

File re appointment of Cameron

February 15, 1932.

T. W. M. Cameron, Esq., M.A., D.Sc., M.R.C.V.S.,
Lecturer in Helminthology,
University of Edinburgh,
Edinburgh, Scotland.

Dear Sir,

Recognizing that the live stock industry was suffering losses because of animal parasites and that no adequate effort was being made in Canada to study this menace or to deal with it, we decided to undertake investigational work at Macdonald College, which, as you may know, is the agricultural college of this University. The work was begun in 1928, when it was placed in charge of a committee composed of members of different departments interested in this field of study and in a position to participate in it.

We have been able to enlist the interest and financial support of the National Research Council of Canada and also the interest and financial support of the Empire Marketing Board. Working in conjunction with both these bodies and with the Department of Agriculture of the Province of Quebec, we are now building at Macdonald College a research institute for animal parasitology. The building will be completed in April.

We are very anxious to secure the services of a good man to be Professor of Animal Parasitology and to act as Director of the Institute. On the recommendation of Dr. H.M. Tory, Chairman of the National Research Council, I wish to offer you the position, and I hope you will be able to come to us.

As your chief assistant you would have at Macdonald College Dr. R. L. Conklin, the Professor of Animal Pathology, who has already done outstanding research work in this subject and has given much thought to the economic aspects of the situation. We have not yet selected any other assistants for the Department, preferring to allow the Director to choose his own.

We propose that there shall be set up a supervising committee to help the Director in his work and we have already asked the following to be members of that committee:-

Dr. H.M.Tory, Chairman of the National Research Council of Canada.

Professor Barton, the Dean of the Faculty of Agriculture

Professor Conklin, head of the Department of Animal Pathology

Dr. John L. Todd, who has an international reputation as a parasitologist and who is living now in retirement in the vicinity of the college

Dr. Robert Newton and Dr. E.S.Archibald, of the Dominion Research Council

I think we have established the Institute under exceptionally favourable auspices. The Empire Marketing Board, the Dominion Research Council, the Department of Agriculture of the Dominion and the Department of Agriculture of the Province of Quebec are all keenly interested, and I think there is here scope for a man to do most valuable work for the Empire, as well as to make for himself a position of international importance.

I think you would find at Macdonald College congenial colleagues. We have there the outstanding research and post graduate school in connection with agriculture. We have a strong staff, and are now doing more research work than all the other agricultural schools in Canada combined. The Institute now being built and equipped will provide all the facilities you require for a beginning, and I have no doubt that as the work increases provision for additional facilities will be forthcoming. At Macdonald and at McGill University we have splendid libraries.

We are not advertising the position. I believe Dr. Tory and Dean Barton are known to you, and it is on their recommendation and also on the recommendation of the Empire Marketing Board that I am offering the position to you.

As to the amount of teaching you would be required to do, that would be a matter of arrangement between you and the Dean, but I assure you that you will not be overburdened with teaching work.

The appointment, you will note, is to a professorship and to the directorship of the Institute. There is no probationary period. The salary, to begin with, will be \$4500 per annum and \$500 for your travelling expenses from Scotland.

Macdonald College is a residential college and we shall find a residence for you at the earliest opportunity, if one should not be available when you come. However, in the village of Ste. Anne de Bellevue which adjoins the College, it is not difficult to find a house at reasonable rentals. The college residences provide good accommodation at low rentals.

I may say that in Canada the income tax is very low compared with the income tax in the old country.

Your salary would commence from the first day of September next.

As to pension, we have a plan whereby the University will contribute an amount equal to 5% of each member's salary to purchase an annuity to begin at the age of 65, on the condition that such member pays a like amount for the same purpose. Our regulations provide that a professor may be asked to retire on reaching the age of 65, but I may add that we have some professors who have remained with us beyond that age because we believe they are quite capable of rendering as useful service now as ever.

I may add that we have strong biological departments at McGill. You would have as colleagues such men as Lloyd and Scarth and Huskins in Botany; Collip and Thomson in Biochemistry; Tait and Babkin in Physiology; Murray (from Cambridge) in Bacteriology; and at Macdonald College itself, Conklin in Animal Pathology, and Brittain in Entomology. In the Department of Zoology at the University, Dr. Willey retires this year but he has a most capable assistant in Mr. Berrill (from Leeds), who may be given the Department on probation, but we are trying to get one of the best men in England to come to us.

I am sure that you would find yourself with congenial colleagues and congenial surroundings at Macdonald College, which, as you know, was most generously endowed by the late Sir William Macdonald, and I sincerely hope you will decide to come to us. I would expect you to take up your duties early in September.

Yours faithfully,

Principal and Vice-Chancellor.



DEPARTMENT OF HELMINTHOLOGY,
DEPARTMENT OF ZOOLOGY,
WEST MAINS ROAD,
EDINBURGH.

9th March 1932.

Sir Arthur Currie, G.C.M.G.,
M'Gill University,
Canada.

Dear Sir Arthur,

I received your letter of the 15th February last week, relating to the new Chair in Parasitology at M'Gill University and I am deeply sensible of the honour you have done me in inviting me to accept the first Professorship.

Before I can give you a definite reply, however, I would be glad if you could give me some further particulars about the position. I have no information about the new Institute except such facts as are contained in your letter; and I would like to be able to visualize fuller the buildings, the apparatus, the resources for research and development (financial and otherwise) and the possible staff contemplated. I fully realise that some of this information may not be fully available as yet, but I would appreciate your own or Dr Tory's views on the subject.

From the personal point of view, I would like to know more about my own prospects, both financial and otherwise)



DEPARTMENT OF HELMINTHOLOGY,
DEPARTMENT OF ZOOLOGY,
WEST MAINS ROAD,
EDINBURGH.

otherwise, particularly in relation to the University and the research Council. I do not know the relative cost of living, rental of houses and so on, in Eastern Canada.

