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REPORT AND RECOMMENDATIONS

On Teaching and Research

in

INTERNAL MEDICINE

College of Medicine

Seoul National University

by

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## PREFACE

I arrived in Seoul on August 9, 1957 and will leave January 31, 1958. I have been accorded a most cordial reception and wonderful hospitality by President Yun Il Sun and the faculty of Seoul National University. The cooperative attitude of the faculty has been particularly helpful. I wish to acknowledge especially the hospitality, help and guidance of Dean Myung Choo Wan and the Professors of Medicine, Dr. Kim Kyung Sik, Chief of the Medical Service, Dr. Kim Dong Ik, Superintendent of the Hospital, Dr. Hahn Shim Suk, Dr. Chun Chung Hwee and Dr. Kang Seung Hoo. Dr. Min Haun Kee has been a colleague, guide, interpreter, and eager student of medicine, and to him I owe a very deep debt of gratitude. I wish to thank Drs. Song Ho Sung and Hong Chang Yee for interesting me in coming to Korea. Many other faculty members, assistants and students have given me unselfishly of their time and have done many things which have added to my experience and pleasure. For all this I am deeply grateful.

I owe another very big debt of gratitude to Dr. Arthur E. Schneider, Chief Adviser in Korea, Seoul National University Cooperative Project, to members of the medical team, Miss Margery Low, Dr. James Matthews and Mr. Glenn Mitchell and to Miss Gertrude Koll, our secretary. Most of our activities have been that of a team. This report will deal chiefly with the area of my special interests, internal medicine and medical education, and is to be considered a part of the medical group report which will be submitted in the near future.

I wish to acknowledge the assistance and friendly advice of Dr. Alfred Knight, Chief of the OEC section Public Health until November and for his introduction to members of the Ministry of Health staff.

I wish to thank Dr. Alfred Lazerus, Acting Chief of the Section of Public Health in OEC for his help. I'm also grateful to the many members of OEC for the many services, aids and materials which were essential for carrying out my duties here.

The report will be divided into sections as indicated in the outline below. When critical comments are made, it is my intention to help define areas where changes appear to be needed and to try to offer advice on improvement.

I. Didactic and clinical duties.

- A. List of activities.
- B. General observations.
- C. Lectures to students and results of examination.
- D. Tour of other medical facilities in Korea.
- E. Administrative committees.

II. The organization and function of the medical service.

III. Clinical experience of the students.

IV. Recommendations.

- A. Reorganization of the medical service.
- B. Organization of the out-patient clinic.
- C. Clinical experience for student.
- D. Internship and graduate school training.
- E. Miscellaneous recommendations.

Appendix.

- 1. Graduate School courses in internal medicine.
- 2. Thesis subjects of M.S. degree candidates of Department of Medicine 1947-1957.

## I. DIDACTIC AND CLINICAL DUTIES.

### A. List of activities.

1. Lectures, conferences and seminars for the Department of Internal Medicine.
  - a. Junior and senior medical students. Eight lectures to each class on certain aspects of endocrinology and metabolism. (Collection of approximately 300 slides used for these and other lectures.)
  - b. Lectures every week to the staff of Department of Internal Medicine on many topics in endocrinology, metabolism and clinical chemistry.
  - c. Seminars on fluid and electrolyte problems - supervision of resident presentations weekly for 10 weeks.
  - d. Grand Rounds weekly during entire stay - participation in discussions but not supervision.
  - e. Weekly clinical-pathological conferences from September to December (Protocols and slides for two conferences were supplied from a collection of 25 cases from the Department of pathology of the Minneapolis Veterans Hospital. Duplicate kodachrome slides were made from original slides and have been turned over to the Department of Pathology for use in the future.
  - f. Society of Internal Medicine of Korea Medical Association - guest lecture "Magnesium Deficiency in Man".
2. Special lectures and conferences other than Department of Medicine.
  - a. Korean Pharmacy Association. "Adrenal Cortical Steroids".
  - b. Capital Army Hospital.
    - 1) "Treatment of Acute Renal Insufficiency"
    - 2) "Fluid and Electrolyte Therapy"
    - 3) "Acid-Base Disturbances"
  - c. Continuation course in Anesthesiology, Seoul National University.
    - 1) "Fluid and Electrolyte Therapy"
    - 2) "Acid-Base Disturbances"

d. Continuation course in general medicine, Seoul National University.

"Recent Advances in Knowledge about Adrenal Cortical Steroids"

e. Taegu - Kyungbuk National Medical School - two days.

1) "Fluid and Electrolyte Problems"

2) "Adrenal Cortical Hyperfunction"

3) "Seminar on Metabolic Disturbances"

f. Department of Pediatrics. Two seminars on fluid and electrolyte problems.

g. Department of Surgery. Five seminars on various endocrine and metabolic topics.

h. Department of Obstetrics and Gynecology. One seminar on disturbances in sex differentiation and development.

3. Clinical duties.

a. Medical clinic in out-patient department every Wednesday from 10:00 to 12:00.

b. Rounds on one of the services an average of once a week.

c. Individual consultations with various staff members and assistants.

d. Demonstration clerkship - two weeks in January. A group of ten students volunteered to work as clinical clerks during the winter holiday. An average of four hours a day was spent with the students.

4. Administrative Committees; etc.

a. Dean Myung's meeting every Tuesday morning to discuss plans for rehabilitation, equipment and educational policies.

b. Dr. Kim Dong Ik's operating committee of the hospital every Wednesday to discuss rehabilitation and equipment of hospital and many other administrative problems.

c. Internship committee - four meetings.

d. Faculty meeting once a month.

e. Senior residents meeting - 3 times.

f. Library committee - one meeting.

g. Radioisotope committee - one meeting.

B. General observations on the teaching and clinical duties.

The weekly lectures to the staff of the medical service were generally well attended. The amount of discussion was variable but usually was very good. The lectures to the other services also were generally well attended. The discussions by pediatrics staff were good. Much emphasis was given to disturbances of electrolyte equilibrium. It is hoped that each department will take an active interest in recent developments in electrolyte metabolism and therapy. Many current developments in endocrinology were discussed in considerable detail. Evaluation of this activity isn't possible at this time.

The grand rounds of the medical service were well attended by student, faculty, and guest physicians and the cases were selected well. The assistants discussed some facet of the subject under discussion and many in the audience participated. These were conducted in Korea. The proceedings were interpreted for me in English, though, so comments could be made in English.

