JOHN HARVEY KELLOGG (1852-1943)

SUBJECT FILES, CA. 1885-1920
(PRIMARILY CONCERNING TOPIC OF MEDICAL MISSIONARIES)

BATTLE CREEK SANITARIUM

PURPOSE OF BATTLE CREEK COLLEGE

The purpose of the College as stated in its charter is "to found, establish and conduct an educational institution in which , or by means of which, instruction shall be given in preparatory subjects, the arts, sciences, professions and special vocations, in coördination with and subordinately to, the principles of race betterment and biologic and physiologic living."

G.H., 1924, p. 331

WORK FOR ASSOCIATED SCHOOLS

Lecture to nurses classes

Lecture to Home Economics classes

Corrective and development work for both classes

Indoor work - swimming

Outdoor work - swimming

Outdoor sleeping

Hikes

Nature studies

Outdoor games - under leadership of Normal School students

PATIENTS

Lectures

Examination of every patient and reexamination

Corrective exercise for every patient

Get doctors interested

Out-of-door sleeping

Out-of-door hikes and games

LINES OF WORK

Normal School

Associated schools

General workers

Patients

Research

NORMAL SCHOOL

Objects - Missionaries of simple life

Agents for race betterment

Altruism rather than professionalism

Expert knowledge with altruistic purpose

Methods - Special stress on corrective methods and reconstruction

Posture, out-of-door life, dietetics

Should add school inspection

I think should have a third year for advanced physiology, research, metabolism and practical work.

Physiology of exercise. I can prepare a syllabus for this.

Field work

RESEARCHES

27

STrength and endurance

STrength and vaso-motor tension

Endurance and vaso-motor tension

Abdominal relaxation and tension

Effect of cold on tension - vaso-motor

Effect of heat on tension - vaso-motor

" " sinusoidal current - sinusoidal bath - automatic exercise - vaso-motor tension

" " diathermy on vaso-motor tension

" " abstinence " "

" " loss of sleep " "

" " work " "

" " constipation " "

" " high protein " "

" " sugar " "

RESEARCHES

Effects of cane sugar on vaso-motor tension

" " malt sugar " " "

" " milk " "

" " tea and coffee " "

" " smoking " "

" " water drinking " "

" " hot and cold - temperature and quanitity enon vaso-motor tension

Article for Brown Book, or
Battle Creek Idea.

THERE'S A DIFFERENCE.

Twenty-five years ago the Battle Creek Sanitarium was little known. The Battle Creek Idea had not been hatched; it was only incubating. The Battle Creek Sanitarium system had not been formulated. In those days no one ever heard anything about Battle Creek methods, Battle Creek treatment, Battle Creek diet system; but the changes and developments which have been wrought during the last quarter of a century have made Battle Creek a word to conjure with. At the present time there is scarcely a large town in the United States in which one can not find some one who is doing business under the shadow of Battle Creek. Not infrequently one may see upon a sign something like the following: "Battle Creek Sanitarium Treatments Given Here". Some years ago the writer was very much startled on suddenly running across a sign identical with the above in the city of Seattle. This very pretentious sign was attached to a rickety, one and a half story structure which had some time served as a small dwelling for some poor laborer. The writer was compelled to take two or three looks and to rub his eyes before he could fully believe that he was not the victim of a hallucination. There it was--THE BATTLE CREEK SANITARIUM--in letters big enough to half cover the upper story of the shanty--the name of the largest Sanitarium in the world attached to the smallest and most disreputable looking apology for a bath establishment which the writer has ever seen in many travels about the world. In the presence of such magnificent audacity, I felt impelled to pause and make obeisance before passing on.

On inquiry, I found the place was conducted by a woman who some years before had called at the Sanitarium, peeped into the bathroom, and upon this experience had claimed to represent the whole Battle Creek Sanitarium and its curative methods. The curious and serious thing about the matter was the fact that the woman was doing a thriving business. She made money fast--several

hundred dollars a month, and sold out later for three thousand dollars and more. This is a fair specimen of western enterprise. We have never entertained any hard feelings toward this poor woman, being fully persuaded that she was too ignorant and ill-bred to know any better. She did not recognize the slightest impropriety in using the prestige and reputation of the Battle Creek Sanitarium to attract business so long as she was able to make money by so doing. And this she was able to do so long as there was no one present to expose the fraudulency of her claims.

Not every case is as flagrant as the one above mentioned, but there are many scores of persons and not infrequently institutions,--so-called, which are using the fair fame and name of the Battle Creek Sanitarium and the Battle Creek methods as a means of winning patronage, especially as a means of catching old patrons of the Battle Creek institution, that are no more entitled to make such use of Battle Creek prestige than was the ignorant Seattle woman. Sailing under false colors can never be honorable. A person or an institution that announces to the public, "Branch of the Battle Creek Sanitarium", "Affiliated with the Battle Creek Sanitarium", or that claims to be employing the Battle Creek system without proper warrant for so doing, is obtaining money under false pretenses, just as much as a man who runs a faro bank or works a bunco game.

A number of institutions professing to be Christian have not hesitated to employ this means of winning favor with the public, and this is the first time that a public word has ever been uttered in relation to the matter, although private protests have not been infrequent. An aggravating feature of the case is that not a few institutions which have thought it not improper to introduce themselves to the favor of the public in the name of the Battle Creek Sanitarium have not hesitated to employ most disrpputable means for the purpose of endeavoring to destroy confidence in the Battle Creek institution, hoping thereby to enhance confidence in themselves by such plausible means as the intimation that

"more personal attention can be received in a small institution", "better results obtained', etc., all of which is known to be false and a wilful attempt to deceive for purely mercenary reasons. No small number of men and women who have been lifted from ignorance and penury through the advantages freely and generously afforded them by the Battle Creek Sanitarium and its allied institutions, have not hesitated to stoop to these despicable means of promoting their personal interests or the interests of some sectarian scheme with which they were connected.

