

THE ROCKEFELLER FOUNDATION

61 BROADWAY, NEW YORK

OFFICE OF THE SECRETARY

*Governors*

December 14, 1932.

My dear Sir Arthur:

I have the honor to inform you that at a meeting of The Rockefeller Foundation held December 14, 1932, funds were appropriated to McGill University as needed but not to exceed a total of \$15,000 for aid in the development of research in surgery during the year 1933. This action was taken in completion of the understanding had in 1929 that co-operation should extend for five years, at the end of which time the University would assume full responsibility for further support of this research.

Very truly yours,

Norma S. Thompson  
Secretary.

Sir Arthur Currie, Principal,  
McGill University,  
Montreal,  
Canada.

NST:DSB

*To Dean Martin  
Please note and  
return.  
T. W. White*

December 20th, 1932.

Miss Norma Thompson,  
Secretary,  
The Rockefeller Foundation,  
61 Broadway,  
New York, N. Y.

My dear Miss Thompson,

I acknowledge with gratitude and pleasure your letter of December 14th, in which you inform me that at the meeting held on the 14th instant funds were appropriated to McGill University to carry on the research work in Surgery during the year 1933.

The Department of Surgery and the Medical Faculty will be very happy to receive this assurance of further encouragement.

Ever yours faithfully,

Principal

October 12, 1932.

Dr. Martin telephoned to say that "he thinks he has another \$15,000 or \$20,000 from the Rockefellers for Experimental Surgery for the year beginning next February. The grant comes to an end in January. They were very nice, and said they could probably give this and then see at the end of the year's extension what else could be done."

McGILL UNIVERSITY  
MONTREAL

FACULTY OF MEDICINE  
OFFICE OF THE DEAN

October 30th,  
1931.

Sir Arthur Currie,  
Principal - McGill University,  
Montreal.

Dear Sir Arthur,

I thought you might be interested to see the Annual Report of the Department of Experimental Surgery, which was sent recently to the Foundation, and also Gregg's reply.

Faithfully yours,

C. Martin.  
DEAN.

noted  
Nov. 3 1931  
AWB

November 2, 1931.

Dr. C. F. Martin,  
Dean, Faculty of Medicine,  
McGill University.

Dear Dean Martin,

Thank you very much for sending  
me the Annual Report of the Department of  
Experimental Surgery. When does this grant  
expire?

Ever yours faithfully,

Principal.

COPY LETTER:

From: Dr. Alan Gregg, The Rockefeller Foundation,  
61, Broadway, New York City.

To: Dr. C. F. Martin, Dean of the Faculty of  
Medicine, McGill University, Montreal.

Dated: October 29th, 1931.

"This will acknowledge with thanks your state-  
ment of October 9th regarding the work of the De-  
partment of Experimental Surgery. I have been much  
interested to read the accounts of work being carried on  
under the grant made for this purpose, and wish to thank  
you for this satisfactory report!"

McGILL UNIVERSITY  
Faculty of Medicine.

DEPARTMENT OF EXPERIMENTAL SURGERY  
(Rockefeller Grant).

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DEPARTMENT OF EXPERIMENTAL SURGERY.

(Rockefeller Grant).

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During the year 1930-31 the work of the Department has continued its activities with only one serious interruption. An epidemic of distemper was fatal in some important cases, and for some weeks closed the Animal House to the further admission of dogs.

The organization, which binds together the various departments of the Medical Faculty through the medium of this Grant, has continuously kept in mind the development of an interest in the scientific approach to clinical surgery and cognate branches. Contributing to the work from various angles have been the Departments of Surgery, Medicine, Pathology, Pharmacology, Physiology and Biochemistry, so that a most co-operative, and at the same time economical, means of carrying out research has been provided.

Colloquia are held every fortnight, at which all those engaged in experimental work attend. Here the various researches are discussed in detail and the continuance of the work adjudicated. A very free and open criticism of each man's work is thus given, and as a result the character of the work has improved and, even when under way for some time, is often carefully revised as to any controversial points. Most of the experiments involve surgical procedure, so in this way prospective surgeons receive the double training of experimental



work and surgical technique.

Ten juniors from the Department of Surgery itself are engaged in active study under the direction of Professor Archibald and his colleagues in the various laboratory departments. Others combine surgical procedures with their research, and thus develop the technique which, in some cases, has stimulated further desire for a surgical career.

Enclosed is a list of the work during the year June 1930 - June 1931.

RESEARCH IN THE DEPARTMENT OF EXPERIMENTAL SURGERY  
June 1930 - June 1931.

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This list designates the work done under the Department of Experimental Surgery at the new Animal House. Other experimental work carried out in connection with the Departments of Anatomy, Physiology, Biochemistry, Pathology, Bacteriology and Internal Medicine at the University Clinic is, of course, not included.

From the Department of Surgery:

Dr. Bethune:

- (1) Continuation of observations on the effect of fungi in tuberculosis of the lungs.
- (2) On the effect of various oils in the pleural sac (oleothorax).
- (3) On lesions of the lung from coincident infection with the aspergillus and tubercle bacillus.
- (4) On the variety of lesions in the lung from symbiosis of spirochaetes, fusiform bacilli and pyogenic cocci.
- (5) On a new method of severing interpleural adhesions by the application of silver clips through a cannula between the ribs under thoroscopic inspection.