Clinical-pathological conferences also were well attended. The discussion of cases which are unknown to the discussor and most of the audience was not the usual pattern. Specific recommendations were made to the pathologists to work in that direction when suitable cases are obtained. Help was given in preparing this kind of a conference using pathological materials

(lantern slides) and protocols from the Minneapolis Veterans Hospital Pathology Department.

A seminar on electrolyte and fluid metabolism was started for the assistants on the medical service. The program was too ambitious because of unavailability of many essential source materials in the library. The participants worked very hard, but only a few attended, so it proved less useful than anticipated. Because of the poor organization of recent journals in the library, furthermore, it wasn't possible to demonstrate optimum use of the library. It is indeed pleasing to report that this deficiency in the library has been corrected.

G. Lectures to students and results of examination.

A lecture was delivered on eight successive weeks to each of the third and fourth year classes. Detailed lecture notes were distributed, and copies of these notes are deposited with the chairman of the Department of Medicine and with Dr. Arthur E. Schneider, Minnesota Office. The lectures were illustrated by a large number of slides. Much of the material consisted of recent developments in endocrinology and metabolism and frequent references to current literature were made. It was possible to determine the effectiveness of the lectures on two occasions.

After the lecture on diseases of the thyroid the students were asked to outline the function of the thyroid gland (formation of thyroid hormone - not the function of thyroid hormone.). This question was misunderstood by most students perhaps because the question was not written.

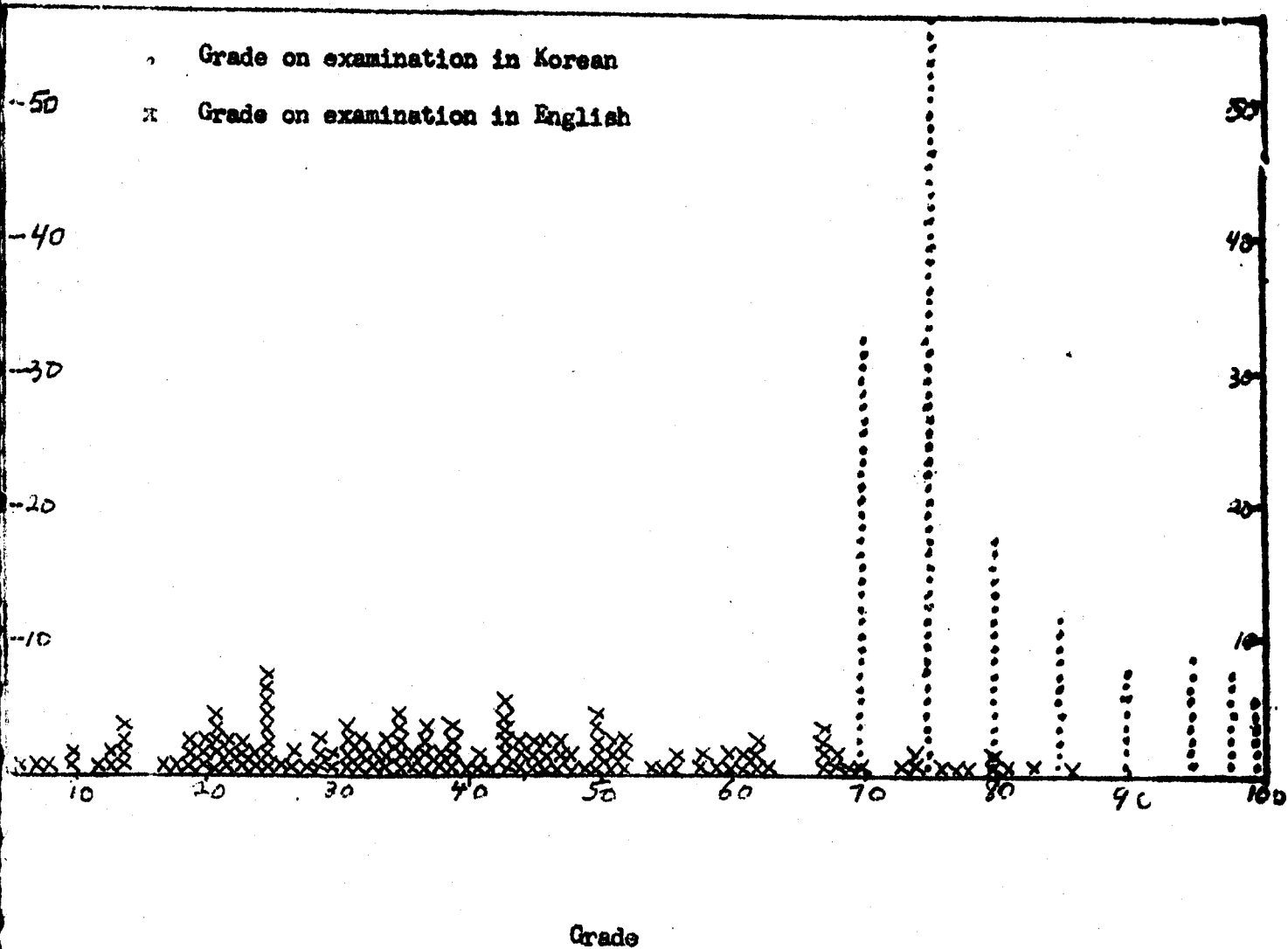


The students prepared answers at home and returned them. Very few used data which I had given them, and many turned in almost verbatim accounts from various textbooks. Some papers were exceptionally good. In general, though, these results were disappointing but illustrated the facts that a verbal question is not understood and that the lecture itself was poorly understood.

The final examination was actually better planned and afforded a more accurate appraisal of the effectiveness of the lectures. The examination was divided into two parts; three discussion questions and twenty short questions which could be answered with a word or short sentence. All of the questions were derived from information contained in the mimeographed material. The answer to one question was particularly disappointing; two slides of a patient clearly illustrating two associated disturbances in this particular disease had been shown and emphasized, but there were only a few correct answers among 296 papers. The numerical grades for each class were plotted on graph paper and compared with an examination given in Korean by one of the Korean professors of medicine.

