

PRESIDENT'S PERSONAL FILE

PPF 9
Gifts M
May 1943

PPF900538

ackd
5/14/43



PP7
9-M

May 14, 1943

My dear Mr. Mix:

Many thanks, in the President's be-
half, for your kindness in sending him a copy
of THE BIBLE IN BRIEF. He is most appreciative
of your thought of him.

X.P.P.7
9-B
X113

Very sincerely yours,

Grace G. Tully
Private Secretary



Jay Phelander Mix, Esq.,
925 Yolo Drive,
Los Angeles,
California.

B

pl



TRAVELCARD
 PHELANDER MIX
 DATE 4/14/45 TIME 9:25 AM
 TO 925 Maple Drive (Town)
 Los Angeles California (State)
 To the First Citizen
 from an humble citizen
 and commoner
 of Puritan ancestry
 (now in my 73rd year)
 More power to you
 Mr President!
 "The Lord Jehovah is our strength"
 Isa. 12.
 Sincerely Jay P. Mix

Ack
 Study
 1991
 POST CARD



Hon Franklin D. Roosevelt
 Hyde Park
 New York

gs together with a
 ---Given to Mr. Groshon.

fmf





SISTER MARY NATALIA,
Billings, Montana,
April 27, 1943 - (ackd. 5/14/43).

P.P. 7,

9-M

Sends the President a card of Easter greetings together with a
spiritual remembrance - (probably religious medal).-----Given to Mr. Groshon.

See P.P.F. 217

fmf

May 10, 1943

P.L.F.
9-M

x 20
Memorandum for Honorable George T. Summerlin:

Will you not be good enough to have an appropriate acknowledgment made of the enclosed book sent to the President.

Please return the book to this office when it has served its purpose.

Grace G. Tully
Private Secretary

eb

Book sent to the President, 5-?-43

From: French & European Publications, Inc.,
La Maison Francaise-Rockefeller Center,
610 Fifth Avenue,
New York, N. Y.

x 203-a B

Name of Book - Christianisme et Democratie
par Jacques Maritain
(Collection - Civilisation)

Inscribed inside cover:

Am President Roosevelt, Tris respechieux hommage

Jacques Maritain

X



B.B.
Study

STATE
ON

May 15. 1943

My dear Miss Tully:

In compliance with your memorandum of May 10, 1943,
I am returning herewith the book entitled Christianisme
et Démocratie, sent to the President by the author,
Mr. Jacques Maritain.

An appropriate expression of the President's thanks
and appreciation has been addressed to Mr. Maritain.

Sincerely yours,

R. H. H. H.
Chief of Protocol

Enclosure:

Book, returned.

Miss Grace G. Tully,
The White House.





DEPARTMENT OF STATE
WASHINGTON

In reply refer to
PR

May 15. 1943

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Mr. Jacques Maritain.

An appropriate expression of the President's thanks
and appreciation has been addressed to Mr. Maritain.

Sincerely yours,

G. H. Harbo
Chief of Protocol

Enclosure:

Book, returned.

Miss Grace G. Tully,

The White House.

FOR DEFENSE



HOLT, Lt. F. W., III,
Hutchinson, Kansas,
May 13, 1943 - noted

P. P. Z.

P. P. Z.
9-M

May 17, 1943

Mrs. Egan

My dear Friends:

It was indeed kind of you to send the
President that copy of your monograph. Many
thanks, in his behalf, for your friendly thought
of him.

Very sincerely yours,

Grace G. Tully
Private Secretary

X The President and Faculty,
Marygrove College,
Detroit,
Michigan.

ms

F. W., III,
son, Kansas,
1943 - 1944

oosevelt

the President a carton of

fmf

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P. P. Z.

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5-17-43
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Study

, Lt. F. W., III,
Hutchinson, Kansas,
13. 1943 - 1944

Roosevelt

the President a carton of

With the Compliments of
The President and Faculty
of
Marygrove College

Detrait Mich

fmf

President Franklin D. Roosevelt
The White House
Washington, D. C.

ack
5-17-43
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the President a carton of

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HOLT, Lt. F. W., III,
Hutchinson, Kansas,
May 13, 1943 - ackd.

P. P. F.
9-M

Note of thanks from Miss Tully for sending the President a carton of
matches.-----"T.A."

See P.P.F. 9-H

fmf

LEGLAY, Mrs. Ada B.,
Groshy, Minn.
3-24-43 (ack. 5-14-43)

Sends President some medicine and cold remedies. Also sent some perfume
for Mrs. Roosevelt. (Throw away)

See P.P.F.9-L

P.P.7

9-74

br

1

7
SCHLAFER, Mr. W.,
Forest Hills, N.Y.
4-12-43 (ack. 4-13-43)

Encloses a poem which he composed and asks permission to have it printed and dedicated to the President. Has a mosaic picture of the President made in 1934. Wants to send this picture to the President if he is willing to accept this gift.

Mr. Early in his acknowledgment on 4-13-43 wrote it is not necessary for him to get permission to print poem. Also while President appreciates his willingness to present him with the mosaic, he does not feel justified in having him make such a sacrifice.

See P.P.F.9-8

P.P.F.
9-7

br

Sent mosaic to the President. Acknowledged by Miss Tully 5-13-43.
(storeroom)

7

Aug 13, 1943

CIELINSKI, Jozef,
New York, New York,
April 5, 1943 - (ackd. 5/14/43).

P.P.F.
9-M

Letter to the President, sending him under separate cover a ship model and the cord work.-----Both sent to Storeroom.

See P.P.F. 223

fmf

May 13, 1943

My dear Miss McDonald:

I have for acknowledgment your note to the President of recent date, as well as the pound of coffee which you so generously sent him. Many thanks, in his behalf, for the kindness which prompted your thought of him.

Very sincerely yours,

Grace G. Tully
Private Secretary

Miss Cornelia McDonald,
827 N. State Street, 5 D,
Jackson,
Mississippi.

Pound of Macgowan's coffee marked "TA".

yours very sincerely,
Miss) Cornelia McDonald

ack
+ A
95

ack. ⑤
5/13/43
jel

827 N. State Street, 5W
Jackson, Mississippi
April 1, 1943

Honorable Franklin D. Roosevelt
President of the United States
Washington, D. C.

Dear Mr. President:

I have read in "Time" magazine that
you are drinking milk for breakfast,
giving up coffee as a rationed citizen.

you should have your cup of coffee. I want
you to have it, and I am sending
you the pound rationed me.

I hope that you will like this coffee.
It is drip grind, and should not be
made by your, or Mayor La Guardia's, recipe.

Yours very sincerely,
Miss) Cornelia McDonald

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Institutum Divi Thomae
Athenaeum of Ohio
Cincinnati

May 21, 1943

P.P. 7-
9-M

Dear Miss Tully:

My dear Dean Miller:

I want to thank you ever so much, in the President's behalf, for your kindness in forwarding the ointment to which you refer in your letter of May fifteenth. I can assure you that the friendly interest which prompted your thought of him is more than appreciated.

Please accept my thanks, too, for your good wishes.

Very sincerely yours,

Grace G. Tully
Private Secretary

Very Reverend Cletus A. Miller,
Dean,
Institutum Divi Thomae,
Athenaeum of Ohio,
Cincinnati,
Ohio.

Sincerely yours,

Cletus A. Miller
Very Reverend Cletus A. Miller
Dean

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5/21/43
Ld

Institutum Divi Thomae
Athenaeum of Ohio
Cincinnati

May 15, 1943

Dear Miss Tully:

While in Washington last week I had luncheon with our mutual friend, Mr. Ted Hayes. X During the course of the conversation we discussed the new Sperti biodyne ointment for burns and wounds.

The ointment, which was referred to in an article in the January issue of Reader's Digest, is a product of the laboratories of the Institutum Divi Thomae, and has proved most effective in the treatment of burns and wounds.

At Mr. Hayes' suggestion, I am having some of the ointment sent to you for presentation to the President. Directions for its application and pertinent scientific literature are also being sent under separate cover.

I believe Mr. Hayes has spoken to you of our conversation.

Although I have not had the pleasure of meeting you personally, I did have the pleasure of talking with you by telephone last October. Upon advice of Bishop Donahue I telephoned regarding an appointment with Mr. Harry Hopkins. You were very kind and solicitous and I want you to know, even at this late date, how much I appreciate your consideration of my request.

With every good wish and kindest personal regards, I am

Sincerely yours,

Cletus A. Miller
Very Reverend Cletus A. Miller
Dean

Miss Grace G. Tully, Secretary
The White House
Washington, D. C.

SPERTI



BEECH AND KENILWORTH AVES.
NORWOOD STATION
CINCINNATI, OHIO

Drug Division

SOLD TO

Miss Grace A. Tully, Secretary
The White House
Washington D. C.

SHIPPED TO

DATE
INVOICE NO.

TERMS: 2% 10 DAYS, NET 30 DAYS

YOUR ORD. NO.	DATED	F. O. B. CINCINNATI, OHIO	SALESMAN	ORDER NO.	DATE ENTERED	DATE SHIPPED
	5/17/43	SHIP VIA Parcel Post		B 8724	5/17/43	

QUANTITY ORDERED	BACK ORDERED	DESCRIPTION	QUANTITY SHIPPED	LIST AND DISCOUNT	AMOUNT	EXTENSION
1 only		15 oz. jar Biodyne ointment Bio.		W/C	W/C	W/C
1 doz		1 oz. tube Biodyne Ointment Bio.		W/C	W/C	W/C
mb						

RETURNED MATERIAL WILL NOT BE ACCEPTED UNLESS AUTHORIZED BY THIS COMPANY.

®

CUSTOMER'S ACKNOWLEDGMENT

SPERTI

BEECH AND KENILWORTH AVES.
NORWOOD STATION
CINCINNATI, OHIO

Inc.

Drug Division

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	5/17/43	Parcel Post		B 8724	5/17/43	
QUANTITY ORDERED	BACK ORDERED	DESCRIPTION		QUANTITY SHIPPED	LIST AND DISCOUNT	AMOUNT
1 only		15 oz. jar Biodyne ointment Bio. 604				
1 doz		1 oz. tube Biodyne Ointment Bio. 607				
RETURNED MATERIAL WILL NOT BE ACCEPTED UNLESS AUTHORIZED BY THIS COMPANY						

PACKING MEMORANDUM

YOU HAVE READ
ABOUT THE
DISCOVERY OF
BIO-DYNE
IN THE
JANUARY ISSUES
OF
READER'S DIGEST
SCIENTIFIC AMERICAN
NEWSWEEK

A

Bio.

607



Have BIO-DYNE
in Your
Medicine Cabinet

MR. DEALER
For quicker sales place this card
on top of the display lid as
follows:
Insert tab "A" into slit in
lid and tab "B" behind lid,
leaving price circle in front.

B

BUY
A TUBE
NOW
65¢

5/18/43
p. 6309

2% 10 DAYS, NET 30 DAYS

DATE SHIPPED

3

5/17/43

EXTENSION

N/C

N/C

mh

RETURNED MATERIAL WILL NOT BE ACCEPTED UNLESS AUTHORIZED BY THIS COMPANY.

©

SPERTI

BEECH AND KENILWORTH AVES.
NORWOOD STATION
CINCINNATI, OHIO

Inc.

Drug Division

SOLD TO Miss Grace G. Tully, Secretary
The White House
Washington D. C.

SHIPPED TO

DATE 5/18/43
INVOICE NO. 6309

YOUR ORD. NO.		DATED	F. O. B. CINCINNATI, OHIO		SALESMAN	ORDER NO.	TERMS: 2% 10 DAYS, NET 30 DAYS	
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							5/17/43	5/17/43
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1 doz		1 oz. tube Biodyne Ointment Bio. 607			1 doz.	N/C	N/C	N/C
mh								

RETURNED MATERIAL WILL NOT BE ACCEPTED UNLESS AUTHORIZED BY THIS COMPANY.

