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MEDICAL JOURNAL

THE UNIVERSITY OF WESTERN ONTARIO
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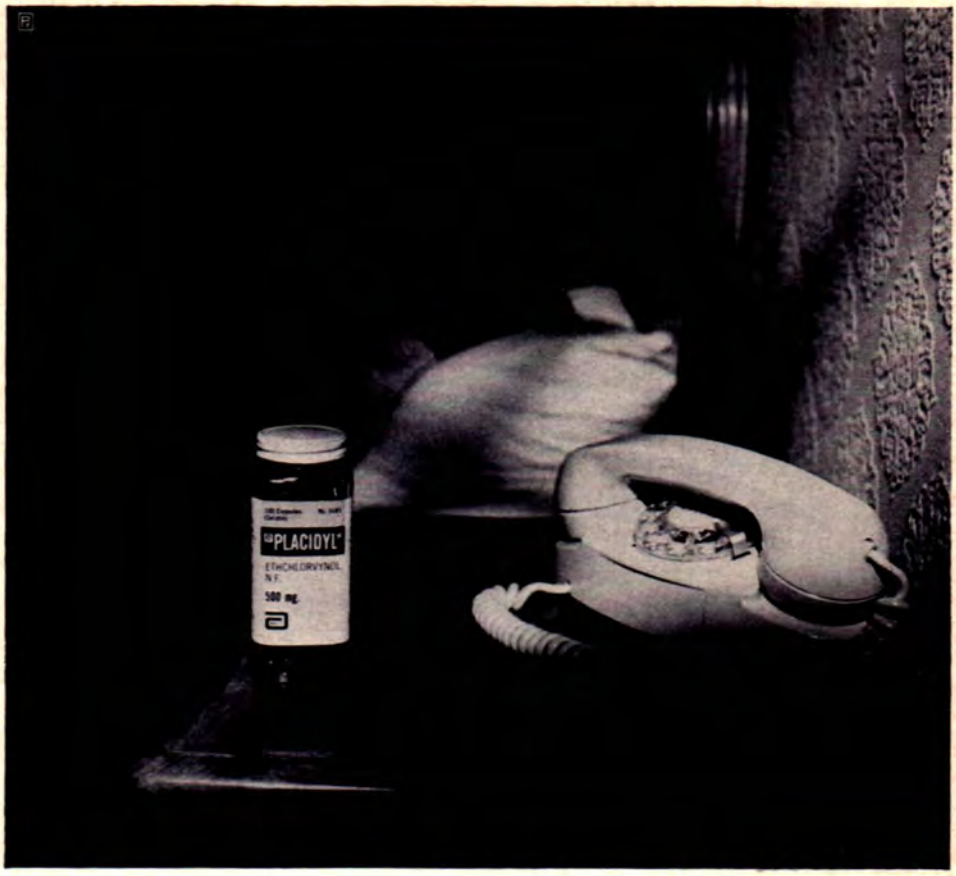

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UWO MEDICAL JOURNAL

VOL. 38: NO. 1, OCTOBER, 1967

THE UNIVERSITY OF WESTERN ONTARIO

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CONTRIBUTIONS will be accepted with the understanding that they are made solely to this publication. Articles should be of practical value to students and medical practitioners. Original research work is most welcome. Articles should not be longer than 3,000 words, and we will more readily accept those of shorter length. Introduction and summary of conclusions, should be included. Drawings and photographs will be accepted, the former to be in black ink and drawn clearly on white cardboard.

All articles submitted must be typewritten, on one side of paper only, with double spacing and two inch margins on each side. Canadian Press (American) spelling must be adhered to. The format for references is as follows: For books: Author(s): title of book, publisher, place, year. For Journals: Author(s): title of article, name of Journal (abbreviated as in the World List of Scientific Periodicals), volume: page, year.

THE UNIVERSITY OF WESTERN ONTARIO

FACULTY OF MEDICINE

CONTINUING MEDICAL EDUCATION PROGRAMS 1967 - 1968

Instructional Course in Surgery of the Hand (Limited registration)	**Friday, August 18th, 1967,** Room 270, Medical Sciences Bldg., The University of Western Ontario
Instructional Course in Gastric Surgery (Limited registration)	**Wednesday, September 27th, 1967** St. Joseph's Hospital, London.
***7th Annual Homecoming Medical Conference**	**Friday, October 27th, 1967** Room,147, Medical Sciences Bldg., The University of Western Ontario
Obstetrics and Gynaecology Refresher Day and The 26th Dr. F. R. Eccles Memorial Medical Alumni Lectureship	**Tuesday, October 31st, 1967 and Wednesday, November 1st, 1967** E. D. Busby Memorial Amphitheatre Victoria Hospital London
***Cancer Symposium and The John A. Macgregor Memorial Lectureship**	**Wednesday, January 10th, 1968** E. D. Busby Memorial Amphitheatre Victoria Hospital London
Therapeutics 1968 Refresher Course	**Wednesday, January 31st, 1968** E. D. Busby Memorial Amphitheatre Victoria Hospital London
Anaesthesia Refresher Course (Limited registration)	**Monday, February 5th, 1967 and Friday, February 9th, 1968** Victoria and St. Joseph's Hospitals London
Paediatrics Refresher Day	**Wednesday, February 21st, 1968** E. D. Busby Memorial Amphitheatre Victoria Hospital London
Psychiatry Refresher Day	**Wednesday, March 13th, 1968** E. D. Busby Memorial Amphitheatre Victoria Hospital London
Medicine Refresher Day	**Wednesday, April 3rd, 1968** E. D. Busby Memorial Amphitheatre Victoria Hospital London

*No Registration Fee

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DIRECTOR OF CONTINUING EDUCATION
FACULTY OF MEDICINE
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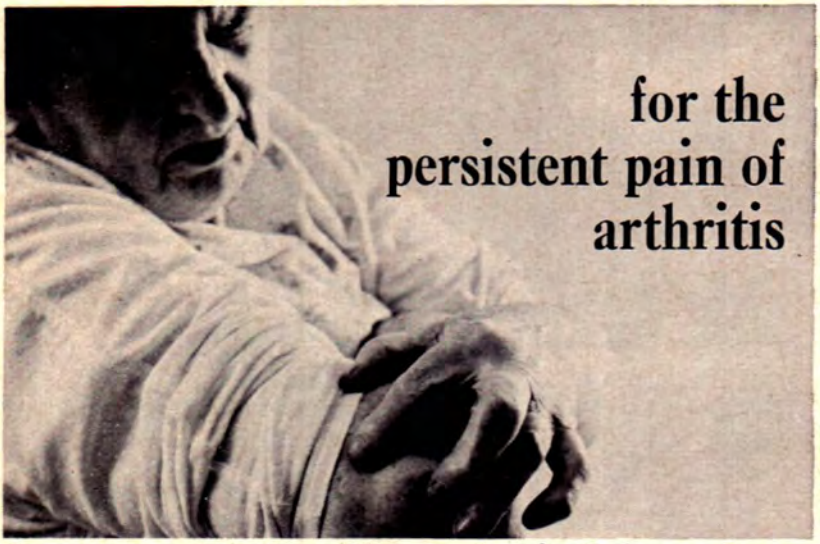

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Editorial

The 1967-68 Journal has started another year of publishing and as usual there is a new Editorial Staff. You will also possibly notice that a change has been made in the cover, paper, type and layout of the Journal. It would be both premature and rash to say that these changes are for the good but I hope that it at least demonstrates that the new staff are very enthusiastic that the Journal still maintains its place as an active force in the Hippocratic Society and represents the opinions of the University of Western Ontario Medical School and its related disciplines.

It goes without saying that no matter how glossy one makes the physical attributes of the journal, the most important part is the content. The current year's editorial policy is very clear on this latter point. Our task is to aid communication in any shape, form, or size it presents itself. One problem of modern day institutions and the Medical School and University are no exception, is that everybody is so busy within their selected roles and responsibilities that insufficient time is given to inform others what problems one is attempting to solve or has solved. There is certainly no need for lofty statements in this regard, but it is the responsibility of the undergraduate years to inform the faculty of its fears and endeavours through the media of this Journal and vice versa.

As Editor, I am quite prepared to go out on a limb and state, that provided the Postmaster General of Canada, and the Editorial Board allows material through the mail, I am prepared to publish any article that anyone wants to write for the Journal. This does not imply that I intend to lower the past high standards of the Journal, but merely to emphasize that in an institution which devotes itself to academic and professional training, our minds should be sufficiently resilient and receptive enough to meet new ideas no matter how extreme or immature they may appear to any one section of the readership.

I do urge you to give every consideration to writing something for the Journal this year, even if it is only a risque joke. You may be assured that every effort will be made to publish it and that we are not in the business of emulating our older and more professional counterparts in the medical publications field by demanding lofty and esoteric material. I hope you will consider writing letters to the Editor because a section has been reserved for this purpose and your comments will not only be appreciated by the staff and readers but also may help to break down the mental barrier which seems to rear its ugly head whenever writing in the Journal is mentioned.

In conclusion, I would personally like to thank all my fellow students and faculty members who have been so helpful to me during the summer in giving me the benefit of their experience, guidance and help. Many names come to mind but a particular vote of thanks must go to Mr. G. Henry of Hunter Printing, Mr. W. Borosa of the University Information Publication's Service; Dr. B. Squires, Glen Withers, '68 and Dick Johnston '69.

Remember this is your Journal and only you can make it a success. The staff is here to help rather than to hinder, to advise rather than dictate, to encourage rather than dissuade, and above all to show that the study of medicine is not simply a case of sitting on one's posterior, reading what others have written, but also to demonstrate originality on your part as well.

Martin J. Inwood, '69,

Editor 1967-68 Journal.

Message from Dr. D. C. Williams, President The University of Western Ontario

It is a very pleasant duty to accept the Editor's invitation to address a few words to the readers of this Journal.

A surgical operation is not a "happening", and, amid all the LSD-inspired clamour in denigration of "cold" scientific knowledge, the value of medical knowledge for man remains, even if it often seems that it must be experienced to be believed. "He jests at scars that never felt a wound."

Yet medicine is more than facts be they hot or cold. Its subject is man and man is a moral being. And granted that the strict meaning of "man as moral being" may be argued, it is still the case that medical practitioners are called upon to face the moral implications of their medical findings and advise their patients accordingly. Medicine then, however firmly *based* in science is *practised* in human terms, complete with human and hence moral problems.

Some of the current problems that come to mind are, "Is the 'new morality' either new or moral?", "What of euthanasia? How long should one stave off in pain an inevitable end?" The presence of these, and similar problems, serves to emphasize the increasing importance of the social and behavioral sciences in the undergraduate, graduate and perhaps most of all in the continuing education of the physician.

The UWO Medical Journal will I hope provide a medium through which these two aspects of medicine, its scientific foundations and its moral implications - its science and its art - will be more widely discussed. It is implied in the very idea (and ideals) of such a Journal as this that by the process of dialogue, a coherent conception of what is needed and wanted in the science of medicine, in the art of medical practice and in their relationships may be developed. Since neither medicine nor man remains static, so must the dialogue that orchestrates them continue. To the pursuit of this noble purpose and for the the patience to endure and the determination to overcome the difficulties that beset this path, I ask of you your strenuous labours and your highest dedication.

The Revolution

Ronald Wexler '70'

There is something very exciting going on in Hamilton at McMaster University which every doctor, student and medical educator should look into in the interests of himself and his profession. A number of young physicians have been given the monumental task of designing a new system of medical education, streamlining it, shortening it, and at the same time maintaining and even improving the calibre of their graduates. The magnitude of their task is exceeded only by their energy and imagination in a radical approach to an already formidable problem.

The first departure from medical education as it now exists is obvious in the training needed to enter the course. Before a student is considered prepared to study medicine, he will have to have a solid background in the biological sciences. This will include courses in psychology and biochemistry and will require at least three years of an honours biology programme, or its equivalent.

The magnitude of biochemistry is well appreciated by the Faculty and it is felt that the advanced biochemistry required of the physician cannot be properly comprehended without previous training in the subject. For students who do not have such a background, but show themselves to be otherwise qualified for the study of medicine, an intensive six week summer course in cell biology and biochemistry will be given prior to the first year. This will be predominantly a lecture course, as it is felt that the usual laboratory experience adds little to the students grasp of biochemical principles in proportion to the hours spent.