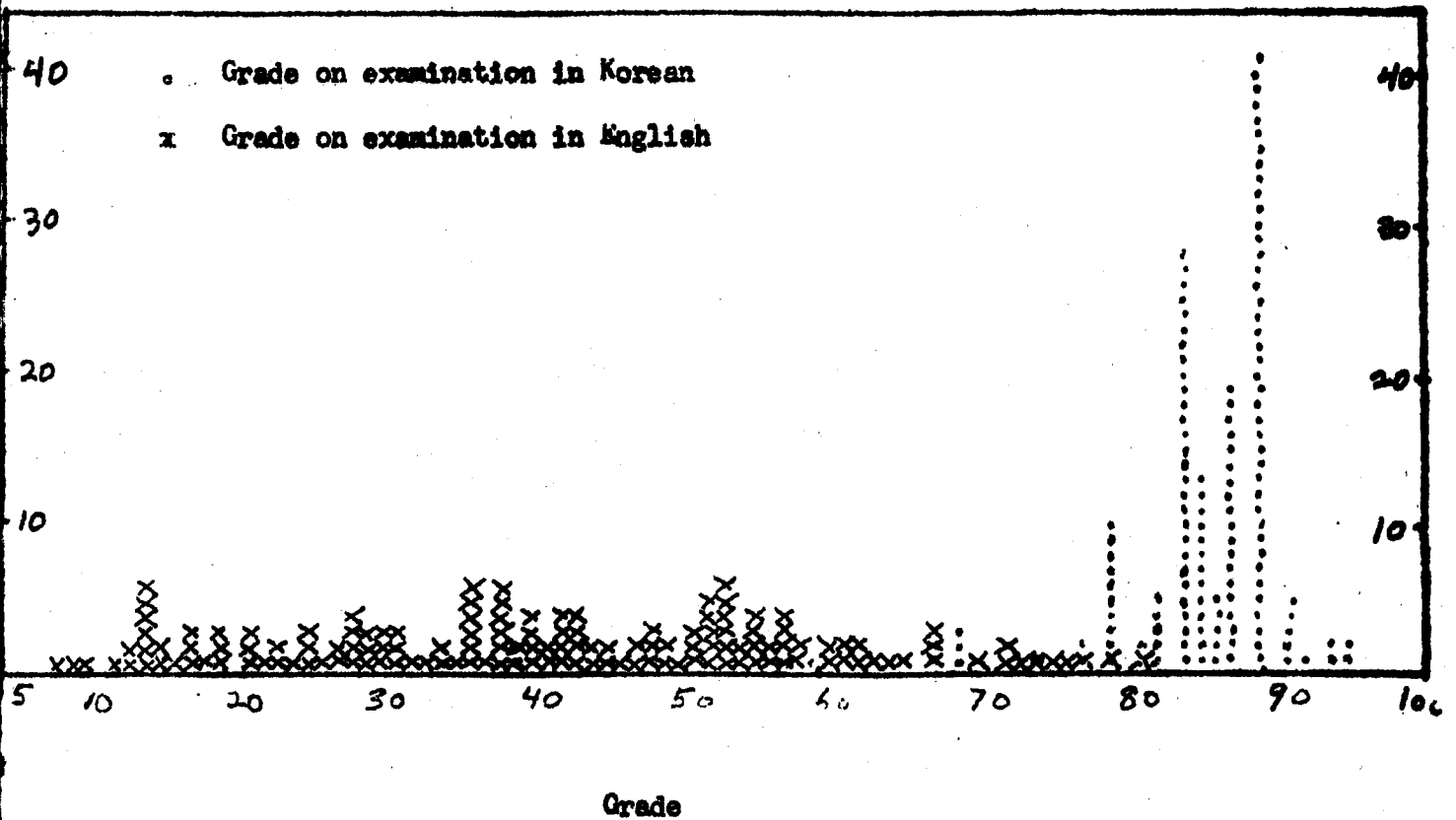
The attached graphs illustrate the results. The scatter of grades in the examinations in English is very wide, but the scatter of grades in the examinations given in Korean is quite narrow. The results in the two classes were nearly comparable. The mean grade for the senior class was 42 and for the junior class 40, and the median grades were 42 and 38 respectively. Comparison of individual student's grades indicated a general agreement between those who had high grades in the English examination

### Junior class examination in internal medicine



The grades of the examination given in endocrinology and metabolism in English are compared with the grades in the examination in Korean by Dr. Hahn Shim Suk. Note the wide scatter of grades in the English examination and narrow scatter in the Korean examination.

Senior class examinations in internal medicine



The grades of the examination given in endocrinology and metabolism in English are compared with the grades in the examination in internal medicine given in Korean by Dr. Kim Kyung Sik. Note the wide scatter of grades in the English examination and narrow scatter in the Korean examination.

and those who had high grades in the Korean examination, but there were many instances of a very low grade in the English one and a high grade in the Korean one. A high grade in the English examination and a relatively low grade in the Korean one occurred a few times in each class.

After each lecture an opportunity was given for questions to clarify obscure points. Not many questions were asked, and usually there were no questions. This was interpreted as an indication of understanding at least the major points of the lecture. The results of the examination clearly indicate that this is not true. An experience at Kyungbuk University in December afforded some insight into this problem. Two lectures and a conference were fully interpreted in Korean. The audience obviously understood the lectures better because of the interpreter and asked exacting and intricate questions for thirty minutes after each lecture and for two hours at the conference. Later at Seoul National University after each of three special lectures, which were interpreted in Korean, many questions were asked.

Several conclusions seem justified from these experiences. The lectures were not understood by many of the students in spite of great care in presentation of the information. It must be assumed that the lack of understanding of the lectures by many students was due largely to difficulty with English and not due to complexity of material or to new concepts which were difficult to comprehend. The performance on the examination was poor because of this primarily. The second conclusion is that much better understanding, acceptance, and performance would have resulted

from interpretation of the lectures in Korean.

The educational experiences which are most valuable are those which satisfy the need to solve a problem (and in medicine this means a clinical problem in diagnosis or treatment) or those which vividly demonstrate the application of a principle.

D. Tour of other medical facilities of South Korea.

Through the combined efforts of Dean Myung Choo Wan and Dr. Kim Dong Ik it has been my privilege to visit the Red Cross Hospital, the Capitol Army Hospital and the Seoul Electric Hospital. Dr. Song Ho Sung arranged a tour of Severance Hospital and Medical School. Dr. Kim Sung Hwan escorted me to a national leprosarium, Sung-Ke Won, Kan Suk Dong, and demonstrated different phases of leprosy. I had not seen a single patient with leprosy in my entire medical career until this visit and I appreciate this opportunity very much. A second opportunity to visit this leprosarium was afforded me at the time of a meeting of the 38th Parallel Medical Society at the 121 Evacuation Hospital at Ascom City in October.