I may mention that I am in receipt of £850 per year here from the University and, in addition, I earn about another £100 from Territorial pay, Reviews and articles for scientific journals, examination fees and so on. All of these would cease, of course, if I left Britain. The Superannuation scheme here is on a 15% basis - 5% from myself and 10% from the University; to continue the same retiral benefits would accordingly reduce the Canadian salary by 5%.

I am,

Yours very sincerely,

Thomas W.M. Cameron

To Dr. Barton
see me about
this Antkurre
27/2/32

March 29th, 1932.

T. W. Cameron, Esq., M.A., D.Sc., M.R.C.V.S.,
Lecturer in Helminthology,
University of Edinburgh,
Edinburgh, Scotland.

Dear Mr. Cameron,

Let me acknowledge with thanks your letter
of March 9th.

I am attaching herewith a memorandum which
should give you the information you ask for regarding the
building for the Institute of Parasitology. On the
second sheet of this memorandum you will see the financial
provision to enable the work to be carried on over a period
of at least three years. There is also a statement of
the staff we contemplate, as a beginning.

The future of this Institute will be deter-
mined by what we can make of it, and it is for that reason
that I am anxious to have you come. There is no doubt
of the keen interest, at the present time, of the Empire
Marketing Board, the Dominion Research Council, the De-
partment of Agriculture of the Dominion and the Department
of Agriculture for the Province of Quebec. The money
available, together with the equipped Institute, should be
sufficient to enable us to demonstrate whether we can make
progress or not, although I know that three years is a
minimum time - probably too short a time - in which to
expect results. But we must remember two things: first,
that considerable work has been done at the College during
the past three years, and we have these results to go upon;
and in the second place, those interested are research people,
who know that it takes some time to produce results in re-
search work.

Regarding the relative cost of living, rental of house, etc. in Ste. Anne de Bellevue (which is twenty miles from Montreal - three-quarters of an hour by fast and fairly continuous train service) I would say that living is just as cheap, and probably cheaper in Ste. Anne than it is in Edinburgh. So many things can be purchased at the College farm at cost price, and comfortable houses can be rented there at \$50.00 a month. Another factor which should have a bearing on the matter of costs is that the income tax in Canada is very much less than in Great Britain.* We regard \$4500.00 at Macdonald College as quite the equivalent of \$5500.00 in Montreal.

I am afraid I cannot offer any higher figure than the \$4500.00 stated in my letter of February 15th, but I should think you would be able to get quite as much for reviews and articles for scientific journals on this side of the water as over there. In fact, I should think that the same periodicals open to you there would still be available if you were at McGill, while your material is likely to be much increased; furthermore, you would be able to make a connection with journals published in the United States more easily if associated with McGill than if living in Scotland.

Your professorship, of course, would be a professorship in McGill University, and not just a professorship in an Agricultural College. Macdonald College is the Faculty of Agriculture of McGill University.

I cannot promise that there would be any immediate change in pension arrangements, but future salary will depend on the progress made in the Department.

Yours faithfully,

Principal.

* A married man is exempt from taxation on the first \$3000 of income; he pays 2% on the next \$2000 and 3% on the next \$1000. He is also allowed a \$500 exemption for each child under 18 years of age.

T.W.CAMERON
ZOOLOGY
UNIVERSITY EDINBURGH

May 14, 1932.

NO REPLY MY LETTER MARCH TWENTY NINTH PLEASE CABLE
YOUR DECISION

C.P.R. LCO. 1.40. Prepaid answer 1.00

CANADIAN PACIFIC RAILWAY COMPANY'S TELEGRAPH



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TELEGRAM

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RAA33 9 COML MAY 14/32 EDINBURGH 530P=

MAY 14 1932

PRINCIPAL MCGILL UNIVERSITY MONTREAL=

ACCEPTANCE MAILED FORTNIGHT AGO=

CAMÉRON



DEPARTMENT OF HELMINTHOLOGY,
DEPARTMENT OF ZOOLOGY,
WEST MAINS ROAD,
EDINBURGH.

1st May 1932.

The Principal,
M'Gill University,
Canada.

Dear Sir Arthur,

I am very much obliged to you for sending me particulars of the new Institute. I shall be very pleased to accept the appointment and I hope that I shall be able to justify the confidence of yourself, Dr Tory and Dean Barton in offering it to me.

I am organising a symposium on Applied Helminthology at the York meeting of the British Association on the 6th September and I shall be free to sail immediately after that meeting. If I can do anything towards representing the University at that meeting, I shall be only too pleased.

I understand from your letters that it will be necessary to justify the existence of the new Institute within three years or so, and I would urge that steps should be taken to engage experienced workers for the two research appointments which are still to be made. I presume that these will be open to any British subjects - not necessarily to workers at present resident in Canada? If that is the case, I know of two men who would be willing to consider coming to Canada for this purpose in the near future and as experienced workers are scarce in this field, I would like the Committee to consider their qualifications.

One is Leroux, a South African by birth, a Veterinary surgeon trained at Edinburgh with ten years experience in South Africa and Northern Rhodesia. He is an expert helminthologist and a really good laboratory worker.

The other is Parnell, English by birth and a Cambridge graduate in Agriculture. He has been associated with me here in practical field work on the control of helminths in stock animals, in making surveys, and in studying resistance to helminths in different breeds of sheep, etc.

DEPARTMENT OF HELMINTHOLOGY,
DEPARTMENT OF ZOOLOGY,
WEST MAINS ROAD,
EDINBURGH.

I hope that I am not premature in suggesting that such appointments should be considered or in enclosing the attached memorandum on a possible research programme. I hope that it may save valuable time in so doing, but I am writing without knowledge of the situation in Canada. Please regard these as suggestions only.

I also enclose a note of my own qualifications for your own information and in case I can be of service to the University in other ways.

Yours very sincerely,

Thomas W. M. Cameron

COPY.



DEPARTMENT OF HELMINTHOLOGY,
DEPARTMENT OF ZOOLOGY,
WEST MAINS ROAD,
EDINBURGH.
1st May 1932.