A Bachelor degree, possibly B.Sc., Med., will be granted after the completion of the basic science part of the program, i.e., the first year. This will put the medical student on an equal status with other graduate students, and thus make him eligible for those privileges which have been withheld from him by an administrative differentiation between M.D. and Ph.D. courses.

The second radical change at the McMaster School is a reduction of the number of years of training from four to three. This requires three basic needs: a good pre-medical background, as mentioned above; a school year of eleven months; a curriculum which eliminates repetition and necessitates close interdepartmental planning. The most obvious problem here, of course, is student financing. It is hoped, however, that with the new Student Aid Programme and with graduate student status, enough grants could be acquired to support medical students, just as M.Sc. and Ph.D. students are supported. The problem is politically difficult, but not impossible by any means.

The most important feature of any school is, of course, its curriculum. At McMaster, this will be so changed, especially in the basic science years, that those affixed to the standard method of medical education may reject it immediately. A closer look, however, shows that the advantages seem to far outweigh the drawbacks.

Even the method of setting course content and organization shows a paramount difference. The responsibility for the material to be covered will be in the hands of an integrated course committee. This will remove the autonomous control of each department over its own teaching, but the benefits to the student are great; the plan of re-organization set out below will show the necessity of this.

The course will be divided into four stages. The first of these is "Normal Structure and Function" in which Anatomy, Physiology, Psychology, Sociology and probably a small amount of general Biochemistry will be taught. These courses will be covered in a general manner, simply introducing the student to the basic concepts needed for understanding.

Anatomy, for example, will consist of dissection of a foetus for the body cavities, the limbs ,and a cursory view of the rest of the body. Much of the material will be prosected. The detailed study will occur in stage three, the systems studies.

Stage two will consist of abnormal structure and function, again in a general integrative way in which the general concepts of pathology common to the whole body will be covered, such as inflammation, neoplasia, etc. Again, the detailed pathology will be dealt with in stage three. The first two stages will take the student approximately two thirds through his first year.

Systems teaching is the most exciting of all the innovations to be made at McMaster. The students will be divided into groups of four, each group having a tutor who will stay with the group during the study of any one particular system. The tutors will be M.D.'s who will not necessarily be specialized in all of the fields that they teach. They will confer with specialists in other fields to gain information, sometimes bringing to the groups 'guest' speakers and demonstrations of a specialized nature. The tutor will not lecture, but will act as a catalyst, learning along with the students and guiding them in their studies. Assisting the tutor will be many audio-visual aids. There will be prosected cadaver material and pathological specimens available at all times. Modern carrels containing film clips, microscope slides, specimens and models will be available for the study of each system.

Four to six weeks will be spent on each of the major systems such as cardiovascular, genito-urinary, respiratory, etc. The student's job will be that of understanding completely the problems of the system being studied. He will do this while concentrating at the same time on a specific aspect of the system. This can best be illustrated by an example. (See Table 1) Thus, at the end of one week, the student will have studied the complete liver and biliary system, with each group applying the general knowledge gained by all to their specific case. At the end of the week, seminar sessions will be held at which each group will present its case to the others. They will have studied, as a unit, all of the normal and abnormal facets of the system, understanding as they go and learning a unit of practical, applicable medicine. There will be few if any lectures, but the demonstrations, carrel and library work accompanied by discussions should provide more than enough exposure. By granting full access to all parts of the school day or night, students will have ample opportunity to learn.

To quote Dr. W. Spaulding, Associate Dean, "Medical education is training in human biology." Thus the medical student will study chiefly those aspects of medical science which are applicable to his job of treating patients. The experimental aspects would be dealt with, in relation to their clinical application, the remainder being left to the students of medical science and research. The normal and the abnormal will merge and blur into various aspects of a single entity, the patient.

The fourth stage is, of course, that of clinical blocks. Four blocks are planned:-

1. Medicine
2. Pediatrics and Obstetrics
3. Psychiatry and Surgery
4. Family Medicine.

This approach will allow the student to follow pre-natal through delivery to post-natal care of both mother and child. Coupling of psychiatry and surgery will give the student an insight into the diagnostic difficulties between organic and mental illness - both real, yet very different in treatment. The family practice unit will allow him to see patients in an office in conjunction with a general practitioner, possibly one or two afternoons a week, and on certain occasions take him into the home on house calls. The other specialties, such as anaesthesia and ophthalmology will be studied as units within these blocks.

Again the course of study will be at the bedside with little or no lecturing. The onus this places on the student is preparatory for his continuing education in his post-graduate years when he will be truly on his own.

The exam schedule will be easier on the student. Continued assessment by the various tutors would obviate the need for term tests, with only a set of final exams in the basic science as well as the clinical years. Again, it is up to the student how much he learns during the year; nobody will coerce him into studying.

The facilities planned include a large 410 bed hospital directly connected to the research and teaching areas. A large family practice unit is planned with at least ten family practitioners supervising and instructing. The patients will be from all walks of life, and students will have specified "office hours" in which they will follow their families, going into the home when necessary.

The ideas of Dean Evans and his staff are very exciting. As a student I can see certain difficult problems, such as a teaching staff willing to devote enough time to make the system work, and dependable, mature students, able and willing to work and study on their own. But, no matter how little or how much of the total plan is accomplished, the result will be a step forward in medical education. Everyone is watching anxiously.

NOTE: The author would like to thank Dr. W. B. Spaulding for the considerable amount of time and advice he gave to the preparation of this manuscript.

TABLE 1

SYSTEM-GASTRO-INTESTINAL

— Liver + Biliary

— Time — One Week

Group:	1	2	3	4
Tutor:	Pathologist	Int. Med.	Psych.	Pharm.
Topic:	Portal Cirrhosis	Inf. Hep.	Gallstones	Cholycys
Embryology	"	"	"	"
Anatomy	"	"	"	"
Pathology	"	"	"	"
Biochemistry	"	"	"	"
Path. Chen.	"	"	"	"
Liver Function	"	"	"	"
Epidemiology	"	"	"	"
Microbiology	"	"	"	"
Pharmacology	"	"	"	"

Quotable Quotes

A Psychiatrist: Is a man who has studied medicine, which he doesn't practise in order to practise psychology which he hasn't studied.

Definition: An Alcoholic is a man who drinks more than his own Doctor.

Truism: It takes human beings about two years to learn how to talk and about seventy how to keep their mouths shut.

Quote: My opinion of the profession is this; the ancients endeavoured to make it a science and failed; the moderns to make it a trade and suceeded. Samuel Johnson on the Medical Profession.

Madge Macklin — Pioneer in Medical Genetics

Dr. Hubert C. Soltan
Department of Anatomy,
The University of Western Ontario

"It's been a great year for genetics, saddened for us by the death of a former President of our Society, Madge Macklin, who played a pioneer role in introducing genetics to the medical fraternity, and whom we all loved for her energy, tenacity of purpose, humour, compassion and the whimsical tirades with which she would castigate her male colleagues. She did a fine job and had a good time; may her memory remain as an inspiration for us all".

(Extract from the presidential address delivered at the annual meeting of the American Society of Human Genetics by Dr. F. Clarke Fraser at Corvallis, Oregon, August 30, 1962)

Who was this remarkable person who should be an inspiration to all geneticists? Before assessing some of her major scientific contributions a chronological précis of her academic curriculum vitae might be appropriate.

Madge Thurlow Macklin was born in Philadelphia in 1893. In 1914 she received a B.A. from Goucher College and in 1919 an M.D. degree from Johns Hopkins University. During the next year she was an Instructor in Physiology at the School of Hygiene of the Johns Hopkins University. In 1922 her career at the University of Western Ontario began with an appointment as part-time Instructor in Histology and Embryology. Her appointment to the Faculty of the Medical School of the University of Western Ontario was a matter of circumstances since her husband, Dr. Charles C. Macklin, had recently been appointed Professor of Histology and Embryology, having previously been at Johns Hopkins. For eight years Dr. Madge Macklin held the post of Instructor. In 1930 she became Assistant Professor, a rank which she held till her dismissal from the Faculty in 1945. During her 23 years at the University of Western Ontario Dr. Macklin published approximately 150 papers. Some of these publications contain her most important contributions to medical genetics. In 1946 Dr. Macklin became a Research Associate in Cancer Research of the National Research Council (U.S.) and moved to Ohio State University in Columbus, Ohio where she held appointments both in the Medical School and the Department of Zoology. On her retirement in 1959 she returned to London, Ontario, where her husband then lived in retirement. Following the death of her husband in December of the same year, she moved to Toronto where her daughters had settled. She died suddenly following a coronary thrombosis in Toronto in 1962 at the age of 69.

In 1938 Dr. Macklin received an honorary LL.D. degree from her original alma mater, Goucher College. Dr. Macklin was a member of several American and Canadian biological societies. In 1957 she was awarded the Elizabeth Blackwell Award—an annual award to a woman doctor distinguished in her own field. In 1959 she was elected president of the American Society of Human Genetics to which she had contributed much since its founding in 1948.

Madge Macklin's contributions to genetics and to medicine were many and varied. This is attested, in part, by her publications which number approximately 200 and date from 1915 to 1961. If one must choose a few fields where her contributions were greatest the following three would be pre-eminent. First, by persistent lecturing and widely scattered publications she tried to demonstrate the relevance of genetics to medical teaching and medical practice. Secondly, she made several fundamental contributions to the statistical methodology of human genetics at a time when the fruitful marriage of mathematics and human genetics was scarcely beginning. Thirdly, her long-time interest in the

hereditary aspects of neoplastic diseases led her to undertake research projects of considerable scope in the heredity of various types of cancer.

Besides her contributions to the three areas mentioned above, two of which will be discussed in some detail in the body of this paper, Dr. Macklin conducted research and published on many other topics in medical genetics. For example, in 1927 she published a monograph in seven parts on hereditary abnormalities of the eye. She was one of the first to call attention to the occurrence of mongolism in sibs. She utilized the twin method in studying dental malocclusion. In the late 1930's she attempted genetic studies on erythroblastosis fetalis and, although her conclusions as to mode of inheritance were invalidated by the subsequent discovery of the etiology of this disease, her studies remain as examples of how to analyse familial aggregations in order to establish a hereditary hypothesis.

Dr. Macklin's beliefs were the outcome of a basic idealism and of a logical mind tempered by much practical experience. She felt keenly the need to spread her beliefs in the interest of science ,the medical profession and the public good. This aspect of her character and influence is illustrated best in her contribution in drawing attention to the importance of genetics in medical teaching and medical practice. Other human geneticists of the time were doing similar "missionary" work in the United States, notably William Allen and Lawrence Snyder. But none tackled this task with more zeal and perseverance and probably against greater obstacles than Madge Macklin; and none other was doing it from a platform in Canada.