Dr. Bethune has further devised the following instruments for thoracic surgery:-

- (1) An automatic self-retaining scapula lifter and retractor.
- (2) A combination pleural respirator and pneumothorax apparatus.
- (3) A new pneumothorax apparatus using transparent pyralin jars instead of glass.

- (4) Three varieties of raspatories.
- (5) New bone shears.
- (6) Sticker chest charts.

Dr. Wilkie:

- (1) Continuation of research on the aetiology of acute and chronic cholecystitis.
- (2) Observations on the problem of cholesterosis.

Drs. Wilkie and Doubilet:

- (1) On the relation of cholesterol to the chronically diseased gall bladder.
- (2) On the function of the gall bladder in respect to calcium and bilirubin.

Dr. Doubilet:

- (1) Further studies on the gall bladder with respect to bilirubin, calcium, cholesterol and the bile ducts.
- (2) On the mechanism and the physiological emptying of the gall bladder and its relation to the formation of gall stones.
- (3) On the effect of cholecystectomy and cholecystitis on the bile ducts.

Dr. Dudley Ross:

Continuation of studies on the production of increased compression strength of bone and on bone regeneration.

Dr. Gavin Miller:

- (1) Completion of studies on high intestinal obstruction. (Edinburgh and McGill Universities).
- (2) On the treatment of intestinal obstruction.

- (3) On the blood chemistry changes with loss of secretion after resection of the stomach.

Dr. J. C. Armour: (Edinburgh and McGill).

- (1) On a new method for the cure of penetrating gastric ulcers.
- (2) A new method of studying gastric secretion by means of a pouch with base at the lesser curvature.
- (3) On the cause of death in high intestinal obstruction.
- (4) An assay on the cortical hormone of Collip in suprarenalectomy.

Dr. H. Kaufmann.

- (1) Continuation of studies on the regurgitation of duodenal contents into the pancreatic duct.
- (3) On the production of permanent oedema in the leg.
- (3) Continuation of studies on the prevention of peritoneal adhesions.

From the Department of Physiology (in conjunction with the Department of Surgery).

Dr. Vineberg:

- (1) On the activation of different elements of gastric secretion by variation of vagal stimulation.
- (2) On histamine and pilocarpine in relation to gastric secretion.
- (3) On the chemical factors involved in and influencing gastric secretion, more particularly with reference to the  $CO_2$  content and pH of the blood.
- (4) Investigations as to the significance of mucoid cells of the stomach in relation to gastric ulcer. (An experimental and clinical investigation).

Dr. D. R. Webster and Dr. J. Armour:

- (1) On the quantitative estimation of the mucin content of the gastric juice. (An experimental and clinical study).
- (2) On the relation of lost gastric secretion to various types of disease, more particularly anaemia.

Dr. D. R. Webster:

Variations in the composition of the gastric juice under different stimuli.

Dr. D. R. Webster and Dr. S. A. Komarov:

On the presence of a soluble glucoprotein in the gastric juice.

Dr. S. A. Komarov:

- (1) On the organic constituents of gastric juice.
- (2) On the presence of physiologically active substances in the parotid saliva.

Dr. S. G. Baxter:

- (1) On the role of the sympathetic nervous system in gastric secretion.
- (2) On the effect of hypo- and hyperglycaemia on the pancreatic secretion in the rabbit.

Drs. Margaret E. MacKay and S. G. Baxter:

- (1) Restoration of the pancreatic secretion by histamine.

Dr. W. Stavraky:

- (1) The effect of barium chloride on salivary secretion.
- (2) The effect of amytal on the autonomic nervous system.

- (3) The effect of distention, compression and irritation of the small and large intestines on the pulse rate and blood pressure in dogs.

Dr. H. E. Rawlinson:

- (1) On the mechanism of control of salivary secretion.

From the Department of Bacteriology (in conjunction with Surgery).

Dr. G. Townsend:

A study of surgical streptococcal infections -

- (a) The serum treatment (Cadham)
- (b) The potency of serum on the role played by complement.
- (c) Bactericidal and bacteriostatic power of blood serum.

Dr. Maurice Brodie:

- (1) Continuation of studies on poliomyelitis, with special reference to active immunization.
- (2) On the changes in the spinal fluid and blood in extracerebrally infected animals.
- (3) On the standardization of serum for poliomyelitis.

From the Department of Neurology and Neurosurgery:

Drs. Penfield and Cone:

- (1) On the study of epilepsy in relation to the cerebrospinal blood vessels.
- (2) On the pathology of traumatic epilepsy.
- (3) On a new method for the treatment of spina bifida.

Dr. Cone:

Studies on syringomyelia.

Dr. J. P. Evans:

A study of the effects of different types of wounds upon the susceptibility of animals to experimental epilepsy.

Dr. E. L. Gage:

The effects upon epilepsy of the removal of various portions of the sympathetic nervous system.

Dr. Georg Chorobski:

On the origin of the perivascular nerves of the brain.