During the first week of October Dean Myung Choo Wan, Dr. Kwon E. Hyock and Mrs. Lee Kwi Hyang escorted the Minnesota Medical advisers on a tour of major medical installations in South Korea. We visited the following hospitals: Children's Charity Hospital, German Red Cross Hospital, Pusan National University Hospital and Medical School, and the 3rd and 5th Army Hospitals all located in Pusan, the National Rehabilitation Center

at Tongnae, the Navy Medical Center in Chinhae, the 36th Army Hospital and Medical Center in Masan, Presbyterian Hospital and Kyungbuk National University Hospital and Medical School in Taegu, and Chunnam National University Hospital and Medical School in Kwangju. We also visited many sites of historical and cultural interest including Tongdosa Temple, Buluksa Temple, and Puyo.

Visits to all of these hospitals permitted a good look at some of the major hospitals and the medical schools of the Republic of Korea and a better understanding of the medical problems in Korea. A detailed report of this trip is on file in the Minnesota Office and Dean Myung's office. Since the present report is primarily concerned with medical education, mention of this aspect only will be made. The curriculum at each of the provincial national universities is quite comparable to that of the others. The most significant finding was that teaching of clinical medicine is primarily by lecture. At each school the junior or senior medical students attend out-patient clinic several hours a day. Teaching on the wards is largely by demonstration rather than by actual participation. There is insufficient clinical material for the large classes, but the material available is not used optimally at the present time. A more concerted effort at clinical teaching is made at Seoul National University than at any of the provincial medical schools.

I wish to thank Dean Myung, Dr. Kwon and Mrs. Lee for a wonderful experience on this trip. It will remain one of my "most unforgettable" and enjoyable experiences. I am also very

grateful to the faculties and staff of the universities and hospitals visited for their fine hospitality.

E. Administrative committees.

The composition and function of the standing committees of the hospital and medical school will not be discussed. Participation in the meetings of these committees and observing the operations of the various committees form the basis of much of the following report.

The composition of the internship committee will be mentioned separately since one of the groups of recommendations stems directly from this committee action. Dr. Kim Dong Ik appointed a committee to study internship and recommend suitable action: Dr. Hahn Shim Suk, Dr. Choo Kun Weon, Dr. Lee Moon Ho, Dr. Lee Myung Ho, Mr. Glenn Mitchell and me. Dr. Rha Sae Chin was consulted at one meeting regarding the relationship with the Graduate School.

II. THE ORGANIZATION AND FUNCTION OF THE MEDICAL SERVICE AND ITS STAFF.

At the present time there are four medical services. These are designated as services for respiratory diseases, gastro-intestinal diseases, communicable diseases, and cardiovascular diseases. There are five professors, four associate professors, two assistant professors, four instructors, and twenty-two assistants. There are approximately 40 patients with pulmonary tuberculosis and 40 patients with other diseases at the time of maximum bed occupancy. There were 829 admissions to the medical service during 1957, 215 of them being admitted to the tuberculosis service. The other special divisions of medicine are handled in one or the other of the above services as follows:

hematology and endocrinology on the pulmonary disease service, certain metabolic disorders and especially diabetes on the gastro-enterology service, and renal and other mesencymal diseases on the cardiovascular service. In actual fact the divisions are not realistic at present because patients with heart disease will be admitted on one of the other services, patients with pulmonary tuberculosis and particularly extrapulmonary tuberculosis will be admitted on another service than tuberculosis, etc.

Ward rounds are made once a week by each professor. The schedule of ward rounds by assistant and associate professors is variable depending on the service and is apt to be limited to a few patients. Likewise the duties and responsibilities of the instructors, assistant and associate professors appear to be quite variable. The chief assistant supervises the work of the medical students. The students when assigned to medicine are on the ward of one professor for one week and then move on to the next service.

The history and initial physical examination are recorded by the assistant who is responsible for from two to five patients at one time. He records the statements of the consultant - usually the professor - and the results of special laboratory tests, but other progress notes are infrequent. The student records of history and physical are not placed on the charts at present. The change of service every week makes follow-up of patients by the students very difficult. The assistants (and junior staff members also) have little responsibility for students' activities, but, of course, influence the students' work informally. Increasing the tutorial responsibility of the assistants will greatly enhance the training value to the assistant and will also



improve the value of the clerkship to the students. Since establishing a central laboratory the assistants are afforded little opportunity to do laboratory work for their own patients. Supervision of students' laboratory work will permit satisfying this fundamental need in the training of an internist.

Grand rounds once a week, clinical pathological conference once a week and clinical clerkship were established in January 1957. This fact alone is important, and a great deal of progress has been made already. It is felt that certain changes in emphasis in the clerkship will enhance the value of the entire teaching program. The suggested changes are probably applicable to clerkship programs on other services too.

The division of the medical service into sub-specialty divisions is not realistic with so small a patient load. It makes assignment of patients to students difficult, and it makes a well-rounded training for the assistants difficult also. The lines are not adhered to anyway. A strict sub-specialty arrangement, furthermore, conditions the thinking of the entire staff and the students along one line. There are enough ways in which thinking becomes stereotyped anyway.

At the same time developing and sustaining interests in a sub-specialty or even a more limited group of illnesses for intensive clinical study and research should be encouraged. The sub-specialty interests of the individual staff members can be sustained by special rounds or conferences in the sub-specialty, and free use of consultation requested by one staff member from another where the clinical problem is in the area of the latter's special interest. Assistants can arrange materials for these conferences, rounds and consultations.

If this system is really pursued, it will help weld the service into a harmonious unit. Each professor then would be primarily responsible for patients with a wide variety of diagnostic and therapeutic problems, but he would also seek help, advice, or mere confirmation from a staff member who has special interest in the particular area. This kind of arrangement requires close cooperation of all members of the staff.

Several features of hospital care need to be critically reviewed. There always are too many visitors on the wards of the medical service (as well as other services). This is particularly true of the tuberculosis service and the communicable disease service. Very young children were often observed on both wards. This condition must be remedied. Children under 15 years of age should not be visitors in the communicable disease and tuberculosis sections at any time.