The period in her career when she was most active in this area of "genetics in teaching and in practice" started about 1931 and extended until about 1941, but it was a lifetime interest and cannot truly be limited chronologically. In summary, Dr. Macklin believed that the medical curriculum, by not providing time for the teaching of medical genetics, was seriously in error. If unaltered, this situation would have grave repercussions on the advance and utilization of genetic knowledge in medicine. Several generations of doctors would be untrained in this field. Over the years she provided a mountain of evidence for her belief. She also proposed, in detail, how, where and by whom medical genetics should be taught in the medical curriculum. It is not possible in a paper of this length to give even a selection of the wealth of practical examples from her own experience which Dr. Macklin used to support her thesis. However she did demonstrate that knowledge of medical genetics gave the student a better foundation for his later clinical studies, greater facility in the diagnosis of disease and that it was of value to the patient and the public from the standpoint of prevention. The two similar quotations which follow have slightly different emphasis and are appropriate summaries:

"When he is in his final year, after he has seen cases of many of the diseases, and heard the rest discussed in lectures; when he is familiar with the conditions and with the terminology used, he should receive a course in heredity as applied to medicine from a medically trained person who is conversant with the field of experimental genetics. This course should not be left to individuals who may at random exhibit a case of inherited disease in their clinics. Such instructors may not be interested; they may not have the requisite background of information, for the study of inheritance is one that is a specialty in itself. It should be taught as a separate subject with the dignity befitting its importance."[1]

"Medical genetics should be taught in the medical school in the final year of medicine, by a medically trained person conversant with the broader aspects of the science of genetics. It should not be given by a geneticist who is not medically trained, inasmuch as such a person is unacquainted with the phenomena of disease, and their diagnostic significance. It should not be given before the final year in medicine because the student is not yet familiar with the signs and symptoms of disease, and hence cannot appreciate even the terms used in the discussion."[2]

In another publication Dr. Macklin discussed in detail the kind of course she has in mind even to the major contents of each of the lectures. It should consist of: ". . . 36 hours of lectures as a minimum and, depending upon the available clinical material in the hospital at the time, a certain amount of practical work. There would be much leeway here in the line the practical work would follow, just as there is variation in the choice of material for medical or surgical clinics."[3]

And even 35 years ago Dr. Macklin was concerned about one of the important current problems in teaching medical genetics:

"Only as we arouse medical educators to the necessity of this course in medical genetics will we arouse the premedical schools to adopt a program to assure adequate preparation of their students for such training by giving them the fundamentals of the science of genetics. Although many medical schools assume that these are taught that assumption is not always justified. The

medical schools frequently do not require it, and the premedical education meets only requirements."[4]

Dr. Macklin also wanted medical genetics incorporated in the curriculum for another less direct but, to her, vitally important reason. Although a keen supporter of the "Eugenic Movement" in general (and it must be remembered that the heyday of this movement was in the 1920's and 1930's) she had sufficient foresight to realize that if physicians did not assume a leading role the movement would be taken over by politicians publicists and prejudiced extremists. In those hands it would yield no fruit towards the "better society" she envisaged. Eugenics had its basis in genetics, and genetics was a disciplined science. How could physicians play the role she expected from them if they themselves had little or no knowledge of the science of genetics? Physicians must be better informed in genetics, for the doctor was becoming increasingly regarded as a scientist; perhaps the only "scientist" a large section of the population could ever have the opportunity to turn to. His influence in hereditary matters could be enormous, but it might just as readily be detrimental to the ideals of eugenics as beneficial. To her critics who claimed that a formal course in medical genetics would involve the physician too much in the "eugenic propaganda" she replied:

"Sir William Osler, in his fight to have sanitary sewage disposal in Baltimore in a preliminary to his fight to lower the typhoid death rate had to face the political entanglements into which such a scheme plunged him. Insofar as the eugenic programme touches the field of prevention of disease, the physician must accept the connection. The aim of the medical profession is to give the public the best it can, the best which the accumulated knowledge of the day entitles them to expect. Unless the physician is thoroughly acquainted with the field of heredity in disease as it applies to man, he robs himself of some of his best opportunities for making a diagnosis, his patient of the best in therapy, the potential case of disease of the best in preventive medicine, and the public of the best that can be offered to them to relieve them and future generations of the crushing weight of hereditary disease."[2]

Her thoughts on this topic of "eugenics and the physician" are perhaps best summarized in the following extracts:

"Because of the essentially fundamental position of the medical practitioner in respect to the carrying out of the eugenic programme his education in medical genetics, which is the study of inheritance. It is my firm conviction that the Eugenic Societies of any country can make no greater contribution to the progress of their cause than by the repeated agitation to put on a course in Medical Genetics in every medical school . . . To further the likelihood of such a course being given in medical schools even although some administrative officials might not be cognisant of its importance there should be incorporated in every State Board Examination, questions relating to the inheritance of disease in Man."[5]

Madge Macklin's interest in the hereditary aspects of cancer can be detected to reach back as far as 1926 when she wrote a short note on the work of Maud Slye, one of the pioneer workers in cancer research. By 1932 she had become deeply involved in heredity and cancer. Her interest in heredity and cancer was sustained and increased througout the remainder of her life. About one quarter of her total publications were on cancer. During the last 15 years of her life these problems were her major research interests. At Columbus, Ohio, she had the opportunity of working at the Tumor Clinic of the Starling-Loving Hospital and the Columbus Cancer Clinic, a vast source of starting material for her genetic studies.

So much energy was expended by Dr. Macklin in her desire to learn more and educate others about the practical necessity of considering and studying the hereditary aspects of cancer that it is very difficult to give even a summary of her major interests and contributions. However this must now be attempted. First, she showed that for many specific types of tumors of the same organ at similar ages of development, an excellent argument could be sustained for a hereditary basis. Her methods consisted of a statistical pedigree approach augmented by twin data. A hereditary basis meant, of course, a mendelian explanation. And this was her second problem—and second major contribution—namely, the education of physicians, statisticians and the public generally as to the significance and meaning of the words hereditary, "familial" and congenital in the context of modern genetics. She pointed out the practical importance of taking into account the family history; how it could help in early diagnosis and preventive treatment. Much of her criticism of earlier and contemporary studies was based on the statistical biases inherent in the methods of selection of proband and control series. No one better appreciated the difficulties of obtaining adequate controls for studies of inheritance in cancer than Dr. Macklin. Her invitations to speak at various national and international symposia on the etiological and statistical aspects of cancer attested to the

extent to which she was regarded as a foremost authority in this field.

Cancer of the gastrointestinal tract, particularly the stomach and large intestine, interested Dr. Macklin for a considerable time. Her conclusions were based on detailed genetic study of the families of over 300 patients, about half with gastric cancer and half with cancer of the large intestine. Her summarized conclusions illustrate her method of approach as well as her results and are quoted below for this reason.

"Gastric cancer was found significantly more often in the relatives of index cases with gastric cancer than in the general population, but cancer of the large intestine was not. Similarly, cancer of the large intestine was found significantly more often in relatives of index cases with cancer of the large intestine than in the general population, but gastric cancer was not. This indicated that both types of cancer had specific factors for induction that did not influence the development of the other type. Husbands and wives were not affected with gastric cancer more than would be expected on the basis of random distribution. Parent and child, and two sibs were affected, if one showed the disease, with significantly greater frequency than would be expected on the basis of random distribution. These facts indicate that the basis for the increased frequency probably lies in the genetic similarity between the members of the affected pairs, rather than in the environmental similarity. Biased ascertainment cannot be advanced for this familial similarity because the same relationships hold for families in which the index case was not chosen because of gastric cancer as in those families in which the index case had gastric cancer. No simple genetic pattern of inheritance exists, particularly in families with gastric cancer or families with cancer of the large intestine, in which there is no multiple polyposis, so that the genetic basis for both cancer of the stomach and large intestine is very probably polygenic. This study did not show any common environmental factor in the history of patients."[6]

The practical therapeutic aspects of such studies as the one described above were stressed time and time again. Recognition of the fact that gastrointestinal cancers are expected more often in close relatives of patients should enable the alert physician to find these tumors in persons in whom as yet no symptoms have appeared but who have had close relatives with the disease.

Studies of carcinoma of the uterus and breast occupied much of Dr. Macklin's time in the last decade of her life. The fact that these conditions were virtually restricted to one sex presented a further challenge to find suitable controls. The statistical pitfalls in such unisexual studies were many. As a result several previous studies contained serious statistical biases and errors. Dr. Macklin's research showed that cervical carcinoma and carcinoma of the fundus of the uterus are distinct entities from the genetic viewpoint. Cervical carcinoma occurs with undue frequency among married women who have begun their childbearing at an early age and keep producing children as late or later than the average woman. Consequently they have many more months of pregnancy in their histories than does the average woman. The findings suggest that parity is not as important a factor as early childbearing. If cervical carcinoma does have a genetic basis the physiological experiences of reproduction seem to have more significance than do the genetic factors.

Carcinoma of the fundus of the uterus can be shown more clearly to have a genetic basis. It is apparently allied to mammary carcinoma because the relatives of patients with carcinoma of the fundus of the uterus have mammary carcinoma much more frequently than cancers of other organs (if they have cancer at all).[7]

Several large scale genetic studies of cancer of the breast in women have been attempted in recent years, sometimes with apparently contradictory results and controversial conclusions. It is probably true to say that the stimulus for some of these was Dr. Macklin's findings and publications on breast cancer in the late 1940's and 1950's. Again her principal findings are best described in her own words which point out the degree of care used in the collection of data and dealing with statistical difficulties.

"Grandmothers, aunts and sisters of women with breast cancer have had breast cancer with a frequency which is significantly greater than that of women in a similar age range either in the general population or in two sets of selected control samples. This excess cannot be entirely environmental in origin since it is found almost to the same extent in both paternal and maternal grandmothers and aunts. It cannot be attributed to biased selection or to chance distribution of the trait through the population since the excess is significantly greater than can be accounted for by either of the above factors. Better recall by women with breast cancer, whose relatives are similarly affected, has not bearing on this excess since the entire family of both control and breast cancer samples was thoroughly investigated. The ratio of observed-to-expected numbers of breast cancers is higher in unmarried than in married aunts and sisters. The fact that the presumably genetic factor responsible for the excess of breast

cancer is enhanced to the greatest degree in childless women shows the interaction of genetic and intrinsic factors."[8]

This essay has attempted to illustrate, in condensed form, some of the contribution of one scientist to the advancement of knowledge in medical genetics. Most of this contribution was made in the second quarter of this century—a critical period in the history of medical genetics. Dr. Macklin's influence this period as a "pioneer" is succinctly stated in the opening quotation and further developed in the body of this paper. More difficult to assess than her research contributions, addresses before medical societies and publication, is her influence as a teacher.

Perhaps the greatest paradox in Madge Macklin's academic career was that she never taught a formal course in medical genetics during her 23 years on the Faculty of Medicine at the University of Western Ontario. No such course was on the curriculum. Yet no one in North America was more insistent than she that such a course should be introduced. Her formal academic training was in the areas of embryology and histology. At the University of Western Ontario she taught embryology to first year medical students and assisted her husband in the histology course. Her former students remember her as an exceptionally gifted teacher. She is also remembered by former students as an open and approachable person interested in their problems and always willing to help.

It is not the purpose of this essay to delve into the environmental stresses and difficulties under which the subject of this essay worked. But it would be negligent to fail to mention several facets which seem of significance and which place the research contributions of Dr. Macklin in a position of even greater prominence than might otherwise have been the case. First, Dr. Macklin worked intensely as a research worker at a time when the significance of research as a vital part of the Medical School faculty member's activities was just beginning to be realized. Furthermore, her field of research interest was only indirectly relevant to the subjects which she taught. Secondly, it should be realized that women in the academic community—particularly in the academic medical fraternity were not kindly regarded in those earlier days. This fact, coupled with certain traits in her personality, particularly her outspokenness, made almost inevitable the clashes of temperament and outlook which occurred and involved some of her less open minded colleagues and academic superiors. These unfortunate human circumstances seriously affected her working conditions, her research support and her advancement in the Faculty.

On reading a selection of the published papers of Dr. Macklin one is struck by a common thread which seems to run through them all and is almost certainly an indication of at least part of her philosophy of life. Her writings are consistent examples of clear presentation of data and evidence followed by logical argument from these data. All this is tempered by the right amount of skepticism in accepting the prevailing opinion or current hypothesis. These, surely, are marks of the truly scientific mind.

But she was also a missionary—and once convinced of the soundness of her belief on a certain topic she was out to convert the unbelievers if this would result in changes and improvements in medicine in particular, but also for society in general. She had a good deal of the utopian in her and therefore could not accept the status quo in many fields close to her interests. She flourished in a period when many medical men were somewhat more biased against a genetical explanation of disease than we find today. Often her achievement lay in breaking down age old prejudices and educating medical colleagues simply by the force of her data, the logic of her arguments and the strength of her personality.

There can be no doubt that she was also a very idealistic visionary as this last extract shows (written in 1938):

"Today I believe that there is only one medical school on the North American Continent that has a compulsory separate course in medical genetics. I prophesize that 25 years from now *all* first class medical schools will have a department of medical genetics and that medical students will have to be trained in the fundamentals of genetics in their premedical work and in the applications of the science to medicine in their clinical work. I believe that institutes for the study of human genetics will be founded in connection with the larger medical schools and that just as the hospital treats the patient who is ill, the medical genetic institute will investigate the relatives of those who have inherited disease for early symptoms and for departures from the normal that may be the forerunners of the actual disease. Who knows what we may find in the way of a cure when we get the diseases before they have irreparably spoiled the structures and function of the organs?"