SPERTI

May 25, 1943

BEECH AND KENILWORTH AVENUES
NORWOOD STATION
CINCINNATI, OHIO

May 20, 1943

My dear Mr. Groll:

Thank you ever so much for your
letter of May twentieth, with the enclosures.

The shipment of the ointment which
you mention has been received and an acknowl-
edgment has been sent to Reverend Cletus A.

Miller. Will you not also express to Dr.

Sperti our thanks for his kindness.

Very sincerely yours,

Grace G. Tully will be able to put
Private Secretary

Very truly yours,

SPERTI, Inc.

Fred L. Groll
Drug Division

+

Fred L. Groll, Esq.,
Drug Division,
Sperti, Inc.,
X Beech and Kenilworth Avenues,
Norwood Station,
Cincinnati, Ohio.

cb

SPERTI



Inc.

BEECH AND KENILWORTH AVES.
NORWOOD STATION
CINCINNATI, OHIO

May 20, 1943

*ack'd.
5-25
cb*

Miss Grace G. Tulley, Secretary
White House
Washington, D. C.

Dear Miss Tulley:

At the request of Dr. George Sperti
we are sending you a quantity of our Bio-Dyne Ointment.

We are enclosing some descriptive literature about the ointment which we hope you will find of interest.

We trust that you will be able to put this ointment to good use.

Very truly yours,

SPERTI, Inc.

Fred L. Groll
Fred L. Groll
Drug Division

FLG:ah
Encl

BB ———
Sentiment to
Dr Mac with Copy of
letter and literature M.E.

going
to ask for C.G.

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e of the conversation
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I did have the pleasure of talking with you by telephone last
October. Upon advice of Bishop Donahue I telephoned regarding
an appointment with Mr. Harry Hopkins. You were very kind and
solicitous and I want you to know, even at this late date, how
much I appreciate your consideration of my request.

With every good wish and kindest personal regards, I am,

Sincerely yours,

/s/ Cletus A. Miller

Very Reverend Cletus A. Miller
Dean

Miss Grace G. Tully, Secretary,
The White House,
Washington, D. C.

Mr. Wagner - Please
have a copy of this letter
made as the above is
going to Dr. Mc Intyre
& ask for a C.G.T.

INSTITUTUM DIVI THOMAE
Athenaeum of Ohio
Cincinnati

May 15, 1943

Tully:

Washington last week I had luncheon with our mutual
friend, Ted Hayes. During the course of the conversation
I mentioned the new Sperti biodyne ointment for burns and wounds.

This ointment, which was referred to in an article in the January
issue of the Leader's Digest, is a product of the laboratories of the
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With every good wish and kindest personal regards, I am,

Sincerely yours,

/s/ Cletus A. Miller

Very Reverend Cletus A. Miller
Dean

Miss Grace G. Tully, Secretary,
The White House,
Washington, D. C.

COPY

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Athenaeum of Ohio
Cincinnati

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Very Reverend Cletus A. Miller
Dean

Miss Grace G. Tully, Secretary,
The White House,
Washington, D. C.



Questions and Answers about the NEW BIO-DYNE TREATMENT FOR BURNS

Discovered at a world-famous research institute...
Now you can get it for home emergencies...the



**NEW BIO-DYNE
TREATMENT FOR BURNS**
acclaimed in **READER'S DIGEST**

DISCUSSION OF THE NEW BURN
TREATMENT (A NEW CONCEPT IN HEALING)

Food and Drug Administration. Representative case histories from our files are available on request.

Q—What has been found to be the chief advances in burn treatment represented by Bio-Dyne Ointment?

—(1) Ease of application. (2) Almost immediate relief from pain. (3) Acceleration of rate of healing and epithelization. (4) Keeps tissues soft, minimizing scar and keloidal tissue formation. (5) Marked shortening of period of disability.

Q—How much faster have burns healed with Bio-Dyne Treatment?

—In a comprehensive series of burn cases reported, evidence showed the average case treated with Bio-Dyne Ointment healed more rapidly and more effectively than cases in which ordinary treatments were used.

★

Available from leading surgical supply
houses in 15-ounce jars, priced at \$5.50,
5-lb. jars at \$21.50.

**BIO-DYNE
OINTMENT**

Manufactured by Sperti, Inc.
Cincinnati, Ohio

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SPERTI BIO-DYNE OINTMENT BRINGS TO SCIENCE AN ENTIRELY NEW CONCEPT IN HEALING



You saw it acclaimed first in *News-week* and *Time Magazine*. You read about it again in *Reader's Digest**... the story of the discovery of *biodynes* and of their almost incredible effect when used in treating *serious* burns.

You read how Sperti Bio-Dyne Ointment healed faster than any other known method**... relieved pain, in most cases, almost immediately... eliminated disfiguring scars where they'd normally have been expected.

And you may have wondered, "How soon will I be able to use this new healing agent on the *minor* burns, cuts and abrasions that are always occurring in my home?"

*January 1943 issue.

** (In a comprehensive series of burn cases, reported over a 3-year period, evidence showed the average case treated with Bio-Dyne Ointment healed more rapidly and more effectively than the average case in which ordinary treatments were used.)



WHAT ARE BIODYNES?

Biodynes are neither hormones nor vitamins. They are newly discovered, natural cellular products—result of 7 years basic research in a world-famous laboratory—which have the power to stimulate the growth and respiration of living cells, resulting in more rapid, more effective healing. According to leading scientists, as respiration increases, healing increases. Biodynes bring to science an entirely new concept in wound healing and tissue repair.



SPERTI BIO-DYNE OINTMENT

FOR MINOR BURNS, CUTS AND ABRASIONS

ONLY 65¢ AT YOUR DRUG STORE

Q—Are case histories available?

A—Yes. Hundreds of them were sent to Washington when Bio-Dyne Ointment received the approval of the

Available from leading surgical supply houses in 15-ounce jars, priced at \$5.50, and 5-lb. jars at \$21.50.

No other preparation for use by physicians contains biodynes.



BIO-DYNE OINTMENT

Manufactured by Sperti, Inc.
Cincinnati, Ohio

(wound hormones)

ONLY SPERTI BIO-DYNE
OINTMENT CONTAINS
BIODYNES

Manufactured by
SPERTI, Inc.
CINCINNATI, OHIO

Questions and Answers the NEW BIO-DYNE TMENT FOR BURNS

10-MINUTE DISCUSSION OF THE NEW BURN
WHICH BRINGS A NEW CONCEPT IN HEALING)

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★

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**BIO-DYNE
OINTMENT**

Manufactured by Sperti, Inc.
Cincinnati, Ohio

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Questions and Answers about the NEW BIO-DYNE TREATMENT FOR BURNS

(A TWO-MINUTE DISCUSSION OF THE NEW BURN
TREATMENT WHICH BRINGS A NEW CONCEPT IN HEALING)

Q—How were biodynes discovered?

A—They were discovered in a leading research institute as a result of 7 years' basic study of cellular growth and metabolism.

Q—Just what are biodynes?

A—Biodynes are a substance given off by cells, when injured, which regulate cellular life and activity. Extracted from living cells and fish livers, they have the power to stimulate both cellular growth and respiration.

Q—What is the significance of the respiration—stimulating factor?

A—Famous scientists state that as cellular respiration increases, healing increases. A fact confirmed by exhaustive research with Bio-Dyne Ointment and in ever-expanding practical application in hospitals, industrial plants and first aid centers.

Q—Are case histories available?

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Food and Drug Administration. Representative case histories from our files are available on request.

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Manufactured by Sperti, Inc.
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PHYSICAL AGENTS IN TISSUE REPAIR

LEO NUTINI, M.D.

Institutum Divi Thomae

CINCINNATI, OHIO

The beneficial effects of physical agents, such as ultraviolet light and roentgen rays, in tissue repair have long been a matter of much controversy. The conflict has existed chiefly because of lack of sufficient direct experimental proof of the efficacy of these agents. The lack of understanding of the mechanism of their action on cellular activity has been a contributing factor. Recent work has done much to clarify this point, with the result that a definite role can now be assigned to such agents in the repair process. It has been shown that certain physical agents (ultraviolet light, roentgen rays and mechanical injury) when acting on living cells or tissues force them to liberate substances capable of stimulating metabolism—substances which may be considered a most important “formative stimulus”¹ to repair.

In the present paper is presented some of the experimental evidence for the existence of factors stimulating cellular metabolism. Experiments correlating the production of these factors with tissue injury are also described. An attempt has been made to indicate the simplicity with which these substances can be secured and their possible clinical value in wound repair. Such a discussion necessarily involves a knowledge of the “wound hormone” concept of wound healing and, while it is not the purpose of this paper to present an exhaustive review of the subject, some preliminary remarks appear to be in order.

Tissue repair is such a commonplace occurrence that one seldom stops to consider the nature of the mechanism behind this vital process or why it is that a cell which has remained quiescent for years should suddenly begin to multiply after an injury. The old tissue tension theory of Ribbert assumed that cells normally exert a restraining influence on one another but when injured lose this power and, as a result, permit multiplication of the surrounding cells. However, in the light of present knowledge it seems much more likely that the cellular proliferation which accompanies injury is a response to a stimulus, either direct or indirect, supplied by the injury.

This, the so-called “hormone concept of wound healing,” is by no means a new theory, for its origin can be traced as far back as 1858, when Virchow² suggested that healing was a result of the direct stimulation of the cells by traumatism. It was not until 1892, however, that Wiesner³ suggested his theory that the traumatic effect is an indirect one, the injured cells releasing substances (wound hormones) which stimulate the normal cells to proliferate, and it was

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not until 1922 and 1924 that the first preliminary information concerning the actual existence of growth-stimulating substances was presented by Naswitis.⁴

Since the work of Naswitis, the field has been extensively investigated in an effort to secure the stimulating factor or factors, and the "neurohormones" of Lorrin-Epstein⁵ and Franke⁶, the "trephones" of Carrel⁷ and the "SH radical" of Hammett⁸ have at one time or another assumed leading roles, not to mention numerous other factors, including polypeptides,⁹ glutathione and hemoglobin.¹⁰

With these observations as a basis, many of the supposed active factors were tried on experimental and clinical wounds, with a reported lessening of healing time in some of the cases. Whether these factors themselves act directly to stimulate wound healing or whether they act indirectly as "injuring agents" to cause the cells to liberate wound hormones is not clear. In spite of the vast amount of work that had been done on the subject of wound repair, the crucial experiment proving that substances (wound hormones) are generated by the cell as a result of injury to the cell rather than merely produced as disintegration products remained to be conducted.

Experiments

Ultraviolet Light.—Such was the status of the problem when the early research on the action of ultraviolet light in wound healing was being investigated. It has long been felt not only that the role ultraviolet light plays in this process is a germicidal one (a role clearly proved by the practical experiments of Wells and others^{11a, b}) but that it actually accelerates healing, thus minimizing or preventing infection by its direct action on the tissues.¹²

The problem of acceleration, or stimulation, of growth by ultraviolet light has been the subject of controversy for years, some investigators repeatedly observing stimulation, others repeatedly reporting contradictory evidence. There existed contradictory evidence not only on the action of ultraviolet light in wound healing but on the stimulation of the growth of micro-organisms by ultraviolet light.

In the early researches in our laboratories, ^{13a, b, c, d, e, f} conducted chiefly on micro-organisms, the cause of these discrepancies, occurring under apparently similar conditions, was investigated and modifications in technique were developed which led to consistently uniform results and to the proof that ultraviolet light can stimulate the proliferation of cells.