The management of the Battle Creek Sanitarium have been perhaps too lenient in relation to these matters. They have thought it best to quietly pursue the even tenor of their way, not deigning to notice such unworthy people and conduct, and what is now said is not by the direction or even with the knowledge of the board of management of the Battle Creek Sanitarium. (?) It is only a sense of duty to the public who are being constantly imposed upon by adventurers who, having no reputation of their own, seek to gain a footing by exploiting the reputation of others. The simple truth in relation to the situation may be summed up as follows:-

Many persons have received more or less training in the capacity of nurses or assistant physicians at the Battle Creek Sanitarium. Of those who have gone out from the institution in past years, a few competent ones who had had special training for the purpose, were encouraged and assisted by the management of the Battle Creek Sanitarium in starting small embryo sanitariums and treatment places where the simpler methods of the Battle Creek Sanitarium, especially baths and massage, might be utilized in the treatment of those unable to travel a long distance from home in order to secure the needed treatment. The persons put in charge of these institutions, not being known to the public, and having their reputations yet to establish, were permitted to announce their work to the public as branch establishments. The management of the Battle Creek Sanitarium recognized that in doing this, they were incurring no small risk of misrepresentation and consequent injury through the lack of experience and judgment, and es-

pecially through the great lack of facilities which necessarily characterized these embryo establishments. Nevertheless, they felt that this sacrifice must be made in the interests of the public so that the superior methods which have been perfected at Battle Creek might be made more easily accessible to the sick.

The experiment has not proved altogether a success. As a matter of fact, so many complaints have been made from various parts of the United States where these experiments have been tried, that it has been indeed a very live question whether good or harm had been accomplished. It was hoped that the enterprises which were helped to start in a small way might soon grow into large and worthy institutions which would be well equipped and prepared to represent in a worthy manner the physiologic method which has acquired world-wide fame as the Battle Creek Sanitarium System. Unfortunately, this expectation was not realized. The little institutions fell into the hands of clerical management, men who were good enough in their place, who could preach fluently and discuss theological questions ably, but who had no comprehension of the needs of a scientific, up-to-date institution, undertaking to maintain the prestige and reputation of the Battle Creek Sanitarium by thorough scientific work. The consequence was that in most instances the competent medical men in charge became discouraged and gave up the struggle, and the effort either failed altogether or permanently passed into a state of desuetude.

Several years ago the management of the Battle Creek Sanitarium became fully persuaded that something must be done to save the name and reputation of the institution from the injury which was being done through false impressions received from these incompetent, poorly equipped, and badly managed establishments doing business under its name. Notice was accordingly served on all of them to the effect that they were no longer permitted to announce themselves to the public as branch establishments. Notwithstanding this, and the fact that in some instances, notices were repeatedly served, a number of persons continued to hold

themselves forth as branches, while not a few adopted subterfuges for giving the public the impression that they were in reality or practically branches, though not using the word. The time now has come when it seems but just and proper that the public should be made fully acquainted with the following facts:-

1. The Battle Creek Sanitarium is not and never was under the control of any sect or church. The public may have had considerable reason for supposing that at one time the institution was under sectarian control, but this was never actually the case. The Battle Creek Sanitarium at the present time is not even affiliated with any religious denomination. It holds itself in readiness to co-operate with any and all Christian denominations. Its corps of workers is made up of members of all the leading Christian churches. The institution constantly entertains as guests a score or more of returned missionaries who represent most of the leading missionary boards and the principal foreign mission fields.

2. The Battle Creek Sanitarium has no branches and is not allied or affiliated with any other institution in the world. It stands alone in its work as a separate, distinct organization, having its own mission, its own board of management, and supported by its own resources.

3. The Battle Creek Sanitarium is the only institution which represents in a thorough and up-to-date manner the Battle Creek system of treatment; it is the only one which is authorized to announce itself to the public as employing the Battle Creek System, as it is the only institution which is fitted up with the necessary appliances and the trained corps of physicians, attendants, dietitians, and nurses which a right application of this system requires. There is an old adage that one swallow does not make a summer. It is equally true that one bath tub does not make a sanitarium. For a sanitarium of the Battle Creek sort there are required not only thoroughly equipped bathrooms and other treatment rooms, but expensive appliances for the use of electricity, photo-therapy, and other methods, thoroughly equipped laboratories with experts in charge of them, trained cooks and dietitians who understand the calculation of

dietaries, and the preparation of standardized foods; and, above all, a thoroughly organized system of graduated and systematized treatments, exercises, dietaries, etc. No small establishment can possibly undertake to duplicate the work of an institution like the Battle Creek Sanitarium, in building up which more than a million and a half dollars have been expended, besides ~~a third~~ more than a third of a century of unremitting effort, by the present management. The large institution permits the specialization of work by which means alone it is possible for the highest skill and expertness to be attained. In a small institution not infrequently the physician in charge is required to act not only as physician, but as superintendent or business manager, sometimes even as bookkeeper and steward, besides attending to outside cases.

In the Battle Creek institution each physician has his own proper work, his particular patients, and has nothing whatever to do except to give them his unremitting attention. The medical faculty is selected from the most able and experienced physicians who have been developed in connection with the work of the institution during the last thirty years. There are no novices among them. The management several years ago changed its policy in relation to its faculty on becoming satisfied that greater good might be accomplished by building up a strong center and developing a definite and well-elaborated system than by scattering its forces so greatly that there would not be left in any one place sufficient strength for substantial and durable growth and development. The management believes that the wisdom of this philosophy has been fully demonstrated. The Battle Creek Sanitarium stands today with the best faculty and organization it has ever had. Its patronage is greater than at any time in its previous history. The satisfaction given its patrons is such as to elicit from them the highest commendation and appreciation. A spirit of good cheer, good order, and success pervades the place. Those who connived for the destruction of the institution have the satisfaction of knowing that their efforts have ignominiously failed.