Her prophecies for a quarter century hence have not been fulfilled to the extent she would have wished—but the trend is inescapably there and who can assess just how much she affected it?

PUBLICATIONS OF DR. MADGE T. MACKLIN QUOTED IN THIS PAPER

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2. Medical Genetics. An Essential Part of the Medical Curriculum from the Standpoint of Prevention. J. Ass. Am. Med. Coll. 8: 291, 1933.
3. The Teaching of Inheritance of Disease to Medical Students. A Proposed Course in Medical Genetics. An. Int. Med. 6: 1335, 1933.
4. "Medical Genetics". A Necessity in the Up-to-date Medical Curriculum. J. Hered. 23: 485, 1932.
5. The Need of a Course in Medical Genetics in the Medical Curriculum. A pivotal Point in the Eugenic Programme. Edinburgh Med. J. 40: 20, 1933.
6. Inheritance of Cancer of the Stomach and Large Intestine in Man. J. Nat. Cancer Inst. 24: 551, 1960.
7. Etiological Factors in Carcinoma of the Uterus, Especially Cervix. J. Intl. Coll. Surg. 21: 365, 1954.
8. Comparison of Number of Breast Cancer Deaths Observed in Relatives of Breast Cancer Patients, and the Number Expected on the Basis of Mortality Rates. J. Nat. Can. Inst. 22: 927, 1959.
9. The Inheritance of Disease and its Relation to the Practice of Medicine. Med. Woman's J. 45: 89, 1938.

Quotable Quotes

There is no force greater than a vested interest disguised as a moral principle.

WAYS OF EXPRESSING SCIENTIFIC WORK

If natural scientists altogether ceased sounding as if they had been commissioned by the Manufacturer of Nature to compose a few paragraphs of His Handbook and took to writing in a candid, uncensored autobiographical way so that most of us could find out what they were getting at, didactic dead-pan would fall into discredit and some of the worst fractures within our culture would gradually mend.

re STATISTICIANS

quote from a letter in C.M.A.J. 88: 862 by Dr. S. C. Robinson of Dalhousie (O.B.dept.)
"I can only hope that the enthusiastic efforts of all doctors to diagnose cervical cancer early will result in mortality from this cause becoming unknown.
Then the statisticians will be able to draw their graphs down to the abscissa and depart."

re PLACEBOS

"An interesting hazard for the expt'l subject is that by reacting to a placebo, he may arouse the hostility of his physician or nurse. This is an ironic twist because his very response expresses as eloquently as possible his confidence in those who care for him."

from H. J. Eysenik, quoted by Arthur Koestler re. opposition to E.S.P. research
"Scientists, especially when the leave the particular field in which they have specialized are just as ordinary, pig-headed and unreasonable as anyone else and their unusually high intelligence only makes their prejudices all the more dangerous.

UNIVERSITY EDUCATION

"So far as the mere imparting of information is concerned no university has had any justification for existence since the popularization of printing in the 15th Century." *(A. N. Whitehead)*

Brit. J. of Prev. Med. 15: 177, 1961
from an article on prevalence of neurosis in women, commenting on finding that excessive frequency of neurosis among females does not disappear after the menopause.

"It may well be that the female reproductive system is not so grave a psychological hazard as are the attitudes and expectations imposed by our society on "those who possess it."

Cryoprecipitate and the Hemophiliac

Dr. Bruce Barton and
Martin J. Inwood '69'

CRYOPRECIPITATE PROGRAM

During the 1966-1967 session Meds '69' donated blood specifically for the production of cryoprecipitate by the London Depot, Canadian Red Cross Blood Transfusion Service.

As it is well documented that the level of Factor 8, (Anti hemophilic Globulin), is at its peak in young healthy males it was felt that the medical student population would be an ideal group for such a donation program.

Subsequently the Hippocratic Society adopted a resolution suggesting that all four years donate during the 1967-1968 session specifically for the production of this concentrate, and that the class which donated the largest percentage of units would receive a tangible award presented by the London Auxiliary of the Ontario Chapter, Canadian Hemophilia Society. The details of this project will have already been arranged by the various class representatives by the time this journal reaches you.

It goes without saying that the gift of a blood donation is one of the greatest acts of charity available to us now and that I know the school will support the Hippocratic Council in this endeavour to the utmost. We are all aware of the tremendous advantages of blood transfusion therapy and this could not be truer in the care of hemophiliacs who literally owe their daily existence to the availability of blood products, particularly cryoprecipitate.

The following message from Dr. B. Barton will I hope introduce you to the therapeutic necessity of having ample supplies of this product available and also re-emphasize where we can be of particular service to our fellowman. Martin J. Inwood

*Medical Director, London Depot
Canadian Red Cross
Blood Transfusion Service

CRYOPRECIPITATE

While it has been possible for some years to control or modify soft tissue or intra-articular bleeding in hemophiliacs by the use of fresh blood, fresh plasma or fresh-frozen plasma, it has not been possible to prepare such patients for surgical procedures until recently. In order to render a hemophiliac safe for a major surgical undertaking, (and this may include dental extraction), the Factor VIII level should be raised to 30% or more of normal and kept there for a sufficient time after operation to ensure haemostasis. Using such products as fresh blood, fresh-frozen plasma and plasma, volume considerations are such that the danger of circulatory overload made the undertaking prohibitive. Especially is this true in children.

Now there is available a number of products which, by virtue of their high Factor VIII level contained in a small volume, are useful in achieving excellent haemostasis with almost no danger of great increases in blood volume. Such products are Factor VIII Concentrate (Connaught Laboratories): Cryoprecipitate; Bovine and Procine Factor VIII concentrates; Glycine Precipitated Factor VIII.

The product which stands out clearly as the one of choice is Cryoprecipitate. This is made readily from blood freshly drawn into ACD double packs. Other requirements for the preparation of Cryoprecipitate are a quick-freeze mixture of dry ice and alcohol. a refrigerated centrifuge and, for storage, a deep freeze which achieves a temperature below -30° centigrade. Theoretically then, this product can be made by many hospital blood banks. Most of the preparation in Canada is undertaken by the Canadian Red Cross Transfusion Service. The most vital link in the chain of preparation is the blood donor and it is the interest and dedication of donors who will give rather carefully scheduled

donations which allow the preparation of a product of maximum potency.

In order to retain its potency (and this may be achieved for periods in excess of twelve months) cryoprecipitate must be kept frozen. This is a great disadvantage when considering shipment over long distances. The other products mentioned previously come in the form of dry powder and, hence, they have the advantage of being more readily shipped, although some of them require refrigeration at 4°C. Availability and relative ease of preparation, however, make cryoprecipitate the current favourite.

The physical half-life of Factor VIII is somewhere in the vicinity of 6 to 8 hours and the biological half-life is about 13 hours. These figures are fairly standard for most Factor VIII preparations. Hence, any product which is being given for control of haemostasis in the Factor VIII deficient subject must be given every 6 to 12 hours. The frequency of injection will depend on the severity of the bleeding, or on the seriousness of the operative interference.

Interested donors are really the crucial commodity in having adequate supplies of cryoprecipitate. If one could develop a panel of donors with high Factor VIII levels and deal with them weekly in a plasmapheresis programme the ideal could be achieved. We don't have the physical set-up for this type of undertaking at the moment but we are able to handle donors of the ordinary variety in a scheduled fashion. In this connection physicians, hemophiliac societies, and perhaps many paramedical personnel have a very vital role to play.

ODDS AND ENDS

A pair of substantial mammary glands has the advantage over the two hemispheres of the most learned professor's brain in the art of compounding a nutritious fluid for infants. *(Oliver W. Holmes)*

All scientists know of colleagues whose minds are so equipped with the means of refutation that no new idea has the temerity to seek admittance. *(P. B. Medawar)*

I have always been helplessly captivated by research organizations. They can prove almost any proposition you care to present to them. That two and two equal four for instance. Or that two and two don't equal four. Or, if pressed hard that there are no such figures.

In cases of abnormal sex behaviour, you never get a true verdict from a jury because half of them cannot believe such things happen and the other half indulge in such practises. *(British Judge)*

Every truth passes through three stages before it is recognized. In the first it is ridiculed, in the second it is opposed, in the third it is regarded as self evident. *(Schopenauer)*

For the male, old age is a state in which the mind makes appointments which the body cannot keep.

Student Research

The purpose of this particular section of the Journal *is multifold. First, and primarily, it is hoped that it will provide a useful interchange of ideas, and in particular, supply the students with a much needed source of information as to the nature of summer research projects available to them. Secondly, this column should, indirectly, give an indication of some of the areas of research currently being undertaken at Western, since these projects are all under faculty supervision. In a sense, however, we hope to turn the title into a misnomer since it is planned to include not only actual research projects, but also other interesting summer employment experiences. All student contributions will be welcomed, and those interested in submitting a brief abstract of their summer work for publication should contact the Journal.* *M.L.T.*

A Clinical Study of Drugs in the Treatment of Parkinson's Disease

Parkinson's disease (paralysis agitans) is described as a chronic, progressive degenerative disease of the basal ganglia, usually onsetting in the later decades of life. It is characterized by the triad of symptoms of tremor, rigidity, and akinesia. It has been said that in the classification of the disorder, ". . . No purpose is served through the continuance of the artificial designation 'arteriosclerotic' and 'idiopathic' since it is universally recognized that Parkinson's disease at any age is idiopathic."[1] The condition can be produced by a number of different pathological states involving the corpus striatum or substantia nigra, and a Parkinson-like syndrome is one of the undesirable side effects of the Phenothiazine tranquilizers.

In Parkinson's disease the problem for the physician is not in the diagnosis, except in the unusual or early case, as the symptoms are, so to speak, on the surface. The first symptom to manifest itself in the majority of cases is that of tremor, characteristically of the non-intention type (i.e. ceasing upon voluntary movement of the affected limb), which is rhythmic and at a frequency of three to five per second. The most serious manifestation of the disorder, however, is not the tremor, but the progressive rigidity which develops.

While in certain selected cases surgery has benefited patients with this disorder, by and large, the majority are treated with drug therapy. Two points must be established at the onset of any discussion of the anti-Parkinson drugs: (1) They do not produce a cure, but merely control the symptoms in some patients; and (2) they are used on a purely empirical basis. All the anti-Parkinson drugs currently in use are anti-cholinergics. Thus, they are limited by atrophine-like side effects of both a central (delirium, confusion, flushing, dizziness, and visual hallucinations) and peripheral (constipation, dry mouth, etc.) nature.

One of the major problems in introducing newer and more effective drugs to treat Parkinson's disease has been that of the clinical evaluation of these agents. Such assessments have been based on the subjective evaluation of improvement in symptoms by physician, nursing staff, and the patient himself. Another problem in this area is that since many of the side effects produced by these drugs are of a psychological nature, it is difficult to evaluate how much of this is drug-induced behavior. In other words, it is convenient to interpret any slight aberration in behavior as being drug-induced. This is particularly a problem with

older patients who may be affected by senile dementia as well. Thus, our project consisted of an attempt to evaluate the effectiveness of some established anti-Parkinson drugs in a more quantitative manner, with the hope that this would prove useful in the study of more recently introduced agents.

The approach used was to record hand tremor on a Grass (Model 7) polygraph using an instrument called an "accelerometer" which can detect linear acceleration (i.e. in one plane). In addition, we were interested in studying the effects of these drugs on another involuntary muscular movement. Thus, we recorded the rapid eye movements (REM's) which occur during sleep and are thought to be associated with the dreaming state. These are are rapid, jerky, binocular movements of the eyes which last for 0.1-0.2 seconds and occure in clusters for 3-50 minutes several times during a night's sleep.