The Principal,
McGill University,
Canada.

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DEPARTMENT OF HELMINTHOLOGY,
DEPARTMENT OF ZOOLOGY,
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Yours very sincerely,

Thomas W.M. Cameron



DEPARTMENT OF HELMINTHOLOGY,
DEPARTMENT OF ZOOLOGY,
WEST MAINS ROAD,
EDINBURGH.

14th May 1932.

Dear Sir Arthur,

I received your cable this afternoon and have replied saying that my acceptance of the appointment had been mailed to you a fortnight ago. The letter was registered and this may have accounted for the delay in receiving it. In case it has gone astray and not merely been delayed, I enclose a copy of the letter - I did not keep copies of the two notes referred to in the letter, but I can re-write them if necessary.

I had intended asking you with whom I should communicate about accomodation at Macdonald College. I presume that it will be Dean Barton? I find that there is a ship sailing from Glasgow on the 9th September and I am planning to sail by it; my wife and daughter are accompanying me. Accordingly I should like to be able to arrange the necessary accomodation before reaching Canada.

Yours very sincerely,

Thomas W. Emerson

May 28th, 1932.

Dr. Thomas W. M. Cameron,
Department of Helminthology,
Department of Zoology,
West Main's Road,
Edinburgh, Scotland,

Dear Dr. Cameron,

Let me acknowledge with profound thanks the receipt of your letters of May the 1st and 14th. It so happened that on the day your telegram was received the Committee on Research in Animal Parasitology held a meeting, when the attached memorandum was considered. You will note how close a resemblance this report bears to your own suggestions, and this leads me to the conclusion that you will be able to begin at once a continuation of the studies already launched and that you will have an ardent sympathy with the work. I am very pleased indeed that you have decided to join the staff of McGill.

As regards your assistants, we thought we would wait until you came and made Conklin's acquaintance and decided what further help was necessary. We thought that you would find in Conklin quite as useful an assistant as LeRoux.

Dean Barton is already engaged in looking for a house for you, and I think we shall be in a position to give you favourable information regarding that before you leave Scotland.

Sailing from there on the ninth of September, accompanied by Mrs. Cameron and your daughter, will bring you here at a very convenient time. I am glad that you will be able to attend the Symposium on Applied Helminthology at the York meeting of the British Association on the 6th of September, and that you will appear before that gathering as the Professor of Helminthology of McGill University.

Your colleagues in the biological sciences will give you a warm welcome to McGill. I shall

2.

be writing you from time to time during the summer.

Ever yours faithfully,

Principal and Vice-Chancellor.

British Medical Association.

CENTENARY MEETING, LONDON, 1932.

July 26th, 27th, 28th, and 29th.

President-Elect: The Rt. Hon. LORD DAWSON OF PENN, P.C., G.C.V.O., K.C.B., K.C.M.G., P.R.C.P.(Lond.).

SECTION OF COMPARATIVE MEDICINE.

(Three Day Section.)

President: Professor F. A. E. CREW, M.D., King's Buildings, West Main Road, The University, Edinburgh.

Vice-Presidents: JOSEPH A. ARKWRIGHT, F.R.S., M.D., F.R.C.P., Lister Institute, Chelsea Gardens, S.W.1.
Professor J. B. BUXTON, F.R.C.V.S., Institute of Animal Pathology, Milton Road, Cambridge.
Sir FRANK J. COLYER, K.B.E., F.R.C.S., 39, Palace Road, Streatham Hill, S.W.2.
Colonel A. E. HAMERTON, C.M.G., D.S.O., M.R.C.S., R.A.M.C.(Ret.), 1, Park Village West, Regent's Park, N.W.1.

Hon. Secretaries: Professor FREDERICK T. G. HOBDAY, C.M.G., F.R.C.V.S., Royal Veterinary College, N.W.1.
Professor T. J. MACKIE, M.D., Bacteriology Department, University New Buildings, Edinburgh.
Sir P. CHALMERS MITCHELL, C.B.E., F.R.S., LL.D., D.Sc., Zoological Society, Regent's Park, N.W.
Maj.-Gen. Sir JOHN MOORE, K.C.M.G., C.B., F.R.C.V.S., 16, Frognal Lane, N.W.3.
S. ZUCKERMAN, M.R.C.S., L.R.C.P., 7, Ormonde Terrace, N.W.8.
T. W. M. CAMERON, Ph.D., D.Sc., M.R.C.V.S., Zoology Department, The University, Edinburgh.

Edinburgh University,
8th June 1932.

Dear Sir Arthur,

I received your letter and its enclosures to-day. I hope that I shall be able to justify, at least in part, the high standard which the University sets and the excellent character which you have given me in the Press. I am looking forward to my arrival in Canada with keen anticipation.

I thank you also for asking Dean Barton to look into the question of housing.

The question of assistants is obviously one which can only be settled after very serious consideration, especially as so few people with a knowledge of helminthology are available. I would like to make it clear however, that I was not suggesting that Leroux should replace Dr Conklin. Both from my personal knowledge and from his published papers, I am sure Conklin will make a most agreeable and efficient colleague and his knowledge of Canada will be invaluable. My suggestion was that Leroux might be considered for one of the two additional posts which your second letter mentioned as possible. There is of course no need for haste as he is at present engaged in research in Africa.

With regard to Parnell however, I think the type of work he would be doing could be commenced as soon as the Institute is in working order. It will obviously be necessary from the programme which the Committee has outlined, to engage a junior assistant at a fairly early date - and he has the advantage (to me) of working with me here. We have been carrying

out field experiments in Control and at present we are completing a survey of the parasites of wild mammals in Scotland. I would imagine that some names have already been put forward; at least so I gather from a letter which I received to-day from Professor Faust in Tulane in which he suggests one of his graduates as suitable. That is why I should like Parnell's name added to any such list.

Yours very sincerely,

Thomas W. Emerson

June 21st, 1932.

Professor T. W. Cameron,
Department of Zoology,
University of Edinburgh,
Edinburgh, Scotland.