The confusion which has been produced by the misleading announcements of various pseudo-scientific and sectarian establishments, in exploiting the Battle Creek Idea, some even going so far in their attempts to deceive the public as to claim to be actual originators of the Battle Creek Idea, though really so ignorant that they really do not know what the Battle Creek Idea is, has led to this brief explanation and protest, for the information of the public and the protection of the name and reputation of the Battle Creek Sanitarium and its work.

613.12

MEMO. for article in New York Journal and for other journals.

THE PROPER PLACE OF THE SANITARIUM IN PHYSIOLOGIC MEDICINE.

The necessity for institutional treatment.

Patients who need to go away from home.

Patients who require rest and change.

Patients who require restraint, training, instruction, control, diet, etc.

Expensive equipment needed, hydriatic, electrical, etc.

Skilled attendants, experienced physicians, advantages of climate, seashore, etc. can be secured by artificial means in a proper institution.

Specially constructed buildings in suitable locations.

Business for the practicing physician,--acute diseases, obstetrics, surgery, eye and ear troubles, and other ailments which are inconvenient but nor disabling.

Institution should not be a mercenary enterprise, no private interest, should be non-partisan, broad and liberal in policy, scientific in spirit, philanthropic, must have research laboratories, etc.

The Battle Creek Sanitarium as a model---pioneer, history, opportunity afforded for improvement by the fire.

Outside and inside pictures.

613.12

DEDICATION OF THE NEW MAIN BUILDING OF THE BATTLE CREEK SANITARIUM.

Chairman, Hon. Perry F. Powers, Auditor General of Michigan.

PROGRAM.

Sunday, May 31, 1903.

2:30 P.M.

Orchestra	(See Barnes for selection)
Invocation	Rev.....Crouch.
Singing	
Responsive Scripture reading and address	Eld. A. T. Jones
Address	Hon. W. T. Bliss, Governor of Mich.
Address	Hon. Washington Gardner, U. S. Senator.
Address	Hon.....Lowry, of Chicago.
Addresses	Hon. E. C. Nichols
	Mayor .....Webb
	Hon. Jesse Arthur.
	Dr. J. F. Morse.
	Dr. Chas. Stewart.
	Mr. F. M. Andrews
Anthem	.....
Addresses	Hon.....Johnson, Military Sec'y. to the Governor.
	....Salisbury, City attorney.
	John G. Woolley.
	Hon. S. O. Bush.
	Prof. M. V. O'Shea, A.M.
	Prof.....Scott (Get his title)
Orchestra	

Dedicatory Prayer	Rev. ....Osborn.
Anthem	.....
Orchestra	

(On 3rd page of program)

Praise Service --- Sunday, 7:30 P.M.

Eld. A. T. Jones, presiding.

Congregational singing	Led by Prof. E. O. Excell, of Chicago.
Prayer	Rev. ...Potter.
Anthem	Amateur Musical Club, under the direction of Prof. Edwin Barnes, accompanied by orchestra under the direction of Prof.....Martin.
Solo	Prof. E. O. Excell
Address, "Religion and Health,"	Eld. A. T. Jones.
Address, "Providences,"	Rev. D. D. Martin
Anthem	Chorus
Duet	PProf. E. O. Excell and Prof.Chas.Gabrid
Address, "The Old and the New,"	Rev.....Potter
Address,.....	Rev.....Osborn
Anthem	Chorus
Solo	Prof. E. O. Excell
Address	Rev.....Crouch
Address	Eld. G. C. Tenney
Duet	Prof. Excell and Prof. Gabriel
Address	Eld. ....Lane
Address	Dr. J. H. Kellogg.
Congregational Singing	Led by Prof. E. O. Excell
~~Invocation~~	
Benediction	Rev. D. D. Martin
Orchestra	

Monday, June 1, 1903.

10:00 A.M. Reunion of old patients, in Sanitarium parlor.

Music by Wilde Orchestra.

Remarks by Dr. J. H. Kellogg, other physicians, and numerous friends and guests.

3:00 P.M. Inspection of Building.

4:30. to 6:00 P.M., Gymnastic drills and other entertainment in the Gymnasium.

7:00 P.M. Grand Health Banquet.

Toastmaster, Hon. Charles Austin.

SANITARIUM REFINANCING

In submitting any plan looking toward relieving the Sanitarium of its present financial difficulties we recognize that for the Institution to continue to operate, we have to depend upon the loyalty and support of our present bondholders, bankers and other creditors, as well as the loyal corps of employees, many of whom have borne the burdens of the Institution for a long period of years and are responsible for its successful growth.

The present difficulties are the result of general business conditions which the management could no more foresee than could the bankers, financiers and industrial leaders throughout the world. The business of the Sanitarium is one of personal service, and the invaluable reputation of the Sanitarium has been builded upon service.

In the majority of the leading medical institutions of the country the professional man receives all of the professional fees instead of a salary, and the hospital meets its deficit through an income from endowments, together with the contributions from the Public; generally from community welfare funds, etc., but the Sanitarium has always paid its professional staff, and all funds have been turned into the treasury; thus from its own funds this great self-supporting charitable institution has been built up without calling upon the Public for contributions or endowments.

The present management, with the loyalty of the many faithful employees have, since the fire of 1902, built up an Institution recognized as the greatest of its kind throughout the world, and with assets of approximately $8,000,000.00 in excess of its liabilities. To allow the Institution to pass into the hands of others through an unfriendly receiver, or foreclosure, would mean a great loss to those who have invested their funds in it, whether they be creditors through the bonds, notes, deposits or open book account.

Battle Creek Ideals

The really great things in
world are ideals. There
are wide huge enterprizes,
great projects, wonderful
inventions, flashes of genius
which electrify and
captivate us, which fire our Emotions
and enthrall our
admirations, but com-

ideals which are
fundamental & human
welfare are, compared
with these towering
mountain peaks which
lift their heads to
clouds and
Jar above the mists ~~and~~
~~mountains~~ that. So he
marked with the glory of
his manhood
Judged by its ideals,

Battle cries may justly
claim to lead me if the
~~words~~ great centers of civil
nations
but our ideals dominate
our lives and determine
our destiny. Great ideals
are the mountain peaks
of human experience.