The patients used in this study were all from the geriatrics wards of the D.V.A. Westmnister Hospital. The actual procedure consisted of attaching the accelerometer to a finger (to pick up hand tremor), and placing electrodes just lateral to the outer canthi (to detect REM's). The patient was allowed to sleep throughout the night and recordings were taken for a four hour period beginning at 3:00 a.m. After conducting a series of control trials (i.e. without drugs), six patients were selected who were thought to be most suitable for the purposes of our study. They were all placed on an initial low dose of Procyclidine HCl (Kemadrin), 2.5 mg. t.i.d. While we had intended to establish a dose-response curve of at least three dose levels for each patient, this was possible for only one patient, as the others had to be taken off the drug due to aberrations in behavior which the nursing staff claimed to have observed.

While our preliminary results are not conclusive, further refinements may yet prove this to be a useful technique to quantitate the action of anti-Parkinson drugs.

Martin L. Throne, Meds '69'
Supervisor: Dr. J. M. Parker
Professor of Pharmacology.

[1]Doshay, Lewis J., Parkinson's Disease and Parkinson Syndromes. Current Diagnosis. Conn F. Saunders, Philadelphia, 1966.

Survey of Chronic Obstructive Pulmonary Disease

My summer was spent working for the Department of Medicine here at the University, more specifically for Dr. Lefcoe, a pulmonary specialist and Associate Professor in the Department of Medicine who, besides having clinical teaching responsibility, is also engaged in research in the pulmonary field.

My particular project was a continuation of work started about four years ago, during the summers only, in which Dr. Lefcoe's summer students had been surveying various occupational groups for evidence of chronic obstructive pulmonary disease. Up until this summer all of the London area doctors had been surveyed (as controls), the farmers in London Township, and firemen in the London and Kitchener-Waterloo areas.

It was decided that I should survey the petro-chemical workers in Sarnia, partly because of the cloud of uncertainty hanging over Sarnia concerning air polution and partly because they presented a good occupational group at risk from respiratory irritants. Consequently, with the fullest co-operation of of the Medical Officers at Imperial Oil, Dow Chemical and Polymer Corporation, as well as permission at the top level, we were allowed to survey these men.

From a parent population of 1,387 maintenance workers, 384 were randomly chosen by our computer here at Western. Maintenance workers in the petro-chemical industry are pipe-fitters, mechanics, electricians, etc., and it was thought that these men would have the most general exposure to any chemical irritant since they are not localized to one area of the plant but rather are called to various areas to correct leaks, take-down and set-up equipment, and so on.

With the able assistance of Tom Murray, who is a Grade 12 student at Central High in London, I was successful in interviewing 378 of the predicted 384 workers. Of the six missed, one refused and five were ill with long term illness apparently unrelated to respiratory irritants.

The interview consisted of a questionnaire (the same one used on Doctors, Firemen and Farmers) concerning cough, phlegm, shortness of breath, past chest illness, allergies, etc. The chest was then auscultated at the apices,

front and back, and the presence or absence of rhonchi was noted. Finally, the worker was requested to forcefully expire about three times into a Sted-Wells Spirometer and the Vital Capacity, Forced Expiratory Flow in 1 second, and Maximal Mid-Expiratory Flow were calculated. When these actual values are compared to the "predicted" values calculated from knowledge of age, height and weight of the patient, it is possible to gain useful information about the patient's respiratory health.

I should add that Dr. Lefcoe was not interested in hanging any particular diagnosis on these people, but rather in seeing whether or not the various parameters measured are influenced by occupation after controlling for age, smoking habits, length of time in occupation, number of overexposures to respiratory irritants, place of residence, socio-economic group, etc., ad infinitum.

The final results, of course, are not yet available, (research is slow). However, the computer centre is busy trying to fathom out the myriad of information which has been gathered during these four summers, and Dr. Lefcoe is trying to make it into a meaningful whole for presentation sometime in October.

I also surveyed 44 past and present employees at Allied Chemical in Sarnia who work with a known respiratory irritant, toluene dilisocyanate, and this may serve as a convenient jumping off place for future investigation.

Douglas Holder, Meds '69'
Supervisor: Dr. N. Lefcoe
Associate Professor of Medicine

Studies on the Effect of Allopurinol on Platelet Aggregation

The predisposing causes of gout are related to either the increased production, or to the decreased renal clearance, of uric acid. In the past the only treatments were anti-inflammatory agents and uricosuric drugs. Recently the use of allopurinol has brought a new approach to this disease.

Allopurinol and its metabolic product, alloxanthine ,act by competitively inhibiting xanthine oxidase. Thus, the formation of uric acid from hypoxanthine and xanthine is decreased. The plasma levels of hypoxanthine and xanthine still remain low because of their high rate of renal clearance and total purine end product excretion is reduced through the reutilization of accumulating byproducts. The therapeutic effect is achieved by reducing the uric acid concentration in plasma and thus urate deposition in soft tissues.

As the pathway of purine catabolism is affected, there is a possibility of accumulation of purine-containing precursors.

Adenosine, derived from the metabolism of adenosine tri-, di- and mono-phosphate, also is degraded to xanthine and thus it is conceivable that these substances might be affected by a xanthine oxidase inhibitor such as allopurinol.

Previous investigators have established that ADP, added to platelet-rich plasma *in vitro,* triggers platelet aggregation. On the other hand, adenosine and, to a much lesser extent, AMP, inhibits this reaction. Adenosine, infused intravenously, also inhibits the formation of arterial thrombi. Since platelet aggregation is related both to normal haemostasis and to the formation of pathological thrombi, our project was an attempt to determine whether or not allopurinol would influence the normal response of platelets in any way.

Our methods of investigation involved the adherence of platelets to glass beads and the study of platelet aggregation, initiated by the addition of ADP to platelet-rich plasma, by measuring optical density changes with a device called an "aggregometer".

To date, the results lead us to suspect that platelet aggregation is changed in rats fed a diet containing allopurinol. As yet no definite conclusions can be drawn, but further investigation in the field is indicated by our initial observations.

Donald Miskew, '69'; Bill Clark, '70'
Supervisor: Dr. R. B. Philip
Associate Professor of Pharmacology

Malignant Cells in Peripheral Blood

During recent years considerable attention has been given to the demonstration of malignant cells in peripheral blood. Originally, it was thought that the presence of such cells would be of considerable value in prognosis of a malignancy. However, both biological and technical problems have arisen which have not made such a prognosis valid in the majority of malignant disease states.

The object of the present investigation was to design a method which combined technical ease with increased morphological resolution and removal of extraneous cellular elements from the peripheral blood samples. A cellulose acetate filter system was selected with subsequent dissolving of the filter matrix and staining of the resultant cells.

Experiments were designed to test the efficiency of various filters in removing extraneous peripheral blood cells, different solvents for filter dissolution and the estimation of recovery rates, using known numbers of tumor cells obtained from tissue culture. Future experiments will be carried out in order to ascertain whether or not such a method is useful for concentrating L.E. cells, leukemic cells and other abnormal hemopoietic components. Certainly such a technique appears to show great promise for such applications.

Martin J. Inwood, '69'
Supervisor: Dr. D. Meltzer,
Dept. Haematology,
St. Joseph's Hospital.

This space has been reserved for the flood of 'Letters to the Editor' which are expected for the next issue.

Letters of praise and adoration for the Editorial Staff will be particularly welcome.

The Prize Winning Papers for the 1966-1967 Session

The Rowntree Prizes in Medical History

The Editor regrets that the following papers are in a synopsis form but space did not allow for the inclusion of the papers in their entirety.

First Prize

Wilhelm Conrad Roentgen and The New Ray

W. L. Helmer '70'

"In recognition of exceptional services rendered by him in the discovery of the special rays—Roentgen Rays— X-Rays—the Nobel prize in Physics is awarded to Doctor Wilhelm Conrad Roentgen." These words were spoken in Stockholm, Sweden, December 10, 1910 on the occasion of the first presentation of Nobel Prizes. The Nobel prize was one of the few honors which Dr. Roentgen accepted.

Wilhelm Roentgen was born March 27, 1845 in Lennep, Germany. From his father, a Prussian farmer, and his mother, young Wilhelm learned industry, truth and modesty.

As a youth Wilhelm was carefree and active, spending hours in the countryside. After grade school he was enrolled in an Agricultural school but his participation in a prank resulted in his being ousted.

Barred from other German schools he gained admission to the Polytechnical Institute at Zurich, Switzerland. Under Kundt, his personal tutor, an interest in science bloomed and he received his doctorate in physics at the age of twenty-four.

Kundt and Roentgen moved to the University of Strassburg where Roentgen became very popular with the students. At the age of thirty, he became professor of theoretical physics. At Strassburg Dr. Roentgen met and married the woman who would share his many experiences.

In 1888 Dr. Roentgen, Professor of experimental physics moved to Wurzburg. He was a tall, slender, loose-limbed man; possessor of tremendour enthusiasm and energy. He felt about experimentation:

"If the result does not agree with reality it must necessarily be wrong."

"Research work requires great mental effort, great amount of time, keenness of observation and critical judgement."

On teaching he asserted:

"Let each student find his own way out of difficulty."

The Discovery:

Dr. Roentgen's laboratory was quite simple with much of the apparatus homemade. There stood, in the corner, a "sentry box" into which he could enter and be completely shut-off from light. An opening at one end allowed access to the radiation of his Crooke's tube. Here follows a description of his discovery:

"I was passing a current through my black-shielded Crooke's tube when I noticed a peculiar glow from a sheet of barium platinocyanide paper as though light had

struck it. I assumed the rays were coming from the tube and I investigated; in a few moments there was no doubt. Here was a new kind of invisible light." The date was November 8, 1895.

On December 28, Dr. Roentgen delivered his paper "Concerning a New Ray" to the Physio-Medical Society in Wurzburg. At this meeting learned men received their first glimpse of the living skeleton. In Germany, Roentgen's discovery created considerable excitement; he was decorated by the Emperor; the students of Wurzburg honored him with a torchlight parade.

Abroad, in England, it is interesting to see the change in attitude toward the New Ray.

From 1896 volume of Lancet . . .

"Many will be skeptical as to whether it is possible to see an object which is situated behind a door. Yet this has virtually been accomplished, if we are to believe an announcement from Vienna this week (Jan. 11).

"In how many ways such a discovery might, if it be true, be turned to the highest account we cannot pretend to say."

Dr. Roentgen placed his discovery in the hands of other scientists and technicians and turned to other experiments. His highest reward was the fact that he was permitted to accomplish something valuable to Science. Roentgen declined many flattering positions, finally accepting the chair of Physics at Munich University. In Munich, Dr. Roentgen lived simply until in 1919 he resigned his position and retired to the suburbs. The same year his wife became ill and with her death, loneliness descended upon Dr. Roentgen.

On February 10, 1923, Professor Roentgen, seventy-eight years of age, departed this life. Monuments of stone and bronze tell of his worth to the world he loved, but his greatest memorials are those of the people whose sufferings have been made lighter by the rays he discovered—the Roentgen Rays.

Seven references given.

Second Prize

The History of Rabies

Stephen R. Pearl '70'

Rabies is always lethal in man. It is an acute infectious disease of the central nervous system caused by a virus. Canine rabies is an example of aberrant parasitism where the natural capacity of the virus to produce encephalitis becomes the means by which it can adapt to the host, that is, by increasing the tendency of its host to bite. General symptoms in the human are fever, malaise, anorexia and nausea. The outstanding symptom of this disease is hydrophobia. In the event fluid comes in contact with the fauces, it is expelled with considerable violence and painful spasmodic contractions of the muscles of deglutition.

Donna Darlene Feathers, age 4, succumbed January 13th, 1967 to this disease. Here was the first such death in Canada, after normal post-exposure vaccination, in the past 23 years. That a single death from rabies qualified for front page space in national newspapers denotes the advancement of man in his effort to control this virus. That Donna's death carved much fear in the public bespeaks the special focus in the public's imagination that rabies has earned since history first recorded its occurrence.

Since antiquity the period of summer, reckoned by the helical rising of the dog star, Sirus, has been referred to as "dog days", when dogs are supposed to be especially liable to spells of madness. Rabies in dogs and domestic animals was described by Democritus in 500 B.C. Aristotle, in 322 B.C. referred to rabies in the dog and its transmission to other animals when bitten. Ovid (107 B.C.), Virgil (70 B.C.), and Plutarch all made mention of the disease in their works. The Romans used the word square:

ROTAS
OPERA
TENET
AREPO
SATOR

as a long prized charm against mad dogs in Europe and Asia Minor. The square can be built up from PATERNOSTER, crossed on itself, strongly suggesting that it was a cryptic sign of early Christians.