Speriti and others¹⁴ demonstrated that the action of ultraviolet light on cells is twofold: (1) the prevention of proliferation as the result of destruction of cells and (2) the stimulation of proliferation of the remaining living cells by factors produced by neighboring injured or dying cells. As a further result of the investigations they were able to isolate from the suspending medium proliferation-promoting substances elaborated by the injured cells which stimulated the proliferation of other cells, thus demonstrating conclusively that one of the actions of ultraviolet light on cells is to force them to release substances which stimulate the growth of their neighboring cells. These investigations show that not only does a cell produce substances which stimulate the growth of other cells but that factors stimulating respiration and glycolysis are likewise secreted. ^{13a, b, c, d, e}

After having extensively investigated the production of growth factors from injured micro-organisms, Looftourow and others^{15a, b} investigated the production of similar factors from injured animal tissues. In these researches three types of tissue were used as sources of the growth-promoting factor: adult newts, 7 day chick embryos and 14 day rat embryos. In these experiments the radiations from a 500 watt quartz mercury arc lamp were used as the injuring agent. Irradiation was carried out in quartz test tubes, with constant stirring. The embryos were removed under sterile conditions, minced in Drew's solution or 0.89 per cent sodium chloride solution, and washed three or more times in changes of the solution to remove growth factors arising from mechanical injury. Each experimental sample was accompanied by a control sample, the control and the irradiated tissues being maintained under similar conditions (temperatures, etc.) except for the actual irradiation. Looftourow and his co-workers concluded from these experiments that tests of the proliferation-promoting effects on yeast of intercellular wound hormones produced by the injury of the newt, chick and rat tissue with ultraviolet irradiation showed that these factors are active on yeast and can be assayed by quantitative yeast growth methods. They also concluded that their data indicated that growth factors produced as a result of mechanical injury (a subject which is discussed at greater length in this article) must be taken into account in evaluating the effects of ultraviolet radiations used in the experiments.

Fardon and Sullivan ^{16a, b, c} showed that tissue cultures can be used in some instances as a means of measuring the potency of proliferation-promoting factors, but it is apparent from their work that the tissue culture method has decided limitations in view of the fact that there is no way of abolishing the growth factors which arise through mechanical injury in the preparation of the cultures themselves. Looftourow, Cueto and Lane discovered that greater growth and lesser degeneration occurred in cardiac explants grown in fluids from tissue injured by ultraviolet light than in controls grown in fluids from normal tissue. They concluded that animal tissues respond to injury by the production of intercellular wound hormones which, it is reasonable to assume, are the natural stimuli to the repair process in the tissues following injury. Carrel, Hammett and others, as previously stated, have suggested the possible importance of such materials in wound healing, but, by the process worked out in the Institutum laboratories, it has been possible for the first time to produce such active factors at will by controlled tissue injury, to relate their production definitely to injury of the cells and to obtain them in sufficiently large quantities to permit extended investigations of their chemical nature and physiologic effects.

Röntgen Rays.—Although the preceding experiments illustrate the value of ultraviolet light in tissue repair, experimental data on the relation of roentgen rays to this vital process are not nearly so complete or conclusive. However, evidence does exist which indicates that changes occur in the metabolism of tissues, particularly as regards their respiration. Fardon and others,¹⁷ conducting experiments along these lines, showed that rat skin responds to exposure to roentgen rays by a short initial period of depressed respiration followed by a prolonged period of stimulation. Preliminary experiments¹⁸ on tissue culture growth appeared to be accompanied by similar results, i.e., a period of depressed

growth followed by a period of stimulation. While these experiments do not indicate a direct action of roentgen rays in tissue repair, they do indicate an indirect one, in that the metabolism of the tissue exposed to roentgen rays is stimulated.*

Today roentgen rays are being used with good results in the treatment of numerous types of lesions, including furuncles and carbuncles.^{19, 20, 21, 22} Their value in the treatment of such conditions cannot possibly be attributed to their direct germicidal powers, since it has been proved by in vitro experiments that a much higher dose and a longer exposure are required for actual killing of micro-organisms than those used clinically. It would seem that when acting on

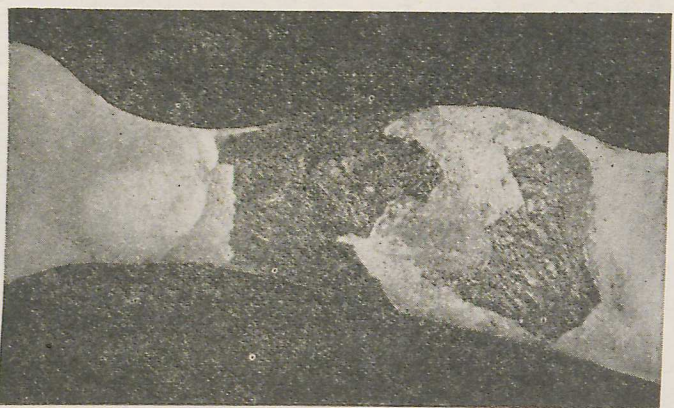


Fig. 1.—May 14, 1938. Deep 2nd to superficial 3rd degree burn involving the entire circumference of the lower leg.



Fig. 2.—May 28, 1938. Applications of ointment containing metabolic-stimulating factors have suited in rapid healing, as evidenced by unimpeded epithelial proliferation, especially in the peripheral area. The numerous, small, brown islands of epithelium resemble pinhead grafts.

pathologic tissues, roentgen rays possess, in addition to a direct action on the organisms involved, an action on the tissues themselves, perhaps forcing them to liberate either metabolic-stimulating substances similar to those previously described or substances which are toxic for the organisms.^{23, 24} Whatever is the nature of this synergistic action, it is significant in the healing process.

Mechanical Injury.—Notable among the experiments on injuries produced by mechanical means are those of Carrel.²⁵ This investigator showed that if a simple incision produced by a sharp instrument was kept completely free from debris of tissue and blood clots and absolutely protected from outside irritation, healing would not take place. From this observation he advanced the theory

*The significance of this increased metabolism in the wound healing process is discussed to some extent by Cook and Fardon.¹

that irritation set off the trigger mechanism for repair by bringing about invasion of leukocytes which, in secreting "trephones," induced cicatrization. In early experiments of Fardon and Looftbourrow, as previously stated, the existence of growth-promoting substances arising as a result of mechanical injury to tissues was recognized. Extensive study into their nature²⁶ has shown them to be similar to the materials produced by the action of ultraviolet light and roentgen rays.

In working on the problem of mechanical injury in tissue culture growth it was found that much greater growth occurred in cultures grown under the influence of embryonic juice prepared by cutting the embryos into small bits with a pair of scissors than in juice prepared by grinding them with sand in a mortar.^{26, 10c}

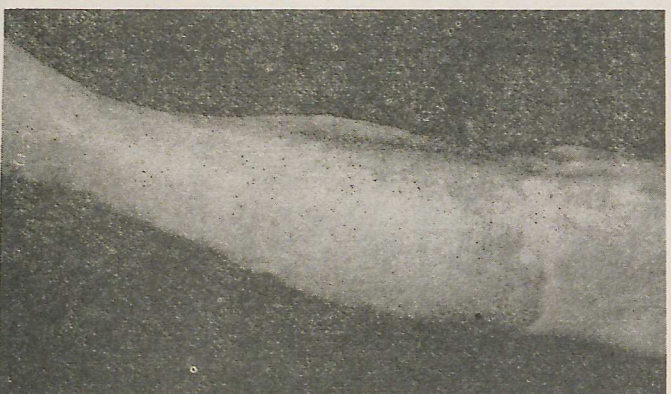


Fig. 3.—June 18, 1938. Complete healing has resulted after 5 weeks' treatment. Minimal scarring and no contractures. Hair follicles and glands are present in the healed area.

This phenomenon indicates that growth-promoting substances are liberated to a greater extent by injured cells than by those completely destroyed. In addition, it would seem that these substances are materials liberated by the cells rather than merely disintegration products.

Further work was conducted along these lines with sound used as the mechanical injuring agent. In these experiments²⁷ yeast cells in suspension were subjected to a vibration frequency of 50 cycles over a period of five hours. Berkeley filtrates of the suspensions yielded growth-promoting substances one and one-half to two and one-half times as potent as controls on a volume basis and one and one-half to four times as active on the basis of equal weights of solid in the filtrates.

Clinical Application.—From the previous experiments it is evident that cells react to injury, regardless of the type, by the production of metabolism-stimulating factors. It is likewise evident that the discovery of these factors, factors which we consider the "formative stimulus or stimuli" to tissue repair, has opened the possibility of many practical applications in the field of medicine.

Investigations employing these agents in the treatment of wounds, both in laboratory animals and in human beings over a period of several years have had gratifying results. In animal experiments these results were manifested by a decrease in the time required for healing, absence of sepsis and freedom from scarring. In addition to these remarkable features, a minimum of pain was experienced by the human subjects. For the work on the treatment of human wound we are indebted largely to Dr. Thomas F. P. Walsh,²⁸ of Mercy Hospital, Chicago, whose results are based on extensive treatment of burns during the past three years. With his permission we present photographs of a typical burn treated with an ointment containing metabolic-stimulating factors. The results speak for themselves.

From the foregoing, it is evident that many possibilities are open for investigation with these metabolism-stimulating materials. Moreover, their method of production through the action of physical agents on the tissues seems certainly to justify the use of such agents in the repair process.

In view of the evidence demonstrating that the proper use of physical agents can result in the production of metabolism-stimulating factors, it may be seen that there are many possibilities for wider and more effective use of physical therapy in the treatment of wounds, in the treatment of disease and in hitherto unexplored fields.

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THE WOUND HORMONE CONCEPT IN WOUND HEALING

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IN this paper we wish to indicate briefly the position of chemical substances, produced by injured living cells, as the possible natural stimulus, or so called "formative stimulus," to wound repair; and, in particular, to relate certain studies carried on in our laboratories of this problem. We wish also to broaden the wound hormone concept to include not only materials which stimulate cellular proliferation but also materials which may accelerate cellular metabolism during the healing process.

It is not our purpose to provide an exhaustive review of "wound hormones." Nor is it the intention of the authors to review the manifold aspects of wound healing. This has been done in the excellent paper of Arey.

WOUND HORMONES

Many years ago, in 1858, Virchow suggested that healing was the result of a direct stimulation of the cells by the traumatism. Wiesner appears to have been the first, in 1892, to suggest that the traumatic effect is an indirect one, the injured cells releasing substances (wound hormones) which stimulate the normal cells to proliferation. These suggestions were made with regard to plant tissues. Not until 1913 and later did the botanists Haberlandt and Reiche produce further evidence to substantiate this hypothesis. Recently a series of researches by Bonner and English has resulted in the isolation from plant tissues and subsequent synthesis of a substance which they believe to be a plant wound hormone and have accordingly named "traumatin," although no evidence has been adduced for its increased formation as a result of injury.

The application of the "wound hormone" hypothesis to animal tissues likewise suffered a severe time-lag. In 1891 Welch "presented the hypothesis that the formative stimulus of Virchow consists of substances acting from without which directly stimulate cells to growth and proliferation; the stimulating principle would be, therefore, chemical in nature" (Arey). Not until 1922 and 1924 did Naswitis present preliminary information concerning the existence of wound hormones. "Necrohormones" derived from injured tissues were studied by Lorin-Epstein and

From the Research Laboratories of the Institutum Divi Thomae.

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Fraenkel. Carrel, as a result of his long series of studies extending back to 1912, observed that definite growth-promoting substances are secreted by leucocytes and are present in embryonic tissue juices. He suggested (1924) that "trephones," elaborated by the leucocytes, were the primary stimulus to repair in animal wounds. Later (1930) he stated that, in superficial epithelial wounds, the reparative stimulus must consist of materials from the injured cells themselves. It was believed by Carrel and Baker that the growth activity could be attributed to split products of proteins (polypeptides) and to glutathione and hemoglobin. Many researches conducted by Hammett on both plant and animal tissues led him to the conclusion that the sulfhydryl radical is the essential stimulus for cellular proliferation and applications of this conclusion have been made to wound healing by Hammett and Reimann.