+ 1/2 When I was a young
(1896) I rode into the
little village of
Battle Creek on
wooden rails or rather
rails, as the rail-
road track was then
made of wooden
rails with a strap
iron on top which ofte-
times got loose and curl
up through the floor and
impaled a passenger.

Sept. 28/31

Battle Creek Health Ideals

Biggest thing in the world ideals

Biggest thing in area, prop. or wealth; but not the ideals.

Not so much organizing a thing; testing; making practical Spiritual Regime prevailed. To be a health center. Sanitarium Co-op.

Wheat early Friends kept farm
or raid.

Alice - Aberlain -
Deiphford St Mary's
Oliver Wendell Holmes, Kirkwood
Jacob Bigelow. Paradise Meadow
Harvard Botanic Garden
1803 - 1862 -
1876

Since 1876 effort to
protect Thoreau Swamp
Forest to road digging
by Tree Cadets & Naturalists
Conservation Ecology (over)

Patient Educated at Peer School
& Medicine not from
Brain & so-called reformers
Independent - no church or
doctor organizations

What is given to world.

Therapeutics { light as remedy — bath
Sunshine
Swedish work
Hydrotherapy
Correlated Physiotherapy
Electricity
World recording abdi —

Hygiene { Boards to eat
Coffee substitute
Cereal foods
Brain
Foods to meet all the special
needs of invalids

Idea grew ~~Could~~ Chicago to San
Spread to Europe

Look Here! Report Capitalists

all good foods

Wear dagger + cheekbones

Needed

Art Foods Trade made.

Foods Trade come to very

Ends earth

Arctic - Antelopes

Ant Arctic - Dogs

No Visitors ~~was~~ temporary no

residence -

Lodge

Lawyers

Merchants Etc

Literature - Mellons Spaces,

Ideas rebelled in advertising celery

& Every week the

Such broad subsidiary men
before accomplished.

B. C. College.

First devoted to biologic
ideals. No god, simply
choose as code
highest ideals of
Race betterment
Eugenics.
two race. Ele

Looking forward.

Creation. areas maximum working
backward to the primeval area for the
day. Ele

Nurses School - Advanced

Anatomy - Gray

Physs. Martin Human Body or Walters

Chem. Short Text Book, Chem. foods, urine - Stomach fluids.

Physics - Short

Meteorology

Bacteriology - Starch, Meats, Bacilli.

Hydrotherapy

Diagnosis - Heart, lungs, nerves.

Electrotherapy.

Hydrotherapy

Emergencies

Diseases & treatment

~~Nervous Hydriatic prescription~~

Massage

Swedish Movements. - Prescriptions.

NURSES SCHOOL. ADVANCED.

Anatomy, Gray

Physiology, Martin's or waller's.

Chemistry, short qualitative, chem. of foods, urine, stomach fluids.

Physics, short.

Meteorology

Biology

Microscopy, starch, meat, bacilli.

Diagnosis--heart, lungs, nerves

Electrotherapy

Gymnastics

Diseases and treatment

Massage

Swedish Movements, Prescription.

Hydrotherapy

TECHNIQUE OF FECAL

LABORATORY

AT

BATTLE CREEK SAN.

LABORATORY DIRECTION

FECAL ANALYSIS AS CONDUCTED BY THE BATTLE CREEK SANITARIUM

Specimens are collected in 1 qt. paper buckets. These are left at the patient's door in the evening, and collected at stated times the following morning. The physician, in ordering the examination, gives the patient the card here appended, which is placed on top of the bucket.

FECAL SPECIMEN

FOR REGULAR ANALYSIS

Examine also for_____

Name_____ Room_____

Physician_____ Date_____

When ready, place outside the door. If placed outside the door after 9 A. M., call 157

7-7-30-10M

Specimens which are to have special parasitological examination are sent in the same paper bucket, but the paper container is placed within a copper container so designed to hold it, surrounded by warm water but not in contact with the water. Such a container may be had by phoning the Laboratory. Such a specimen has the accompanying card attached.

DIRECTIONS FOR THE COLLECTION OF WARM STOOLS

The stools must not be allowed to become cool at any time before this special examination. The stool should be passed directly into the paper pail and placed immediately in the special Warming Bucket.

The Warming Bucket must have been recently filled with water as hot as the hand can stand (not boiling nor too hot, but more than merely warm).

When ready phone 157 immediately, specifying Warm Bucket.

The full report is returned on the blanks here shown:

EXAMINATION OF FECES

M. No.

Dr. Date 19

Amount gms.	Starch Gran.	PARASITES
Form	Fat Glob.	
Color	Fat. Ac. Cryst.	
Odor	Soap Cryst.	
Reaction	Calc. Salts.	
Food Remnants	Tr. Phos. Cryst.	TYPE OF BACTERIAL FLORA
	Epithelia	1. (Aciduric) 4. (Semi-putrefactive)
	Pus Cells	2. (Semi-aciduric) 5. (Putrefactive)
Mucus	Blood Cells	3. (Mixed)
Blood		
Occult Blood		Analyst

O	100	A Aciduric	Very Excellent
O	90	A- "	Excellent
O	70	B+ "	Very Good
O	50	B "	Good
O	30	B- "	Fair
O	10	C Alkaline	Bad
O	10	D Butyric	Bad

Special findings which demand immediate report are given on the blank following:

PARASITIC EXAMINATION

(Preliminary Report)

M.....

Dr..... Date.....

