1930

have forwarded We we today forwarding for publication in THE PHYSICAL REVIEW

_the following manuscript:

Divergent Chain Reaction in Systems Composed of Uranium and Carbon. by Leo Szilard

Further communication concerning your article should be addressed to the American Institute of Physics, 175 Fifth Avenue, New York, New York.

John T. Tate, Editor
THE PHYSICAL REVIEW,
University of Minnesota,
Minneapolis, Minnesota

AMERICAN INSTITUTE OF PHYSICS

Incorporated

175 FIFTH AVENUE, NEW YORK

Member Societies:
American Physical Society
Optical Society of America
Acoustical Society of America
Society of Rheology
American Association of Physics Teachers

February 14, 1940

JOHN T. TATE

GEORGE B. PEGRAM SECRETARY

HENRY A. BARTON

Dr. Leo Szilard
Pupin Physics Laboratories
Columbia University
New York, New York

Dear Dr. Szilard:

My attempt to reach you by telephone today was unsuccessful. This is to confirm, however, the message which I left for you, to the effect that we will hold the manuscript of your article "Divergent Chain Reaction in Systems Composed of Uranium and Carbon" in this office awaiting your release on it, before sending it to the printer to be set for THE PHYSICAL REVIEW.

Because of the fact that we publish eight different magazines and there are always several issues for each of them in the process of publication we do not like to complicate the printers work by requesting special treatment in the plant for one manuscript. Since you are in New York this method of handling your paper will not cause any special delay.

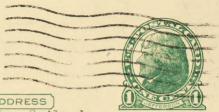
Very truly yours,

Madeline M. Mitchell Publications Manager

m/g/pl

N





THIS SIDE OF CARD IS FOR ADDRESS

Dr. Leo Szilard King's Crown Hotel 420 West 116 Street New York, New York

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	Inform	nation con	ncernir	or the	publicat	ion of	this	article	will h	e sent

JOHN T. TATE, Editor, THE PHYSICAL REVIEW, University of Minnesota, Minneapolis, Minnesota.

as soon as possible.

AMERICAN INSTITUTE OF PHYSICS Incorporated 175 FIFTH AVENUE, NEW YORK Member Societies American Physical Society Optical Society of America Acoustical Society of America Society of Rheology February 14, 1940

American Association of Physics Teachers

GEORGE B. PEGRAM SECRETARY

HENRY A. BARTON

Dr. Leo Szilard Pupin Physics Laboratories Columbia University New York, New York

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Very truly yours,

Madeline M. Mitchell

Publications Manager

Spilard was pretty mad by this time nice nothing happened American





THIS SIDE OF CARD IS FOR ADDRESS

Dr. Leo Szilard
Pupin Physics Laboratories
Columbia University
New York, New York

AMERICAN INSTITUTE OF PHYSICS-175 Fifth Ave., New York, N.Y.

March 28, 1939

Dear Dr. Szilard:

The Letter to the Editor entitled "Instantaneous Emission of Fast Neutrons in the Interaction of Slow Neutrons with Uranium" by yourself and Walter H. Zinn which was originally scheduled for publication in the April 1, 1939 issue of THE PHYSICAL REVIEW will appear in the April 15th issue instead.

MADELINE M. MITCHELL Publications Manager Professor D. P. Mitchell, Carnegie Institute of Terrestrial Magnetism, Broad Branch Road, N. W., Washington, D. C.

Dear Mitchell;

This afternoon Professor Pegram, Fermi, and I discussed the question of the few thousand dollars which might be left over at Dr. Briggs' disposal, and I am communicating to you herewith theoutcome.

If boron free calcium can be bought at a price which does not considerably exceed the price of commercial calcium hitherto used by Dr. Alexander, then the money should be used for this purpose rather than for any of the items listed below. If no order for boron free calcium can be placed right away, then we would sugest that (a) an order be placed with Alexander for 50 lbs. of thorium metal at a price of twenty dollars per pound, according to hisletter, of which you have a copy.

Professor Pegram wants me to ask you to explain to Dr. Briggs that this order for thorium is not directly connected with the intermediate scale experiment, since the experiment for which we would use it has no direct bearing on the reaction with thermal neutrons. It seems necessary to point this out since it might be that the terms of the appropriation at the disposal of Dr. Briggs might exclude the possibility of his purchasing this 50 lbs. of thorium.

