

Subject: Letter from Dr. Chanutin, University of Virginia.

EIDMK

2nd Memo. Ind.

707296

Research Division, Manhattan District, Oak Ridge, Tennessee, 10 September 1946. To: Colonel Wm. D. Fleming, Director, Medical Division.

This document inadvertently sent to this office is returned to you for appropriate action.

A. V. PETERSON,
Director, Research Division.

2 Incls.:
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Mr. Welsh 57411
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Subjects: Letter from Dr. Chanutin, University of Virginia.

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2 Incls.:
n/c

A. V. PETERSON,
Director, Research Division.

1020794



Subject: Letter from Dr. Chanutin, University of Virginia.

EIDMI

1st Memo Ind.

28

U. S. District Engineer Office, Manhattan District, Oak Ridge, Tennessee, 30 August 1946. To: Director, Research Division, Executive, Manhattan District (in turn).

1. For your information and comment.
2. While there would appear to be no violation of security in fulfilling Dr. Chanutin's request, any results of experiments by Dr. Chanutin on the sera would necessarily be subject to scouting under declassification regulations prior to any dissemination.
3. Although it is not clear from Dr. Chanutin's letter whether he is still doing contract work for the Chemical Warfare Service, that fact can be inferred.
4. A further fact to consider is the advisability of placing the Manhattan District in the position of acting as a supply agency for outside interests, although the monetary factor in this case would undoubtedly be minor.
5. In view of the above, it is suggested that contractual arrangements be worked out with Dr. Chanutin, whereby he may be enabled to procure the sera desired and the District will receive desired data and retain control of the dissemination of resulting information.

For the District Engineer:

S. L. BROWN,
Colonel, Corps of Engineers,
Director, Security Division.

- 2 Incls.:
1. Basic Letter
 2. Ltr fro Dr. Chanutin

Subject: Letter from Dr. Chanutin, University of Virginia.

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1st Memo Ind.

28 August 1946.

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Colonel, Corps of Engineers,
Director, Security Division

2 Incls.:

1. Basic Letter
2. Ltr fro Dr. Chanutin

1020796

WAR DEPARTMENT
CORPS OF ENGINEERS
OFFICE OF THE DISTRICT ENGINEER
MANHATTAN DISTRICT
OAK RIDGE, TENNESSEE

ADDRESS REPLY TO:
DISTRICT ENGINEER
MANHATTAN DISTRICT
CORPS OF ENGINEERS
P. O. BOX 16
OAK RIDGE, TENNESSEE

REFER TO FILE NO. E1D4T



Subject: Attached Letter from Dr. Chanutin, Univ. of Virginia
MEMORANDUM to Chief, Security Division, Manhattan Engineer District.

1. Reference to attached letter from Dr. Alfred Chanutin, Professor of Biochemistry, University of Virginia, which requests that the Manhattan Engineer District furnish him sera from animals which have been irradiated by neutrons and beta and gamma rays, clearance is requested for supplying him such sera from animals so irradiated in work done in various research contracts under Manhattan Engineer District, notably at the Universities of Rochester and Chicago.
2. That the work of the Manhattan Engineer District involves production of neutrons, beta and gamma rays has been a notorious fact since the publication of the Smythe Report. That such work involves animal exposure to such radiation is equally notorious. Even if Doctor Chanutin desires a statement of the exact dosage of radiation of the animals whose sera might be furnished, it is believed this would not divulge any information as to the exact experiments in which such animals were involved, either as to purpose, technic or results.
3. On the other hand, information will be very probably gained from Doctor Chanutin's proposed work on such serum which would be of direct value in the problems of this Division. It is proposed to secure an agreement from Doctor Chanutin to furnish such data to the Division as an essential condition to such supply of sera if the proposal is given clearance.
4. The work being done by Doctor Chanutin and his Department is known to me personally as being of the highest order of scientific merit. The work on electrophoresis in particular requires peculiar training and equipment which is available in very few institutions. Hence, Doctor Chanutin's proposal promises to afford this Division newer data, difficult to obtain in any other manner.

1 Incl.
Letter to Dr. Chanutin

W. D. Fleming
W. D. FLEMING,
Colonel, Medical Corps,
Director, Medical Division

1020797

ADDRESS REPLY TO:
DISTRICT ENGINEER
MANHATTAN DISTRICT
CORPS OF ENGINEERS
P. O. BOX "E"
OAK RIDGE, TENNESSEE

WAR DEPARTMENT
CORPS OF ENGINEERS
OFFICE OF THE DISTRICT ENGINEER
MANHATTAN DISTRICT
OAK RIDGE, TENNESSEE

REFER TO FILE NO. EIDMT

28 August 1946.

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1 Incl.
Letter to Dr. Chanutin

WIL. D. FLEMING,
Colonel, Medical Corps,
Director, Medical Division

1020798

UNIVERSITY OF VIRGINIA
BIOCHEMICAL LABORATORY
UNIVERSITY, VIRGINIA

August 26, 1946

Colonel William D. Fleming, M. C.
Manhattan Project
Oak Ridge, Tennessee

Dear Colonel Fleming:

I am writing to you at the suggestion of Col. John R. Wood, Chief of the Medical Division, Chemical Warfare Service, at Edgewood Arsenal.