Based upon these observations, many trials of embryonic extracts, leucocytes, protein decomposition products, and tissue destruction products have been made on experimental and clinical wounds, usually with a reported lessening of healing time. References to this work are given by Arey.

It is not within the province of this paper to discuss in detail the use of many other substances which have been employed to promote wound healing, such as urea and allantoin. Although these substances occur naturally, as, for example, in the excreta of maggots, there is no evidence of which the authors are aware to link them with the "primary stimulus" to wound repair as the result of the wounding itself. Similarly, fish liver oils, although natural products, do not appear to be associated with wound repair in the manner of which we are speaking. The considerable literature on this subject is ably reviewed by Holmes who points out the lack of unanimity of opinion as to the nature of the active factor in the oils, although this has been variously identified with vitamins A and D and with fatty acids. The present case for vitamins is outlined by Hardin. Unpublished experiments on animals in our laboratories, in which were used not only fish liver oils but also fat soluble preparations from beef liver, rat liver and spleen, have led us to believe that the proliferation promoting activity, while possibly accumulating in the vitamin containing fractions,

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is not attributable to the vitamin content. The experiments of McJunkin and Matsui on the epithelial regenerative activity of the fat soluble portion of rat tail scrapings seem to be in agreement with this view. Getz appears to have demonstrated that the healing effects of cod liver oil in experimental tuberculous lesions reside neither in the fatty acids nor in the vitamins A and D contents, but in an unknown factor in the unsaponifiable residue.

Nearly all of the workers with natural cellular products have regarded the materials responsible for the increase in cellular proliferation to be products of tissue destruction. In our laboratories techniques have been developed for the controlled injury of cells under reproducible and more or less quantitative conditions, and we believe that our experiments indicate that cells subjected to injuring agents secrete or release proliferation promoting (and respiration stimulating) substances as a direct response to the injury. These factors are not solely cellular destruction products nor do they consist wholly of nutrient materials, but rather they may be hormone-like substances, in the original sense of Brown-Séquard and of Arsonval, secreted by injured living cells into the intercellular fluid. For this reason they have been spoken of as "intercellular hormones." In our investigations (Sperti, Looftowrow, Fardon, Cook and collaborators), yeast, bacteria, algae, and animal tissues injured by controlled dosages of lethal ultraviolet radiation and x-rays as well as by chemical injury, mechanical injury or trauma, and by oxygen-want have been shown to produce factors which stimulate the proliferation of cells *in vitro* and, at least in one instance, *in vivo*. The fact that many of our studies have used yeast as a test organism does not deprive them of clinical interest, since it has been shown that, in many cases, the tissue active factors also stimulate yeast proliferation, and the latter is experimentally much better suited for quantitative assay purposes.

The evidence seems to show that injured living cells form hormone-like proliferation promoting factors as a specific response to injury although the release of dead cell disintegration products and increased permeability of the cell membrane may account for some of the activity in crude preparations.

Specific experimental results with cell suspensions which support these contentions include the following:

1. A given dosage of injuring agent, such as ultraviolet irradiation, applied at low intensities to a suspension of cells over a long period of time

so that the rate of killing is low as compared with the application of the same dosage at high intensity for a shorter and more rapidly lethal period results in the formation of greater quantities of proliferation promoting substances, the yield, within limits, being closely proportional to the time required to kill the cells;

2. A comparison of the curves for the rate of killing by lethal ultraviolet with the curves representing rate of production of growth factors shows that the maximum production of proliferation factors takes place before appreciable killing occurs;

3. Application of a given dosage of injuring agent, such as ultraviolet, followed by the killing or grinding of the surviving cells by other means, as by heat or grinding, produces more potent growth promoting extracts than by reversing the process, i.e., first killing (by heat or grinding) and then applying the injuring agent;

4. Experiments on the use of various media for suspending cells during the application of injurious radiation show that nutrient or nontoxic isotonic media allow the greatest yield of the growth factors for the same dosage of injuring agent;

5. Carbon dioxide increases the yield of active factors in the intercellular fluids without killing the cells;

6. Carcinogenic hydrocarbons, such as 1,2,5,6-dibenzanthracene, increase the yield of active factors by cell suspensions without appreciable killing of the cells.

These findings receive further, although less quantitative, support from experiments on the effects of trauma on tissues in culture. Certain of these experiments are considered in the following section.

THE BEHAVIOR OF GROWTH PROMOTING FACTORS IN TISSUE CULTURE

It has been shown directly and indirectly by several investigators that growth promoting substances are released by excised fragments of embryonic and adult tissue *in vitro*. Explanted pieces of embryonic tissue in simple saline solution show migration and cell division. Fischer (1917) holds that such cultures grow at the expense of nourishing and growth promoting substances liberated by the cells of the explant. Carrel (1913), working with cultures of connective tissue, demonstrated the remarkable power of embryonic tissue extract upon the multiplication of such cells. It was also shown by Carrel (1912) that extracts of adult spleen, leucocytes, and Rous chicken sarcoma considerably accelerated the growth of such cul-

tures. Working with cultures of adult tissue, Drew found that products of autolysis from disintegrating adult cells initiated the multiplication of such tissue and produced growth of explosive character. However, making subcultures of these in fresh media and again adding the autolyzed tissue extract, he found rapid degeneration to set in, while other cultures which did not receive a second dose of the extract continued to grow vigorously. Walton noted that if a piece of rapidly growing tissue was cut in two, growth was delayed on the cut edge (he was of the opinion that this was apparently due to trauma), so that when the cells from the uncut edges had formed a halo of branching cells spreading out into the plasma, only a few cells were projecting from the cut portion. These cells grew rapidly, however, and after the second or third day nearly equalled in width the outgrowth from the uncut edges. Walton apparently made no special issue of increased growth after injury, but was mainly interested in the lag period.

Fischer, in studying the physicochemical nature of growth promoting substances, employed various methods of obtaining embryo tissue extracts. He found (1917) that extracts obtained by simply cutting embryos into pulp with a pair of scissors gave greater activating power than when this pulp was subjected to grinding in a mortar with kieselguhr. These results suggest to us that injury rather than complete destruction of the cells produces the highest concentration of growth promoting substances. These experiments were repeated in our laboratories with the same results obtained by Fischer. Further work by Fischer (1930) on the healing of wounds *in vitro* has shown that, after successive traumatization, the cultures grew definitely faster than the undamaged controls. He observed also that the speed with which wound healing takes place in such cultures could be measured and was found to be inversely proportional to the age of the culture.

To demonstrate the liberation of growth promoting substances from injured tissue, a series of *in vitro* experiments was initiated in these laboratories. Embryonic chick heart was chosen for explantation, and plasma-Drew's solution for the medium. The tissue fragments for the control cultures were immediately transferred to hanging-drop slides. The pieces of tissue used in the experimental group were placed in a serological tube and washed thoroughly with Drew's solution by shaking gently for 30 seconds. This procedure was repeated six times with every piece of tissue, the old fluid each time being pipetted off and replaced with fresh Drew's solution. Thereafter

each fragment of tissue was transferred to a slide culture and incubated with the control group which was not washed. Growth measurements were taken after an incubation period of 41 hours. The results may be summarized as follows: Twenty-four per cent of the unwashed tissues showed growth ranging from *no growth* to *poor*, while in the washed tissues 53 per cent showed either *poor* or *no growth*. Contrariwise, only 47 per cent of the washed tissues showed growth ranging from *fair* to *very good*, while 76 per cent of the unwashed tissues exhibited growth ranging from *fair* to *very good*. These results clearly indicate that washing the tissue before explantation removes much of the growth stimulating substances produced through injury by cutting, and is reflected in subsequent reduced growth.

Another series of *in vitro* experiments was performed in these laboratories to demonstrate more directly the stimulation of growth as a result of injury. To illustrate with any degree of directness that injured tissues liberate growth promoting substances entails several technical difficulties. After a fragment of tissue in a plasma clot is cut and oriented it is often difficult later to recognize the cut portion. It frequently happens—although the cut portion be recognizable—that the resultant ubiquitous migration of cells produces a pattern which gives the false impression of uniform growth from all portions of the tissue. To circumvent these difficulties a tissue was chosen in which the cut portions were easily distinguishable and relatively remote from the uncut portions. For this experiment intestine removed from 14 to 18 day old chick embryos was carefully cut into transverse sections not exceeding 2 millimeters in length. In transferring the sections to the cover slips, special precautions were taken not to injure any portion of the muscular coat of the intestinal wall. Each fragment of intestine was so oriented as to make clearly visible the two cut ends. Active growth in every instance proceeded from the cut or injured portion of the intestine sections.

In summarizing the experimental results of the *in vitro* investigations, it appears evident that growth promoting factors are liberated from tissues in culture as a consequence of injury.

METABOLISM

While considerable effort has been devoted to the stimulation of proliferation in wounds—including use not only of products of cellular injury but also of allantoin, urea, fish liver oils, sulthydryl compounds, etc.—much less attention has been devoted to the problem of the effect of injury on

tissue metabolism. Since energy for proliferation must be supplied by metabolism, the well known fact of high metabolism of rapidly growing normal tissue, such as embryo tissue, would be expected. A similar relation holds in aseptic wounds. Gaza and Gissel, by means of the Warburg technique, measured the respiration and anaerobic glycolysis in aseptic wounds of the human skin. It was found that shortly after infliction of the wound, a rapid fall in metabolism occurs, corresponding to the destruction of tissue. When repair begins, a rise in metabolism occurs above normal, and the metabolism finally declines to the normal level. Similar findings were obtained from study of the metabolism of the Achilles tendon of the dog. It has been pointed out that respiration may be lowered in a number of pathological conditions or by toxic agents and that its measurement may serve as a criterion of the vitality of the skin and, for that reason, may be a useful adjunct in dermatology (Adams, Amersbach and associates, Cook).

In our laboratories the effects of injuring agents such as ultraviolet and x-radiations, on the respiration of cell suspensions have been studied, conditions similar to those employed in the proliferation investigations being used. It was found that mild irradiation caused an increase in respiration while intensive irradiation, with resulting destruction of most of the cells, caused a decrease or cessation of respiration (Fardon and associates, 1937). It was shown that such irradiation caused the release by the injured cells of a factor (or factors) which could be separated from the cells and which was active in increasing the respiration of fresh cell suspensions. Thus, it appears that cells, under the influence of injuring agents, release into the intercellular fluids substances which stimulate the proliferation and respiration (and also, less extensively investigated, the glycolysis) of cells. Effort is being expended on the preparation, fractionation, and characterization of these substances and their relation to other recognized materials (Cook, Norris, and collaborators). As a result of these studies we believe that the injury of cells causes them to release (and probably to synthesize in increased quantities) not only chemicals which induce more rapid proliferation but also chemicals which tend to restore the metabolism which has been lowered as a direct result of tissue destruction. Present indications are that the growth and respiratory stimulating factors are distinct; and, at least under our experimental conditions, relatively greater proportions of the growth factors are produced by injury.

NATURE OF RESPIRATORY PROMOTING AND PROLIFERATION PROMOTING FACTORS

1. *Respiration promoting factors.* Little is known as yet of the chemical nature of the respiratory factors with which we have been dealing and consequently we are unable to state how these factors may fit in with the recognized respiratory systems and to just what extent they may be identical with known respiratory intermediaries. Our efforts in connection with both the respiratory and proliferation factors have, until recently, been directed primarily toward the physiological aspects of the problem, i.e., the effect of injury on the production of these materials, and less toward their nature and mode of action. Certain indications are available, however (Cook and associates). In crude extracts undoubtedly mixtures containing both coenzyme-like substances and oxidative substrates are present. There is evidence that a variety of materials, more or less specific as to tissue, are involved. It has been possible to eliminate a variety of amino acids, members of the vitamin B complex (thiamin, riboflavin, nicotinic acid, pyridoxin, pantothenic acid) and other substances as major sources of activity on yeast respiration (Cook, Walter and Ellert, 1940) as well as on skin respiration (unpublished) under our experimental conditions. The active materials appear to be free of protein and sulfur, and all the active water-soluble preparations thus far obtained contain nitrogen. A material active in increasing liver respiration has been concentrated by fractional electrical transport and is definitely acidic in nature. Certain of the common participants in cellular oxidation systems, such as the thiamin containing and alloxazine containing coenzymes and coenzymes I and II, appear to be eliminated by the lack of correlation between ultraviolet absorption and respiratory activity. Certain fatty substances which, in nontoxic concentrations, increase the respiration of yeast have been shown to be fatty acids acting as substrates.