Dear Professor Cameron,

I am this morning in receipt of your letter of the 8th June. The Committee met again yesterday at Macdonald College, but did little more than approve of the appropriations for completing the furnishing of the Institute. I understand that Professor Conklin has been in communication with you. I was interested in learning that he has lately returned from a visit to Prince Edward Island, where a new parasite has been found working havoc among the pregnant cows. Conklin and others who have studied the matter consider it an absolutely new fluke. You will also be interested to know that the Institute is receiving the personal interest and co-operation of the Department of Agriculture, the Province of Quebec.

Regarding the staff, we decided to leave that matter to be settled when you come.

Yours faithfully,

Principal.



DEPARTMENT OF HELMINTHOLOGY,
DEPARTMENT OF ZOOLOGY,
WEST MAINS ROAD,
EDINBURGH.

15th July 1932.

Dear Sir Arthur,

Many thanks for your letter of the 21st June which I only received yesterday on my return from the North where I have been collecting material to complete my survey of the parasites of Wild Mammals in Scotland.

You mention that the Committee is completing the furnishing of the new Institute. I presume that, at least the major part of the equipment will have to wait until September owing to the special nature of the equipment required for Helminthology. I have already had some experience in this line; I worked out the equipment for the Helminthology department of the London School of Hygiene as well as for my own smaller department here. Accordingly I have a fairly good idea of what can be obtained. Has any definite sum been set aside for equipment (as against furnishing)? And if so, is there any objection to my taking preliminary steps here? Even if I don't, there should be no very great delay in getting things together in September and it would be impracticable to get much equipment together before that as it is a thankless task buying apparatus for another man to use.

I am secretary of the Comparative Medicine Section at



the Centenary Meeting of the B.M.A. in London this month and I am expecting to meet some of my new colleagues there. I heard it rumoured in London recently that you might possibly be in Britain this summer. If this is the case and you are likely to be in this part of the world before the end of August, I hope that you will consider our house at your disposal.

Yours very sincerely,

Thomas W. M. Cameron.

Lowell Barton,

Please note and return

29/7/32

W. M. Cameron



DEPARTMENT OF HELMINTHOLOGY,
DEPARTMENT OF ZOOLOGY,
WEST MAINS ROAD,
EDINBURGH.

Thomas Wright Moir Cameron.

Born; Glasgow, 1894. Married. One daughter, aged 14.
Education; Allan Glen's School, Universities of Glasgow,
Edinburgh & London, Royal (Dick) Veterinary College.
Degrees: M.A., B.Sc.(Vet), Ph.D., D.Sc.(Pure Sc.) M.R.C.V.S.
Appointments; Agricultural Research Scholar, 1921-23. Lecturer &
Milner Research Fellow, London School of Hygiene & Tropical
Medicine, 1923-29. Asst.-Director, Institute of Agricultural
Parasitology, 1927-29. Lecturer in Helminthology, Edinburgh
University and Royal (Dick) Veterinary College, 1929-32.
Secy. of Edinburgh Branch, Royal Society of Tropical Medicine, of
Comp. Med. Section, B.M.A., Centenary Meeting, 1932, and of the
International Society of Helminthologists. Asst-Editor,
Helminthological Abstracts.
Teaching Experience; Helminthology for D.T.M. and D.P.H. (London &
Edinburgh) D.T.V.M., D.V.S.M., and M.R.C.V.S. (Edinburgh) This
includes the complete range of medical and veterinary helminthology,
both tropical and temperate.
Publications; About 60 papers on Helminthology; Book on Diseases of
Animals transmissible to man. Text-book on Veterinary Parasitology
should be published in the fall or winter.
Military experience; G.U.O.T.C., 1912-14; H.L.I., 1914-16; R.F.C., &
R.A.F., 1916-19; R.(D) V.C., O.T.C., 1921-23; R.A.V.C.T., 1923--

Convention Aug 1934

An International Veterinary Congress will be held in New York from the 13th to 18th August, 1934. This will be attended by Veterinary Surgeons from all parts of the world, including all parts of the British Empire. These Veterinary Surgeons will range from Government Officials, Laboratory workers and Army men to public health inspectors and private practitioners.

There is little likelihood of such a congress being held in Canada within the next few years. It only meets every ten years and it is unlikely that it will again meet in America for some time.

It seems desirable that all the Empire Veterinarians visiting this continent should have an opportunity of seeing the Dominion and the work that is going on there. Accordingly, it is suggested that a short extension course in Parasitology lasting for say ten days, be held at Macdonald College sometime after the ^{28th} ~~tenth~~ of August.

It should be pointed out that it is only recently that Parasitology has become a major subject in the Veterinary Curriculum and that although its importance is now generally recognized, very few veterinarians have had any opportunity of studying this subject practically. The Institute of Parasitology has an Imperial ideal as well as a Canadian one and this would be an almost unique opportunity, not only of extending the sphere of influence of the Institute but of attracting the attention of the other parts of the Empire to the work being carried on in the Dominion.

It is suggested that the staff of the Institute be supplemented for this purpose by distinguished visitors at the Congress from other parts of the Empire and perhaps also from the United States. This would enable us to produce a short course here which would be unique in the history of the science. The cost to the students would be small - a nominal fee for the course and board and lodging at the rate of \$8. per week. Accommodation for wives would also be available at the College.

The visit might be combined with any other activities which the Dominion might desire as it would probably be possible to arrange for delegates and visitors to visit Ottawa, etc., en route for Montreal and to depart from here direct to their homes, (via Canadian transport instead of American.) The Empire Marketing Board or C.D.F. might also be interested in this project.

These proposals are merely in the exploratory state yet and no arrangements whatever have been made. It will, however, in order to reach the various parts of the Empire in time to have their local arrangements completed in good time, be necessary to take steps in the near future.

October 10, 1933.