Dr. I. M. Tarlov:

On the finer structure of the cranial nerves.

Dr. A. R. Elvidge:

On the pathology of hydrocephalus.

Dr. J. N. Petersen:

On the vasomotor system of epileptics.

Dr. M. Brodie:

On the sequelae of encephalography.

From the Department of Biochemistry (in conjunction with Surgery).

Dr. R. U. Harwood:

On the biochemistry of the gall bladder.

Dr. J. S. L. Browne (with Dr. Vineberg).

On the relation between gastric secretion and the acid base balance of the organism.

ROCKEFELLER FUND FOR EXPERIMENTAL SURGERY.

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Expenditure for year ending May 31st, 1931.

Fellowship Grants:

Dr. Babkin	\$1000.00		
" Webster	1950.00		
" Komarov	1500.00		
" Stavradi	1000.00		
" Baxter, S.	1000.00		
" Harwood	1700.00		
" Townsend	1000.00		
" Doubilet	1000.00		
" Rawlinson	450.00		
" Kaufmann	500.00		
" Ross	500.00		
" Miller	500.00		
" Armour	500.00		
" McLellan	450.00		
" Vineberg	333.33		
		<u>\$13,383.33</u>	

Technical Assistants:

Miss Toby	301.30		
" Brodie	286.45		
Birkett	428.15		
Bresnahan	468.00		
Horgan	1044.00		
McDowell	452.00		
Ritchie	1308.00		
Russell	960.00		
Pelodeau	936.00		
		<u>6,183.90</u>	

Departmental grants for materials  
and supplies -

Dr. Babkin	2000.00		
Dr. Archibald	500.00		
Animal House	1500.48		
		<u>4,000.48</u>	<u>\$23,567.71</u>

Total Expenditure \$23,567.71



McGILL UNIVERSITY

MONTREAL

FACULTY OF MEDICINE  
OFFICE OF THE DEAN

November 4th,  
1931.

Sir Arthur Currie,  
Principal - McGill University,  
Montreal.

Dear Sir Arthur,

Re: Department of Experimental Surgery.

We are in the midst of our third year of the Grant, and we have one more year to come. Dr. Pearce, however, at the time told me that if everything was satisfactory this could be extended for <sup>still</sup> another year, and although I have only his verbal guarantee, I feel morally certain that the Foundation will be willing to continue for at least one more year.

Faithfully yours,

C. B. Martin  
DEAN.

*This came from the  
Dean's Office.*

Department of Surgery:

Ten years ago we were in the middle of the transition period from the six year to the five year course, and the trimester system for the fourth and fifth years had not yet been inaugurated, nor had the system of allotting the third year teaching to the Royal Victoria, and the fourth year teaching to the Montreal General Hospital, been thought of. In a general way it is my opinion that these changes have been of benefit to the students. They have, I think, enhanced on the whole McGill's reputation for clinical teaching.

Certain changes and additions have also been made, which represent an increase in teaching value. Thus a neurological surgical department of the highest standard has been created in the Royal Victoria Hospital, with the prospect also of instituting a similar department in the General Hospital within the next year. Pulmonary diseases of a surgical character have been brought under a new medico-surgical pulmonary department, through which better instruction in this branch than hitherto is provided. In the orthopaedic course the very valuable material of the Shriners' Hospital under Dr. Turner has been made available, as also, though still to too small an extent, the material of the Childrens' Memorial Hospital.

The teaching of X-ray technique and interpretation has also been, within the last few years, put upon a much more thorough basis than ten years ago.

It should be pointed out also that owing to the opening of the new Maternity Hospital, in the Royal Victoria, the number of beds available for surgical teaching has been considerably in-

creased, while the establishing of the new departments already mentioned, has allowed of greater variety.

With regard to the three chief modes of teaching, the didactic lecture, the amphitheatre clinic and the bedside clinic, we have in McGill always been of the opinion that each had its distinct value, and no one could be altogether sacrificed; but during these ten years we have gradually reduced the number of the amphitheatre clinics in the final year from three to one a week; while in the fourth year we have maintained the number of theatre clinics at two a week and the number of didactic lectures at two a week. In addition a course of fifteen didactic lectures on principles has been instituted for the third year. In the final year the work has been gradually made more and more, under the trimestersystem, of a practical nature, approaching, in fact, very closely to the work of a house surgeon. This is one of McGill's greatest assets, from the student's point of view, as compared with the practice of many American universities, where the course is a four year one and where the clinical instruction and opportunities afforded are relatively much less. Some of the States in the United States require an extra year of internship in a recognized hospital before granting the diploma to practise; but, inasmuch as many of their students are obliged to take services in hospitals which are not teaching hospitals the experience, thus acquired, can hardly be as valuable as that which McGill gives them in the present fifth year under direct supervision and actual teaching in what corresponds to a rotating service. These facts, I think, represent a very solid asset as regards teaching

prestige for our University. If it should prove possible, as is now proposed, to secure the opportunity of hospital residents for a considerable portion of our final year students, this asset will be still more valuable. During the last ten years the final year students in the Royal Victoria Hospital have been given, in groups, their meals in the Hospital, so that they could be on duty for the whole of the twenty-four hours, except for the period of sleep. And they have been given a much greater degree of responsibility than hitherto, acting essentially as internes, under the supervision of the proper internes and one of the Clinical Assistants of the Hospital Staff. This move has been found to be most popular.

