Minnesota Medical School.

B. C. Prentice practices general medicine in Ashland, Wis., where he is a partner in the Smiles-Prentice Medical Group, 206 Sixth Ave. W.

Harley J. Racer is in general practice with **Dr. Richard K. Simmons (Med. '55)** at 2519 W. 79th Street, Bloomington, Minn. He and his wife, Loretta, are parents of Catherine, 13; Anne, 11; Peter, 8, and Jane, 4.

A. I. Rajala is associated in general practice with the Itasca Clinic, 355 River Road, Grand Rapids, Minn. He and wife Maxine have four children, Susan, 5; Catherine, 4; Mary Ann, 3, and William, 2, the latter born on their fourth wedding anniversary. He writes that another family addition was due in November, 1961.

Alex Ratelle is an anesthesiologist at Methodist Hospital, 6500 Excelsion Ave., Minneapolis, and teaches at Minneapolis General Hospital. He and wife Patricia have two children, Jeanne, 3, and Alex, 1.

Reimert T. Ravenholt is an epidemiological consultant for the U.S. Public Health Service stationed at the American Embassy, Paris, France. His address is 19 Avenue Le Notre, Vaucresson, Seine-et-Oise, France. With him there are wife, Mildred, and Janna, 10; Mark, 9; Lisa, 6, and Dane, 4, all of whom attend French public schools.

Ralph R. Rayner joined the medical staff of the Interstate Clinic, Red Wing, Minn., following completion of a surgical residency at Ancker Hospital, St. Paul. Moving to Red Wing with him were wife Louise, and children Ralph, 11; Mark, 9; Christopher, 7; Anthony, 5; Sara, 3, and Amy, 7 mos.

Byron H. Roberts is an anesthesiologist in partnership with **Dr. Richard C. Gaard (Med. '45)** at 2312 S. Sixth Street, Minneapolis 6, Minn. Mrs. Roberts' name is Dolores. Their children are Brad, 7; Steve, 6, and Susan, 4.

Joseph A. Rorem is in general practice at Appleton, Minn., at the Kaufman-Rorem Clinic. He and wife Gladys are parents of Paul, 12; Mark, 10; David, 7; Kristine, 4, and Karin, 6 mos.

Robert H. Rosenberg is a radiologist in association with two other physicians at 306 Stimson Building, Seattle 1, Washington. His family includes wife Faylene, and children Sarah, 8, and David, 7.

John B. Rutledge is associated with the Detroit Lakes, Minn. Clinic in the general practice of medicine. He is married to the former Geraldine Ghent. Their children are Robb, 9; Nancy, 8; Mark, 7, and Susan, 4.

Charles N. Sadoff is an internist with the Permanente Medical Group, 130 N. LaCienega Blvd., Los Angeles 48, Calif. The family home at 13159 Stagg Street, N. Hollywood, Calif., houses

wife Beverly, and children Marc, 8; Cory, 7; Dan, 5; Joel, 3, and Julie, 2. He writes: "It's a struggle paying the bills on the damage they do!"

Norvel Sisson is a pathologist with the South Bend Medical Foundation, 531 N. Main Street, South Bend, Indiana. Mrs. Sisson (Ruth) is vice president of the county medical society auxiliary.

Lorin C. Spencer is a pathologist in Claremont, Calif. The family home at 1495 N. Mountain Ave. shelters his wife, the former **Annabel Teberg**, (Med. '51) and their children, Suzanna, 8; Lucinda, 5; Daniel, 4; Martha, 3, and Stuart, 18 mos.

George V. Squire is an allergist and in general practice alone in Salem, Oregon. Starting in January, 1962, he is limiting his practice to allergy. He is a clinical instructor at the University of Oregon Medical School. The family includes wife Edith, and children Douglas, 17; Sally, 11; Susan, 9, and Janet, 5. Home is 496 Hoyt Street, S.E.

Robert F. Stanchfield practices general medicine in partnership with another physician at 925 Oilfield Ave., Shelby, Mont. Mrs. Stanchfield (Ann) and he are parents of twin daughters, Linda and Susan, 8; Patricia, 7, and Mark, 3.

John M. Streitz is a urologist in Duluth, Minn., practicing at 324 W. Superior Street with another physician. His wife's name is Patricia. They are parents of Susan, 9; John, 7; Sarah, 5; Andrew, 4, and David, 1.

David F. Struxness practices general medicine with a partner at 109 E. Willow, Pomona, Calif. The family lives nearby at 1502 N. Tulane Rd., Claremont, Calif., and includes his wife, graduate of the University of Minnesota, the former Patricia Jean Porter. Their children are Jean, 16; Carol, 11, and Miles, 10.