Findings:

11-26-28-5M-L65

GROSS MACROSCOPIC EXAMINATION

This examination is made as soon as possible after the specimen reaches the laboratory. The amount in grams, the form, color, odor, reaction, presence of food remnants, mucus, or fresh blood are recorded with the following terminology:

1. Amount - Recorded in grams.
2. Color - Brown, green and yellow are the colors indicative of well defined types of stools, but various conditions produce a great variation. Especially frequent are the stools of a grey to yellow tint that are the result of the administration of a barium meal.
3. Form - Scybalic, formed, part-formed, mushy, semi-liquid, or liquid.
4. Odor - Odorless, sour, butyric, putrid.
5. Food Remnants - Almost infinite possibilities. Vegetable fibres, seeds, skins and undigested food are frequently found.
6. Mucus - May be reported as much or little, and as mixed, free, or mucus curds.
7. Fresh Blood - May be confirmed by tests found described under Occult Blood Tests in Chemical Analysis.

Here are appended extracts explanatory of the above topics, taken from a paper by Hiromu Tsychiya: "Clinical Diagnosis and Intestinal Flora", published in the Bulletin of the Battle Creek Sanitarium and Hospital Clinic, July 1926, Archives of Internal Medicine, 36, No. 5, pp. 636.

> "Amount of Stool. The amount of the stool has nothing to do with the types of intestinal flora, except in the case of constipation, especially of the atonic type. Here the quantity of the Stool is much diminished owing to the excessive absorption by the intestinal mucus. The number of bacteria also is generally reduced, and the flora chiefly consists of the putrefactive bacteria. The aciduric type cannot exist in any obstructions along the intestinal tract favorable for chronic constipation.
>
> Color. A dark brown suggests the putrefactive type of flora. The presence of this color is often characteristic of the meat regimen responsible for the condition. In greenstools characteristic of the vegetable diet, putrefactive processes are very much lessened, while in the yellowish stools of the milk regimen the fermentative flora is often found."

"Consistency. The scybalic stool harbors putrefactive bacteria. The fermentative type is mostly found in partly formed or mushy consistencies. Semi-liquid and liquid types are not of desirable form so far as the character of the flora is concerned. In the latter, bacterial congreation is very numbrous both in quality and quantity.

Odor. The odor of the stool has more to do with the interpretation of the flora than all other physical examinations put together. If the examiner accurately conducts his olfactory sense, the determination of flora is partially or wholly made before the bacteriologic examination is completed. The putrefactive type imparts an offensive odor owing to the presence of indol, skatol and mercaptan, particularly methyl mercaptan, as well as ammonia and hydrogen sulphid. The butyric acid odor is characterized by saccharobutyric fermentation in the flora dominated by B. welchii. The fermentative type if characterized by either sour or non-odor. The sour odor is due to the liberation of acetic and lactic acid by the activities of aciduric bacteria, which often partially or wholly inhibit the growth of purely alkaline or putrefactive bacteria. In a mixed type the odor varies according to the diet taken or the type of bacteria dominant in the flora. Thus, in this type bacterial antagonism and symbiosis are at their height. The non-odor that often prevails in a putrefactive stool is probably due to excessive absorption of toxic substances by intestinal mucus, and the feces are usually scybalic. The reduction of the quantity of putrefactive by-products, therefore, means the betterment of the flora, and consequently, that the odor of the stool is less offensive.

Mucus. The fermentative type of stool is seldom found in the stool in which mucus is detected in large quantity. The presence of mucus always interferes with the process of transformation. Mucus is an albuminous substance, and favors the development of putrefactive bacteria. The presence of mucus, therefore, hinders the progress of the intestinal transformation. In cases of mucous colitis and other inflammatory and infectious diseases, mucus can be detected either separately or mixed with the stools. In those instances, the change of flora takes on a very slow course.

Summarizing these findings, we may say that the conditions favorable for the process of the transformation are a yellowish, soft, fluffy stool with sour or non-odor, and an absence of mucus and blood as well as of parasites regardless of reaction. On the other hand, if the stool shows scybalic or diarrheal types, is dark brown, of putrid odor, with or without mucus, blood and parasites regardless of reaction, the putrefactive process is evident provided the bacteriologic examination presents the equivalent picture."

CHEMICAL EXAMINATION

1. Reaction - Determined by placing a few drops of a .05% solution of brom-cresol-purple on a glass plate and mixing with it a small amount of feces. The reaction is reported as alkaline, neutral or 1 plus, 2 plus or 3 plus acid.

2. Occult Blood - Gregersen test used.

   0.025 gm. of benzidin base.

0.20 gm. barium peroxide.

5.0 cc. 50% acetic acid.

Freshly mixed and allowed to stand until solution assumes a tea-brown color, at which time it must be used. The feces are then spread on a glass plate and two to four drops of the benzidin-barium-proxide-acetic acid reagent dropped on them. If pathologic blood is present, a blue or greenish blue color appears within one minute. If color appears later than one minute, the reaction is not considered positive. Color may be detected easily by placing the slide on a black background. Degree of reaction if indicated not by the intensity of the color, but by time elapsed before color appears.

"1. If it takes from fifteen to sixty seconds for mere greenish-blue or pale blue to develop, this is called a weak positive reaction and is marked 1 plus. The blood content in this case is less than 1%.

2. If it takes from three to fifteen seconds and the coloring is deeper, the reaction is definitely positive and is marked 2 plus. Here we have from 1 to 5% of blood.

3. When the change appears almost instantly and is deep blue, almost black, the reaction is strongly positive and is marked 3 plus. More than 5% of blood is indicated".

SYSTEM OF REPORTING USED IN B. C. SAN.

3 sec. - 3 plus.

15 sec. - 2 plus.

30 sec. - 1 plus.

45 sec. - Trace.

60 sec. - Faint trace.

Extract from Dr. Tsuchiya's paper here appended:

Reaction.—The reaction varies according to the kinds of diet taken. In a strictly fruit regimen the reaction is acid, while in a meat regimen alkalinity prevails. In a carbohydrate regimen, the reaction is often acid. In my study, an acid reaction does not necessarily indicate a good flora, while the same can be said in regard to the alkalinity of the putrefactive flora. Robinson [11] concluded that the hydrogen ion concentration of the intestinal content has no relation to the type of the bacterial flora.