The number of teachers of Surgery and Clinical Surgery was in 1920 twenty-eight. At present it is twenty-nine. This includes the staff in Anaesthetics, but not in Radiology. In view of the circumstances already mentioned it will be seen that we have kept down the number of our teachers to a reasonable level.

I am quite aware of the importance of the principle which says that it is wise to choose out of the available candidates the best teachers and to give extra work, and presumably extra pay, to a few rather than to employ a large number, (some of whom may be indifferent material as regards capacity to teach), and give them small pay. Nevertheless, as I have previously pointed out, it is impossible with our present system of two Hospitals and the group system of teaching, to get a sufficient amount of instruction given without employing a corresponding number of teachers. A further

justification for the present number lies in the fact that nearly all of those actually appointed as junior teachers in the Surgical Department have control, in a more or less independent way, of teaching material. After all, it is important to maintain a fairly large seed-ground of potential teachers.

With regard to the second item in your letter of December 15th, 1930, concerning the "present needs with respect to equipment and staff", I may take up first of all the question of equipment. The equipment for teaching necessarily depends in the first instance upon the clinical material available. That continues to be what it has been in the past. We have a splendid amount of material in the two Hospitals, decidedly larger on the whole than other Universities which graduate a similar number of students per year. But our great lack is an organized, central depository of illustrations. Mounted specimens are now easily available in the two Hospital pathological museums, but these collections, though growing year by year, are not yet large enough, nor sufficiently utilized. The central museum in the Medical Building has been very greatly depleted of recent years by the transference of its material to the two Hospital museums; yet for the purposes of didactic lectures it seems to me important that during the coming years the University museum should again be well provided with teaching specimens. It is true that specimens can be transported from the Royal Victoria to the University without much trouble, but that is not true of the General Hospital, and I feel that the Hospitals should again adopt the old practice of sending duplicates to the University museum, so that good specimens may be more easily available for lectures given

in the University.

With regard to illustrations we have at the Royal Victoria a certain number of photographs, coloured drawings, and lantern slides, which, however, are not properly indexed and classified, and I think the same is true of the General Hospital. We need a comparatively small sum of money to get this done.

The present arrangement with regard to photographs, lantern slides and microphotographs is that we have to employ the University Photographic Department to prepare us what we need in this respect for teaching, and the charges of this department are excessive. I find that such illustrations can be done more cheaply, and in the case of microphotographs much better, by the staff of the Royal Victoria Hospital than by the Photographic Department of the University. This means that the appropriation of the Surgical Department is being returned to the University in undue measure to support the expenses of the Photographic Department.

With regard to paragraph three in the same letter, concerning "ideals for the future of the Department of Surgery in regard to undergraduate and graduate study, as well as research", it is obvious that the recent action of the Standing Committee in deciding to recommend a complete change of policy along the lines of paragraph four, in your letter of March 27th, 1931, will alter fundamentally a great many things in the details of teaching. It is clear that a complete revision of our curriculum will be necessary. It will effect in particular the distribution of the amount and type of teaching to be done by the Chief, on the one hand, and by the assistants on the other. For my own part, my present intention is to propose that the Chief undertakes all the amphitheatre clinics

as his personal duty. This applies in the main to the fifth year clinics, but it will have to be considered whether under this new scheme the present arrangement of teaching the third year entirely in the Royal Victoria, and the fourth year entirely in the General Hospital, will not have to go by the board - or at any rate be largely modified. It may be of advantage, for instance, to assemble both fourth and fifth years for all amphitheatre clinics. My idea at the moment is to do this, but to alternate, using the Director and the Professor of Surgery (myself and Dr. Bazin, at the moment) for this purpose.

With regard to bedside teaching in wards, I feel that the present arrangement as distributed between the two hospitals can not be bettered; but the students will have a choice as to which teacher among the juniors appointed they will elect.

With regard to the series of didactic lectures, I am strongly inclined to the plan of making these entirely optional. I think it would be better to drop the present system of didactic lectures, which cover the ground of general surgery, in a most abbreviated way, and to refer the students to their books for this purpose. In their place, I would institute series of lectures upon special subjects, such as neurological surgery, thoracic surgery, abdominal surgery, the application of biochemistry, of physiology and of pathology to various surgical problems; selected chapters in genito-urinary and orthopaedic surgery; such fundamental subjects as shock, circulatory diseases, diabetes, amputations, etc. Such lectures would be optional, and the subjects would be

allotted in rotation to teachers who had made some special study of them, and who would speak with authority, and only to such men; and not only undergraduates of the three final years, but also graduates would be at liberty to attend them; They would be advertised from year to year in the University Calendar and on notice boards and also through the Medico-Chirurgical Society to the profession in the City. They would extend over not less than ten lectures for the most part. The result ought to be a very definite increase of prestige to the Department. Some distinction might be made as regards the students of the third year in the sense of offering to them particular subjects, to which their degree of knowledge would be suitable; but all others, both fourth and fifth year, might attend. It would probably be necessary to utilize the Assembly Hall for the latter. In this way, during the three clinical years of the undergraduate course it would be possible to present the experience of experts in most of the major subjects.