Donald B. Swenson practices in St. Paul as an internist in association with **Dr. Joseph Borg** (Med. '22) and **Dr. David M. Craig** (Med. '39). The group is located at 918 Lowry Medical Arts Bldg. Don is a clinical assistant professor of medicine at the University of Minnesota cardiology clinic, and is on the attending staff at Ancker Hospital, St. Paul. His family includes wife Geraldine, and children Janet, 3; and Stephen, 1.

George A. Tanbara is a pediatrician at 30 Tacoma Medical Center, Tacoma 5, Wash. Wife Kimi, and children, Gregory, 8; Diane, 6, and Susan 4, are home at 710 North Yakima Ave., Tacoma. George urges anyone heading for the World's Fair in Seattle to stop and see them.

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Annabel Teberg is the wife of Lorin C. Spencer of the Class of 1951. (See previous page)

Harold R. Thysell is practicing general medicine in association with the Crookston Clinic, Crookston, Minn. His family includes wife Midge, and children Freddie, 13; David, 10, and Jane, 8.

Jack A. Vennes is an internist at the St. Louis Park Medical Center, 4959 Excelsior Blvd., Minneapolis 16, Minn., and a clinical instructor in medicine, University of Minnesota. His wife Carol and he are parents of Martha, 9; Brian, 6, and David, 3.

Barbara Visscher is married to Dr. Fredrick H. Kahn and lives at 3309 Corinth Avenue, Los Angeles 66, Calif. Their children are Susan, 8; Kathy, 7; and Billy, 4. Barbara is not practicing at present, but "hopes to get back to medicine in a year or so when the youngest is in school!"

Robert K. West is "doing general practice in the heart of good hunting, fishing, and skiing country." He is in partnership in Cut Bank, Montana. His wife is named Helen, and their children are Lydia, 10; Dulcy, 9, and Russell, 8.

Harold Wexler is an internist at the Minneapolis Medical and Diagnostic Center, 2219 Chicago Avenue, and teaches at Mt. Sinai Hospital, paralleling the professional activities of Dr. Elliot Latts, a classmate. Harold's family includes wife Shellie, and children Reid, 9; Michael, 7; Adam, 5, and Jill, 3.

William R. Weyhrauch is a general surgeon in Lincoln, Nebraska. With wife Janet, he lives at 2108 S. 24th Street, Lincoln 2. Their children include Victoria, 12; David, 11; Elizabeth, 10; Bruce, 8; Tom, 4, and James 2. His practice is in association with the Lincoln Clinic.

Eugene L. White is a general surgeon with two other physicians at 726 Wall St., Bend, Oregon. He is a Diplomate of the American Board of Surgery. He is married to the former Virginia Voorhees. They are parents of Karen, 5; William, 3, and Nancy, 2.

Donald E. Wohlrabe is associated in general surgery with the Springfield Medical Group, Springfield, Minn. He and his wife, Favelyn, are parents of children Wendy, 9; Julie, 8, and David, 5.

Kermit J. Wright is a general surgeon, Helena, Mont., where he started the Helena Medical Clinic, 1930 Ninth Ave., in December, 1960. He was chief of surgery for the Fort Harrison

Veterans Administration Hospital during 1957-60. Mrs. Wright (Myrl) and he are parents of Pamela, 10; Mark, 9; Peggy, 5, and Margot, 2.

Merrill B. Yeomans, in general practice at 205 Lee Street, Shelby, North Carolina, reports his family "healthy and ordinary." It includes wife Sue, and children Becky, 10; Alice, 6; Brooks, 4, and Susy, 2.

* * * *

Too Late to Classify . . .

Ernest A. Ager, 205 E. 25th Ave., Olympia, Wash.; Epidemiologist, Washington State Department of Health.

Mary Goepfert, 5529 Woodlawn Blvd., Minneapolis; Consultant in Internal Medicine, St. Peter State Hospital.

John W. McLinden, 265 Crestview Drive, Santa Clara, Calif.; General Practice.

Virgil Erickson, 5120 Rafton Drive, San Jose, Calif.; Ship's Doctor, S.S. President Polk, c/o American President Lines.

Seven other members of the Class of 1951 could not be located. The editors express thanks to those who sent information and photos.

**COMBINED ALUMNI GIFT
APPEAL UNDERWAY**

The 1961 Alumni Gift Appeal of the University of Minnesota Medical School was mailed this month to more than 5,700 graduates.

Three formerly separate appeals were "packaged" in the 1961 campaign to provide alumni with a convenient opportunity to support the institution through a direct channel. Included this year are (1) the Medical Student Center Project, (2) the Minnesota Medical Foundation Membership Appeal, and (3) the Medical Projects Campaign of the Greater University Fund, which supports thirty different medical activities.