FECAL OCCULT BLOOD TESTS

The following test is recommended where special attention should be paid to occult blood in the feces, as for example in cases of suspected gastric ulcer.

Quotation from paper by Horace W. Soper, "Carcinoma and other Lesions of the Small Intestine," J.A.M.A. 92: No. 4, 286 Jan. 26, 1929.

"In 1912 I (Soper, H. W.: Interstate M. J. 19: 201, 1912) again called attention to the value of the occult blood test in the stomach contents and feces. I advocated Weber's modification of the guaiac test, as the benzidine, phenolphthalein and other tests were too sensitive to be relied on. The test is performed as follows:

"A portion of the feces, about the size of a walnut, should be selected, surfaces covered with mucus being avoided, mixed with water and rubbed well in a mortar to thin mushy consistency. If the stool is liquid, the sediment should be selected without the addition of water. From 5 to 10 cc. is poured into a large test tube; one-third the volume of glacial acetic acid is added; the solution is mixed well, and an equal volume of ether is added, extraction being carried out slowly. A rubber cork should be used, and the tube tilted in order to bring the largest possible surface of the fluid into contact with the ether without permitting them to be mixed together. Should a mixture occur, however, the resulting emulsion may be filtered and the filtrate tested. At least three minutes is required to complete the extraction. The ethereal extract is carefully poured off into a second test tube and from 10 to 15 drops of freshly prepared tincture of guaiac and from 20 to 30 drops of old oil of turpentine or hydrogen dioxide is added. The mixture is shaken well in the air without

corking or covering without the thumb. The appearance of a blue or violet color indicates the presence of blood. If the color does not appear at once, the test tube should be filled two-thirds full with water. The ethereal extract will float on the surface, and the color change will be more readily detected. Other colors may appear, but after much discussion observers are practically unanimous in advising that only a blue or violet color should be accepted as a positive reaction. The color is not lasting but fades and disappears in a few minutes".

Extract from Dr. Hiromu Tsuchiya's paper here appended:

Blood.—The presence of either occult or fresh blood suggests the inflammatory or infectious processes going on in the intestinal tract. It may be due to hemorrhoids, fissure or ulcer in the lower part of colon in case fresh blood is found, and ulcer or cancer of the gastro-enteric tract in case of occult blood. Any infectious processes, such as typhoid, tuberculosis or diseases of a parasitic nature, often result in the presence of fresh blood. In such a case transformation takes place very slowly, and in the majority of cases will never occur until the interference is removed.

WET SMEAR EXAMINATION

The wet smear examination is used to identify starch granules, fat globules, oil, fatty acid crystals, soap crystal, calcium sals, triple phosphate crystals, epithelial cells, pus cells, blood cells.

Two smears are prepared upon a slide from the feces; upon one a drop of glacial acetic acid is place. Upon the other a drop of Gram's iodine is place. Examination is made using a four mm. objective. Upon one or the other, the above mentioned characters may be recognized. The following references given in the bibliography should be studied before examination is attempted. -- Aaron, Webster, Haden, Cummer, Stitt, or Todd.

PARASITOLOGICAL EXAMINATION

The examination for animal parasites is made chiefly from a direct smear. The feces is picked from the specimen with great care. It should be picked

from those parts slightly mucoid or moist. These are sometimes found upon the outsife of the stool and sometimes they must be picked from the center. A few drops of saline solution are added and a cover slip pressed down gently. These smears should be examined before they are allowed to dry.

The following protozoan parasites are relatively frequent fidings. Entamoeba cole, Entamoeba histolytica, Endolimax nan, Iodamoeba Butchlii, Giardia intestinalis, Enteromonis hominis, Trichomonas intestinalis, and Balantidium coli, Chilomastix mesnili.

For descriptions of these forms it would be best to refer to: Webster, Stitt, Chandler, Hegner Cort & Root, Fantham Stephens & Theobald, Hegner, Minchin, Brumpt, or Wenyon.

For the intestianl platyhelminthes, and nemahelminthes, the above references are also excellent.

Worms likely to be encountered are:

<u>Cestodes</u>

Taenia saginata

" solium

" echinococcus

Dibothryocephalus latus

Hymenolepsis nana

" diminuta.

<u>Trematodes</u>

Schistosoma haematobium

Clonorchis endemicus

" sinensis

Fasciolopsis buski.

<u>Nematodes</u>

Trichuris trichuira

Ancylostoma cuodenale

Necatur americanus

Ascaris lumbricoides

Oxyuris vermicularis.

These listed do not exhaust the possibilities; if there is doubt concerning the diagnosis a careful check of all those parasitic upon man should be made. Though the eggs of both the flat and round worms are the most frequent sources of diagnosis, the segments or whole worms are also encountered.

Where the whole or segment of the worm is found it should be carefully studied alive and its characters noted, then placed in 4% solution of formalin. A segment of a flat worm is sometimes placed between two glass slides and the ends of the slides tied with thread to press the segment flat to show internal structure.

Many methods of egg concentration are employed. Some which have proved satisfactory are given. The first method given is run routinely upon all first tests in this laboratory.

ACETIC ACID # ETHER CONCENTRATION.

A lump of feces the size of a bean (the size must vary with the solubility of the specimen) is mixed thoroughly with about 5 cc. of 5% acetic acid. This is filtered through a double layer of gauze to remove the coarse particles and collected in a centrifuge tube. To this is added about 5 cc. of ether. The tube is then corked and shaken vigorously and centrifuged at a medium speed for about 3 minutes. The supernatant fluid is poured off and the sediment examined under 16 mm. objective. (It is frequently possible to detect the cysts of many of the protozoa by this method). Care should be taken in selecting the amount of speciment so that there will not be too heavy a sediment after centrifuging.

WATER CONCENTRATION

This method is used sometimes for concentration of protozoan cysts, which acetic acid might distort.

See Acetic-acid-Ether method, but substitute water for the Acetic Acid. The ether is used in this method if it is desirable to remove olis of fat.