2. *Proliferation promoting substances.* It was early established that there was a correlation between the proliferation promoting capacity and the amount of ultraviolet absorption at approximately 2600 Angstroms in the crude concentrates of proliferation promoting factors from both yeast and animal tissues (Looftbrouwer, Cook). This was taken as evidence of a nucleic acid-like nature of the proliferants. Recently, however, experiments have shown that, while an increase in nucleic acid (or similar substances) can be demonstrated in ultraviolet injured cells either directly (by the quartz microscopic technique) or by isolation, and

while a parallel increase in growth potency also takes place (Looftbrouwer et al., 1941), yet it is possible by the technique of chromatographic adsorption to obtain potent extracts which do not show selective ultraviolet absorption. No correlation was observed between ultraviolet absorption at 2600 Angstroms and growth potency of fractions from "uninjured" cells (Cook, Hart, and Stimson, 1940). Davidson confirmed the growth promoting properties and the increased content of purine, nucleotide, and nucleoside nitrogen in the cell free fluids from ultraviolet injured yeast cells and also found a large increase in amino nitrogen. It may be recalled that Caspersson has demonstrated an increase in nucleic acid during cellular division and Fischer (1939, 1940) believes that a nucleoprotein is responsible for the proliferation effects observed by him and previously referred to in this paper. A preparation from beef embryos based on Fischer's work and known as epicutan is being investigated in the healing of war wounds in England.

A series of unpublished experiments comparing cell free extracts from ultraviolet irradiated yeast with the known growth factors for yeast (inositol, thiamin, biotin, vitamin B₆, pantothenic acid and amino acids) has shown that, while part of the activity of crude extracts is accounted for by certain of these substances, there is yet a residual effect due to substances not yet recognized. This is confirmed by work of Williams and associates. Injury, therefore, would appear to result in the release of proliferation promoting substances, some of which represent an increased production of known materials, but some of which are yet unknown. It may be mentioned that no evidence has been found to relate these materials to the sulhydryl compounds of Hammett since none of them contain sulfur.

SUMMARY

Evidence is presented that living cells, upon injury, produce or release substances which promote the proliferation and metabolism of surviving cells. While crude preparations from injured cells contain cellular disintegration products which can serve as nutrients, it is believed that injured cells secrete into the intercellular fluid additional materials which may be hormone-like in their action, in the original sense of Brown-Séquard and d'Arsonval, and which, therefore, may be termed "intercellular hormones." It is believed that these substances are of importance in wound healing and may constitute the "formative stimulus" of Virchow. The efficacy of such contemporary modes of therapy as the Orr treat-

ment may be due in part to the retention of such substances at the wound site. The work reported herein is being extended to *in vivo* studies of animal and human wounds and will be reported later.

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QUESTIONS AND ANSWERS

ABOUT BIO-DYNE OINTMENT

the remarkable new concept in burn and wound treatment

Question: What is Bio-Dyne Ointment?

Answer: It is a dressing designed specifically for the treatment of burns and wounds. It is the result of seven years of research by a leading post-graduate research foundation. It was developed from a long series of basic studies of cellular growth and metabolism and represents a new concept in the treatment of burns and wounds through the discovery of "Biodynes".

Question: What are the chief advances in burn therapy represented by "Biodynes"?

Answer: The incorporation of respiratory-stimulating and proliferation-promoting concentrates. These are natural cellular products -- extracted from living cells and fish-livers. They belong to a group of natural substances, generated by human cells, which participate in the regulation of cellular growth and respiration.

Question: What is the composition of Bio-Dyne Ointment?

Answer: Live Yeast Cell Derivative 1.0% (supplying 2000 units Skin Respiratory Factor per ounce of Ointment)

Liver Oil 3.0% (containing Proliferation-Promoting Factors.)

Merphenyl Nitrate 1:20,000 in a specially adopted Lanolin-Mineral Jelly Base.

Question: What are the most important properties of Bio-Dyne Ointment in the treatment of burns?

- Answer:
1. Ease of application and treatment
 2. Almost immediate relief from pain
 3. Acceleration of rate of healing and epithelization
 4. Keeps tissues soft, minimizing scar and keloidal tissue formation
 5. Marked shortening of period of disability

Question: Have there been previous efforts to promote the proliferation of epithelium?

Answer: Yes. Various proliferation stimulants such as allantoin, urea and many others have been employed, but, in general, such proliferation has been very difficult to accomplish. In Bio-Dyne Ointment, this is achieved by the use of natural stimulants of cellular proliferation.

Question: What is the importance of the respiratory-stimulating factor?

Answer: A lesion involving the destruction of tissue may show a depressed metabolism which rises during the healing process. It would seem desirable, therefore, to maintain normal respiratory metabolism during the treatment of lesions. Rapidly accumulating scientific evidence exists to show that the respiration of a tissue is, in many cases, a criterion of its normal or pathological condition; and it has been found that depressed tissue respiration may be characteristic of certain pathological states.

Question: What is the effect of germicides on the respiration of tissue?

Answer: Germicides, which are desirable to maintain sterility of lesions, may slow the healing process by their toxic action on the tissue as manifested by the depressed respiration of the tissue. Bio-Dyne Ointment, therefore, contains a concentrate of natural respiratory-stimulating factors which off set the respiratory depressing action of the germicide without sacrificing germicidal efficiency.

Question: What end results may normally be expected in using Bio-Dyne Ointment?

Answer: End results normally show a soft but firm epithelization spread over the lesions, throughout which can be seen networks of fine capillaries, indicating that proliferations of the several layers of the derma have taken place. Glands and hair follicles may regenerate if their cells have not all been destroyed. Scar tissue and keloids are minimized.

Question: How does Bio-Dyne Ointment relieve pain?

Answer: As a result of two years of observation by competent physicians, it has been established that Bio-Dyne Ointment as a treatment for burns, without the incorporation of a local anesthetic, does relieve pain almost immediately and completely. The mechanism of this action, however, is as yet unknown.

Question: How much does the use of Bio-Dyne Ointment generally shorten the period of disability?

Answer: In hundreds of serious burn cases, reported over a 3-year period, evidence showed the average case treated with Bio-Dyne Ointment healed more rapidly and more effectively than the average case in which ordinary treatments were used.

Question: What is the suggested local treatment of burns with Bio-Dyne Ointment?

Answer: 1. Cleanse surrounding skin first with liquid white soap and water, for a time sufficient to assure absolute cleanliness. Then treat the lesions gently in a like manner. Wash off excess soapings with warm water and dry with soft gauze.

NOTE: (Liquid White Soap) Cut Castile or Ivory Soap into chips and add water to liquify by boiling to a consistency which can be poured freely. Add water to thin to soap suds consistency.

2. Open all vesicles, blisters and bullae with scissors and tissue forceps. Do not tear, strip or cause bleeding. Weeping does not persist as secretions of the lesions readily coagulate.
3. Spread thick applications of Bio-Dyne Ointment on smooth surgical gauze, lesion size, and lay over the burned area. Bandage for even compression - not too tightly. This prevents pockets, slipping and edema in tissues.
4. Examine lesions in 24 hours and complete debridement of new vesicles and loose skin if necessary. This applies to chemical burns especially. Subsequent dressings depend entirely upon the clinical course and type of healing.

After a few days, islets of epithelium are noted in the base of the lesion and cellular activity in the margins of the wound. These islets gradually coalesce and spread peripherally on the flat. When epithelization is evident, dressings may be less frequent, two or three days being allowed to pass without change. Prevent drying out when necessary by changing and applying more ointment.

5. Pre-existing infection does not contraindicate this treatment which stimulates healthy granulation. It is generally contraindicated in lesions covered with fibrous connective tissue. In old lesions with infected, exuberant, unhealthy granulations, the regular treatment as outlined for acute burn lesions is employed.

Sperti, Inc.
Cincinnati, Ohio.

CASE NO. 1

L. E. Age: 38 Male White
Physician: [REDACTED]
Dayton, O.
Office case

HISTORY OF BURN:

On August 19, 1941 this patient suffered multiple burns of the left leg when he accidentally spilled molten material on his trousers. The burns were second and third degree in character. They were treated with the usual burn therapy until September 2 when Bio-Dyne Ointment was applied. During this interval, between August 19 and September 2, healing had been poor and characterized by excess accumulation of granulation tissue. tried during the past year without results.

EXAMINATION AT TIME OF INITIATION OF BIO-DYNE THERAPY:

Treatment consisted in thorough cleansing September 2, 1941, of Bio-Dyne Ointment. Examination revealed multiple burns of the left leg. The lesion of the hip and the thigh ranged from deep second to superficial third degree depth while those on the lower part of the leg were even more severe, particularly those which extended from the lower third around the heel and ankle to the front of the foot. All lesions presented healthy granulations but in excess so that they projected above the surrounding epithelial surface. lesion in eight days.

TREATMENT:

On September 2, fourteen days after the occurrence of the injury, Bio-Dyne Ointment on gauze spreads was applied to the lesions. The dressings were changed every other day, and remarkable advance in healing was noted. Pain was greatly diminished after the initial treatment. Sepsis was absent throughout. Cosmetic end results were good. A last dressing was made on September 10.

SUMMARY & CONCLUSION:

In my eleven years of experience as an industrial surgeon, I have had many opportunities to study burn cases and their treatments. To date, no treatment that I have used has proven as efficient as Bio-Dyne Ointment. The rapidity of healing, with minimum pain and scar tissue formation, is remarkable.

CASE NO. 2

Lieut. E. E.
U. S. Army

Age: 45 Male White

Physician:
Cincinnati, O.

Office case

PAST MEDICAL HISTORY: Irrelevant.

HISTORY OF BURN: September 12, 1941
This man has had an X-ray burn of one year's duration over the right pectoralis muscle.

EXAMINATION: The burn covers an area approximately 4 x 5 cms. and is approximately third degree in depth. Numerous treatments have been tried during the past year without results.

TREATMENT: Treatment consisted in thorough cleansing and the application of Bio-Dyne Ointment. The rapid response in epithelization was remarkable. Complete filling in of the defect with healthy granulation tissue and a surface covering of firm, elastic, pink derma occurred in eight days.

CONCLUSION: The prompt response occasioned in the healing of this X-ray burn of the chest which had proven refractory to other forms of treatment for one year was remarkable. Healing progressed to completion in eight days.

PHYSICAL AND LABORATORY EXAMINATION: The final result was highly satisfactory. Localized infection was present in the burned area, but there was no evidence of generalized sepsis. No laboratory work up was undertaken.

TREATMENT: On December 24, fourteen days after the accident, Bio-Dyne Ointment was applied to the infected lesions in the form of gauze squares which had been soaked in the melted dressing. Complete relief from pain was obtained in 24 hours, and in three days all evidence of infection had disappeared. The purulent base became clear and filled in with firm, healthy granulation. These gradually became covered over with a shiny smooth layer of tissue which eventually resulted in complete healing without scar formation. The patient was discharged as completely healed two weeks after the institution of the Bio-Dyne treatment.