One very important function of the medical service was started about December 1, 1957. The medical service has been charged with staffing and supervision of the central emergency room. The need for a central place for examining (and treating) acutely ill patients was recognized, and a plan was adopted for functioning of the emergency room. It is already functioning well. There are two medical assistants who are responsible for examining all admissions to this room. All of the other services have an assistant designated as the person on call for the emergency room to see patients in his specialty in consultation with the medical assistant.

The efficient handling of this kind of patient in rooms which can be equipped with adequate instruments and materials will continue

to be a constant source of good public relations and will be a means of attracting more patients to this hospital.

Our entire medical team is pleased with the functioning of the emergency room now. We are also particularly anxious that it continue to develop and be strengthened by all departments. This is an area where interdepartmental cooperation and understanding is needed particularly and can continue to be the focal point for such cooperation.

The assistants are registered in the Graduate School, and each one is expected to write a thesis for Master of Science degree on a clinical or experimental subject. The courses offered in the department are recorded in the appendix. These courses are taught by lecture usually but also by conference or seminar type of instruction. A list of theses for the M.S. degree by assistants in the Department of Medicine granted by the Graduate School in the past ten years is included in the appendix. Twenty-four semester credits are required for an M.S. degree.

### III CLINICAL EXPERIENCE OF THE STUDENTS

- A. Special clinical clerkship during January 1958. An opportunity to carry on clinical-bedside teaching was afforded by the combined efforts of Dr. Chun Chung Hwee and a group of ten volunteer junior and senior medical students during the winter vacation period. Five assistants agreed to assign patients and be immediately responsible for supervision of two or three students. Dr. Min Heun Kee was general coordinator. Drs. Hahn Yong Chul,

Chai Yang Kyu, Kim Dook Tchu and Kim Song Hi were the other assistants who helped in this program. The laboratory service agreed to furnish space and materials for students to do routine laboratory procedures on their own patients. The students were asked to make rounds with the assistants on their own patients and those of the assistant at 9:00 A.M. At 9:45 A.M. we all met and spent the rest of the morning going over case presentations of the students. At first it was apparent that the students were not accustomed to obtaining and recording a very detailed history. Emphasis on exact information rather than generalizations, complete family histories, etc., quickly resulted in much better quality of clinical examinations. The students were all capable and eager to learn.

The afternoons were spent on rounds with various professors on at least two occasions on each service. The students presented their cases to the professors in somewhat briefer form than at morning sessions. Discussions usually were free and student participation was good.

The clerkship experience indicates several important facts. The students worked well and enthusiastically. There is a definite need to carry on this kind of student activity, because many of the students did not know how to do, or at least did not know how to organize, a complete clinical examination. Performing laboratory examinations on their own patients was an obviously rewarding experience. The participation of assistants was enthusiastic and very helpful.

B. Observations on the regular clerkship. Random sampling during September to December indicated that students seldom appeared on rounds with the professor. They sometimes did not do the examinations requested. The student records were not incorporated in the chart. It is customary that the senior class be freed of clerkship responsibilities for the rest of the school year beginning in mid-December. Minimal laboratory work was performed.

In the first semester the juniors are assigned to the wards and work from 1:00 P.M. to 5:00 P.M. During this time the seniors work in the outpatient clinic from 10:00 A.M. to 12:00 noon. During the second semester the schedule is reversed so the juniors work in the clinic and the seniors on the wards.

Four weeks are devoted to medicine, four weeks to general surgery, and one week to each of the following: pediatrics, obstetrics and gynecology, dermatology, urology, ophthalmology, otorhinolaryngology and psychiatry. With this system the class is divided into groups of approximately 10 students, and each group shifts to a new service every week. On medicine each group has a week on the services for pulmonary diseases, gastro-enterology, communicable diseases, and cardiology. Since the rotation is on a weekly basis the students have very little continuous experience. This also prevents any continuous contact of students with assistants and staff.

C. Out-patient student experience. The junior students obtain a brief history and perform a partial physical examination. The

history sheet is used as the clinic record, but the physical examination is on a separate sheet and not included. The history often was so brief that such important details as the dosage of medicine, duration of treatment, nature of medicine, careful description of pain, etc., were not included. A check-list type of review of systemic symptoms was also done, often without pursuing positive leads. In other words, the student was content merely to check a symptom such as dyspnea without finding out any details. This performance is related to the brief time allotted to the student work-up and limited space. (Also difficulty in transmitting the information to me in English). More time will be allotted to clinic activities from this date. The clinic will be in session from 9:00 to 12:00 instead of from 10:00 to 12:00. There are enough students to permit a more thorough clinical examination than obtained at present. There is an assistant available each morning to help students with these examinations.

Another unsatisfactory arrangement is the fact that the charts of one clinic are not available to that of another. A new chart is made up for the second clinic. The out-patient chart doesn't accompany a patient into the hospital, so the information from one clinic is lost to that of another and to the hospital service.

#### IV. RECOMMENDATIONS

##### A. Organization of the medical service.

1. The chief of the medical service must continue to be responsible for teaching assignments, coordinating appointment of assistants keeping records of their work, arrangement of student schedules

and organization of clinical training in addition to other administrative and clinical duties, of course.

2. The geographical segregation of tuberculosis patients is necessary for protection of hospital personnel and other patients. Likewise segregation of acute contagious diseases is also desirable at present. This does not involve segregation in a separate building. The separation of these two groups of patients from general medicine is necessary and should be continued. This does not mean that these patients cannot be a part of a general service as will be explained in paragraph 4 of this section.
3. The present divisions of the medical service should be disbanded.
4. Create a general medical service and divide into two sections, A and B. There are two alternative ways of accomplishing this:
  - a. Patients should be admitted to these sections in strict rotation regardless of diagnosis (other than tuberculosis and contagious diseases). This means that the first patient is admitted to service A, the second to service B, the third to service A, the fourth to service B, etc. The general medical section should have one professor in charge of each one. This means, of course, that some professors would be off service part of the time. Thus a professor would be on service for 3 months and off service for 3 months. (The periods on and off service could be 2 months, of course.) Dr. Kim Kyung Sik and Dr. Chun Chong Hwee would have responsibility for their respective service and each could take turns for one of the professors positions on the general medical sections three months out of the year.