Dear Professor Cameron,

I have no objection to a short extension course in Parasitology being offered at the Institute next August to coincide with the International Veterinary Congress at New York from the 13th to 18th August, but I suggest that you consult Professor Snell and Mr. Ward to see if any other Summer School or Extension work is to be in progress at that time. We cannot have conflicting times. I know that the Summer School for Clergymen is held at the College every year in August, and it might be that we could not also offer Parasitology if the dates conflict.

Another point on which we must all be quite clear - the University cannot be involved in any expense whatever in connection with such a course; ~~if~~ ^{if} it will not carry itself I am afraid the idea must be given up at once. You suggest supplementing the staff of the Institute by distinguished visitors at the Congress and a nominal fee for board and lodging for students. Would the guests be willing to lecture for nothing?

2.

It is a most unpleasant duty that I have just now, that of curtailing even the legitimate activities of the Departments of the University, but, frankly, the financial situation is such that I must be sure that nothing adds to our burden.

Ever yours faithfully,

Principal

re pension

May 5, 1933.

Dr. T.W.M. Cameron,
Institute of Parasitology,
Macdonald College.

Dear Dr. Cameron,

I have received from Mr. Eagleson
for my approval copy of the budget submitted by
you for inclusion in the Minutes of the last meeting
of the Committee.

The next time you are at McGill
will you please drop in to my office to see me.
There are one or two matters on this budget that
I wish to discuss with you.

Ever yours faithfully,

Principal

Membership on Faculty of Agriculture

MACDONALD COLLEGE

McGILL UNIVERSITY

RAILWAY STATIONS AND EXPRESS:
STE. ANNE DE BELLEVUE, QUE.

POST OFFICE:
MACDONALD COLLEGE, QUE., CANADA

FACULTY OF AGRICULTURE
OFFICE OF THE DEAN

November 15th, 1932.

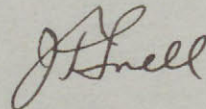
Sir Arthur W. Currie, G.C.M.G., K.C.B.
Principal,
McGill University,
Montreal, Que.

Dear Sir Arthur:

Dr. T.W.M. Cameron, Director of the Institute of Parasitology, tells me that he has not been appointed a member of the Faculty of Agriculture. While it is true that he will be doing very little undergraduate teaching, only half a course every second year, it would appear to me desirable that he should be named a member of the Faculty of Agriculture.

I do not know what is your intention in regard to the chair of Animal Husbandry. It would seem necessary for that department to have representation in our Faculty meetings and I would suggest that Professor A.R. Ness, the senior member of its staff, should be asked to attend the meetings until an appointment to the chair is made.

Faithfully yours,



Acting Dean.

JFS/Y

*Noted
J.H.S.
21 Nov 1932*

November 18, 1932.

Professor John F. Snell,
Acting Dean, Faculty of Agriculture,
Macdonald College, P. Que.

Dear Professor Snell,

On my return from New York this morning I found awaiting me your letter of November 15th. Please inform Dr. Cameron that his appointment was Professor of Parasitology, McGill University, and Director of the Institute of Parasitology at Macdonald College. By this fact he is a member of the Faculty of Agriculture at Macdonald College, and will also, I take it, be asked to sit as a member of the Faculty of Graduate Studies and Research. However, this latter fact must be taken up in formal fashion by the Faculty of Graduate Studies.

I have not made a final decision with regard to the Department of Animal Husbandry. Dean Barton assured me that he had made clear to both Professor Ness and Professor Crampton what their duties would be until the matter was finally settled. What I would suggest to you would be to ask both Ness and Crampton to attend Faculty meetings until farther notice. I shall try to get out shortly.

Yours faithfully,

Principal.

P.S. In New York yesterday I saw President Murray of Saskatchewan University who told me that he had seen President Klinck in Toronto and learned that the latter intended to visit Macdonald College. If he does so, will you please tell him that I would like to see him.

MACDONALD COLLEGE

McGILL UNIVERSITY

INSTITUTE OF PARASITOLOGY

RAILWAY STATIONS AND EXPRESS:
STE. ANNE DE BELLEVUE, QUE.

POST OFFICE:
MACDONALD COLLEGE, QUE., CANADA

Cameron's paper at York
Conference

14th - October 1932

Dear Principal,

I am enclosing herewith, at
Dean Barton's suggestion, a copy of
the paper I presented to the British
Association at York. It is being
printed by the Imperial Bureau of
Agricultural Parasitology and I shall
send you a printed copy in due
course. Meanwhile the typewritten
one may be of interest to you as
showing our ideas for the future.

I was sorry we could not visit
you last week but in any event we
are up to our eyes in settling down
and the commencement of the

HELMINTHOLOGY
AND ITS APPLICATION TO LIVE-STOCK

by

Thomas W. M. Cameron, M.A., D.Sc., M.R.C.V.S.
Professor of Parasitology, McGill University,
Montreal.

(A paper presented to Section D. of
the British Association, York,
6th September, 1932.)

The helminths of the domesticated animals are very closely related to those of man; so much so, that no student of the one branch can afford to neglect the study of the other. In practice, however, several very important distinctions must be drawn between these two groups. In the first place, human helminths are essentially tropical in their importance; veterinary helminths, on the other hand, are nearly as important in temperate as in tropical climates. Secondly, hygiene and sanitary science have practically eliminated human helminths from temperate countries; these sciences have scarcely touched the domesticated animals yet and the parasitic worms continue to be highly important factors in animal health. By its very nature, veterinary helminthology is much more difficult and much more complicated than is human helminthology. Animals normally live in an environment more than favourable for parasites: they continually contaminate their food with droppings; their food is uncooked and their skins are hairy and dirty.

Far from improving, the situation in animals is steadily becoming worse. As agricultural science makes possible the keeping of more and still more animals on a limited area, so also does it make possible an increase in numbers of their parasitic worms. There has been a gradual transition from nomadic conditions on open fields and hills to enclosed fenced conditions in farm-steads. Under natural conditions, ground is normally lightly stocked with scrub animals. In artificial modern conditions, land is heavily stocked with pure bred animals with a high productive capacity and a low resistance to disease.