(b) If after placing the above orders there is some residue of money left would sugest that an order be placed for pure commercial bismuth at one dollar and two ty-five cents per pound for an amount of not less than 500 lbs. and not more than 1000 lbs. If after where it is an another which is a standard with the standard way it is a standard with the standard way it is a standard with the standard way it is a standard way in the standard way it is a standard way in the standard way it is a standard way in the standard way it is a standard way in the standard way in

If after placing this order there is a residue left, we would suggest that an order for uranium oxide be placed for the total of the residue with the Eldorado Gold Mines, Ltd., Canada. I shall send you a telegram tomorrow giving you the exact address of the firm with whom the orders for bismuth are to be placed since I have the address at the Physics Building.

Since I understood you to say that the orders have to be placed on or before June 30th, and since you will not be in Washington on Friday, it seems to me that tomorrow, Thursday, is the only day on which this matter can be settled. Therefore, if there is any further question in connection with these orders to be settled, please call me over the teb phone tomorrow.

With kind regards,

February 6, 1940

John T. Tate, Editor Physical Review University of Minnesota Minneapolis, Minn.

Dear Dr. Tate:

Enclosed you will find a manuscript which I am sending you with the request that you have it printed in the Physical Review as a "letter".

Since this manuscript deals with a matter in which the government has shown a certain amount of interest from the point of view of national defense it is felt that inquiries should be made in Washington as a matter of courtesy before the letter is actually printed. Would you, therefore, perhaps be kind snough to ask the Lancaster Press not to print this manuscript until they have a telegram from me releasing the matter for publication. I trust this way of proceeding will not cause any undue inconvenience.

Yours very truly,

C O P

February 6, 1940

John T. Tate, Editor Physical Review University of Minnesota Minneapolis, Minn.

Dear Dr. Tate:

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THIS SIDE OF CARD IS FOR ADDRESS

Dr. Leo Szilard King's Crown Hotel 420 West 116 Street New York, New York

The Editors of THE PHYSICAL REVIEW acknowledge receipt of the								
following manuscript: Divergent	Chain Reaction	in Systems	Composed					
of Uranium and Carbon. by	Leo Szilard	*						

Information concerning the publication of this article will be sent as soon as possible.

JOHN T. TATE, Editor, THE PHYSICAL REVIEW, University of Minnesota, Minneapolis, Minnesota.

February 14, 1940

John T. Tate The Physical Review University of Minnesota Minneapolis, Minnesota

Dear Dr. Tate:

Enclosed you will find a manuscript which I am submitting for publication to the Physical Review. There is just a chance that I might be requested by certain departments of the Administration to delay a publication of this paper though I personally do not think that this is very likely to happen. Still if you do not prefer to read the paper yourself, perhaps you might think it advisable to let the referse know about this possibility.

Pages 22, 23 and 24 of the manuscript deal with two experiments which I described in some detail because it is hoped that it will be possible to give the result of at least one of these experiments within a short time and the values found may be added in proof. Both experiments are in a state of preparation and might be completed by the time the paper appears in print.

Yours very truly,

February 14, 1940

John T. Tate The Physical Review University of Minnesota Minneapolis, Minnesota

Dear Dr. Tate:

Enclosed you will find a manuscript which I am submitting for publication to the Physical Review. There is just a chance that I might be requested by certain departments of the Administration to delay a publication of this paper though I personally do not think that this is very likely to happen. Still if you do not prefer to read the paper yourself, perhaps you might think it advisable to let the referee know about this possibility.

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Yours very truly.

DOMESTIC	CABLE				
TELEGRAM	ORDINARY				
DAY	URGENT				
SERIAL	DEFERRED				
NIGHT	NIGHT LETTER				
SPECIAL	SHIP RADIOGRAM				

WESTERN 1207 UNION

ACCOUNTING INFORMATION
TIME FILED

CHECK

R. B. WHITE

NEWCOMB CARLTON

J. C. WILLEVER

Send the following message, subject to the terms on back hereof, which are hereby agreed to TO PROFESSOR TATE, EDITOR Street and No. PHYSICAL REVIEW Place UNIVERSITY OF MINNESOTA MINNEAPOLIS MINN. HAVE RECEIVED NO ACKNOWLEDGEMENT OF MANUSCRIPT MAKED TO YOU ON FEBRUARY 14 STOP KINDLY WIRE WHETHER RECEIVED SZILARD 420W 116 Street N.Y.C.