CASE NO. 4

W. R. Age: 40 Male Colored

Physician: [REDACTED] burn which was only acti-

Hospital: [REDACTED] and [REDACTED]
Dayton, O. [REDACTED] healed entirely by first intention with-

PAST MEDICAL HISTORY: Irrelevant.

HISTORY OF BURN: December 10, 1940
This patient, a middle-aged colored man, suffered severe burns of his back when he fell backward on to an open oven. He was initially treated with [REDACTED] sprays, alternating with [REDACTED]. A good eschar formed, but after ten days this began to peel off leaving a purulent, poorly granulating base. There was intense pain associated with the lesion at this time.

DESCRIPTION OF BURN: When the patient first came to the hospital the lesion was classified as an uncomplicated third degree burn involving the entire back, or approximately 10% of the body surface.

Treatment with [REDACTED] [REDACTED] [REDACTED] produced no healing and resulted in infection of the previously uncomplicated third degree burns. This was the condition existing at the time Bio-Dyne treatment was started.

PHYSICAL AND LABORATORY EXAMINATION: General physical condition of the patient was good. Temperature was slightly elevated, but the pulse and respirations were normal. Localized infection was present in the burned areas, but there was no evidence of generalized sepsis. No laboratory work up was undertaken.

TREATMENT: On December 24, fourteen days after the accident, Bio-Dyne Ointment was applied to the infected lesions in the form of gauze squares which had been soaked in the melted dressing. Complete relief from pain was obtained in 24 hours, and in three days all evidence of infection had disappeared. The purulent base became clear and filled in with flat, healthy granulations. These gradually became covered over with a shiny smooth layer of tissue which eventually resulted in complete healing without scar formation. The patient was discharged as completely healed two weeks after the initiation of the Bio-Dyne treatment.

CASE NO. 4 con'd.

SUMMARY &
CONCLUSION:

B. P.

Physician:

PAST MEDICAL HISTORY:

HISTORY:

DESCRIPTION:

GENERAL AND LABORATORY

EXAMINATION:

TREATMENT:

CONCLUSION:

This third degree burn which was only activated by, and subsequently became infected with, combined [redacted] and [redacted] therapy healed entirely by first intention without scar formation when Bio-Dyne was applied. Pain was relieved in 24 hours, localized sepsis overcome in three days, and healing completed in two weeks. This was a very short disability period when it is borne in mind that two weeks of [redacted] therapy had not only produced no healing but had produced actual damage. [redacted] the skin flap off the dorsal surface.

Duration of lesions: 28 days
Previous treatment: 14 days 2 cm. There
Biodyne treatment: 14 days in over this area
Biodyne applications: 7 only at its distal end.

This skin flap was considerably macerated and very black. The underlying soft tissue also showed some evidence of necrosis.

Patient's temperature on admission to the office was 98.3, pulse 84, respiration 18, and blood pressure 100/80. General physical examination was essentially negative, as was also the urinalysis. The red blood count was 3,980,000, the white 8,440, and hemoglobin 88%. The non-protein nitrogen was 23.4 mg.-%.

In injuries of this type where the distal fragment of the skin alone remains attached they are completely deprived of their blood supply; however, in this case an attempt was made to suture this flap into place, and a dressing of Bio-Dyne Ointment was applied. The blackened, torn skin sloughed completely after five days, leaving an area about 4 x 8 cm. completely denuded. Daily applications of Bio-Dyne Ointment were continued until December 31 -- 25 days after the injury -- at which time healing was complete, and only a small linear scar at the base of the right thumb gave any evidence of previous damage.

In this, as in all other Bio-Dyne-treated cases, pain was relieved after the initial dressing was applied. Healing was accomplished by both marginal and basal epithelial proliferation. There were no manifestations of sensitivity throughout the course of treatment. The healing that resulted could not have been duplicated by skin grafting.

CASE NO. 5

B. P. Age: 70 Female White

Physician: [REDACTED]
Cincinnati, O.

PAST MEDICAL HISTORY: Irrelevant

HISTORY: Entered December 6, 1937
The right hand was caught in a wringer tearing
the skin flap off the dorsal surface.

DESCRIPTION: The area torn measured about 3 x 8 cms. There
was complete avulsion of the skin over this area
so that it was attached only at its distal end.
This skin flap was considerably macerated and
very black. The underlying soft tissue also
showed some evidence of maceration.

GENERAL AND LABORATORY
EXAMINATION: Patient's temperature on admission to the office
was 98.3, pulse 84, respiration 18, and blood
pressure 160/80. General physical examination
was essentially negative, as was also the
urinalysis. The red blood count was 3,980,00,
the white 8,440, and hemoglobin 88%. The non-
protein nitrogen was 23.4 mgs. %.

TREATMENT: In injuries of this type where the distal frag-
ment of the skin alone remains attached they
are completely deprived of their blood supply;
however, in this case an attempt was made to
suture this flap into place, and a dressing of
Bio-Dyne Ointment was applied. The blackened,
torn skin sloughed completely after five days,
leaving an area about 4 x 8 cms. completely
denuded. Daily applications of Bio-Dyne Oint-
ment were continued until December 31 -- 25 days
after the injury -- at which time healing was
complete, and only a small linear scar at the
base of the right thumb gave any evidence of
previous damage.

CONCLUSION: In this, as in all other Bio-Dyne-treated cases,
pain was relieved after the initial dressing was
applied. Healing was accomplished by both mar-
ginal and basal epithelial proliferation. There
were no manifestations of sensitivity throughout
the course of treatment. The healing that re-
sulted could not have been duplicated by skin
grafting.

CASE NO. 18

M. J. Age: 48 Male White

Physician: [REDACTED]

Hospital: [REDACTED]

Chicago, Illinois

HISTORY:

August 20, 1941

In attempting to extinguish a fire caused by burning oil and an explosion, this patient was severely burned over scattered areas of the entire body.

ENTRY:

Entered [REDACTED] Hospital less than one hour after the accident in fair condition. Patient was completely relaxed, but not in shock.

Examination: Examination revealed second to third degree burns involving head and neck, face and ears, back and shoulders, left forearm and both hands, left thigh and knee, right ankle and both feet.

Treatment: Aseptic preparation with limited debridement where indicated was followed by applications of Bio-Dyne Ointment on gauze dressings secured in place by compression bandages. Only the body lesions were covered, the remainder being exposed with copious applications of ointment. Immediate blood examinations, etc. completed the first aid management.

August 21

The lesions are clean. No severe reactions are evident in the areas. Prognosis more favorable.

August 22

Fibrinous covering is present. Condition of the patient is good.

August 23

Lesions are redressed as usual. All lesions are showing activity of follicle cells in the bases.

August 25

Left arm, face, ears and neck are healed. These areas were exposed without dressings in good condition and with normal cell growth throughout. Two areas on the back are healed but were dressed with the larger areas, still quite sore.

August 27

Left knee and back shows active healing basally. These areas are deep and extensive, 6" - 8" in diameter and situated over bony prominences.

August 29

All healed lesions show good texture. Patient is able to walk around in comfort. Patient has not complained since confinement.

CASE NO. 18 con't.

August 30

Healing is progressing. Knee lesion is slow due to limited vascularity over the patella. Back is covered with normal skin in healed areas. The unhealed portions show numerous islets of cell growth throughout.

September 2

The condition of the patient is satisfactory. Patient is allowed to leave the hospital for home.

September 4

Basal cell growth is complete. Peripheral growth, like an invasion, is spreading across both lesions as a full complement of skin texture.

September 10

Healing process seems to have a peak suggestive of terminal growth. Both areas show follicle hypertrophy and complete epithelization. All treatment discontinued and a mild lubricant applied for protection for twenty-four hours.

September 15

Back and knee healed with firm, plastic, healthy derma denoting completion of management. In some areas pigmentation and follicle cell activity are noted.

**SUMMARY &
CONCLUSION:**

1. Multiple, severe, painful burn lesions over the body.
2. Absence of shock, altered blood chemistry, and pain after initial treatment.
3. Rapid recovery of the lesser lesions.
4. Characteristic cell growth, basal and marginal.
5. No after effects:- scars, contractures, or unsightly cosmetic end results.

This case, severe in character, follows the pattern of Bio-Dyne stimulated cases.

Twenty-six days disability of which only nine were spent in bed and nine more driving his automobile, is a contrast to the six weeks prognosis at first expected.

growth produced as the result of the cell stimulators incorporated in this ointment is responsible for this effect rather than any other material present including the germicide. It is hard for me to give any adequate reason for the wonderful anesthetic effect produced. There is no doubt that the decrease in oxygen produced by the application of the ointment plays a small part in this process.

CASE NO. 36

B. S. Age: 21 Female White

Physician:

CASE NO. 19

Hospital:

Chicago, Illinois

B. C. Age: 21 Female White

Physician:

May 4, [redacted]
Patient Cincinnati, Ohio. aspect of the right thumb, index, ring, and middle fingers by electricity.

PAST MEDICAL HISTORY: Irrelevant treatment four days later.

HISTORY: Examination May 8, 1940. revealed the right hand encased in [redacted] Patient was burned on right hand and fingers of the accident when a book of matches ignited in her hand. Exudation of purulent secretions was noted around the margins.

DESCRIPTION: Second degree non-infected burn on palm of right hand and fingers. crusts and aseptic preparation of the lesion showed superficial third degree burns

GENERAL AND LABORATORY EXAMINATION: General physical examination was negative. with cotton ball Temperature was 98.8, and pulse 78. No laboratory work up was attempted.

TREATMENT: May 2 The lesions Lesions were cleansed with soap and water, active. Third degree and dressings of Bio-Dyne Ointment containing 1% R.S.F. and 1:20,000 germicide were applied. May 12 Daily applications were continued for a period of five days at the end of which time the burn- ed areas showed a clean, smooth, glistening surface with epithelium rapidly converging from the margins and filling in at the base. For May 16 the next ten days dressings were applied about every third day. Complete healing resulted at the end of two weeks. The patient suffered no pains after the first application of the ointment, and the burns were completely healed without scar.

SUMMARY &

CONCLUSION: There are [redacted] therapy:

CONCLUSION: The fact that no infection has developed in any case which I have treated with Bio-Dyne Ointment has led me to believe that the rapid growth produced as the result of the cell stimulators incorporated in this ointment is responsible for this effect rather than any other material present including the germicide. It is hard for me to give any adequate reason for the wonderful anesthetic effect produced. There is no doubt that the decrease in oxygen produced by the application of the ointment plays a small part in this process.

Duration of lesion: 12 days

Bio-dyne treatments: 8

[redacted]: 4 days

Total disability: 6 days

Partial disability: 6 days

CASE NO. 36

B. S. Age: 21 Female White

Physician: [REDACTED]

Hospital: [REDACTED]

Physician: Chicago, Illinois

Chicago, Illinois

HISTORY: May 4, 1938

Patient burned the palmar aspect of the right thumb, index, ring, and middle fingers by electricity.

ENTRY: Patient came in for treatment four days later.

Examination: Examination revealed the right hand encased in [REDACTED] crusts which were sprayed on at the time of the accident. These crusts were elevated and cracking. Exudation of purulent secretions was noted around the margins.

Treatment: Complete removal of the crusts and aseptic preparation of the lesion showed superficial third degree burns of the index finger and first degree on the others. Application of Bio-Dyne Ointment was made on gauze dressings with cotton balls for compression.

May 9

The lesions are clean. The first degree lesions are active. Third degree lesions show signs of reduction of reaction.

May 10

All first degree lesions are left exposed. Index lesion shows basal healing. The same treatment was made as before.

May 16

Daily examination shows daily healing. The index finger has entirely healed without scar or contracture. No limitation of motive is noted.

SUMMARY &

CONCLUSION: There are some factors herein displayed that incriminate [REDACTED] therapy:

1. Application to an electric burn in a dry state
2. Failure to estimate the depth of the burn and the possibility of the extent of the damage
3. Constriction of the digits by circular treatment
4. Infection under the crusts, the most common cause of contractures.