While, as regards the teaching in the Royal Victoria Hospital, I propose, as Director, to confine myself to the amphitheatre clinics, handing over the ward teaching of the fifth year to assistants, and taking only a share in the didactic lectures under the plan just indicated, (possibly the surgery of thoracic diseases), I could not, of course, insist that Professor Bazin in the General Hospital should do likewise. Under the new scheme he might prefer to confine himself to ward teaching, and leave amphitheatre teaching to his assistants. Such questions have still to be worked out. But I feel in a general way that for the best interests of our School the three forms of teaching - ward



classes in small groups, amphitheatre clinics to as large a body as can be got together, and didactic lectures given by men of recognized authority in particular lines, with sufficient time to go deeply into their own subject, - are necessary.

The place which the specialties, such as genito-urinary diseases, orthopaedics and neurological surgery, have to occupy in this scheme must be carefully considered. I am against the idea that any formal course of teaching in these specialties should be undertaken by the chiefs of the department of general surgery, except in so far as differential diagnosis during amphitheatre and ward classes is concerned. These special departments must still offer particular ward teaching, and must be given the opportunity of offering series of didactic lectures, either upon the whole or upon some important part of their subject. Such courses of didactic lectures would come in their turn as the organization warrants, and would always be considered as optional.

With regard to private tutorial classes, I can not see that such are admissible in the wards of the two hospitals, in view of the already great utilization of the patients by teachers definitely appointed. They are only possible when given as private classes, outside the hospitals but possibly in the University.

McGILL UNIVERSITY  
MONTREAL

FACULTY OF MEDICINE  
OFFICE OF THE DEAN

May 28th,  
1932.

Sir Arthur Currie,  
Principal - McGill University,  
Montreal.

Dear Sir Arthur,

I am sending, herewith, a copy of the Report on  
the Department of Experimental Surgery, which I have sent  
off to Dr. Gregg, and hope it will meet with your approval.

Faithfully yours,

*C. J. Martin*

DEAN.

*Seen  
A. C. L.*

DEPARTMENT OF EXPERIMENTAL SURGERY.

(Rockefeller Grant).

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REPORT ON THE WORK DURING THE YEAR 1931-1932.

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The work during the past year has been carried on as usual in the Department of Experimental Surgery, always keeping in mind the main object, namely, the training of young men in experimental methods in order to fit them for their ultimate work in the Department of Surgery.

Professor Archibald has continued to supervise those who are directly associated with him, and Professors Babkin and Collip have lent their aid wherever the subjects of physiology or biochemistry impinged upon the various problems under investigation.

It was unfortunate this year that the activities of the Anti-vivisection Society deprived us of dogs for a period of nearly four months. On the other hand, in many instances, dogs which had already been operated upon were kept under observation, and investigations were continued during that period with very satisfactory results. This holds particularly true in those surgical undertakings in which the physiological investigations are of paramount interest, e.g., gastric fistulae and the like. (It may be said here that while the various departments and laboratories (Physiology, Biochemistry and Pharmacology) co-operate and stand ready to assist, they have their own animal experimentation work quite independent of this project in Experimental Surgery).

Under the guidance of Professor Archibald, the following work undertaken is of special interest:

Drs. Wilkie and Doubilet in their studies on the etiology of cholesterosis of the gall bladder and of cholesterol stones have obtained interesting results. This paper awaits publication. It has been definitely proved that the process is one of filtration or transudation rather than a secretion, for the amount of cholesterol passing between the bile and blood was relatively proportional to the ratio between the percentage of cholesterol in the blood and the percentage of cholesterol in the bile. These experiments have been repeatedly performed and carefully controlled.

Concurrently with these experiments they have determined the relation of calcium of the bile to the normal gall bladder. Results show that during the period of bile concentration in the gall bladder, calcium is lost from the bile to the blood. This tends to bear out their previous observation on cholesterol that the gall bladder mucosa tends to act as a filtration membrane. The changes noted are small, due to the fact that part of the calcium is bound up as calcium bilirubinate, and since there is no loss of bilirubin during the period of concentration of the bile, the calcium tends to be retained in the gall bladder bile. Determination of bilirubin in the liver bile is now being carried out in order to ascertain the relationship between the blood and bile calcium.

All this work is but a continuation of what was carried out during the previous year, but has now been brought to a completion.

Dr. Harwood, Biochemistry, assisted in the determination of the bile acids and of cholesterol, thus helping in the surgical problem suggested by Dr. Archibald.

Clinical investigation of gall bladder disease has been carried on simultaneously. About 400 cases of this condition have been investigated in hospital, more particularly where cholecystectomy had been previously performed, and an effort has been made to determine the percentage of cases in which post-operative attacks of pain occur, the type and etiology of the pain and possible means of prevention.

It is Professor Archibald's belief that Dr. Wilkie's work on cholesterosis is of signal importance, inasmuch as it finally settles a problem which has divided scientific opinion in Europe and America into two camps. This, together with previous work on cholecystitis, has already gone far to explain the formation of both cholesterolin and calcium gall stones.