<u>Section A</u>		<u>Section B</u>	
(1)	(2)	(3)	(4)
January-March	April-June	January-March	April-June
July-September	October-December	July-September	October-December

Two sections could be on one station when there are few patients.

- to
- b. Patients should be admitted to the sections A and B in strict rotation including contagious diseases and tuberculosis. The tuberculosis and contagious disease patients would be

geographically separated in their respective wards but would still be designated as patients in section A or B. In this arrangement the rotation of professors would be as follows:

<u>Section A</u>		<u>Section B</u>	
(1)	(2)	(3)	(4)
January-March	April-June	January-March	April-June
(5)	(1)	(2)	(3)
July-September	Oct.-Dec.	July-September	Oct.-Dec.

(The periods on and off service could be 2 months.)

This plan has several obvious advantages, but the most important are that each professor would have equal responsibilities and privileges and that the assignment of patients to students would be easier to arrange.

5. When "on service" the professor should make rounds more often than at present or at least twice a week. At all times the professors would have responsibilities in his sub-specialty.
6. Plans should also be made for associate and assistant professors to make rounds regularly for teaching and clinical purposes.
7. Plans should be made to incorporate contagious disease patients into the main hospital wards as soon as adequate screening and sanitary facilities are available for their adequate isolation.
8. Sub-specialties should be encouraged and developed by means of special rounds and conferences. All the patients on the medical service (and on pediatrics, and other services also) with a given disease should be seen by the group interested in that sub-specialty including the professor and other staff members. An experienced assistant should be asked to arrange these special rounds each week or twice a week and keep record of proceedings. The findings and decisions should be recorded in the patient's chart in the form of a consultation. The individual groups will form natural focal points for seminars, special conferences, etc., in the sub-specialty. Furthermore, these sub-specialties can be strengthened by having regular out-patient clinic for referral of patients from general medical clinic and for follow-up of patients after discharge from hospital. (See out-patient clinic.)



9. The sub-specialties should be designated: hematology, cardiology, pulmonary diseases, gastro-enterology, metabolism and endocrinology, and infectious diseases.

The senior staff member of the group most interested in the sub-specialty should be designated as chief of the sub-specialty.

10. Some of the members of each sub-specialty group should be advisers to the central clinical laboratory in the particular area of interest and develop close cooperation with the laboratory staff. Cooperation on both sides will be mutually beneficial.
11. Assignments of assistants could be arranged as follow: All would have clinic duty one or two mornings a week.

1st year - 3 month rotation periods (with one 3 month period on each of the tuberculosis and infectious diseases services).

2nd year - Choose one professor for a year (or half a year) in one of the sub-specialties of medicine as well as continuing interest in general internal medicine.

3rd and

4th year - Experimental medicine (associated with a basic discipline for this work). Clinical duties should include out-patient clinic and helping as tutor of medical students.

5th year - Senior assistants. Supervise clinic activities, ground work for consultations and conferences. Work on research project.

The teaching of graduate school courses should be fitted in with the sub-specialty rounds, conferences, and clinics, and most lectures should be eliminated. (See below also under internship and graduate training program.)

12. Interns and graduates from other medical schools should be accepted for hospital training on an exchange basis. Exchange of ideas with other schools of medicine is vital, and this is one of the best ways.

#### B. Organization of the out-patient clinic.

All patients who come to the clinic for the first time or return to the clinic after a lapse of six months or more should have a thorough general clinical examination (complete history and physical examination and some routine laboratory and x-ray work) before going to any of the other specialty clinics (this includes all clinics outside internal medicine). Many examples of diseases

could be cited to indicate the wisdom of this. Furthermore, the patient himself cannot be expected to know what division of medicine he should seek. If all specialty clinics (outside of internal medicine) would carry out a thorough clinical examination on all new patients, this would solve the problem, but as a matter of fact, this is not commonly done.

Therefore, it is felt that the following general principle be established that all new patients have a thorough clinical examination in the internal medicine clinic by students assigned to the department of medicine and checked by medical assistants or staff members. The patients are then referred to the special clinic which is appropriate or followed in the medical clinic if the problem is internal medicine.

The Pediatrics Department should do the same kind of examination for all children who come to the clinic regardless of the diagnosis and then refer the child if indicated to a special clinic just as is done in the plan for adult medical clinic.

This general plan will systematize care, permit detection of diseases such as parasitic diseases and tuberculosis in the clinic population. Thus one can detect unsuspected but important diseases and help protect personnel and other patients from tuberculosis.

The adoption of a unit record for care of all patients is imperative also in order for this plan to work effectively.

It will be necessary probably to have more medical students assigned to the medical clinic depending on the "new patient" load.

Patients should be classed as "new" when they have not been in clinic recently. An old patient can be referred back to the "New Patient Medical Clinic" for examination when new symptoms appear or another thorough work-up is indicated. This cannot be defined any more completely now but has to be worked out by the staff.

### C. Student clinical experience.

#### 1. Scheduling of hospital clerkship.

A minor rearrangement of the school calendar and grouping of students will make it possible to improve the students' experience considerably. Divide each class into 4 sections, A, B, C, and D. Each group would spend 4 weeks on each of the following services or group of services:

1. Medical service.
2. Surgical service.
3. Pediatrics, dermatology, psychiatry, affiliated hospital services (one week each).

4. Urology, ophthalmology, ENT, obstetrics and gynecology services (one week each).

The schedule would be as follows:

Group	Weeks*			
	0-4	5-8	9-12	12-16
A	1	2	3	4
B	2	3	4	1
C	3	4	1	2
D	4	1	2	3

\*Double time if rearrangement of schedule suggested below is adopted.

If the in-patient or hospital clerkship were held in the second semester of the third year and the first semester of the fourth year, a number of advantages would result. There wouldn't be any waste of clinical opportunities by excusing the seniors from the fourth quarter classroom work. (This practice of excusing the seniors should be stopped anyway.) It would be possible to double the length of continuous time for each department's clerkship and, therefore, give more concentrated and continuous training than is permitted when the clerkship is divided into two periods and is separated by two semesters of out-patient clinic work as it is now. In other words, a junior student would start his in-patient work in his second semester. Then he would continue on the in-patient service during the first semester of his senior year and he would have one year of continuous in-patient clerkship. The same scheme would work out well in the clinic also.