COPIED FROM DESIGNAL IN THIS COLLECTION

Dear Dr. Tate:

I am writing to you concerning the manuscript of a paper which was sent to you enclosed in my letter of February 14, 1940. I am anxious that this manuscript should not be sent to print until I have definitely heard from the Administration that there is not objection to its publication. In the meantime, however, I should be glad to know whether the manuscript has been accepted for publication in the Physical Review and perhaps you would be kind enough to inform me with regard to this point.

Yours very truly,

THE PHYSICAL REVIEW REVIEWS OF MODERN PHYSICS

Conducted by

THE AMERICAN PHYSICAL SOCIETY

JOHN T. TATE, Managing Editor

University of Minnesota, Minneapolis, Minn., U. S. A.

April 8, 1940

Dr. Leo Szilard King's Crown Hotel 420 West 116 Street New York, New York

Dear Dr. Szilard:

Your paper on "Divergent Chain Reaction in a System Composed of Uranium and Carbon" will be published in THE PHYSICAL REVIEW. On the other hand, I feel that it should be condensed somewhat, particularly in the introduction. I should think too that you might wish to modify parts of it in the light of more recent experiments, particularly those of Dunning and Nier.

Sincerely yours.

John T. Tate,

Editor

JTT:B

15 40. 619 739}

May lerre

THE PHYSICAL REVIEW



CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

SYMBOLS

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NL=Night Letter
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NS103 10 COLLECT=MINNEAPOLIS MINN 20 133P

LEO SZILARD=

420 WEST 116 ST=

YOUR MANUSCRIPT RECEIVED FEBRUARY 16TH ACKNOWLEDGEMENT SENT

FEBRUARY 19TH=

JOHN T TATES

16 19



OPPOSITE COLUMBIA UNIVERSITY
April 16, 1940

Dr. John T. Tate, Editor Physical Review University of Minnesota Minneapolis, Minn.

Dear Dr. Tate:

Many thanks for your letter of April 8.

Following your suggestion I shall send you a new manuscript in which I shall attempt to shorten the paper. Apart from rewriting the introduction the paper could perhaps be shortened by shifting some of the purely arithmetical parts of the paper into an appendix, which could be set in small type.

I feel, however, that perhaps I ought to refrain from modifying the paper in the light of more recent experiments. If there is considerable delay in the printing of this paper, and if much additional information becomes available, it will probably be necessary to add

a short note in proof. This note could then take into account all additional information.

Yours sincerely,



OPPOSITE COLUMBIA UNIVERSITY

May 23, 1940

Dr. Lyman J. Briggs, Director National Bureau of Standards Washington, D. C.

Dear Dr. Briggs

Enclosed you will find a copy of a letter to Dr. Tate which I wrote in pursuance of the course upon which we decided during our last discussion on April 27.

Yours sincerely,

Mond

(Leo Szilard)

LS/jbc ENC.



OPPOSITE COLUMBIA UNIVERSITY

May 23, 1940

Dr. John T. Tate, Editor The Physical Review University of Minnesota Minneapolis, Minnesota

Dear Dr. Tate:

I was asked by Dr. Briggs acting as chairman of a committee at which various Government departments are represented to delay the publication of those two manuscripts which I sent to the Physical Review dealing with the subject of chain reactions in systems composed of uranium and carbon. I gave the assurance that I would write to you asking for a further delay concerning the publication of these papers which I am doing herewith.

In the circumstances it appears to me now likely that considerable time may elapse before these papers will be released. I shall, however, send you the revised manuscripts for which you asked and would be grateful if you would hold both manuscripts until such time as there will no longer any objection to their publication.

Since work on this and related subjects is being intensified it appears likely that you will receive more papers with or without the request for a delay in publication in the near future. This may raise questions of principle



420 WEST HETT STREET
NEW YORK

OPPOSITE COLUMBIA UNIVERSITY

Dr. John T. Tate

May 23, 1940

and I propose therefore to discuss the matter with various colleagues and having obtained their reaction to take it up with Dr. Briggs so that he may inform you of his attitude as well as theirs.

Yours sincerely,

AMERICAN INSTITUTE OF PHYSICS

Incorporated

175 FIFTH AVENUE, NEW YORK

Member Societies:

American Physical Society
Optical Society of America
Acoustical Society of America
Society of Rheology
American Association of Physics Teachers

May 20, 1940

PAUL E. KLOPSTEG CHAIRMAN GEORGE B. PEGRAM SECRETARY

JOHN T. TATE

HENRY A. BARTON

MADELINE M. MITCHELL PUBLICATIONS MANAGER

Professor John T. Tate The Physical Review University of Minnesota Minneapolis, Minnesota

Dear Professor Tate:

On February 13th you sent me a short article by Dr. Lee Szilard on "Divergent Chain Reaction in Systems Composed of Uranium and Carbon" for publication in THE PHYSICAL REVIEW when Dr. Szilard released the article. Inasmuch as we have not received this release from Dr. Szilard, I am returning the manuscript to you.