Dr. John Armour, for the past two years, has been studying two main problems, the first a purely physiological one of investigating the functions of a lesser curvature pouch devised by himself, and substituting, or complementary to the Pavlov pouch. In collaboration with Dr. Webster, Dr. Komarov (biochemist) and Professor Babkin, he has already demonstrated the value to gastric physiology of this new type of pouch. (V.Can.Med.Assoc.Jrnl.1932).

Secondly, as already reported, he has been investigating the facts of permanent pyloric obstruction, with removal of all gastric acid, and with the addition of an oesophageal fistula, all of this leading up to a possible causation of pernicious anaemia. The results so far have been most interesting.

In addition to this, Dr. Armour has continued his work on the operation devised by himself for the cure of posterior pene-

trating or perforating ulcers of the stomach, a method which, clinically, seems to be most promising, and has already brought interesting practical results.

Dr. Dudley Ross' work on the stimulation of bone production in the healing of fractures by the implantation of a free muscle graft has been continued and proved valuable. The method is now being tried out in a case of fragilitas ossium, for the cure of which disease the problem was first undertaken. There seems to be no doubt that the method will be of value, too, in the treatment of fractured bones in which union has failed. His paper awaits publication.

Drs. Miller and Kaufmann have been continuing their problems previously reported, but are not in the position at present to publish their findings. The shortage of dogs in their cases was a very distinct handicap.

Dr. MacIntosh, who has already had four years of experience in various surgical clinics, during part of which time he was the Halsted Fellow in Experimental Surgery at Johns Hopkins Hospital, has returned to McGill with the idea of making surgery his special interest, and he is now engaged on research in this Department. He has been investigating the basal respiratory level, with special reference to the Hering Breuer reflex. All this work is carried on with the prospect of advancing the technique of pulmonary surgery, as well as of lung physiology.

It is particularly interesting in this connection that Dr. MacIntosh, who has already been working in Pathology at Ann Arbor and with Graham in St. Louis, is following a surgical career as an assistant in the Department of Surgery at the Hospital, and yet is spending a great deal of his time in research on physiolog-

ical problems. He is one of our best prospects for advancement in the Department of Surgery.

Dr. Webster, who assumed administrative control of the Animal House and general supervision over the staff of workers, has just completed, with the assistance of Dr. Komarov, a study of dissolved mucoprotein in the gastric juice. In addition, he and Dr. Armour have completed a study on the secretion of the pouch of the lesser curvature and anterior wall of the stomach. (v. Can. Med. Assoc. Journal, 1932).

This work has been continued by them, and further investigations are now under way on pyloric obstruction, etc., in relation to gastric secretion. Professor Babkin is supervising the research, and some interesting results have been obtained.

- (1) One problem concerned the factor of distention in its influence on gastric secretion, a relationship which, in common with other recent observers, has been definitely established.
- (2) Another problem dealt with the content of dissolved mucus in human subjects. In this work they have been co-operating with the Department of Medicine. Histamine tests have been carried out on ulcer patients in whom less than 15% of retention existed. Students were used as normal controls. This work is in progress. A preliminary report was presented before the Royal Society of Canada, and will appear in its Transactions.
- (3) The third problem deals with the occurrence of oedema under conditions of alkalosis, or other altered blood conditions, and its disappearance following the introduction of hydrochloric acid. This work has opened up a most interesting and hopeful field for further research. Concurrently with this work, for example, another investigator has successfully treated nephritis with oedema on this fundamental principle. This work has already been presented before the Royal Society of Canada and will shortly be published in their Transactions.

The work of Ivy and Fogelson on the treatment of gastric ulcer with mucin, the fundamentals of which were done in this

laboratory, are also being repeated. Professor Babkin and Dr. Komarov are planning to work out the active haematopoietic fraction of the gastric juice.

Dr. Komarov, who assists various men with their biochemical problems, has also been doing independent work. This includes the following problems:

- (1) On the interrelation between dissolved mucoprotein and pepsin in the gastric juice: Dr. Webster (who is the next prospect for a residency in Surgery at the Royal Victoria Hospital) has been collaborating with him, and an analysis of their data shows clearly that the secretion of the dissolved mucin is closely related to the secretion of pepsin, all of which has a bearing on the newer theories as to the treatment of gastric ulcer.

Investigation is being made as to whether or not pepsin is secreted as a complex pepsin-mucoprotein compound, or whether both substances are secreted separately and to some extent independently of one another. All this work is being done with dogs upon whom gastric fistulae have been made.

- (2) The nature of the secretagogue constituents of the gastric juice: An effort is being made to isolate the active substances in a pure chemical state. Some crystalline substances have already been isolated, but the identification is not as yet quite clear.
- (3) Non-protein nitrogen of the gastric juice and its physiological significance: It was established already in this laboratory last year that the pure gastric juice contains a considerable amount of non-protein nitrogen. Its physiological significance is being studied, as also the influence exerted by the sympathetic and parasympathetic innervation and different hormones.
- (4) The excretory function of the digestive glands: This study is directed towards investigating to what extent digestive glands participate in the excretion of waste products from the blood. Professor Babkin has suggested studying the influence of various conditions of stimulation, (parenteral administration of metabolites, the influence of removal of kidneys or experimental depression of renal function) on excretion



through the digestive glands.