The school calendar needs to be changed slightly. The second quarter should be extended to the end of July.

2. Student's clinical experience.

Out-patient clinic. The students should examine all new patients who come to the clinic. The entire history and physical examination written by the student should be incorporated into the chart. The consultant can more easily add to or correct any differences he finds than write a new account. Each patient should have a single hospital and clinical record. The students should be encouraged to do a more thorough examination and this

should be possible with an increase in time of the clinic.

If the change in rotation is adopted, the juniors then will start in the clinic. Intensive training in history and physical examination should be given at this time by all members of the staff. During the second semester of the senior year the student's clinic work will afford an opportunity in examining a relatively large number of patients again to round out his clinical experience.

**Clerkship.** The entire group of assistants on the medical service (and other services for their programs) should be utilized as teaching assistants. If this is done, two students could be assigned to one assistant as their actual tutor. The assistant should be responsible for assignment of patients, correcting clinical records, making rounds, and checking, and helping with laboratory work. The emphasis should be on the student doing things for himself with teaching directed at the individual clinical problem. The records should be very detailed, graphs and charts be made for appropriate cases, and the entire student record be incorporated as part of the patient's record. Better laboratory facilities should be provided for the students than are available to them now.

The student should not know before his work-up anything about the staff's opinion as to diagnosis. The student needs to learn from first-hand experience that diseases are not automatically labelled, and he should not start an examination already prejudiced about the diagnosis.

A general medical service rather than a highly divided service is highly desirable for proper functioning of a clerkship program.

In order to avoid the relative waste of already short supply of clinical material some students could be encouraged to take an elective course combining clinic and ward work during part of the vacation periods.

The experience at the affiliated hospitals should be patterned after the above clerkship. At some time in the future it may be possible to assign one half or a smaller fraction of the class to the affiliated hospital for the entire clerkship in medicine. This can be done only if that staff is of the same caliber as this staff. This would help greatly in reducing the number of students assigned to service at one time and make the whole teaching program more effective.

The physical diagnosis course, which is the introduction to clinical medicine, is now taught entirely by lecture. Supervised

sessions of examination of their fellow students for normal physical findings should replace the lectures on normal findings. When clinical material increases, the practical experience during the second year should extend to specific physical signs. At the present time the out-patient clinic examinations in the third year will of necessity complete the initial phase in the practical experience in physical diagnosis. Of course, additional experience will be gained during the remainder of training.

D. Internship and graduate school training.

1. Internship. An internship is desirable to complete the clinical training of the medical students. It is the firm recommendation of the entire group of medical advisers that this hospital establish an internship which can be a model for other hospitals in Korea. The internship should be open to graduates of other Korean Medical schools and a competitive system should be used to select candidates on the basis of ability regardless of school of origin. Since clinical experience is limited for students as yet, it is desirable to establish a rotating internship.

A suggested assignment of interns has been made as follows with a total of 17 interns.

Medicine	5
Emergency room and Dermatology	1
Psychiatry	1
Pediatrics	1
General surgery	2
Chest surgery	1
Neurosurgery	1
Orthopedics	1
Urology	1
Obstetrics and Gynecology	2
ENT and Eye	<u>1</u>

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This will mean that each intern will miss some of the smaller services which will have one intern at a time. This could be

done by having the intern select a rotation with surgical emphasis of eight months on surgical services and four months on medical services, and the others who intend to go into one of the non-surgical specialties to take a rotation with medical emphasis of eight months on medical (i.e. non-surgical) services and four months on surgical services (preferably general surgery and obstetrics and gynecology).

On the advice of Dr. James Matthews anesthesiology is not included in the rotation. The interns on surgery rotations should be encouraged to pay particular attention to immediate pre and post-operative care and to help the anesthesiologists in caring for their own patients.

In order that every intern get at least one month on each service, it is necessary to set up an alternate program with exactly twelve interns or integral multiples thereof. Thus a number of 24 would be more in line with what Dr. Rha felt was necessary from the standpoint of meeting eventual graduate school needs. Twelve interns are probably too few to cover the needs particularly of the surgical service which has many divisions.

Distribution of interns could be as follows:

	12 interns	24 interns
Surgery	5	10
Medicine	4	8
Psychiatry	1	2
Pediatrics	1	2
Obstetrics and Gynecology	1	2

The graduates who have spent at least a year in an army hospital, in another approved hospital as an intern or in a research laboratory could register directly as an assistant. This would also increase the number of graduate students in medicine without enlarging the internship inordinately.

The following specific recommendations are concurred in by the committee:

1. That an internship be established and that a rotating program with 17 interns be started.
2. An internship committee becomes an established committee to help advise the superintendent about policies pertaining to interns, their duties, responsibilities, privileges, etc. The committee will act also to help select interns.

3. Graduates who have had an approved 1 year internship can begin as first year assistants (or residents).
4. Interns should be registered in the graduate school and receive credits as a minor course. (There doesn't appear to be any reason why credits in their major course couldn't be accumulated when serving on that service.)
5. Only students who pass Graduate School examination be accepted.
6. Proper publicity in Korean medical journals for the internship should be arranged when plan has been accepted.

## 2. Graduate school training.

In order to strengthen the graduate program in internal medicine and in all clinical divisions of the medical school, it is advisable to require a "minor" course of study in one of the basic medical sciences (Biochemistry, Physiology, Anatomy, Pathology, Microbiology, Pharmacology, and Parasitology). The best way to accomplish this would be for the individual graduate student to spend six months or even a year in the basic science department. Such basic science training should come before the student starts his research project so that he can apply techniques in his future research work.

The basic science departments could each set up courses of electives for the "minor" requirement with seminars, conferences, laboratory work, and lectures for the graduate students in clinical sciences. Since the number of students would be small, plans should be made so that a sequence of courses would be arranged in a department. The formal course training is not as satisfactory and definitely less apt to lead to use of a new technique in clinical studies than informal, full-time duty in the basic science laboratory of the student's choosing.

## E. Miscellaneous recommendations.

1. The centralization of library books and periodicals, and the reorganization of the periodicals particularly is pleasing. The students should continue to have access to current periodicals.
2. For purposes of radiologic safety, economy, and efficiency an isotope committee to supervise the function of a single central isotope laboratory has been established. This pattern of a cooperative project in isotope studies should be continued indefinitely, because of the unique nature of the problems involved.