Sincerely,

Madeline M. Mitchell

Madeline M. Mitchell Publications Manager

amm/pl encl.

ce: Dr. Leo Szilard



420 WEST HETH STREET NEW YORK

OPPOSITE COLUMBIA UNIVERSITY

Dr. John T. Tate

May 23, 1940

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Yours sincerely,

C O P Y

May 23, 1940

Dr. John T. Tate, Editor The Physical Review University of Minnesota Minneapolis, Minnesota

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Since work on this and related subjects is being intensified it appears likely that you will receive more papers with or without the request for a delay in publication in the near future. This may raise questions of principle and I propose therefore to discuss the matter with various colleagues and having obtained their reaction to take it up with Dr. Briggs so that he may inform you of his attitude as well as theirs.

Yours sincerely,

April 24, 1946 Professor John T. Tate University of Minnesota Minneapolis, Minnesota Dear Professor Tate: Please excuse me for the delay in answering your letter relating to the manuscripts which I sent for publication to the Physical Review in February, 1940. I, too, am anxious to publish the paper and think that probably the corresponding fletter to the Editor might then be dropped. While I am quite certain the paper contains nothing that ought to be considered secret in view of the Smyth Report, I feel it should not be the author's responsibility to decide, from the point of view of national defense, whether or not a paper should be printed. I wonder whether you wouldn't think it advisable for you to submit the paper to some authority, for instance, the Tolman Committee or Mr. Tolman, for a decision in order to protect yourself against any possible charges. I might try to clear up the matter from this end but I am not sure it is a feasible idea since the paper was written and withheld before the government took an interest

in this field of knowledge.

In 1940 you suggested that the paper be shortened and I shall immediately try to do that. I will only cut portions of the paper without eadding anything and possibly make changes in the phraseology for the sake of greater clarity. I might also add a footnote pointing out the limitations of the paper arising out of the ignorance of certain factors which we now know to be relevant.

I would appreciate it if you would let me know just how you propose to handle the matter of "clearance".

Very sincerely yours,

LS: jjp

pages and figure No. 2 of 2 copies, Series 1

CONFIDENTIAL

May 2, 1946

Professor Farrington Daniels
Director, Metallurgical Laboratory
P.O. Box 5207
Chicago 80, Illinois

Dear Professor Daniels:

I am enclosing a report which is substantially identical with the paper that I sent for publication to the Physical Review in February, 1940; that is, before the U.S. government began to give financial support for work on uranium. The publication of this paper was delayed at my request.

Having studied the criteria for declassification which you showed me yesterday, I have come to the conclusion that there is no reason why the publication of this paper should be delayed any longer and I am, accordingly, asking the editor of the Physical Review to have the paper printed.

I would appreciate it if you would have the paper examined so that if I should be in error and if there should be anything in the paper which, in accordance with the recommendations of the Tolman Committee should not be published at the present time, I can take the necessary steps to have those offending passages removed from the text if not any earlier, than at least in the proofs.

Very sincerely yours,

LS: jjp
encl. (Report A-55 attach to orig. lat.)



THE PHYSICAL REVIEW **REVIEWS OF MODERN PHYSICS**

Conducted by

THE AMERICAN PHYSICAL SOCIETY

JOHN T. TATE, Managing Editor

University of Minnesota, Minneapolis, Minn., U.S.A.

April 29, 1946

Dr. Leo Szilard Metallurgical Laboratory P.O. Box 5207 Chicago 80, Illinois

Dear Dr. Szilard:

It would seem to me that if you are in doubt with respect to the advisability from the standpoint of security of publishing the paper which you submitted in 1940 it would be best for you to send it to Lt. Col. John R. Ruhoff at Oak Ridge, Tennessee, P.O. Box E, to ask for his judgment. In other cases Dr. Tolman has felt that he should not accept the responsibility for making a recommendation but has advised that papers be sent to Lt. Col. Ruhoff.

Sincerely yours,

John T. Tate,

Editor

JTT:B





THIS SIDE OF CARD IS FOR ADDRESS

Mr. Leo Szilard 5816 Blackstone Avenue Chicago, Illinois

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Information concerning the publication of this article will be sent as soon as possible.