The alumnus may divide his gift among the three sections of the appeal according to his own personal interest.

Alumni are urged to watch for their 1961 Alumni Gift Appeal, and to respond as generously as possible.

Alumni Notes

◆ 1901

Edward A. Eberlin, Glenwood, Minn., is observing his 60th year in the practice of medicine.

◆ 1911

Five graduates of the University of Minnesota Medical School were among 29 physicians in Minnesota cited for 50 years of medical practice in the state by the Minnesota State Medical Association. Joining the "Fifty Club" in 1961 were **Dr. Moses Barron** and **Dr. Thomas Ziskin**, both of Minneapolis, and **Dr. William H. Hengstler**, **Dr. Archibald Leitch**, and **Dr. Dale D. Turnacliif**, all of St. Paul.

◆ 1918

Harold S. Diehl, former Dean of the University of Minnesota Medical School, received an Edward J. Hitchcock Award from the American College Health Association "in recognition of his outstanding contribution to the field of college health." He is a past president of the Association, and is now senior vice president for research and medical affairs, American Cancer Society.

◆ 1922

Robert W. Adams, who has practiced in Chetek, Wis. for nearly 40 years, was recently honored by the citizens of that community as they observed the opening of a new three-doctor medical center built under the Sears Roebuck Foundation-American Medical Association Community Medical Assistance Program. Two new physicians have now joined Dr. Adams, who has been Chetek's only physician for several years. The town's 1,700 citizens contributed \$52,000 to help provide the new Medical Center. Officials lauded Dr. Adams for his devoted service to the community.

◆ 1927

Raymond F. Peterson has moved to Fullerton, California (801 Laguna Road), and is now associated with the Rice Clinical Laboratories. Dr. Peterson, a pathologist, is a past president of the Montana Medical Society. He practiced at Butte, Mont. for many years, and served ten years as a Montana delegate to the American Medical Association. His son, **Dr. Raymond M. Peterson**, was a member of the 1961 graduating class of the Medical School, and is now interning at Alameda County Hospital, Oakland, Calif.

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◆ 1932

Edward R. Addy, Gilbert, Minn., was elected chief of the medical staff at Eveleth-Fitzgerald Community Hospital, Eveleth, Minn.

Bror F. Pearson, Shakopee physician, has been appointed to a seven year term on the Minnesota State Board of Medical Examiners.

◆ 1938

Leonard L. Kallestad, Wayzata, Minn., physician, was named Minnesota Alumni Association representative to the University of Minnesota's Senate Committee on Student Affairs. **Dr. V. J. P. Lundquist** (Med. '42) was appointed MAA representative to the University's Senate Committee on Intercollegiate Athletics.

◆ 1940

Laurence M. Hursh retired September 1, 1961 as a colonel in the U.S. Army Medical Corps, and was appointed to the staff of the University of Illinois Health Service, in charge of environmental medicine. He has recently been chief of medical research, U.S. Army Medical Research and Development Command, Washington, D.C.

◆ 1943

Harold E. Coulter, formerly of Madelia, Minn., has begun a residency in anesthesiology at the University of Minnesota Hospitals.

Roger F. Harwich is new president of the medical staff at Winona (Minn.) General Hospital.

◆ 1944

Robert B. Howard, Dean of Medical Sciences at the University of Minnesota, was appointed to the Surgeon General's Advisory Committee on Indian Health by the U.S. Public Health Service. He will serve four years on the Committee, created in 1955 to advise the Service in its program of medical care and health services for some 380,000 American Indians and Alaska natives.

◆ 1946

D. R. Nelimark was named Health Officer for the city of Virginia, Minn., and was elected an associate of the American College of Physicians. He is associated with the Lenont-Peterson Clinic, Virginia, Minn.

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◆ 1950

Norman W. Hoover, orthopedic surgeon at Mayo Clinic, spent July and August, 1961, as a member of the medical staff aboard the SS Hope in Pacific Ocean waters.

Sherman N. Keiffer was named deputy medical officer in charge at the U.S. Public Health Service Hospital in Fort Worth, Texas. He will direct the hospital's clinical program. Dr. Keiffer has been with the U.S.P.H.S. since 1950. One of his previous posts was that of chief clinical psychologist at the Minneapolis Veterans hospital. He has also been an instructor in several universities.

◆ 1953

Ralph A. Nelson is now on the staff of the Graduate School of Nutrition, Cornell University, Ithaca, N.Y. He received his Ph.D. in physiology at the University of Minnesota in March, 1961.

John Wohlrabe has begun a three-year residency in psychiatry and neurology at Washington University, St. Louis, Mo. He formerly practiced in North Mankato, Minn.

◆ 1954

Richard W. Anderson has begun a residency in pathology at the Minneapolis Veterans Administration Hospital. For the past five years, he has been associated with the East Range Clinic, Aurora, Minn., in general practice.