SALINE CONCENTRATION

This method may be used to concentrate protozoan forms in active stages. It has been found to interfere but little with the movements of flagellates or amoebae.

See Acetic acid-Ether concentration method. Substitute normal saline for both reagents.

HOOKWORM LARVAE CULTIVATION

"(1) Mix the feces (free from drugs such as salines or thymol) with animal charcoal, adding water if necessary till a consistency of porridge is obtained. If the stools are very fluid, allow to sediment first and pour off the fluid. The best charcoal is that made from bones, and should not have an acid reaction. Charcoal is necessary in order to prevent fermentation, which kills the larvae. Spread in layers 2 to 3 mm. thick in Petri dishes. Incubate at room temperature. To extract the larvae from the culture, allow the surface thoroughly to dry, then pour on water; the larvae wander out and are poured off and subsequently further purified by sedimentation or filtering through blotting paper, and larvae passing through.

(2) A funnel is plugged with cotton wool, then filled with washed sand to within a centimeter or two of the rim. Stand this in a jar of water so that the level of the water is slightly below that of the sand. On the surface of the wet sand now place layers of blotting paper, and spread the feces, diluted if necessary, on this in layer of a few millimeters thick".

PRESERVATION AND EXAMINATION OF FLUKES

Fixation. - (Method a) (1). Place the flukes in a test tube or small bottle a quarter full of normal saline. Shake the contents as hard as possible (the object of this is to extend the flukes) for half a minute.

(2) Add immediately an equal bulk of saturated aqueous solution of corrosive sublimate and shake again as vigorously as possible for a few minutes.

(3) Transfer when convenient to 70% alcohol. (Before staining and mounting remove the sublimate with tincture of iodine.)

Method b - In case of large flukes, e.g., Fasciola hepatica, Fasciolopsis buski, compress the flukes between two glass slides with ruber bands or thread. Fix in sublimate or in absolute alcohol, or in 10% formalin,

Method c - Place the flukes in 10% formalin solution.

Staining is successfully effected by using quite dilute solutions of carmine or heimatein overnight. This is far preferable to using strong solutions, as it may be almost impossible to remove a too intense stain. Almost any dilute carmine solution suffices. One of the best is acetic-alum carmine (boil excess of carmine in a saturated aqueous solution of potash-alum for about fifteen minutes; add glacial acetic acid to the extent of 10%; let it stand for a week; filter). For use, dilute about thirty times with water. Place the fluker directly in the stain. Stain overnight or longer.

Differentiation - In order to get the sharpest picture, it is best now to differentiate (but this may often be omitted) with acid alcohol (70% alcohol 100 parts, HCl 5 drops). Allow to act from one to twenty-four hours, according to the appearance of the flukes. Simiarly, in staining with Haematoxylin solution, dilute twenty to thirty times so that the water is merely tinged with the stain. Differentiate as before. After staining, dehydrate, clear, and mount in balsam if required.

Clearing and Mounting - (1) Carbolic acid (Carbolic acid 94, water 6) is a very convenient clearing agent. It may be used for stained or unstained specimens. It will clear rapidly without previous dehydration. If it is required to mount a specimen permanently, transfer from carbolic to alcohol, then cedar-wood oil (or xylol)then balsam.

(2) Creasote - Dehydrate the specimen, stained or unstained, transfer to creasote. If it is desired to mount permanently, transfer back to alcohol, then cedar-wood oil, then balsam.

(3) Cedar wood oil - Preferable to xylol or oil of cloves. Dehydrate the specimen in alcohol. To mount permanently, trans fer to balsam.

(4) Glycerine - Vide under methods of preservation of ova: to mount permanently, transfer to glycerine jelly; subsequently to harden the jelly, expose to formalin vapor;

Of these media, carbolic acid has the greatest refractive index excepting that of balsam. The latter may, in some cases, render structures too transparent, and it may be advisable to use only glycerine jelly.

PRESERVATION OF OVA IN FECES, UTINE, BILE, ETC.

Heat some 70% alcohol in a basin to about 60 to 70° C, (until bubbles begin to appear). Add the feces, etc., in the proportion of one part to about nine of fixative; keep stirring. Allow the sediment to settle, Transfer to a bottle with some fresh 70% alcohol.

Transference to Glycerine. Prepare 5%, 10%, 20% solutions of glycerine in 70% alcohol. Pour off the alchol in the bottle of feces, etc., and replace by 5% glycerine solution. Allow to stand an hour or so. Then in the same way replace the 5% by a 10% solution, and finally by a 20% glycerine solution. When in this latter, expose freely to the air (protecting from dust) so as to allow the alcohol and water to evaporate. Add a few drops of glycerine from time to time till eventually the ova are in pure glycerine. (In a very moist climate

it may be necessary to use lime or calcium chloride to dry the air). To mount permanently transfer some of the sediment to glycerine jelly.

PRESERVATION AND EXAMINATION OF CESTODES

Fixation - (1) Saturated aqueous corrosive sublimate - Add to this glacial acetic acid to the extent of 1%. (Note this fixative will dissolve the "calcareous corpuscles"; 10 g. of sublimate to 160 cc. of water will give a saturated solution). Warm the fixative to 70 to 80 degrees C. (Avoid the use of needles). Use plenty of fixative. Allow to act for a quarter of an hour or so. (a) Transfer to 70% alcohol. (It is advisable to remove the sublimate by the use of Lugol's solution, or a solution containing tincture of iodine, adding this until the iodine color is permanent). Or (b) transfer for preservation to 10% formalin.

Or (2) 10% formalin - In order to prevent contraction it is advisable to extend the tapeworm and keep it fixed by glass plates, or wind the worm around a wide glass tube or bottle, then fix it.

Or (3) fix in hot alcohol.

Staining: In cases of quite small Nematodes, e.g., Anguillilidae, carmine may be used, but as a rule staining is not advantageous.