And this country now supports a million horses, seven and a half million cattle, over 26 million sheep and nearly three and a half million pigs. Egg production in the parasite has been evolved to provide against light stocking - for sheep in the hills and horses in the dry plains. The chances of individual reinfection were slight - about one in a million - and so *Ascaris* learned to produce some 30,000 eggs daily and *Taenia* 150 millions yearly so that even one might return to continue the race. We have confined the range of our animals, the eggs have been concentrated and parasitic infection has become so heavy as to produce disease. It must not be thought that the parasites are harmful naturally. A large proportion of such pathological lesions as do occur are due to larval forms. No adult worm desires to injure its host and so sacrifice its own life. It is only when through accident, that numbers increase beyond the supporting capacity of the host, that disease commences. Practically all wild animals carry worms; few suffer from worm-produced disease. That is a penalty we pay for our disturbance of the balance of nature.

It is difficult to estimate just what this disturbance is costing us. Sheep and horses suffer more from parasitic disease than from any other cause; pigs and carnivores nearly as much. We know that Liver Fluke costs this country at least a million pounds yearly; even more costly are the losses due to the small intestinal trichostrongyles, to hook worms and to lung worms in sheep. Probably we would not be far from the mark if we estimate that about ten per cent of all sheep (especially lambs) die yearly from worms - directly or indirectly.

The percentage is even higher in horses and pigs. The losses are not confined to death however; condemnation of food offal in the meat market, lowered production of meat, milk, eggs, power, young and growth are even more important. They are generally attributed to other causes, as the common symptoms of helminthiasis - a prolonged and progressive afebrile unthriftiness gradually resulting in death - are not sufficiently spectacular to attract attention or are masked by superimposed bacterial infections. We are certainly under-estimating the situation if we say that over ten million pounds are lost to this country yearly through the agency of helminths. This estimate is based on the present low price of stock.

We know that some of this loss is already preventable and we are reasonably certain that much more could be, if we had fuller information about the various species infecting animals. About a thousand species are already known to parasitise domesticated animals in various parts of the world. We know none of them thoroughly - nor even well and most of our existing knowledge is very recent. We can recognise them on sight but we would be safe in saying that is the sum of our knowledge in well over nine tenths of the cases. We know little of their distribution or the causes governing this, and practically nothing about how they affect the host. In under five per cent of the cases, do we know even the outline of the life cycle. We have only the most superficial knowledge of therapeutic measures - only two outstanding drugs have been introduced into veterinary helminthology in modern times - carbon tetrachloride and tetrachlorethelene. Practically all

the others in every day use are heritages of ancient civilizations. Research is too often uncontrolled and the workers are too few to make any other than slow progress. Little help is given by the pathologist - the technique for examining for helminths is too little understood and even trained pathologists only see the grosser forms - and most species are minute. But even with our present knowledge much could be done to reduce losses in stock - if only the stock owner would co-operate. It is impossible in a paper of this length to detail prophylactic measures for individual cases; but perhaps I may be permitted to deal collectively with the main lines on which this can be carried out.

General Principles of Prevention:

1. Destruction of adult worms in situ. This must be regarded as a preventive measure as well as a curative one and it is in the former light that we shall discuss it. All anthelmintics are animal poisons. And accordingly should only be given under expert advice. Flocks and herds should be treated in the mass in order to abolish the reservoirs from which other animals are being infected. This is specially true for older animals which generally do not show symptoms of parasitism so much as young animals. We know few satisfactory anthelmintic drugs; but these should be used where ever possible. This is specially true for sheep where a mixed infection in the abomasum and intestine is the rule. Most drugs are satisfactory for only some species; but a reduction in number of even only one species will lessen the strain on the host and reduce the potentialities for infection. Any drug which produces a mild

transient enteritis, for example, will remove intestinal worms: and bacteria often play a natural role in doing this. Monthly treatment of sheep and horses will very considerably lessen infection and keep the animals in good condition.

2. Manure disposal if perfect, would eliminate the vast majority of helminths. Unfortunately it is far from perfect. In special circumstances it can be stored until its own heat has destroyed the eggs which it contains; or it can be burned; or it can be spread on fields which are either used for crops or, if for pasture, where other kinds of stock will graze. The helminths of different animal groups, as a rule, are not interchangeable. Young animals, especially should be kept off fields where manure from their own species or from human or canine sources is used. Chemical disinfection of manure is not yet practicable.
3. Once the eggs are hatched, it is more difficult to keep them away from the animals. Most of the forms in this country, must be swallowed with food or water. Many of them climb up grass in damp weather, retreating to the soil when the sun dries the grass. Housing animals until the dew is off the grass; draining of pastures, burning of long grass -- are all possible, if not always practicable, methods of control. The use of raised water troughs is a useful measure when the larvae - as in the case of the husk-worms - are mainly water-carried. Mixed grazing kills many. In a mixture

of sheep and horses, for example, many of the sheep larval forms are eaten and digested by the horses and vice versa. The feeding of animals on bare ground or in stables is often valuable and rotation of pastures and stock also helps. Permanent pastures are always dangerous.

4. When the larva enters the host, control becomes even more difficult, but some success has been obtained by the use of "licks" containing tobacco and other substances which are lethal to the young worms. Repeated dosing with anthelmintics is, however, the only practicable method at our command at present.
5. When an intermediate host is necessary, control must be centred on its elimination. Snail control is relatively easy, in theory at least, since the use of copper sulphate has become common. The aeroplane has even been pressed into service in spreading this chemical. Ecto-parasite and other branches of insect control are subjects which necessitate the attention of all interested in worms as well as entomologists, but it is too large a subject to discuss here.
6. Reservoirs: Many of the helminths of domesticated animals are also found in wild animals and much more information as to the parasitic fauna of the wild mammals of all countries is necessary. *Syngamus* in wild birds, liver-fluke in rabbits and deer, *Echinococcus* in foxes and so on are examples from this country. Accordingly no parasitic survey of a district can afford to neglect wild hosts, and preventive measures must take cognizance of their presence.