◆ 1955

Alvin S. Zelickson, a Minneapolis dermatologist and clinical instructor at the University of Minnesota Medical School, has received a \$71,000 research award from the National Cancer Institute. The grant will finance a five-year study of the human skin and skin tumors utilizing the University's electron microscope, capable of magnifications up to 200,000 times, with particular emphasis on fetal skin.

◆ 1956

Dale Lindquist is now practicing at Lindstrom, Minn.

◆ 1958

Lt. Charles D. Lufkin, U.S. Navy Medical Corps, has been transferred from the Naval Air Station, Whidbey Island, Washington, to duty at the U.S. Naval Hospital, Oakland, Calif.

Sidney Maurer, Jr., was appointed a fellow in pediatrics in the Mayo Foundation, Rochester, Minn.

◆ 1959

Dale L. Anderson has accepted a fellowship in plastic surgery at the Mayo Foundation, Rochester, Minn.

◆ 1959

Arthur J. Gerdes, Mountain Lake, Minn., has departed for the Congo, where he will serve for two years as a physician under a volunteer project sponsored by the Congo Protestant Relief Agency. He expects to work at several Congolese government hospitals during the period. Mail should be addressed to him at Route 2, Box 220, Mountain Lake, Minn.

ALUMNI DEATHS

◆ 1922

Dr. Gordon R. Kamman, prominent St. Paul neuropsychiatrist, died of cancer September 25, 1961 after an illness of several weeks. He was a fellow of the American College of Physicians, a member of the American Board of Psychiatric, and a diplomate of the American Board of Psychiatry and Neurology. He was 63 years of age. Dr. Kamman was very active in many medical and professional societies, and was the author of numerous articles in the scientific literature and medical journals. He was among the founders of the Minnesota Medical Foundation, and a member of the staffs of several St. Paul hospitals.

◆ 1938

Dr. Jack Isadore Chalek died September 9, 1960 in Beverly Hills, Calif. Death occurred from coronary thrombosis at the age of 51 years. Dr. Chalek was a prominent radiologist. He was on the staff of Cedars of Lebanon Hospital, Los Angeles, and on the faculty of the College of Medical Evangelists.

Memorial Gifts

Memorial gifts to the Minnesota Medical Foundation have been received recently in memory of:

Mr. Hugh A. McNeill
Brandon, Manitoba

Dr. Elizabeth Monahan
Minneapolis, Minn.

Dr. Arthur Williams
St. Paul, Minn.

Memorial contributions are a practical means of honoring the memory of a friend or loved one, while helping the Minnesota Medical Foundation in the advancement of medical education and research. Appropriate acknowledgements are promptly sent to both donor and family of the deceased.

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1342 Mayo Memorial, Minneapolis 14, Minn.

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Coming Events

University of Minnesota Medical School

Tentative List of Continuation Courses for Physicians

University of Minnesota
Center for Continuation Study

1961

- November 6-10 . . . Urologic Radiology for Radiologists
November 15-17 . . . Ophthalmology (Refraction) for General Physicians
November 16-18 . . . Surgery of the Hands for Orthopedic Surgeons, General Surgeons, and General Physicians

1962

- January 2-6 . . . Intermediate Electrocardiography for General Physicians and Specialists
February 12-14 . . . Pediatric Neurology
March 5-7 . . . Anesthesia for General Physicians
March 16-17 . . . Treatment of Traumatic Injuries
April 12-14 . . . Otolaryngology for General Physicians
April 16-18 . . . Internal Medicine for Internists
April 26-28 . . . Surgery for Surgeons
April 30-May 2 . . . Gynecology for General Physicians
May 7-9 . . . Ophthalmology for Specialists
May 14-18 . . . Proctology for General Physicians
May 31-June 2 . . . Psychiatry for General Physicians

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 \$30 for a two-day course, \$50 for a three-day course, and \$75 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
DEPT. OF CONTINUATION MEDICAL EDUCATION
THE MEDICAL CENTER
UNIVERSITY OF MINNESOTA
MINNEAPOLIS 14, MINNESOTA

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A Word About Memorial Gifts

The Minnesota Medical Foundation welcomes your memorial contributions when an appropriate occasion arises. Memorial gifts serve the living and pay thoughtful tribute to the memory of a friend or relative.

The Foundation will promptly acknowledge your gifts to both the donor and the family of the deceased. The gift will help finance the Foundation's program for the advancement of medical education and research. The Medical School at the University of Minnesota will be the direct beneficiary.

Gifts should be sent to the **Minnesota Medical Foundation, 1342 Mayo Memorial, University of Minnesota, Minneapolis 14, Minn.**