For the last three years, I have served first as a consultant to the Medical Division, CWS, under Dr. C. P. Rhoads and Col. John R. Wood, and then as the responsible investigator for contracts for work being done in the Biochemical Laboratory at the University of Virginia. During this time, we have been studying certain aspects of the physiological mechanism of action of mustards. We have been particularly interested in the distribution of the plasma proteins as measured by the electrophoretic method. In addition we have been fractionating these proteins by the alcohol precipitation technique of the Harvard group and have determined the distribution of the lipids in these fractions. During the course of our work, we found that we were getting abnormal proteins appearing in the blood after treatment with the nitrogen and sulfur mustards and after a variety of injuries which included x-ray irradiation. We have some evidence which leads us to suspect that each type of injury produces a different type of new protein in the plasma. In addition, we have studied certain other changes in the plasma which appear to be characteristic for injured and intoxicated animals.

It has occurred to me that certain of the actions of the mustards, particularly the nitrogen mustards, might be similar to that which would be seen in animals exposed to intense bombardment by neutrons or beta and gamma rays. I wrote Col. Wood about this matter and asked if he could possibly obtain sera from animals treated by intense radiation.

1020799

Colonel William D. Fleming, M. C.
Oak Ridge, Tennessee

August 26, 1946

Page 2

He wrote back and informed me that you were in charge of the biological and safety work of the Manhattan project at Oak Ridge, Tennessee. He stated, "I do not know whether they have placed contracts with universities for studies of this type, but I suggest that you might write directly to Col. Fleming and inquire. We have no direct connection with Manhattan District work, and so Col. Fleming could be approached as well by you as by us. He might possibly be interested in having you explore such a problem under contract for Manhattan District. I believe their classification on work of this character is being sharply reduced and may possibly have been made unclassified."

My original question to Col. Wood was one based on curiosity in view of our experience with injury of various types. I am writing to ask if it would be possible to obtain sera from animals exposed to radiation of various types. I would be glad to welcome you or any of your associates to this laboratory or visit you at Oak Ridge or discuss this problem with someone in Washington.

When I first went to Edgewood in November 1943, as consultant, I heard a great deal about you from some of your former associates. They all spoke very highly of you, and I was impressed with the great loyalty and admiration that these individuals had for you. Later I heard much about your work in England during the War.

I trust that I will hear something about the possibility of cooperating with you in the study of the physiological mechanism of the action of intense radiation.

Sincerely yours,



Alfred Chanutin
Professor of Biochemistry

AC
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1020800

EIDMT

28 August 1946.

Subject: Attached Letter from Dr. Chanutin, Univ. of Virginia.

MEMORANDUM to Chief, Security Division, Manhattan Engineer District.

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2. That the work of the Manhattan Engineer District involves production of neutrons, beta and gamma rays has been a notorious fact since the publication of the Smythe Report. That such work involves animal exposure to such radiation is equally notorious. Even if Doctor Chanutin desires a statement of the exact dosage of radiation of the animals whose sera might be furnished, it is believed this would not divulge any information as to the exact experiments in which such animals were involved, either as to purpose, technique or results.

3. On the other hand, information will be very probably gained from Doctor Chanutin's proposed work on such sera which would be of direct value in the problems of this Division. It is proposed to secure an agreement from Doctor Chanutin to furnish such data to the Division as an essential condition to such supply of sera if the proposal is given clearance.

4. The work being done by Doctor Chanutin and his Department is known to me personally as being of the highest order of scientific merit. The work on electrophoresis in particular requires peculiar training and equipment which is available in very few institutions. Hence, Doctor Chanutin's proposal promises to afford this Division newer data, difficult to obtain in any other manner.

1 Incl.
Letter to Dr. Chanutin

WM. D. FLEMING,
Colonel, Medical Corps,
Director, Medical Division

1020801

*Chamartin
Project*

WDF/cm

MEMO

28 August 1946.

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1 Encl.
Letter to Dr. Chamartin

WM. D. FLEMING,
Colonel, Medical Corps,
Director, Medical Division

1020802

UNIVERSITY OF VIRGINIA
BIOCHEMICAL LABORATORY
UNIVERSITY, VIRGINIA

MANHATTAN ENGINEER DISTRICT
File No. Man. 680.2 (R)

September 19, 1946

Colonel William D. Fleming, M. C.
Director, Medical Division
Manhattan Engineering District
Post Office Box E
Oak Ridge, Tennessee

Dear Colonel Fleming:

We enjoyed having you visit our laboratory yesterday. In order to bring all the events leading up to your visit to a focus, I am taking the liberty of outlining the reasons for writing you concerning my interest in the problem of irradiation, and the results we have obtained in the laboratory which have stimulated this interest.