So much for the present. The situation is serious and is yearly becoming more serious. What of the future? More and better research is urgently required. But helminthologists can not be made overnight and the process of interesting and training suitable men must be carefully carried out. Parasitology is not a narrow field of study - it is as wide and general as biology itself; and no zoologist can pass through his professional life without over and over again meeting parasitic helminths, but it cannot be limited to zoologists. Helminthology should postulate a general zoological training; but as a rule, the young student gets an introduction to parasitology in his early zoological classes which effectively puts him off the subject for the remainder of his professional life. The subject is usually inaccurately taught and uninterestingly presented, and the few exceptions serve merely to emphasize this. It is almost always entirely anthropomorphic in its outlook, and unsuitable or aberrant types are chosen either because it is believed that students will become interested only in the parasitic worms because they occur in man or, because tradition had selected the types before helminthology became a science and only human parasites were then accurately described. Neither reason seems to me to be valid. If the subject is taught practically, as it should be, the student will collect his own parasites from his own dissection animals. He can find suitable trematodes in his frogs, suitable tapeworms in his rats and mice, suitable nematodes in his rabbits. His interest is immediately aroused by forms which he himself has collected and he realizes that parasitism is one of the

commonest phenomena in nature. It will be argued that the bulk of the students in the early zoological classes are destined to become medical men and that therefore, medical types should be chosen. This reason is no more valid than the others. The botanist does not teach bacteriology; and helminthology, as a branch of medicine should not be introduced into the curriculum until the student has studied disease. The experience of teachers in postgraduate medical classes is that the ignorance of this subject of the young graduate is colossal and that the time spent on helminthology in his first year, has been entirely wasted. The position in veterinary medicine is much better, as helminthology is taught as a special subject late in the professional curriculum. I submit that zoologists are largely missing their opportunity, that helminthology should be introduced into the zoological curriculum only as an introduction to a group largely responsible for the phenomenon of parasitism, with generalized, simple, typical "types," and that, as a branch of pathology, it should be introduced much later into the medical curriculum. Thus treated, the subject would not only be better taught, but would actually excite the interest of the student. Once his interest is excited, it becomes necessary to discuss the subsequent qualifications necessary for the man who will be encouraged to undertake helminthological research. This research, may of course follow several different avenues of approach; and which we should adopt will largely depend on the type of man we are dealing with. There appear to be three main avenues - apart of course from the use of helminths purely as zoological material, for cytology, embryology, experimental biology and so on.

Applied helminthology seems to demand one or more of the following three qualifications:

1. Zoological:

We must be able to recognize our animals when we see them; i.e., we must know taxonomy and morphology. We must know their life cycles in the free state or in the intermediate host and we must be able to recognize the stages. We must know how worms live, what products they secrete or excrete, how they feed, breed, and so on. These are all questions of pure zoology and a general zoological and biochemical training is necessary for the man who undertakes research along these lines.

2. Medical and Veterinary:

We must know what a helminth does to an animal, how it affects the animal organism by its habitat, its search for food, its larval and adult migrations, how it disposes of its metabolic products and disperses its eggs or larvae, and how it can be eliminated. These are problems of pathology and therapeutics which can only successfully be tackled by one with a medical or veterinary training, with his knowledge of comparative pathology, bacteriology and biochemistry.

3. Agricultural:

We must know how to prevent infection in our stock, how agricultural practice hinders or prevents infection, how preventive measures can be formulated so as not to

conflict too much with established practice or to destroy valuable by-products. This is a most important line of research where an agricultural training is essential with a knowledge of zootechny, breeding and feeding habits or stock and general farm management.

Each worker must know at least a little of the other branches and no real hard and fast line can be drawn between the various kinds of research. Veterinary helminthology cannot be restricted to a knowledge of the worms of domesticated animals alone: it must include those of man and of the related wild animals at least and, ideally, would include all parasites of all animals. Each class of worker must know his literature and this has been simplified in recent years by the work of Stiles and Hassell in American and the J. B. A. P. in Britain. The young worker will find that he must have more than the patience of Jacob before he can obtain his Rachael. He will have to live in the shadow of the slaughter house and the manure pile and work often under most uncomfortable conditions, and he must do it because he wants to do it. In this, however, as in most other research careers, success depends less on ability than on adaptability.

I hope I have not painted too dark a picture of both the present and the future. There are many at present who amply comply with with requirements which I have laid down. But many more are necessary before progress will be obvious. They must come forward of their own free will however, not as the result

of financial baits held out by research institutes: their aim must be to make a life rather than a living.

I have tried to answer in general lines three questions:

How serious are helminthic infections in stock?
What we can do with our present knowledge?
and How we should go about to increase that knowledge?

There is no doubt that helminthiasis is a most serious menace to the health of the stock animals of this and other countries - at least as serious as the bacterial and virus diseases.

We have disturbed the balance of nature and we are only just beginning to realize that we cannot do this with impunity.

This disturbance is still continuing and strenuous and intensive work will be continually required both in the laboratory and the field before we can regard the situation with anything approaching satisfaction.

October 22, 1932.

Professor T.W. Cameron,
Institute of Parasitology,
Macdonald College,

My dear Professor Cameron,

Thank you for your letter of October the 14th in which you sent me a copy of "Helmánthology and its Application to Live-stock". I hope to get a chance to read this on Sunday. I have been so pressed this week that there has been no time to get to it.

When you and Mrs. Cameron are settled, I hope you will come and have tea with us some afternoon.

Ever yours faithfully,

Principal.

Re Lecturing in Medical Faculty

MACDONALD COLLEGE

MCGILL UNIVERSITY

RAILWAY STATIONS AND EXPRESS:
STE. ANNE DE BELLEVUE, QUE.

POST OFFICE:
MACDONALD COLLEGE, QUE., CANADA

22nd September 1932

Dear Sir Arthur,

I landed at Montreal and immediately proceeded here on Monday. The purpose of this letter is formally to report my arrival in Canada.