3. A medical records system should be established and a single chart for each patient be established to record both clinic and hospital visits. The number of the chart should be used for x-ray and laboratory procedures. A detailed plan for this is being submitted by a subcommittee of the operating committee appointed to study this problem.
4. The functioning of the operating committee of the hospital has been impressive to watch and to participate in. The assignment of tasks to committees for solving special problems has been generally effective, and the progress made in solution of many problems has been substantial. One disappointing fact is that in spite of firm decisions to limit visiting hours for all but the critically ill patients and to insist on patients taking only hospital food, neither regulation is enforced. In order to function as a good hospital, it is the writer's opinion that both regulations must be followed, and other decisions of this important committee adhered to.
5. The dietary department needs to be strengthened, and the services of a dietician and eventually of a staff of dieticians are urgently needed. The need for dieticians is particularly important for development of a metabolism and endocrinology section. A committee to study and recommend change in the whole dietary service has just been formed. It is urgent that this committee meet regularly and develop plans for better food services and for helping a trained dietician establish a dietetics service.
6. There is need for rehabilitation and physical therapy. Trained personnel from the National Rehabilitation Center at Tongnae could be obtained and plans be made for development of this type of service. A committee is actively studying this problem. Establishment of this type of service is anticipated in the near future.
7. Other foreign advisers in medicine (and other technical fields too) should devote most of their attention to clinical or laboratory teaching and help establish and apply new techniques. Lectures should be interpreted in Korean in order that more persons can understand the material presented completely.

Lectures and conferences where the adviser is the main contributor should definitely constitute a small fraction of the adviser's duties. When lectures are given, furthermore, they should be confined to or emphasize recent developments with a specific reference to current literature. Where there are adequate printed materials in a given course, there is



little to be gained by repeating the material in lectures. This material should be studied at home, and the classroom time spent in discussing its application to clinical or basic problems.

## Appendix

## 1. List of Graduate School Courses in Internal Medicine

Course	Faculty	Credits	Semester	Year
*Diseases of respiratory system	Kim Kyung Sik	1*	1	2
	Song Ho Sung	1*	2	2
Hematology	Kim Kyung Sik	2	1&2	1
*Tuberculosis	Kim Kyung Sik	1*	2	1
	Song Ho Sung	1*	1	1
Endocrinology	Kim Kyung Sik	1	2	2 or 3
	Song Ho Sung	1	1	2 or 3
*Diseases of digestive system	Hahn Shim Suk	1*	1	1
	Kim Dong Ik	1*	2	1
Helminthology	Hahn Shim Suk	2	1&2	1
Diseases of metabolism	Kim Eung Chin	1	2	2
Toxicology	Kim Eung Chin	1	1	2
*Disease of liver	Hahn Shim Suk	1*	2	2
	Kim Dong Ik	1*	1	2
Rheumatic diseases	Lee Sung Ho	1	1	2
Renal diseases	Kang Seung Ho	1	2	2 or 3
*Electrocardiography	Kang Seung Ho	1*	1	2
	Lee Sung Ho	1*	2	2
*Cardiology	Kang Seung Ho	1*	2	1
	Lee Sung Ho	1*	1	1
Neurology	Lee Sung Ho	2	1&2	1
*Infectious diseases	Chun Chong Hwee	2*	1&2	2
Infectious diseases	Ro Byung Ho	2	1&2	2
Infectious diseases	Chun Chong Hwee	2	1&2	1
Laboratory instruction	Ro Byung Ho	2*	1&2	1

Course	Faculty	Credits	Semester	Year
Radiology	Cho Chung Sam	2	1&2	1
Physical medicine		1	1	2
*Exercise (Seminar		{1*	both	1&2
		{1		
(Conference		{1*	both	1&2
		{1	both	1&2
*Practice (Wards		4*	both	1&2
(O.P. clinics		2*	both	1&2
(Laboratory work		2*	both	1&2

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\*Indicates required courses. Others are elective.

Appendix

2. Subjects of Master's Theses in Internal Medicine for  
Ten Year Period

1. Lee Pong Kyun                      Chemistry and metabolism of porphyrins.
2. Kim Eung Chin                     Blood and bone-marrow picture of ancylostomiasis.
3. Kim Soo Kil                        Clinical observation on the relation of  
venous Pressure to Cardiac Activity.
4. Kim Moon Chin                    Pregnancy and heart disease.
5. Lee Moon Ho                       Cardiac function and water balance
6. Park Chang Ho                    Etiology of functional heart disease.
7. Chang Chae Hyon                 Circulation time and cardiac enlargement.
8. Chang Chae Chun                 Clinical significance of chest leads,  
especially of special auricular lead.
9. Seou Sung Kyu                    Role of sodium in cardiac edema.
10. Hoi In Mok                       Various Serum reactions in Kala-azar.
11. Kim Dook Chu                    Clinical observation of tuberculosis  
cavities of lung.
12. Bai Ching Sook                  Sensitivity test on various antibiotics of  
some pathogenic bacteria.
13. Chun Dong Soo                  Influence of intestinal parasites on circula-  
ting eosinophils and adrenal function.
14. Min Phyang Kak                 Staining of non-acid-fast tubercle bacilli  
by Alexander - Handuroy Method.
15. Min Heun Ki                     Effect of testosterone on refractory anemia  
of pulmonary tuberculosis.
16. Han Chin Kwan                  Influence of red pepper on rabbits.
17. Kang Yang Won                  Tongue coating and digestive diseases.
18. Park Sang Ki                    Excretion of oropepsin in health and in  
digestive disease.
19. Lee Taik Soo                    Gastric juice finding in gastric and duodenal  
ulcer.

20. Kang Suk Young      Intestinal parasites among middle school students in Seoul.
21. Kim Hyon Kyoo      Statistical study of pleurisy.
22. Chun Sung Suo      Statistical study of lung gangrene.
23. Lee Sung Bok      Statistical study of pulmonary tuberculosis.
24. Park Tong Shin      Normal blood picture of Korean people.
25. Kang Hyong Yong      Distribution of intestinal parasites in Kimhae area.
26. Ko Soo Ok      Chemotherapy of pulmonary tuberculosis.
27. Kang Shin Ho      Clinical observation on intestinal protozoa.
28. Park Chung Sook      Significance of circulation time in heart disease.
29. Oh In Hyok      Adrenal function tests in liver diseases.