These accidents are best treated expectantly until an audit is complete, as to prognosis. Bio-Dyne Ointment is not contraindicated after such audit. Prevention of scars, etc. is the primary essential after demarcation has terminated.

Duration of lesion: 12 days
Biodyne treatments: 8
[REDACTED]: 4 days
Total disability: 5 days
Partial disability: 5 days

CASE NO. 42

CASE NO. 42

M. K. Age: 26 Female White
Physician: [REDACTED]
Chicago, Illinois

HISTORY: Office Case

HISTORY: March 2, 1940

Patient suffered a burn of right wrist and index finger when a pan of hot, soapy water which she was carrying tipped and spilled its contents.

ENTRY

March 3

Patient first visited office one day after the accident.

Examination: Examination revealed a burn of the flexor surface of the right wrist approximately 7 cms. in diameter and another of the right index finger in its entire circumference. These were uncomplicated first and second degree lesions.

Treatment: Soap and water cleansing, debridement of all vesicles, and the application of Bio-Dyne Ointment was instituted. Dressings were bound with moderate pressure.

March 10

Bio-Dyne Ointment was applied daily for the first two days and every other day thereafter. There was prompt relief of pain immediately after the first treatment. As early as the third day marked epithelial proliferation in the form of marginal and surface growth was apparent, so that at this time, 8 days after the injury and 7 days after the initiation of the Bio-Dyne form of treatment, complete healing without scar tissue formation has resulted.

SUMMARY:

First and second degree burns of the right wrist and index finger healed rapidly with absence of pain, complications, scar tissue formation or contractures.

Duration of lesion: 8 days
Total disability: None
Partial disability: 8 days
Bio-Dyne applications: 4

CONCLUSION:

The prompt relief of pain and the marked cellular proliferation accompanying the use of Bio-Dyne Ointment are indeed striking. The former is so rapid and constant that it would almost seem as if an anesthetic were incorporated in the dressing.

CASE NO. 45

Mr. A. K. Age: 45 Male White

Physician: [REDACTED]
Chicago, Illinois

HISTORY: August 12, 1940
Suffered extensive solar burn of the back and back of the thighs on prolonged exposure at bathing beach.

ENTRY: August 16
Visited the office four days later because of failure to relieve pain with home remedies. Although the man was suffering no constitutional reactions at this time, he states he has been running a temperature of 101 - 102 and has vomited on several occasions during the past three days. He has been unable to work.

Examination: Examination reveals extensive first and second degree burns of the back from the neck to the waistline, in the back of both thighs to the popliteal fossa. About 20% of the body surface is involved. Approximately 60% of this amount is second degree.

Treatment: The lesions were thoroughly cleansed with soap and water, the vesicles debrided, and Bio-Dyne Ointment on thick gauze spreads was applied.

August 21
Daily applications of the ointment have resulted in approximately 60% healing of the burned area. Most of the epithelization is of the milk curd precipitate type. There has been no pain since the second application, and the man has been working since this time.

August 25
Continued daily applications of the ointment have resulted in complete healing without scars or contractures.

SUMMARY &

CONCLUSION: The value of Bio-Dyne Ointment in the treatment of burns is clearly illustrated in this case. The man was unable to work for four days because of failure of home remedies to relieve pain. Twenty-four hours after starting Bio-Dyne treatment, pain was relieved and he was able to resume work.

It is my honest opinion that had Bio-Dyne Ointment been used immediately, two days, and not five, would have been the disability period. Absence of scars, sepsis, and allergic manifestations are also important features of this treatment.

Duration of lesion:	13 days
Total disability:	5 days
Partial disability:	8 days
Bio-Dyne treatment:	9 days
Bio-Dyne applications	9

CASE NO. 47

S. R. Age: 30 Male White
 Physician: Age: [REDACTED] White
 Middletown, O.
 Hospital: Chicago [REDACTED]

HISTORY OF BURN: While digging out a tap hole, heat blew out upon him with resultant minor burns.

EXAMINATION: November 13, 1941
 Examination revealed a first degree burn of the posterior surface of the left elbow joint. This lesion measured approximately 2" in diameter.

TREATMENT: The lesion was cleansed with soap and water and [REDACTED] was applied. After four days, infection appeared under the [REDACTED] covering. This was cleaned up as much as possible, and [REDACTED] compresses were applied. Under this form of treatment infection subsided, but very little healing took place. On November 28 Bio-Dyne Ointment was instituted as the form of treatment. There was an immediate response in the healing process characterized by marked epithelial proliferation and a degree of pain. Complete healing resulted after seven days on this form of therapy, and discharge was effected on December 5. There was no evidence of scarring at the site of the original lesion.

CASE NO. 48

J. K. Age: 21 Male White
 Physician: [REDACTED]
 Middletown, O.
 Hospital: [REDACTED]

HISTORY OF BURN: While melting babbitt for bearings, some of the material splashed upon his left arm.

EXAMINATION: November 14, 1941
 Examination revealed slight second degree burn on the posterior surface of the left forearm just below the elbow approximately 1-1/2" in diameter.

TREATMENT: Treatment consisted in thorough cleansing and the application of Bio-Dyne Ointment. Complete healing resulted after two applications of the ointment, and discharge was effective on November 18. Minimal pain, rapid healing, and good cosmetic end results marked the course of treatment.

CASE NO. 51

L. W. Age: 20 Female White

Physician: [REDACTED]
Chicago, Ill.

HISTORY: July 20, 1939
Struck on the head by a golf club.

ENTRY: July 20
Arrived at the office approximately 30 minutes after injury.

HISTORY: Examination: Examination revealed a lacerated, contused, and excoriated lesion 5 cms. in diameter situated over the left frontal region of the forehead.

ENTRY: Treatment: The lesion was cleansed with soap and water, and wherever possible the edges were apposed by means of black silk sutures. The remaining excoriated surface was covered by Bio-Dyne Ointment and a gauze dressing applied to the whole area.

July 25
Sutures were removed. The lesion has filled in considerably from the margins with firm, dense epithelium. The area, still denuded of skin, presents a flat, pink, healthy, granulating base. Bio-Dyne reapplied.

July 27
At this time the lesion shows about 75% of the surface epithelized. It is apparent that there is going to be a small linear scar at the suture line.

July 30
Continued Bio-Dyne application has resulted in complete healing of the lesion. There is no scar except for the small linear constriction marking the original suture line.

SUMMARY &
CONCLUSION: There are many surgical cases like the one here described which could profitably be treated in combination with Bio-Dyne Ointment. Not only would the time of healing be shortened, but a much better cosmetic result be obtained. Pain would be greatly relieved, and freedom from sepsis would be almost certain.

Duration of lesion: 10 days
Total disability: None
Partial disability: 10 days
Bio-Dyne applications: 5

CASE NO. 66

J. S. Age: 23 Female White

Physician: [REDACTED]

Hospital: [REDACTED]
Chicago, Illinois

HISTORY: June 26, 1940
Burned the right side of her face on a hot steam sterilizer.

ENTRY: June 26
Was seen in the emergency room of the hospital about four hours after the accident.

Examination: Examination revealed a first degree burn of the right cheek approximately 2 cms. in diameter.

Treatment: Thorough cleansing with soap and water and the application of Bio-Dyne Ointment was the treatment instituted.

June 28
Complete, painless healing has resulted after one application of Bio-Dyne Ointment.

SUMMARY &
CONCLUSION: First degree burns of this type heal so rapidly that it is impossible to follow the various events occurring in the wound-healing process.

Duration of lesion: 2 days
Bio-Dyne treatment: 2 days

May 13, 1943

My dear Mr. Milburn:

Many, many thanks, in the President's behalf, for your kindness in sending him the pictures to which you refer in your recent letter. He much appreciates your friendly thought of him.

I have pleasure in conveying to you the President's very best wishes.

Very sincerely yours,

Grace G. Tully
Private Secretary

W. B. Milburn, Esq.,
300 Ditto Street,
Arlington,
Texas.

mgs



From W.B. Milburn
300 Ditto street
Arlington
TEXAS

, Roosevelt
atest country in the WORLD

r even asking a moment of your Valuable time

an most 85 years old, Had Diabetes for many
oth legs amputated on account of Diabetes
able to earn a cent in about 17 years, But
aranging pictures as I have yours,
I am bating for an offering, THE Good LORD

decided that perhaps this would be something
to sent them to You

May Gods Ritchest Blesings rest

been a Democrat all my life never scratched,
VED and a member of the BAPTIST CHURCH

God Help you to be it will not be lond, A'e you ready,
From a Friend to all mankind

W.B. Milburn

W.B. Milburn 300 Ditto street
Arlington Texas
before I lost my legs

019 A



From W.B. Milburn
300 Ditto street
Arlington TEXAS

Added 5/13/42
Honorable Franklin D. Roosevelt
President of the Greatest country in the world
Will you pardon me for even asking a moment of your Val-
years. I am an old man most 85 years old. Had Diabetes
Hangeren. Havent been able to earn a cent in about
I taken up a hobby of arranging pictures as I have
Do not decide I am bating for an offering
I taken care of me. Just decided to sent them to you
takes care so decided to sent May Gods Bitches
different so decided to sent
on you and Yours /
P S I have been a Democrat all my
I also have been SAVED and a member of the
For over 65 years. It will not be long
From a Friend to all
help you to be

019 A
legs
to street
From W.B. Milburn
300 Ditto street
Arlington
TEXAS

T. A. C. T.
Honerable Franklin, D., Roosevelt
President of the Greatest country in the WORLD

Will you pardon me for even asking a moment of your Valuable time

I am an old man most 85 years old, Had Diabetes for many years, I now have both legs amputated on account of Diabetes Gangreen, Havent been able to earn a cent in about 17 years, But I taken up a hobby of aranging pictures as I have yours,

Do not decide I am bating for an offering, THE Good LORD takes care of me,

But I just decided that perhaps this would be something different so decided to sent them to You

May Gods Ritchest Blesings rest on you and Yours /

P S I have been a Democrat all my life never scratched, I also have been SAVED and a member of the BAPTIST CHURCH for over 65 years,

It will not be lond, A'e you ready,
God Help you to be From a Friend to all mankind

W.B. Milburn

PPZ
9-m

BLACKSTONE, Mrs. A. E.
Atlanta, Ga.
May 6, 1943. Ackd. 5/14/43.

Let. to the President, and sends crocheted mat of red, white and blue, on
which is picture of the President's Mother and 2 small U. S. flags. To storeroom.

SEE: PPF 9-3

ilo

Very truly yours,
John G. Kelly
Private Secretary

Typed in duplicate
and sent to
Mr. Rogers,
Mr. Sullivan.

7

PP7
9-m

May 13, 1943

Hyde Park

My dear Warren:

Your recent letter to the President,
with the enclosed snapshot, has been received and
I want to thank you, in his behalf, for your kind-
ness in sending the coffee to him. I know that he
would want me to extend his very best wishes to you.

x PP7
9-c

Very sincerely yours,

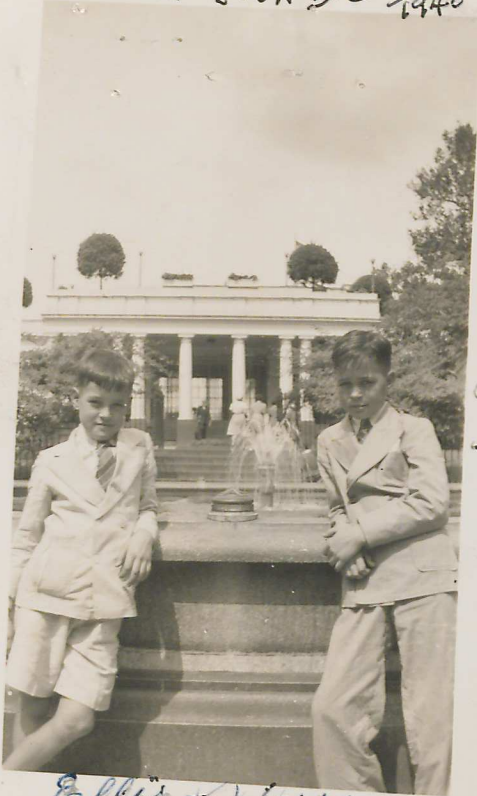
Grace G. Tully
Private Secretary

x
Warren L. Molton,
500 West Avenue,
North Augusta,
South Carolina.

mgs

Yours for an early victory and peace,
Warren L. Molton

WASHINGTON D.C. 6/1940



Ellis + Warren

ack
D.H. P. next
(sent trip) 9/5/43

500 West Ave.

North Augusta, S.C.