I saw Dr Todd to-day and I gathered from him that the course in Medical Parasitology had been discontinued since his retreat. As you know, I have been teaching this subject for the past twelve years in London & Edinburgh (both for students from the tropics and those taking the Diploma in Public Health) and I shall be more than pleased to give whatever assistance I can in a similar manner here. I have brought with me a very complete teaching collection (human, veterinary, and agricultural) so that if it is possible to revive the

come in the near future, there need be
no delay in starting.

I realize, of course, that my appointment
is primarily a research one but I believe
that a little teaching is very desirable for a
research worker: and moreover it helps to
stimulate interest in the subject among younger
people and to secure a future supply of
research workers.

Yours sincerely

Thomas W. M. Cameron.

To Dean Warner

Please note and return,

24/9/32

T. W. M. Cameron

September 24th, 1932.

Dear Professor Cameron,

I am this morning in receipt of your letter of the 22nd. Had I known the exact time of your arrival I would have joined with others in meeting you at the boat. I have not seen Dean Barton who tells me that you are getting settled at Macdonald and he speaks most kindly of the first impressions you have made. I hope you will come in to see me shortly.

I will discuss with Professor F. F. Martin, Dean of the Faculty of Medicine the matter of the lectures in Parasitology.

Ever yours faithfully,

Principal

Professor Thomas Cameron,
Macdonald College,
McGill University.



MCGILL UNIVERSITY

September 26th, 1932.

Sir Arthur Currie,
Principal - McGill University,
Montreal.

Dear Sir Arthur,

Many thanks for the letter from Professor Cameron, which I am returning, herewith.

The information he received from Dr. Todd, I regret, is not quite correct - whereas no professor was appointed in Dr. Todd's place, the course was continued for a number of years by Dr. McTaggart, and since his death the subject has been taught through an arrangement with Professors Oertel and Meakins, the subject matter being included in their regular teaching.

I am sure the Medical Faculty would very heartily welcome Professor Cameron's co-operation, and a course such, as he suggests, would be most useful to many of our students.

If I can do anything in the matter of furthering his desires, I will, of course, be only too glad to do so. If you wish, I will be glad to get in touch with him and discuss the matter.

Faithfully yours,

C. J. Martin
DEAN.

R-52
-7-109 Cameron

September 28th, 1932.

Dr. C. F. Martin,
Dean of the Faculty of Medicine.

Dear Dr. Martin,

Thank you for your letter of September 26th. I shall be glad if you will discuss the matter sometime with Professor Cameron, and let me know if you are able to make the arrangement he suggests as to giving a course in Medical Parasitology. I shall see him on Friday afternoon and will then tell him to get in touch with you.

Ever yours faithfully,

Principal

MACDONALD COLLEGE

McGILL UNIVERSITY

RAILWAY STATIONS AND EXPRESS:
STE. ANNE DE BELLEVUE, QUE.

FACULTY OF AGRICULTURE
OFFICE OF THE DEAN

POST OFFICE:
MACDONALD COLLEGE, QUE., CANADA

January 6th, 1932.

Sir Arthur W. Currie, G.C.M.G., K.C.B.
Principal & Vice-Chancellor,
McGill University,
Montreal, Que.

Dear Sir Arthur:

It has occurred to me that in making the appointment of Research Professor in Parasitology and Director of the Institute, it should be made clear that while the duties of the position would involve the direction of a certain amount of graduate work that might be undertaken, the undergraduate work in parasitology would continue as now organized, in association with the work in Entomology and under the general direction of the head of that department. This is the arrangement that we feel will work most satisfactorily and, to avoid any possible misunderstanding, it would seem advisable to have it understood from the outset. Dr. Brittain and Dr. DuPorte are quite agreeable to this plan.

Yours faithfully,

H. T. Darbois
Dean.

HB/Y

*Cameroon's ideals
on appointment*

Research in Agricultural Parasitology.

There is little doubt that the most important source of loss to the live stock breeder is that caused by the various animal parasites. They do not so often, perhaps cause the death of the animal and they are much less spectacular in their manifestations than are the bacterial and virus diseases. They do however, cause enormous losses through their own actions on the hosts and in association with bacteria as secondary invaders. This loss is the more serious because stock owners are usually unaware of the presence of the parasites and attribute their effects to other causes.

As agricultural science improves, helminth parasites become more and more important. Animals are confined on limited areas of ground which become infected from the droppings. Helminths cannot increase inside the body and in every case, the eggs or larvae are passed to the exterior and have to be swallowed before development can be completed. The concentration of animals means the concentration of these infective forms and so parasitic disease commences.

The problems which require solution and in which research should be undertaken are, in general terms, as follows:

- (1) The first step must be a survey of the animal parasites existing in different species of economic and related wild animals in Canada.
- (2) Research into the bionomics of the non-parasitic stages should then be undertaken. Very little is known of these larvae, - type of soil required, temperature and moisture requirements, resistance to adverse influences and so on. No two species are exactly alike and until the biology of the infective stages is accurately known, control must remain theoretical.
- (3) Research into the bionomics of the parasitic larvae and adults in the host. Many larvae undergo extensive migrations in the host and these are largely unknown. We know practically nothing of the food requirements, of the excreted products, of the actual pathogenic mechanism, of immunology, of chemotherapy (in many cases) and so on.
- (4) Research into seasonal and geographical distribution. This series of problems is to some extent a corollary of (2) but it involves a study of animal husbandry in relation to helminthology in addition to a knowledge of the requirements of the parasites.
- (5) Research into methods of control. With a few well known exceptions, these are still largely theoretical and controlled field experiments embodying the findings of the laboratory must be carried out before specific recommendations to stock owners can be given.
- (6) Teaching. This is scarcely a research problem but if workers are to be obtained, it must be associated with a research institute. A few post graduate students who are anxious to study the subject should be encouraged from the beginning.