Europe experienced rabies epidemics in wolves as early as 1271. Epizootics were not infrequent in Europe throughout the Middle Ages, especially following in the wake of human plague. The first recorded epidemic among domestic dogs in urban centres occurred in Italy in 1708. It was not until one hundred years later that experiments by Zinke (1804) and Gruner showed that rabies was infectious. Raymond demonstrated that the disease could be transmitted to rabbits in series; Krugelstein postulated that the causative agent must reside chiefly in the central nervous system. As a consequence of these findings, European health and police authorities instituted quarantine during epizootics, the licensing of owned dogs, and the destruction of stray dogs. These control measures dramatically eradicated the disease in the community.

The most important phase of study came in what might be called the Pasteur period. Historians note that Pasteur sought to conquer rabies because of its hold on public opinion rather than its importance as a cause of death. The fear the public had of rabies led Pasteur to this disease.

Pasteur et al. (1884) conducted experiments at Villeneuve l'Etang near St. Cloud. Pasteur started a study of prophylactic measures when he noted that some dogs, after the first symptoms of rabies had developed, underwent a spontaneous recovery. If these dogs were given injections of the virus, no symptoms developed. This discovery lead to experiments by which he showed that rabies virus is attenuated for dog, rabbit and guinea-pig by passage through a series of monkies. Thus, in 1884 Pasteur was able to announce the successful results of protective inoculation of dogs.

Pasteur progressed from his successes in pre-exposure inoculation to the practical problem of post-exposure vaccination, whereby he hoped to save the lives of those people bitten by rabid animals. In his approach to the disease he used to advantage a unique quality of rabies, in that the incubation period in man is usually long enough for vaccines to induce antibodies in the blood before the disease becomes clinically manifest. Pasteur was able to demonstrate a difference between a "fixed" strain of the virus, and the wild type. He discovered that the virus maintained in rabbits lost its capacity to infect dogs when given subcutaneously. In principle Pasteur was the first to modify the pathogenicity of a virus for a natural host by serial intracerebral passage in another species of host. He demonstrated that the virus, after continued rabbit passage and drying, was sufficiently weakened to be used as a vaccine.

Pasteur's first experience with human rabies occurred on July 4th, 1855, when Joseph Meister—on his doctor's advice—presented himself to Pasteur with a plea for treatment. Pasteur, greatly distressed by the misfortune of the family, undertook a program of vaccination and saved the child's life. His second patient, Jean Baptiste Jupille, faired as well, but Pasteur's third case—Louise Pelletier—died after vaccine treatment. Her head wounds from a dog's attack were severe, and she did not follow the full course of treatment as prescribed by Pasteur. There was a rebound of public opinion: the press claimed that Pasteur's vaccine, and not rabies, caused the girl's death. However, the vaccine's continuing success returned Pasteur to press favour. The Institut Pasteur by 1935 had inoculated 51,057 patients with only 151 deaths.

Pasteur's method of prophylaxis has, with modification, lasted 80 years to the present time. Roux (1887) introduced the use of glycerol as a preservative for maintaining the viability of the virus in infected tissue. Negri (1903) described the occurrence of characteristic intracytoplasmic inclusion bodies in the nerve cells of human beings and animals previously proven to have been infected with rabies. Negri's discovery means that animals destroyed before the appearance of characteristic rabies symptoms, can be quickly examined and a diagnosis made. However, absence of Negri bodies does not assure absence of rabies—in these cases animal passage is carried out. Semple (1919) showed that a phenol-treated tissue virus suspension could be rendered noninfectious, and still retain its immunizing capacity.

Encephalitis and myelitis, presumably associated with the concomitant introduction into the body of heterologous brain substance, are serious and rather frequent sequelae of vaccination for rabies. Stuart and Krikorian (1928) showed that brain tissue functions as an organ-specific antigen in producing neurologic reactions. Such serious side-effects indicate that the vaccine should not be given unless there is good evidence of exposure to rabies.

The standard killed virus vaccine for post-exposure treatment is the Semple vaccine given in 14 daily injections into the subcutaneous tissue of the abdominal wall. Peck et al. (1955) introduced a second type of vaccine: the duck-embryo vaccine is a tissue virus vaccine prepared from duck embryos injected with Pasteur brain-fixed virus. The virus is inactivated by beta-

propiolactone. Duck-embryo vaccine is the preferred immunizing agent for the pre- exposure immunization.

A second step in the normal post-exposure treatment has been added in serious cases: bites to the head, which usually have the shortest incubation period, or in cases where the attacking animal was a wolf, jackal, bat or fox. Sabeti and colleagues (1949) of the Pasteur Institute of Teheran, used immune serum in addition to the regular vaccination program. Because of a possible antagonism between serum and vaccine, a standard therapy was evolved whereby the immune serum was first administered to the patient, and within 24 hours the regular vaccinations commenced. The immune serum, (usually of equine origin), is used in addition to vaccination in order to provide an early high titre of antibody before the patient has responded to the antigenic stimulus of the vaccine. Recently a service was started in Toronto whereby the titration level of rabies antibody can be determined. This advance should aid in assessing a patient's need for re-vaccination to maintain the optimal level of antibody.

Rabies, in Canada, has not been a potent killer. Between 1926 and 1962 a total of 18 human deaths attributed to rabies were recorded in Canada. With the paucity of cases, and the public faith in the perfected rabies vaccine treatment, Donna Feather's death takes on new stature. Reports of Donna's death do not mention why she should have died after normal post-exposure treatment. However, there are a very small percentage of people who die of rabies in spite of all precautions. One might speculate that the normal immune reaction of the body to the vaccine has failed to materialize in these select cases. Thus, the patient's immune mechanism, and not the vaccine, may be at fault.

Donna's unfortunate death should not serve to create anxiety in the public, but rather, by its contrast to the thousands of successful vaccinations administered in Canada, instill confidence that rabies can be successfully prevented.

Ten references given.

Third Prize

"The Role of the Arabs in the History of Medicine"

Aziz Chaudry '70'

The Arabian period constitutes a most romantic chapter in the history of medicine. The late 6th and early 7th Century was marked by an excess of idol worship in Arabia. With the advent of Prophet Mohammed, who preached that there is but one God and that idol worship was not tolerated, the warring tribes of Arabia, rapidly became united.

Prophet Mohammed admired and urged this by saying "and the ink of the scholar is holier than the blood of the martyr". The contact of the Arab with Greek culture in Syria awoke them in eager emulation. Great scholars arose, who have left their mark on every field of learning, particularly medicine. Forbidden by religion to dissect human cadavers, Muslim anatomy had to content itself with Galen and the study of wounded men. Arabian medicine was weakest in surgery, strongest in medicaments and therapy. To the ancient pharmacopeia, the Arabs added many new potions and drugs.

The Muslims established the first apothecary shops and dispensaries, founded the first medieval School of Pharmacy and wrote great treatises on Pharmacology. Muslim Physicians were enthusiastic advocates of the bath, especially in fevers and in the form of the steambath. The directions for the treatment of smallpox and measles could scarcely be bettered today. Anesthesia by inhalation was practiced in some surgical operations; Hashish and other drugs were used to induce deep sleep. The most famous hospital in Islam was the Bamaristan founded in 706. In 978, it had a staff of 24 Physicians. There were many famous Arabian Physicians. Uhanna Ibn Masaqayh studied anatomy by dissecting apes; Hunain Ibn Ishak wrote the "Ten Treatises on the Eye", the oldest systematic textbook of ophthalmology, and Ali Ibn Isa wrote the "Manual for Oculists" which was used as a text in Europe until the 18th Century.

It was in Bagdad that Abu Beker Mohammed Al-Razi (844-926), wrote 131 books, half of them on medicine. His work was highly respected and a frequently used medical text in Europe for several centuries. It was one of the nine books that composed the whole library of the Medical Faculty at the University of Paris in 1395.

Islam's greatest and most famous physician was Abu Ali Al-Husein Ibn Sina (980-1037). He has often been referred to as the "Prince of Physicians". Besides being very versed in Philosophy, Mathematics and Chemistry, he studied medicine from a very early age, and subsequently published two gigantic productions: "The Kitabal Shifa", or the "Book of Healing", an 18 volume Encyclopedia, and also the "Qanun Al-Tibb", or the "Canon of Medicine", a gigantic survey of physiology, hygiene, therapy and Pharmacology. This latter book was translated into Latin in the 12th Century and became required reading in the Universities of Montpellier and Louvain until the middle of the 17th Century.

Had Rahzes, the most original member of the Arabian school, been permitted to explore the secrets of the human body using the anatomist knife, he would not have said "If Galen and Aristotle are of one mind on a subject ,then of course their opinion is the right one". This is the tragedy of Arabian medicine but however, this was also shared in medieval times, due to the fact that Christians and Jews also shrank with equal horror from the knife.

9 References given.

1st Prize Will Pharmaceutical Essay - 1967

A Review of Epsilon-Aminocaproic Acid (E.A.C.A.) in the Management of Hemophilia (Factor VIII Deficiency)

Martin J. Inwood '69'

The purpose of this paper is to produce a review of the literature which describes the use of E.A.C.A. in the Management of Classical Hemophilia or Factor VIII Deficiency.

In 1953 Okamoto demonstrated that E.A.C.A. was an inhibitor of the fibrinolytic activity of plasmin. This was subsequently confirmed by many investigators and applied to a large number of medical and surgical conditions.

Bearing in consideration that there are two main theories for the formation of the specific defect or defects in classical Hemophilia and also that many workers have investigated the effectiveness of peanuts as a form of therapy in Hemophilia, the original case report of a hemophiliac being treated using E.A.C.A. was in 1962 by McNichol et al. A large number of reports have been made since that date with the object of producing a definitive answer as to whether E.A.C.A. is of benefit in the prophylaxis or active treatment of Hemophilia. Evaluation of this literature would lead one to suggest that at the time of writing, the main indication for the use of E.A.C.A. in this condition is in the treatment of hematuria and oral hemorrhage. The conclusions made in this article were as follows.

Due to the utmost difficulty of evaluating clinical improvement in the Hemophiliac, and the lack of a very large series, it is apparent that the criteria for the administration of E.A.C.A. to the Hemophiliac is still to be fully established.

However, valid conclusions from past experiences with this drug lead one to offer the following suggestions for its use in the Hemophiliac:

1) To inhibit any intrinsic fibrinolytic action in the blood which either prevents clotting formation or leads to a very friable or easily lysed clot unable to effectively plug the bleeding area.

2) To promote solid clot formation in cavities where fibrinolysis might readily lyse the formed clot.

3) Act as a possible psychological aid in giving confidence to the Hemophiliac during a bleeding crisis.

Up to the time of writing its use in the

Hemophiliac has been most successful for:

1) Reducing the severity of hematuria by inhibiting local urokinase activation of plasminogen.

2) In oral bleeding and extractions by preventing dissolution of the intact clot by salivary activation of fibrinolysins.

The following conditions however, must be or should be fulfilled during E.A.C.A. therapy for the Hemophiliac:

1) An adequate plasma level of E.A.C.A. must be achieved as suggested by many workers and also that the levels be maintained for a long enough period.

2) That supplies of fresh plasma, blood and concentrate be available in the event that E.A.C.A. is not effective within a short period of time.

3) That an attempt be made to keep the level of Factor VIII at 30% in the event of severe injury or radical surgery being performed. This would insure that sufficient clot is formed by the intrinsic coagulation system.

4) Great care must be taken to prevent undue side effects and to adjust the dose in the case of impaired kidney function.

5) Plasma E.A.C.A. levels should be performed at regular intervals to insure that the correct level of plasma E.A.C.A. is attained.

6) Supportive therapy such as splinting, bandaging and physiotherapy should be used in conjunction with E.A.C.A. therapy where indicated.

The advantages of E.A.C.A. therapy if successful to the Hemophiliac could be:

1) The prophylactic use of E.A.C.A. in order to reduce the incidence and severity of spontaneous hemorrhages particularly those of hematuria, hemarthrosis and oral bleeding.