- (5) Oesophageal secretion: In collaboration with Dr. Vineberg (a resident in Surgery) a study is made of vagus influence in oesophageal glands, as well as an investigation of its composition.
- (6) As already mentioned, Dr. Komarov has joined with Dr. Webster on a study of the haematopoetic activity of the gastric juice, its constituents and physico-chemical properties.

Dr. Stavraký is preparing himself for neuro-surgery.

He has already had two years of experimental work in this Department, and is now being directed by Professor Babkin in several problems:

- (1) The reversal effect of vasodilator nerves: The problem of the parasympathetic innervation of the blood vessels has recently attracted much attention. The salivary glands present a convenient means of study. It has been claimed that under the influence of amyl nitrate and some other drugs the parasympathetic nerves cause vasoconstriction, a theory of reversal-effect denied by Alison Dale. An attempt is being made to clear up the problem, and to study whether this effect is due to vasoconstriction or other conditions, such as stasis.
- (2) The innervation of the parotid salivary gland: This work, also directed by Professor Babkin, is being studied conjointly with Stavraký and Baxter (a budding oral surgeon). Chronic salivary fistulae are used for the purpose. The elucidation of a new conception of the innervation of this gland, namely, by two parasympathetic and sympathetic nerves, will possibly lead to a new understanding of previous experiments done on this gland.
- (3) The relation of the thalami to the autonomic nervous system: This work is being done at the suggestion, and under the direction, of Dr. Penfield. It deals with the relation of the thalamus to different visceral functions.

Dr. Stewart Baxter is investigating the following problems:

- (1) The blood sugar concentration and pancreatic secretion in the rabbit: This work is an effort to study the recent experiments of La Barre and Destree on hypoglycaemia. This work has been confirmed and a new fact established. It was demonstrated that insulin hypoglycaemia caused a diminished output of enzymes, but this was not observed if the vagi were cut, thus indicating the presence of "negative trophic" fibres in the vagus.
- (2) Influence of the splanchnic nerves on the gastric secretion: Long continued rhythmic stimulation of the splanchnic nerves (vagi being cut) produced a steady flow of alkaline mucoid secretion, which was demonstrated to be of the nature of a true secretion.

Experiments are also being carried out on animals with chronic fistulae of the stomach, in which the splanchnic nerves have been severed and the coeliac ganglion extirpated.

The trophic action of the sympathetic nervous system on the pancreatic gland in the rabbit is also being analyzed.

A great deal of valuable assistance has been derived from the Department of Histology, wherever material for microscopic examination is required. The many sections are prepared and studied by the workers themselves in co-operation with the Professor of Histology and his staff.

In the same manner the Department of Biochemistry has lent aid - under Professor Collip's guidance, and with the assistance of Dr. Harwood, who devoted much of his time especially in the studies of gall bladder conditions.

Neurology:

Drs. Penfield and Cone and their staff have been doing a great deal of experimental work. Some of it in the laboratories of the Royal Victoria Hospital and some in the laboratories of Experimental Surgery at the University.

Of the work that has been done, more especially under

the auspices of the Rockefeller Grant, the following may be mentioned:

Dr. Penfield's investigation of epilepsy, studying (with Chorobski) the innervation of cerebral blood vessels. The latter has demonstrated a pathway for parasympathetic impulses to the cerebral blood vessels.

Dr. Evans' work on the relation of brain wounds to epilepsy.

Dr. Brodie, working under the combined supervision of the Bacteriological and Neurological Departments, is studying intensively poliomyelitis, using monkeys for his experiments. He is making a distinct contribution to the series of experiments, some of which have already been published. He will continue in investigating work for another year, but his plans for the future are still unsettled.

Professor Beattie has also been carrying on a considerable amount of neurological work. He has been giving an interesting optional course to advanced students on neuro-anatomy and neuro-surgery in animals. He has been personally studying experimentally the functions of certain cranial nerves in cats and dogs, and has just recently completed some illuminating experiments dealing with the relation of cerebral lesions to gastric ulcer. This work is being demonstrated before the Royal College of Surgeons, England.

In conclusion, I would point out that among the surgical workers who devote so much time to research, the prospects for promotion are bright:

The future of the Surgical Department at the Royal Victoria is looked to with confidence, under the guidance, more especially, of such men as Wilkie, Armour, Miller and McIntosh. These four already assume serious major responsibilities in ward routine, and in the operating room, and will be soon capable of stimulating others along lines of research similar to their

own, and this, after all, is the great objective of the generous grant from the Foundation.



GLASSBORO BOARD

1913-1914

STATEMENT FOR YEAR ENDING - December 31, 1932.