Mar. 24, 1943.

ident:

not know exactly how to go about
person of such greatness and
ness as you, so please accept this
informal fire-side chat."

fifteen years of age and entitled
to 1 pound of coffee a period. Recently, I
heard that you curtailed your drinking
of coffee because of the shortage. I do not
drink coffee, so I would like for you to accept,
as a gift from me one pound of Maxwell House
coffee (in a separate package) which I hope you
will sincerely enjoy.

When this goes out, just drop me a card
and I will more than appreciate the privi-
ledge of sending my "allowance" of coffee
each period.

I thank you very much for reading this
and I hope you will have time to write
me.

Yours for an early victory and peace,
Warren L. Malton

Warren & Callis
"White House"
Washington, D.C.
June 1940

On our way to the
"East room" in
White House, to
see our President
but unfortunately
we had no pass.

ack
D. P. rest
99T
(sent to trip)

500 West Ave. ✓
North Augusta, S.C.
Mar. 24, 1942.

ident:

not know exactly how to go about
person of such greatness and
ness as you, so please accept this
informal fire-side chat."

fifteen years of age and entitled
to 1 pound of coffee a period. Recently, I
heard that you curtailed your drinking
of coffee because of the shortage. I do not
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will sincerely enjoy.

When this goes out, just drop me a card
and I will more than appreciate the privi-
ledge of sending my "allowance" of coffee
each period.

Thank you very much for reading this
and I hope you will have time to write
me.

Yours for an early victory and peace,
Warren L. Malton

ackd
5/13/43

ack
H. P. rest
(sent to trip) 9/9/43

500 West Ave. ✓
North Augusta, S.C.
Mar. 24, 1943.

Mr. President:

I do not know exactly how to go about writing a person of such greatness and importance as you, so please accept this as an "informal fire-side chat."

I am fifteen years of age and entitled to 1 pound of coffee a period. Recently, I heard that you curtailed your drinking of coffee because of the shortage. I do not drink coffee, so I would like for you to accept, as a gift from me one pound of Maxwell House coffee (in a separate package) which I hope you will sincerely enjoy.

When this goes out, just drop me a card and I will more than appreciate the privilege of sending my "allowance" of coffee each period.

Thank you very much for reading this and I hope you will have time to write me.

Yours for an early victory and peace,
Warren L. Molton

COPY
Ack'd 5/13 mgs

(1)

*Copied
Sent
Hyde Park*

500 West Ave.
North Augusta, S. C.
Ma4. 24, 1948

Mr. President:

I do not know exactly how to go about writing a person of such greatness and importance as you, so please accept this as an "informal fire-side chat".

I am fifteen years of age and entitled to 1 pound of coffee a period. Recently, I heard that you curtailed your drinking of coffee because of the shortage. I do not drink coffee so I would like for you to accept, as a gift from me one pound of Maxwell House coffee (in a separate package) which I hope you will sincerely enjoy.

When this gives out, just drop me a card and I will more than appreciate the privilege of sending my "allowance" of coffee each period.

Thank you ver much for reading this and I hope you will have time to write me.

Yours for an early victory and peace,

/s/ Warren L. Molton

2

PP7
9-11

May 14, 1943

Stoum

My dear Georgianna and Dean:

I want to send you this little note
of thanks for your kindness in presenting your
scrapbook to the President. He appreciates
your friendly thought of him and I have pleasure
in conveying his very best wishes to you.

PP7
9-8

Very sincerely yours,

Grace G. Tully
Private Secretary

f. macris

Georgianna and Dean Macris,
630 Hampshire,
Quincy,
Illinois.

B

pl

7

PP4
9-m

May 14, 1943

T. A

My dear Mr. Mack:

This note conveys to you the President's thanks for the kind thought which prompted you to send him those little gifts of wood carving, as well as the toy for his dog, Fala. Your friendly thought is appreciated very much.

Very sincerely yours,

Grace G. Tully
Private Secretary

x
Charles W. Mack, Esq.,
332 Irving Avenue,
Dayton,
Ohio.

pl

Gift Marked "TA" - wood carving of a man, supposedly of the writer, carved chair and little dog, a flag and a toy for Fala.

+ PP4
9-w
x PP4
9-c

x PP4
7288.

✓

1 5-11-43



Tag goes
in of day

7

the President
If you remember
and him a good
we will be my

under separate cover an

fmf

T.H.T in box The dog is wood
caved and so the man I
looks at the Man has sharp eye
a good head also with a
smile I think he has that
good old Roosevelt Blood
in him and that is not Bad
hope the folks get a kick out of
this Gift.

5-11-43

3 great pals



With all
the good wishes
in the world!

Charles W. Madsen
Boston Ohio

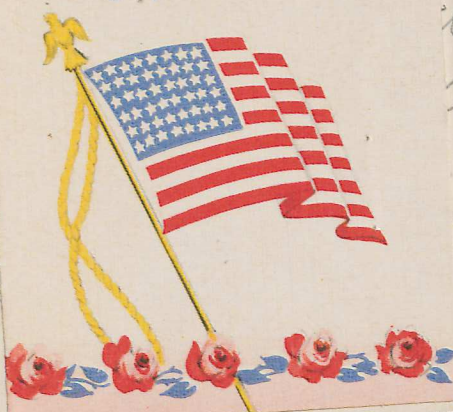
under separate cover an

fmf

T.M.T. in box The dog is wood
caved and so the man I
look at the Man has sharp eye
a good head also with a
smile I think he has that
good old Roosevelt Block
in him and that is not bad
hope the folks get a kick out of
little Gift.

15-11-43

A Gift for You!



Tag goes
Wm of clare

7

the President
If you remember
d him a good

under separate cover an

mf

luck have The mill be my
T.M.T. in box The dog is wood
caved and so the man I
look at the Man has sharp eye
a good head also with a
smile I think he has that
good old Roosevelt Blood
in him and that is not Bad
hope the folks get a kick out of
this Gift.

15-11-43

7
Wishing the best of good luck
to someone who's one of
the best!

Charles W. Wadsworth

under separate cover an

mf

luck have The will be my
T.M.T. in box The dog is wood
caved and so the man I
look at the Man has sharp eye
a good head also with a
smile I think he has that
good old Roosevelt Blood
in him and that is not bad
hope the folks get a kick out of
this Gift.

15-11-43

The Flag goes
in the Arm of dear

7.

I am send the President
a little gift. If you remember
in 1940 I send him a good
luck horse The mill be my
T.H.T in box The dog is wood
caved and so the man I
look at the Man has sharp eye
a good head also with a
smile I think he has that
good old Roosevelt Blood
in him and that is not Bad
hope the folks get a Kick out of
little Gift.

under separate cover an

fmf

15-11-43

ack

Dayton Ohio

April 3 1943

Dear Mr. Leand

I am send the President

a little gift. If you remember

in 1940 I send him a good

luck horse The mill be my

T.M.T. in box The dog is wood

caved and so the man I

look at the Man has sharp eye

a good head also with a

smile I think he has that

good old Roosevelt Blood

in him and that is not bad

hope the folks get a kick out of

little Gift

under separate cover an

fmf

15-11-43

7
der separate cover an

fmf

From Charles W. Mack
332 Irving Ave
Dayton Ohio
and thanks to you

1 5-11-43

BUSHPIES, Mrs. F. P.,
Highland Park, Illinois,
May 13, 1943 - (ackd. 5/18/43).

P.P.F.
9-M

Writes to the President and sending him under separate cover an
Astrological Magazine.———Sent to Study.

See P.P.B. 9-B

fmf

1 5-11-43

...labeled on this with
Arrived home safely
at Lowell from
National Medical
Center
Comm Harold James
Mellen U. S. Naval Reserve

5/10/43
Med. E. Ben:
The attached card
and labels are for a box
of wood acid. 5/8/43 and
sent to Walter.
E. Gupton

1212 F ST., N.W.
WASHINGTON, D.C.
OF
PKGS.
176
M.
TION
"Say it with Flowers"

P.P. 7
9-M

x P.P. 7
9-R

filed
5-11-43

BFB - I checked on this with
Geo Fox who tells me the man
was transferred to St. Elizabeths
so you had better file

MB

5/10/43

Mad. E. Kern:

The attached card
and labels are for a box
of wood acid. 5/8/43 and
sent to Weber.
E. Emerson

1212 F ST., N. W.
WASHINGTON, D. C.

OF
PKGS.

"Say it with Flowers"

P.P. 7
9-12

x P.P. 7
9-R

filed
5-11-43

5/10/43

Mad. Etern;

The attached card
and labels are for a box
of wood acid. 5/8/43 and
sent to Weber.

E. Gresham

P.P. 7
9-M

filed
5-11-43

x P.P. 7
9-R

PHONE

DELIVERED TO

Parsons

OF

PKGS.

1212 F ST., N.W.
WASHINGTON, D.C.

76

M.

TION

"Say it with Flowers"

5/10/43

Mr. E. E. E.

The attached card
and labels are for a box
of wood seed. 5/8/43 and
sent to Weber.

E. E. E.

PP. 7
9-12

filed
5-11-43

x PP. 7
9-R

PHONE _____
DELIVERED TO _____
OF _____ PKGS
1212 F ST., N. W.
WASHINGTON, D. C.
DATE 5/8/43
HOUR _____
M. _____
1552-8
GUDE BROS. CO.
1212 F STREET, N. W.
PHONE NATIONAL 4276

"Say it with Flowers"

TION

GUDE BROS. CO.

FLORISTS and FLORAL DECORATORS
To WASHINGTON SINCE 1889

Flowers By Telegraph

Four Stores For Your Convenience

1212 F Street, N. W.
1124 Connecticut Ave.
5016 Connecticut Ave.
3103 Fourteenth St., N. W.

NAtional 4276
DiStrict 8450
EMerson 1225
COlumbia 3103

Mad. E. Kern:

The attached card
and labels are for a box
of seed seed. 5/8/43 and
sent to Maher.

E. Gresham

5/10/43

TELEGRAPH DELIVERY ASSOCIATION

de's

1212 F ST., N. W.
WASHINGTON, D. C.

"Say it with Flowers"

P.P. 7
9-M

x P.P. 7
9-R

filed
5-11-43

5/10/43

Mad. E. Kern;

The attached card
and labels are for a box
of wood seed. 5/8/43 and
sent to Maher.

E. Groshen

P.P. 7
9-M

filed
5-11-43

x P.P. 7
9-R

CARD

ENCLOSED

PHONE
NATIONAL 4276

Gude's

1212 F ST., N. W.
WASHINGTON, D. C.



"Say it with Flowers"

MEMBERS OF FLORISTS TELEGRAPH DELIVERY ASSOCIATION

HUDDLE, Vera,
Chicago, Illinois,
May 3, 1943.

P. P. F.
9-M

Letter to the President, forwarding her remedy for a cold. Says the
medicine is in the form of a tablet. ~~(Note to Mr. Ira Smith from E. Groshon,~~
dated, 5/20/43, saying, "no record of having rec'd this.).

See P.P.F. 9-H

fmf