2) To decrease the risk of serum hepatitis and red cell antibody production by the frequent plasma or blood cell transfusions, currently required.

3) Make available a cheaper and easier method of treatment than the current method of blood, plasma and concentrate transfusions.

4) Encourage research into other drugs which could potentiate intrinsic coagulation factors and promote solid clot formation and stability.

5) Reduce the periods of hospitalization which at present interrupt working and school schedules for the Hemophiliac.

The answer to these conclusions regarding E.A.C.A. may be only possible by the investigation of large series of patients in a double blind clinical study so that objective and statistical significant results be obtained. Such large scale investigations in a variety of hemorrhagic situations may also produce a of criteria for the use of E.A.C.A. or its more potent and less toxic analogues.

Sixty-seven references and two tables included.

Book Review Section

Larry Kelly '68' and Mario Castelli '68'

The purpose of this section is to review new books on subjects which are of particular interest to the medical student and also to include information from the Medical Library. While it is acknowledged that full coverage of all new volumes cannot be made it is hoped that this section will aid you in your new book purchases and reading program.

HANDBOOK OF ORTHOPAEDIC SURGERY:
A. F. Shands and R. B. Raney

A well written, extensive book which is extremely well organized with an adequate table of contents and an index well enough cross-referenced that finding information on any subject is easy. This book also contains an excellent bibliography, arranged by topic. The extensive coverage of congenital deformities in the second and third chapters is excellent. A worthwhile book for those interested in general or orthopaedic surgery, and a good reference book for the student or general practitioner although it does lack a complete coverage of the treatment of fractures. 7th edition. C. V. Mosby, St. Louis, 1967. 572 pages. Well illustrated. $12.00.
L.J.K.

THE HUMAN HEART
(A LAYMAN'S GUIDE TO HEART DISEASE):
Brenden Phibbs.

The layman or the beginning student of cardiology will find this to be a very useful paperback. The style is simple and the book is well illustrated; it covers all aspects of heart disease in twenty-six chapters. The use of examples and illustrations makes basic physiological and mechanical concepts of heart function easier to grasp. This is also the book the general physician might read and recommend to his inquisitive patients. The C. V. Mosby Company, St. Louis, 1967. 253 pages. $5.30.

BASIC ENDOCRINOLOGY:
Brown & Barker

An excellent paperback on endocrinology; it is simple in style and easy to read. The authors describe methods of hormone assay and current laboratory research into the endocrine systems including sections on the thymus and pineal body. It lacks clinical examples making the book less useful to the general practitioner but for the medical student it is a good preview; a valuable review for the post-graduate. The book is up to date, well illustrated and worth the price. F. A. Davis Company, Philadelphia, 2nd. edition, 1966. 217 pages. $4.50.

A SYNOPSIS OF RHEUMATIC DISEASES:
D. N. Golding

This short book is a welcome addition to the increasing number of medical synopses. It's "telegraphic" style and complete index makes it a ready reference in this rapidly developing and important subject. The book deals with etiology, diagnosis and management of rheumatic, arthritic and connective tissue disorders of hereditary, acquired and allergic types. There are also sections on joint and bone tumors and local pain syndromes. This book is highly recommended to the general physician and to the medical students. John Wright & Sons Limited, Bristol, 1966. Published by MacMillan of Canada, 192 pages, $5.50.

RESPIRATORY PHYSIOLOGY:
Slonim and Chapin

This timely monograph on respiratory physiology stresses fundamental principles and their clinical implications. The section on acid-base balance is particularly well done as are the chapters on pulmonary function, regulation and blood gas transport. The book

is well illustrated and contains problem and question-answer sections. Specific diseases and their treatment are not included. This book is highly recommended to the medical student; the physiologist and general physician may also benefit from this concise excellent writing on this young subject. The C. V. Mosby Company, St. Louis, 1967. 199 pages. $9.45.

RECENT ACQUISITIONS IN THE HEALTH SCIENCES LIBRARY
OF PARTICULAR INTEREST TO MEDICAL STUDENTS

Obtained from Bulletin No. 10., July 1967, Health Sciences Library, (201 new volumes listed).

CALL NUMBER	AUTHOR	TITLE
HA29.H711s 1963	Hoffman, R. G.	Statistics for medical students
HA29.H645p 1966	Hill, Sir A. B.	Principles of medical statistics
*HQ35.D983L 1963	Duvall, E. R.	Love and the facts of life
QH431.C876 1966	Crew, F. A. E.	The foundation of genetics
QS4.C549s 1966	Christensen, J. B.	Synopsis of gross anatomy
QS4.D269b 1966	Dawson, H. L.	Basic human anatomy
QS4.E47c 1966	Ellis, H.	Clinical anatomy
QS25.B474a 1964	Benson, H. J.	Anatomy and physiology
QS504.E42h 1966	Elias, H. M.	Human microanatomy
QS517.H564a 1966	Herrath, Ernst von	Atlas of histology
QW4.H275o 1967	Hare, R.	An outline of bacteriology & immunity
QW4.T939s 1965	Turk, D. C.	A short textbook of microbiology
QY4.N113b 1962	Nabarro, J. D. N.	Biochemical investigations in diagnosis and treatment
QY450.S958c 1966	Sunderman, F. W.	Clinical pathology of serum electrolytes
QZ50.B283m 1967	Bartalos, M.	Medical cytogenetics
QZ50.R645i 1967	Roberts, J. A. F.	Introduction to medical genetics
RC76.H67 1964	Hochstein, E.	Physical diagnosis
WE17.R888s 1965	Royce, J.	Surface anatomy
WE140.S528h 1967	Shands, A. R.	Handbook of orthopaedic surgery
WO100.H236 v.3	Olsson, O. G. A. ed.	Encylopedia of medical radiology
WO100.R628c	Rob, C. ed.	Clinical surgery
WO101.M147s 1963	McGregor, A. L.	Synopsis of surgical anatomy
WO142.129t 1963	Illingworth, C. F. W.	Textbook of surgical pathology
WW17.D676a 1966	Donaldson, D. D.	Atlas of external diseases of the eye
WW17.H869o 1966	Hoyt, W. F.	Ocular fundus in neurologic disease
WW17.T431a 1963	Thiel, R.	Atlas of diseases of the eye

*Not suggested for First Year Students ! ! !

The Health Sciences Library is being reclassified, using the National Library of Medicine Classification. This will explain the call numbers starting with W (instead of R). Some Q numbers also are changed.

All new books will be in the new system.

Subject headings in the Catalogue will gradually be changed to conform with those used for journal articles in Index Medicus.

SYNOPSIS OF CLASSES

Preclinical Sciences

QS	Human Anatomy	QX	Parasitology
QT	Physiology	QY	Clinical Pathology
QU	Biochemistry	QZ	Pathology
QV	Pharmacology	QW	Bacteriology and Immunology

Medicine and Related Subjects

W	Medical Profession	WK	Endocrine System
WA	Public Health	WL	Nervous System
WB	Practice of Medicine	WM	Psychiatry
WC	Infectious Diseases	WN	Radiology
WD 100	Deficiency Diseases	WO	Surgery
WD 200	Metabolic Diseases	WP	Gynecology
WD 300	Diseases of Allergy	WQ	Obstetrics
WD 400	Animal Poisoning	WR	Dermatology
WD 500	Plant Poisoning	WS	Pediatrics
WD 600	Diseases Caused by Physical Agents	WT	Geriatrics. Chronic Disease
WD 700	Aviation and Space Medicine	WU	Dentistry. Oral Surgery
WE	Musculoskeletal System	WV	Otorhinolaryngology
WF	Respiratory System	WW	Ophthalmology
WG	Cardiovascular System	WX	Hospitals
WH	Hemic and Lymphatic Systems	WY	Nursing
WI	Gastrointestinal System	WZ	History of Medicine
WJ	Urogenital System		

News and Views

This section of the Journal has been reserved for reporting all the extra curricular activities of the Medical School along with news items which will interest all our readers.

This first issue of 1967 must, by necessity of our September 12th deadline, be brief but it is hoped all the clubs and organizations will give us their news, be it of an intellectual or hedonistic nature.

The Osler Society

Meetings of the Osler Society in 1966-67 were held in the 2nd south lecture room at St. Joseph's Hospital. A small but steadfast group heard the following:

Stanley Ambis entitled his paper "Some Aspects of Osler's Life". His aim was not to give a historical review but rather to provide glimpses into the life and personality of this man who is so well and fondly remembered by students of Medicine. From some of his portraits one might think that Osler was a cold, unapproachable individual; however, beneath the mask of imperturbability was a man of tender affections, a person capable of outrageous pranks and a warm personality. He pioneered the bedside teaching technique and exchanged didactic teaching for "on the spot" knowledge. He was a prolific writer and left an exceptionally large number of essays on a wide variety of topics. He had great learning and a deep wisdom, but it was his charity which endeared him to all. He was intensely human and loved humanity.

A stimulating discussion, with several divergent views followed this excellent paper.

"The Development of Surgical Anaesthesia" was discussed by *Harold Watts*. The true discoverer of anaesthesia is really unknown. In the preanaesthetic era a surgeon's skill was equated with his speed of operation. Early "anaesthetic" agents included herbal mixtures, alcohol, marijuana, mandragora, belladonna and opium. Occulsion of carotid arteries in the neck and local cooling were also used. Pressure on the great nerves was also tried but found to be damaging to tissues and cause great amounts of pain. Early reports of inhaled gases producing unconsciousness were greeted with much skepticism. In 1846 Dr. Morton publicly demonstrated the use of ether and this compound became available for general use.

Dr. Jim Henderson presented interesting slides and commentary on three weeks he spent in the Soviet Union. He found the Russian people to be friendly and outgoing. They show a remarkable sense of respect for public property. Churches in Russia are not supported or encouraged by the state but neither are they tampered with. The state has a highly organized system of health; there is integration of preventive and curative services. Medical care is free. The patient to physician ratio is one half that in Canada. Doctors are not overworked; 50% are women. Continuing education is stressed and a high level of medical care is achieved. Historical aspects of several large cities were also discussed. The general impression of Russia was quite favourable.

Nancy Moser chose as her topic "The History of Bubonic Plague". This disease, also known as the Black Death, is now mainly of historical interest. It is believed to have been present as far back as the days of the Philistines. In the 6th century it spread from Egypt onto continental Europe for the first time. For the next thirteen centuries great epidemics raged periodically. Increased sanitary measures and the beginnings of preventive medicine produced increased

control in the 16th century. In 1894 the organism was isolated, and the importance of rats and fleas in the epidemiology realized. In 1900 Plague crossed to the Americas, causing 100 deaths in San Francisco. Since that time wild squirrels have become infected and formed a reservoir in Western U.S.A. and Canada. The Black Death is a changer of history and has influenced history for many centuries.

Each meeting was followed by a lively question and discussion period. We appreciate the participation of the faculty members in this program and hope they will continue to do so in 1967-68.