JOHN T. TATE, Editor THE PHYSICAL REVIEW, University of Minnesota, Minneapolis 14, Minnesota

5816 Blackstone Avenue Chicago, Illinois May 20, 1946

Professor John T. Tate University of Minnesota Minneapolis, Minnesota

Dear Professor Tate:

Divergent Chain Reaction in Systems Composed of Uranium and Carbon, which I believe was received by the Physical Review on February 16, 1940. In view of the long time that has elapsed, I have added some notes in the form of an appendix and also a new summary, under the dateline of May, 1946.

I did not add anything to the paper, but abbreviated some passages and others are entirely left out. There is however one exception, a few days after I sent you the manuscript I discovered an error on page 21 and wrote a new page 21. While I am not sure that I sent you the replacement at that time, I had a photo copy made which I mailed to myself and it carries the postmark of February 21, 1940. I enclose that page as a documentary proof of the date of the change, but I would appreciate it if you would return it after examining it. In view of this change, I propose that the date of the paper be changed from February 16, 1940 to February 21, 1940. Perhaps you would let me know whether this procedure is satisfactory to you.

Since I last wrote you I have studied the Declassification Guide, issued by the Army (incidentally it is a secret document), and I am now satisfied that there is nothing in the paper which, under those rules, would have to remain classified as secret. I would therefore appreciate it if the paper were set to print and if I could obtain a galley proof at your earliest convenience.

I have incidentally sent a copy of the paper, through the Metallurgical Laboratory, to the appropriate army authorities, asking them to let me know if they have any objections to any passages contained in the paper. If there should be such an objection, I would make the correction in the proof, but I don't anticipate any.

Very sincerely yours,

LS:jjp encl.

THE PHYSICAL REVIEW REVIEWS OF MODERN PHYSICS

Conducted by
THE AMERICAN PHYSICAL SOCIETY
JOHN T. TATE, Managing Editor

University of Minnesota, Minneapolis 14, Minn., U.S.A.

July 25, 1946

Dr. Leo Szilard 5816 Blackstone Avenue Chicago, Illinois

Dear Dr. Szilard:

The Editors of THE PHYSICAL REVIEW have raised objections to the publication of the revised form of your pre-war article on "Divergent Chain Reaction in Systems Composed of Uranium and Carbon". They have decided that the only course open to them is to publish the paper in the form in which it was originally submitted. This they are prepared to do if it meets with your approval.

Sincerely yours,

John T. Tate,

Editor

JTT:B

1155 E. 57th Street Chicago, Illinois August 12, 1946

Mr. John T. Tate, Editor The Physical Review University of Minnesota Minneapolis, 14, Minn.

Dear Mr. Tate:

Many thanks for your letter of July 25th.

I shall be pleased to have the paper published in the form in which it was originally submitted. May I however ask two specific questions?

- 1) In my last letter to you I sent you the photo copy of one page which was postmarked, February 21, 1940. Would it be acceptable to you to have the text of this page used in the paper and that the date of the paper be accordingly shifted to February 21, 1940?
- 2) Is it acceptable to you that the notes added and dated 1946, be attached to the paper in order to bring the reader up-to-date, or make such corrections as appear appropriate in the light of the later developments. In these notes I am of course limited to what can be revealed in view of the continued secrecy.

The photo copy which was enclosed in my last letter is a document which might at some later date be needed by the Government in connection with a patent application which they have filed in my name. Perhaps (after making a photo copy for your files) you would return the original photo copy to me, preferably by registered mail.

I had a letter from the Army asking me not to publish this paper for the time being and mentioning some such things as objections by the U. S. Patent Office. I do not understand what they mean and will try to clear up this matter as soon as possible.

Sincerely yours.

THE PHYSICAL REVIEW REVIEWS OF MODERN PHYSICS

Conducted by
THE AMERICAN PHYSICAL SOCIETY
JOHN T. TATE, Managing Editor

University of Minnesota, Minneapolis 14, Minn., U.S.A.

August 20, 1946

Dr. Leo Szilard 1155 E. 57th Street Chicago, Illinois

Dear Dr. Szilard:

This is in reply to the questions you ask in your letter of August 12. It will be acceptable to have the text of the photostated page included in your manuscript. I am returning it herewith.

Some notes dated 1946 might be acceptable. They should, however, be kept to a minimum and confined largely to explanations or corrections which are desirable in order not to mislead the reader.

Sincerely yours,

John T. Tate,

Editor

JTT:B Enc.