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Income:

By Cash

\$25,000.00

Expenditure:

Honoraria and Fellowships:

Stavraky, Dr. Geo.	1,000	
Baxter, Dr. S.	1,000	
Webster, Dr. D. H.	2,000	
Babkin, Dr. B. P.	1,000	
Komarov, Dr. S. A.	1,875	
Harwood, Mr. R. U.	1,200	
Doubilet, Dr. H.	1,000	
McLellan, Dr. N. W.	50	
Rawlinson, D. H. E.	500	
Kaufmann, Dr. M.	500	
Ross, Dr. D. E.	1,000	
Armour, Dr. J. G.	500	
Miller, Dr. G.	500	
Wilkie, Dr. A. L.	500	
	12,625	

Wages:

Toby, Miss C., Technician	770	
Lafortune, Mrs. "	810	
Ritchie, T.W. "	1,308	
Russell, W. "	960	
Horgan, T. J., Attendant	1,044	
Peledreau, Geo. Animal Keeper	1,200	
McDowell, N. Lab. Boy	468	
Nelson, T. "	204	
	6,764	

Maintenance:

Supplies & Equipment		
Histological	800	
Physiological	1,000	
Surgical	200	
Animal House (in part)	1,500	3,500

Grant to Dr. Penfield's Department  
of Neurosurgery

2,000

24,889.00

Credit Balance ...

\$ 161.00

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McGILL UNIVERSITY  
MONTREAL

FACULTY OF MEDICINE  
DEPARTMENT OF SURGERY

March 28th,  
1932.

Sir Arthur Currie,  
McGill University,  
Montreal, P.Q

Dear Mr. Principal:

I have your letter urging economy, and assure you that I shall do everything possible in that direction in my Department. As a matter of fact I have been very careful this year, and have spent not half of my appropriation for equipment, etc.

If the University policy should be to reduce salaries you may be sure of my cooperation.

Yours sincerely,

*E. Archibald*

MCGILL UNIVERSITY  
MONTREAL

DEPARTMENT OF SURGERY

February 17th,  
1933

Sir Arthur Currie,  
Principal's Office,  
McGill University,  
Montreal, P.Q.

My dear Sir Arthur:

A number of surgeons, some fifty or sixty, from Brooklyn, New York, are meeting here next Wednesday, the 22nd, for one day of clinical demonstrations. They represent the Brooklyn-Long Island Chapter of the American College of Surgeons.

They are having their dinner at the Windsor Hotel the same evening, and have asked me to communicate to you an invitation, with the added hope that you would be able to say a few words to them. They are also inviting a certain number of those of us from whom they will be receiving clinics during the day. I am not personally acquainted with any of these gentlemen, unless possibly one or two, and I think I should say, between ourselves, that you may feel perfectly free to decline the invitation. The group consists of surgeons in Brooklyn and Long Island, and they are coming here self-invited, although, of course, we medical men are prepared to give them a good welcome.

With all kind regards,

Yours sincerely,

*Edward Archibald.*

*W.A.C. Decline*

February 18, 1933.

Dr. Edward Archibald,  
Department of Surgery,  
McGill University.

Dear Professor Archibald,

Let me thank you for your letter of the 17th of February in which you convey to me an invitation which is extended to me by a group of surgeons from Brooklyn, New York, to address them at their dinner at the Windsor Hotel on the evening of February 22nd.

Will you convey to them my appreciation of their kindness, but tell them that I have already an engagement for that evening. I am attending the Annual Dinner of the Boy Scouts Association.

Ever yours faithfully,

Principal.



## CANADIAN PACIFIC RAILWAY COMPANY'S TELEGRAPH

CANADA CEMENT BLDG., LA. 5652

## TELEGRAM



All Messages are received by this Company for transmission, subject to the terms and conditions printed on their Blank Form No. 2, which terms and conditions have been agreed to by the sender of the following message. This is an unrepeatd message, and is delivered by request of the sender under these conditions.

J. McMILLAN, General Manager of Telegraphs, Montreal.

57RABR 9

SAINTJOHN NB MCH 25 311PM

SIR ARTHUR CURRIE

MCGILL UNIVERSITY MONTREAL.

JUST OFF MEANT TO CALL SAY GOODBYE COULD'NT AUREVOIRE.

ARCHIBALD.

231PM

APR 5/6

52 WESTMOUNT BOULEVARD  
MONTREAL

Tuesday 20<sup>th</sup>.

Dear Sir Arthur,

I had a charming,  
though short, letter from the  
President this afternoon,  
granting leave of absence  
"with pleasure".

Thank you!!

Yours  
Archiebold

Your own permission I  
understood was already  
granted. Sailing on the  
Montclair from St John  
26<sup>th</sup> inst. Back End of

April. Shall introduce myself  
to the Royal College of Physicians  
of Edinburgh as "a friend of  
General Camie".



Monday

3106 WESTMOUNT BOULEVARD  
MONTREAL

My dear Sir Arthur,

I have just received  
your letter. It is a beautiful letter, and  
I send you my most heartfelt thanks.

Though we meet all too rarely, I  
prize your friendship more than I can tell you,

and these good words of yours about  
my dear father deepen that feeling and  
make it still more solid. While the  
public appreciated fully his character in  
public life, only his children could know what  
a wonderful father he was.

Please tell Lady Currie also how deeply  
we are touched by your letter, and by the  
sympathy which you both have expressed

Yours sincerely  
Edward Archbold