David Blaine, '69'

Undergraduate Scholarships and Prizes, First, Second and Third Years
1966-1967 Session

1. The Verda Taylor Vincent Scholarship—Edward Danby Ralph

2. Hippocratic Society Award in Anatomy—Willim John Patrick Wall

3. The J. B. Campbell Memorial Scholarship in Physiology—Edward Danby Ralph

4. Will Pharmaceutical Prizes:

   (1) Will Pharmaceuticals First Prize in Pharmacology—David Walton Scheifele

   (2) Will Pharmaceuticals Second Prize in Pharmacology—Douglas Leslie Bradley

   (3) The First Will Pharmaceuticals Prize for an Essay in Pharmacology—John Martin Henry Inwood

   (4) The Second Will Pharmaceuticals Prize for an Essay in Pharmacology—Frederick Lewis Pattison

5. The B'Nai Brith Scholarship in Pathology —Douglas Leslie Bradley

6. The Dean Russell Prize in Neurological Science—David George Henry

7. The Ciba Prize—David Edward Lehtinen

8. C. V. Mosby Company Scholarships Awards:

   Biochemistry, First Year—Flora Jamieson Rathbun

   Histology, First Year—Edward Danby Ralph

   Bacteriology and Immunology, Second Year—John Martin Henry Inwood

   Psychiatry, Second Year—Robert Bernard Orton

   Pathological Chemistry, Third Year — Charles Leeman. Dennis Sifton

9. The Leonard Sutcliffe Memorial Scholarship—Lorne Jay Brandes

10. The Carleton C. Whittaker Memorial Scholarship in Psychiatry—Ann Elizabeth Dickson

11. The Ontario Medical Association Prize in Preventive Medicine—Robert Alexander Buckingham

12. The Sandoz Prize in Medicine—Glen Stuart Wither

13. The Ciba Prize in Medicine—Lorne Jay Brandes

14. The Rowntree Prizes in Medical History:
    First Prize—Wayne Lewis Helmer
    Second Prize—Stephen Richard Pearl
    Third Prize—Aziz-Ur-Rehman Chaudry

15. The Khaki University and Y.M.C.A. Scholarship—Judith Louise Kutt

Scholarships and Prizes, Fourth Year
1966-1967 Session

1. The Medical Alumni Gold Medal—
   David Alexander Clark
2. The Alpha Kappa Kappa Gold Medal—
   David Alexander Clark
3. The D. F. R. Eccles Scholarship—
   David Alexander Clark
4. The Poulenc Award and Gold Medal—
   David Alexander Clark
5. The Class of '55 Prize—
   Susan Elizabeth Smith
6. The Dr. Fred N. Hagerman Memorial Prize in Surgery—James Matthews Bullock
7. The Pearl Devenow Fox Memorial Prize in Obstetrics and Gynaecology—
   John Patrick Cain
8. The Kingswood Scholarship—
   William Bruce Jackson
9. The J. B. Campbell Memorial Scholarship in Medicine—David Alexander Clark
10. The Roche Scholarship—
    Robert Gordon Colcleugh
11. The Ivan Hamilton Smith Memorial Prize—
    Peter James Law
12. The Class of 1917 Prize—
    Peter James Law

PERSONAL COLUMN

WANTED One 50 gram palpable spleen urgently required to impress Third Year students. Please state price and sex. Reply to Box 270, Victoria Hospital, Dept. of Medicine.

FOR SALE 1967 Cadillac. Excellent condition. Only driven 95,000 miles, mostly in town trying to get from one hospital to the other attending Third Year clinics. Reason for selling—student owner has received his Ontario Student loan and grant and is now able to afford a 1968 Rolls Royce.

LOST One maidens honour last Tuesday at the Victoria Hospital Nurses Dance. Kindly return untarnished. Reward offered.

FOUND One sex Chromosome. Will Miss Turner kindly collect it without delay.

Alumni News

As this year's Alumni Editor, I should like to extend my sincere thanks to our illustrious alumni without whom Alumni News could not be published.

Yours sincerely,

Denise Antoni. '69'

1909

PAUL POISSON is semi-retired in London, Ontario. His spare time is occupied with various community affairs.

1914

JOHN R. MacPHERSON has been a country doctor in Kent County for more than fifty years. Recently he was honored by the village of Highgate for his many years of service.

1925

HERBERT HENRY GILBERT following graduation continued his medical studies in such far-away places as London, Edinburgh and China. From 1928-39 he was the Medical superintendent at St. Paul's Hospital in Kweiteh, Honan, China.

At present, he is involved in general practice and industrial medicine for the Aluminum Company of Canada in Arvida, Quebec.

1932

H. E. MOUNTAIN resides in Chatsworth, Ontario where he practices anaesthesia. He says that his chief problem is trying to save enough money to pay his taxes!

1933

DAVE RUSKIN's postgraduate training involved Psychiatry, Neurology and Electroencephalography. At present, he is chief of the above three departments at the Saginaw General Hospital in Michigan.

1936

BURNS ROTH undertook the study of Hospital Administration at the University of Toronto in 1948. Following the completion of this course, he was appointed director of hospital administration for the province of Saskatchewan. In 1952, he was named deputy minister of public health. In 1962, he joined the University of Toronto. At present, he is both the Associate Director and the Chairman of the Department of Health Administration at the School of Hygiene at the University of Toronto.

1932

PAUL HAUCH specializes in diagnostic radiology in London, Ontario. This year he was named executive of the year in Canadian amateur sports.

1942

LAWRENCE RUTTLE trained at Toronto General Hospital and St. Luke's Hospital in Chicago and today he is an anaesthesiologist at St. Joseph's in Joliet, Illinois.

At present, he is the 2nd Vice-President for the American Society of Anaesthesia. Past positions include Director of the American Society of Anaesthesiologist for District 14, Illinois (1950, 1952-66), Past President of the Illinois Society of Anaesthesiologists (1957), and Case Reports Editor for Newsletter, A.S.A. (1962-66).

1943

ALARIC HUMPHRY obtained his certificate in Radiology and today is a radiologist at the Hospital for Sick Children in Toronto.

1947

ROBERT BUCK, as of Sept. 1, 1967 is Chairman of the Department of Anatomy in the Health Sciences division of the University of Western Ontario.

G. MALCOLM MORTON of Windsor was elected president of Windsor Medical Services at the medical plan's annual meeting in May.

1967.

THOMAS H. SPEIDEL took a residency in Obstetrics and Gynecology at Baylor University Hospital in Dallas, Texas. Today, he is in private practice in Obstetrics and Gynecology in Houston and lives in nearby Baytown.

His publications include the "Case of the Missing Catheter" (Amer. Journal of Ob.-Gyn., Sept. 1958) and the "Present Concept of External Endometriosis (Texas State Medical Journal). Outside Medicine, he is a golf addict, a sports fan, and is even taking piano lessons.

1951

J. I. LESSON is a general practitioner in Wiarton, Ontario. He is the Chairman of the Membership Committee for the College of General Practitioners.

Flying is his hobby and he is a member of the Flying Physicians Association.

JACK H. WALTERS was elected President of the U.W.O. Alumni Association on June 3, 1967. He is presently Chief of Staff and Chief of the Department of Obstetrics and Gynaecology at St. Joseph's Hospital, London.

1953

G. A. RUNDLE resides in Oshawa and is on Staff at the Oshawa General Hospital and the Ajax-Pickering Hospital. Currently, he is on the Medical Board for the Oshawa Crippled Children's Centre. He is also Vice-President of the Art Gallery of Oshawa.

1957

RONALD DAVIDSON is a fellow in Pediatrics (1963) and in Human Biochemical Genetics (1964). He is a Professor of Pediartics at S.U.N.Y.A.B. and Children's Hospital, Buffalo.

His current interests include human genetics, sex differences and human biology, golf and skiing.

1959

DORIS MARGARET NICHOLS is an associate professor of Biochemistry at York University in Toronto. She is actively involved in research and teaching. Her specialty, on which she has published about thirty papers, is protein biosynthesis.

1960

WILLIAM FRISHETTE following internship took further training in pathology at the University of Michigan Medical Center, Ann Arbor, Mich. This year he joined the Pathology Department at Victoria Hospital, London, Ontario.

1961

KENNETH LAMONT obtained his F.R.C.S.(C) in Obstetrics and Gynecology in 1966. He is now a research scholar at Women's Hospital, University of Michigan Medical Centre. He is particularly interested in Obstetrical and Gynecological Endocrinology. In 1968, he plans to join the Staff at McMaster University Medical School.

1961

RICHARD A. STEEVES following internship obtained first his PhD. in Medical Biophysics (1962-66) and then his postdoctoral fellowship (1966-67). Currently he is a cancer research scientist at Roswell Park Memorial Institute in Buffalo. His present project involves the study of marine leukemia viruses as model systems for approaching human leukemia viruses.

1964

MARY O'DWYER is working at the B.C. Cancer Institute in Victoria in an attempt to further the cause of chemotherapy.

1967

ROBERT FASSOLD is interning at the Scarborough General Hospital.

1967-1968 JOURNAL PRIZE

This year the Editorial Board of the U.W.O. Medical Journal is offering a prize up to the value of FIFTY dollars for the best paper submitted for publication in this Journal. The panel of judges will be composed of the Faculty Adivsors and Editor and will be presented in April 1968 after the fourth issue has been published.

The paper may be on any subject, not more than 2000 words long, and particular emphasis will be given by the judges to the accuracy, originality and format of the paper. All papers published in the 1967-1968 Jurnal will be eligible for the competition.

It is hoped that this prize will be awarded every year but of course this is entirely dependent upon the response it stimulates.

For your convenience the deadline dates for the remaining 1967-1968 issues are as follows:

Issue No. 2. November 12th.

Issue No. 3. January 12th.

Issue No. 4 March 12th.

Cover Design

The new cover was designed in the hope that it would increase the attractiveness of the Journal. Earl Dobkin '69' and Dr. B. Squires were primarily responsible for the design. Art work was done by Mrs. M. Corrin, Medical Artist, Department of Anatomy.

If you have any comments as to its suitability, the Journal would be very grateful to receive them. As you might imagine it is impossible to satisfy everybody but it is hoped that the majority of the readership will agree with the change.

THE U.W.O.
ALUMNI ASSOCIATION
PRESENTS

WORLD FAMOUS ARTISTS

1967-68 ALUMNI HALL GREAT ARTISTS' CONCERTS

1967

OCTOBER 15: THE TORONTO SYMPHONY
SEIJI OZAWA conducting
VICTOR BRAUN, soloist

OCTOBER 18: RAY CHARLES ORCHESTRA
AND COMPANY

NOVEMBER 25: DAVE BRUBECK JAZZ QUARTET

DECEMBER 1: DAVID OISTRAKH, violinist

1968

JANUARY 13: CARLOS MONTOYA, guitarist

FEBRUARY 14: DETROIT SYMPHONY ORCHESTRA
SIXTEN EHRLING conducting

SPRING FESTIVAL '68

APRIL 6: THE CLEVELAND ORCHESTRA
LOUIS LANE conducting
LEON FLEISHER, soloist

APRIL 7: THE CLEVELAND ORCHESTRA
DR. GEORGE SZELL conducting

★ ★ ★

SINGLE TICKETS ($5, $4, $3) FOR ALL CONCERTS WILL BE AVAILABLE AT WORDS AND MUSIC, EXCLUSIVE BOX OFFICE, 426 RICHMOND STREET, LONDON.
NO TELEPHONE ORDERS, PLEASE

HIPPOCRATIC SOCIETY

presents

ANNUAL MEDS-AT-HOME

FEBRUARY 2nd, 1968

HOTEL LONDON

Bob Birnbaum, '69'
Social Vice-President

ST. JOSEPH'S HOSPITAL

LONDON, ONTARIO

A general teaching hospital affiliated with the U.W.O. Faculty of Medicine.

Hospital Capacity

St. Joseph's Hospital	600 Beds
St. Mary's Hospital	215 Beds
	815 Beds

Honorarium

	Living in	Living out
Junior Rotating Intern	$3,400.00	$4,120.00
1st Year Assistant Resident	4,000.00	4,720.00
2nd Year Assistant Resident	4,600.00	5,320.00
3rd Year Assistant Resident	5,300.00	6,020.00
4th Year Resident	5,900.00	6,620.00
Chief Resident	6,200.00	6,920.00

This includes food and accommodation allowance. Uniforms are supplied and laundered.

APPROVED BY: Ontario Hospital Association, American Hospital Association, American College of Surgeons, Catholic Hospital Association, Canadian Council on Hospital Accreditation, College of General Practice of Canada.

APPROVED FOR: Post-graduate training by the Royal College of Physicians and Surgeons of Canada in Anaesthesia, Ear, Nose & Throat, Medicine, Obstetrics & Gynecology, Pathology, Clinical Pathology, Psychiatry, Surgery and Radiology.

RESIDENCY TRAINING in Anaesthesia, Ear, Nose and Throat, Eye, Medicine, Obstetrics & Gynecology, Psychiatry, Surgery, Radiology, and Orthopaedics is part of the post-graduate program of the Faculty of Medicine, University of Western Ontario.

Rotations include all major services.

FAMILY PRACTICE TRAINING COURSE:
A three year advanced Graduate Training Program in Family Practice has been established in co-operation with the College of General Practice of Canada and the University of Western Ontario directed by A. T. Hunter, M.D.

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