(1) We are now operating under two contracts under the Medical Division of the Chemical Warfare Service. The first contract, which expires in December of 1946, deals with the physiological mechanisms of chemical warfare agents. We were assigned the problem of studying nitrogen and sulfur mustards. All of our work has been declassified and most of it is now in press. The second contract has a "secret" classification, and I do not wish to discuss it in this letter. I have described the general nature of the problem to you.

(2) Our studies with the mustards yielded extremely interesting results.

(a) The electrophoretic patterns of the serum of animals treated with these agents undergo marked alterations, particularly in the alpha globulin fractions. We found these same changes in animals exposed to thermal injury, X-ray irradiation, trauma, and turpentine injection. Our work led us to believe that the electrophoretic changes were due to "injury", per se, rather than to the specific effect of the mustards.

(b) In order to determine the nature of the proteins responsible for the changes in the electrophoretic pattern, we sent one of our staff to Dr. Cohn's laboratory at the Harvard Medical School to learn the principles and techniques involved in precipitation of serum proteins by low temperature alcohol procedures. You have seen the fractionation laboratories which we have set up for this work. We found that the serum of injured animals contained new protein

1020803

September 19, 1946

fractions which are not present in the normal animal. It was found that several of these new proteins are extremely rich in lipids and others are comparatively poor in lipids. It is our belief that these new proteins result from the breakdown of tissues and represent by-products of injury. It has occurred to us that these findings may have certain immunological implications, but this is a purely hypothetical conjecture.

I wish to emphasize the fact that we have a completely equipped electrophoresis and plasma protein fractionation laboratory in operation, staffed by well trained competent individuals.

(c) Nitrogen mustards have a very marked effect on lymphoid tissue. We have studied the cholesterol and nucleic acid contents of the thymus and have found marked changes taking place in the concentrations of these two constituents after intoxication. An extensive study of the changes taking place in the adrenals of rats treated with mustards appeared in the June issue of Endocrinology. It was pointed out in this paper that the adrenals hypertrophy markedly, water content increases, and the lipids undergo marked changes. The esterified cholesterol concentration is very markedly decreased in this organ. We have also studied the effects of thermal injury on the cholesterol and ascorbic acid concentrations of adrenals and have found marked decreases in the concentrations of both these constituents.

(d) We have noted that the total plasma cholesterol and the fibrin concentration of the plasma increase precipitously after treatment with mustards or with other types of injury. These data are extremely interesting as a measure by which one could predict whether or not the animal would survive treatment by noxious agents.

(3) From available data in the literature, some of the changes described above have been noted in experimental animals and in man after X-ray treatment. The resemblance between some of the actions of the nitrogen mustards and X-ray are striking.

(4) I communicated with Colonel John R. Wood, Chief, Medical Division, Chemical Warfare Service, Edgewood Arsenal, about the possibility of obtaining sera from irradiated animals. He informed me that he was in no position to

1020804

Colonel William D. Fleming

-3-

September 19, 1946

contact laboratories associated with the Manhattan Project but suggested that I communicate with you. He further suggested the possibility of obtaining a contract with the Manhattan Project.

(5) You properly pointed out that it would be inadvisable to submit any project to the Manhattan District without knowing whether or not the problems outlined above had already been studied. I realize that it would be necessary for me to be cleared by your Security authorities before being allowed to discuss this problem with the proper investigators who have been working on this particular phase of research. May I add that many of our personnel have been cleared by proper authorities.

(6) I am making the following requests from you.

(a) Please arrange clearance for me in order to discuss the problem of the physiological mechanism of radiation with qualified workers in the Manhattan Project.

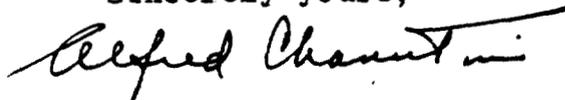
(b) If this clearance is obtained, please arrange for interviews with investigators active in the type of work outlined above.

I believe that you agree with me that until this problem can be discussed, it is inadvisable to submit any definite program or any figures as to the scope of any projected research contract which might be arranged with the Manhattan Project.

I trust that we will have the pleasure of another visit with you sometime in the near future.

With kindest regards, I remain

Sincerely yours,



Alfred Chanutin
Professor of Biochemistry

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1020805

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1020807

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-3-

September 19, 1946

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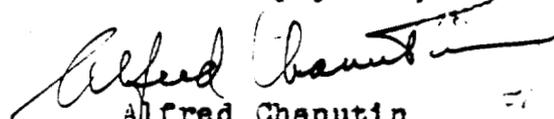
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