Rolling - In order to study the mouth parts, or bursa, etc., it is necessary to place the worm in any desired position. This is done as one would roll a penholder along the table by one's finger placed on top of it. In the case of a worm, one edge of the cover-glass is placed over the worm, the other is supported by a strip of cardboard. By tapping the cover-glass the worm will now revolve as much as required provided it is round and straight. In certain cases it may be necessary for this purpose to cut off the head or tail. Roll these separately.

When a suitable position is got, the worm may be fixed in this position by pressure on the cover-glass, so as slightly to flatten it.

Mounting the Head - (Bass and Hall). Mix the feces thoroughly with ten times the volume of water. Filter through gauze. Centrifugalize the filtrate. Wash the sediment and centrifugalize. Repeat twice. To sediment add $CaCl_2$ solution, sp. gr. 1250. Centrifugalize. Examine sediment, which contains practically all the eggs in the stool.

Detection of Small Nematodes - Mix the feces thoroughly with water. Allow to settle for five minutes. Carefully decant off, or better, syphon off the fluid. Mix the sediment again with water. Allow to settle. Remove the fluid. Repeat several times. Examine the sediment in a Petri dish. As the fluid is poured off, the worms will be seen collected in the backwater. Remove them with a brush. Fix in hot 70% alcohol.

CULTIVATION OF LARVAL FORMS OF ANCYLOSTOMA AND STRONGYLOIDES

A modification of the second method of Looss is that of Fulleborn. A glass filter funnel is lined with linen or with cotton wool dyed black with iron-tannin. On this is placed a layer of sterile sand, and on top of this the feces. The whole is moistened. The larvae hatch out and wander through the mesh of wool, appearing on the edges of the same as white threads visable to the naked eye. With a platinum needle these can be easily removed. The glass filter can be placed on a glass cylinder, and this in another large stoppered cylinder containing caustic potash solution at the bottom so that any larvae escaping from the funnel are killed." The above quotation from Fantham, Stephens and Theobald.

SUGAR CONCENTRATION METHOD FOR AMOEBA CYSTS

A selected portion of the feces, about 10 gm., is thoroughly emulsified in 200 cc. of distilled water and allowed to stand for from twenty to thirty minutes to remove the coarser, heavier particles. The supernatant fluid is then decanted into a 500 cc. container and distilled water added to a total of 500 cc. After standing over night in the ice chest (8°C.) the cysts will be found in the sediment. The Supernatant fluid is now decanted and discarded. The sediment

is washed once with distilled water and precipitated by centrifugalizing at 2,000 rev. per min. for two minutes. The sediment is now transferred to a solution of sucrose of a specific gravity of approximately 1.080. (Approximately enough to raise the meniscus of one liter 250 cc) and resuspended by shaking the mixture thoroughly (app. 2 cc. of sediment to 14 cc. of sucrose solution). The suspension in sugar solution is then centrifugalized at 3,000 rev. per min. for 3 minutes. By this treatment most of the fecal particles left will be precipitated and the majority of the cysts of Encemoeba histolytica and of other amoebae will remain suspended. The cysts remaining in the sucrose solution are concentrated by diluting the solution with three volumes of distilled water and centrifugalizing at 2,000 rev. per min. for two minutes, when the majority of the cysts will be found in the sediment. A small portion of this is placed in the direct examination of the feces for the parasites, covered with a cover glass, and extended. Note: 2¼ gm. sucrose to 100 cc. distilled water makes surface tension of solution approx. 1.080.

MEDIA FOR GROWTH OF PROTOZOAN PARASITES

Ova-mucoid media. Hogue (modified).

Beat the whites of four eggs and add 700 cc. physiological saline. Beat again until the mixture is of a homogeneous consistency. Boil fifteen minutes and filter through four layers of gauze and add one layer of cotton. Place 7 cc. in test tubes, plug and sterilize.

Inactivated Serum saline Media.

Place 1 cc. of sterile serum in each tube. Inactivate by heating thirty minutes at 60°C. To each tube add 7 cc. of physiological saline. Media for the growth of protozoan parasites should be heated in a water bath at 37°C. for several minutes before inoculation. A fecal inoculum the size of a small bean should be used.

Ova-mucoid media is better than serum-saline for the growth of flagellates.

Serum-saline media is better than ova-mucoid for the growth of amoebae.

The surface scum should be examined for flagellates.

The sediment should be examined for amoebae.

A drop of the material should be placed on the slide, covered with a cover slip, and examined under a 4 mm. objective.

STAINING AND FIXING PREPARATIONS

During the direct smear examination for parasites, the technician should have at hand a solution of iodine made up after the following formula: A 5% solution of KI in normal saline solution, and saturated with iodine is satisfactory. This should be made up frequently as it deteriorates with age. A suitable quantity is prepared using the following:

50 cc. normal saline.

2½ gm. KI

2 gm. I

This solution reveals nuclear bodies and stains the glycogen masses.

TODD'S METHOD OF DIFFERENTIAL STAINING

Fix smear for 15 min. in $HGCl_2$ - Alcohol solution.

Alcohol, 1 part.

Saturated solution of $HgCl_2$ in Phys. Saline, 2 parts.

Rinse in alcohol.

Treat with a diluted solution of tincture of I_2.

Soak off the iodine in alcohol for 10 min.

Rinse in water.

While still moist, stain by Mallory's method.

10% Aq. $FeCl_2$ 3-5 min.

Drain off excess.

Stain with freshly prepared hematoxylin.

Rinse in water.

Decolorize in ¼% $FeCl_2$. Differentiate and watch with microscope.

DONALDSON'S IODIN-EOSIN SMEAR METHOD

2 parts of eosin mixture. (Saturated solution of eosin in normal saline.).

1 part iodine.

2 parts of normal saline.

(Remarks: Make up every day).

Fecal and bacterial debris stain pink with eosin.

Protozoan cysts are stained yellow.

Glycogen masses stain brown.

SCHAUDINN'S METHOD OF STAINING.

1. Fixation in Schaudinn's fluid at 40° C. --- - 3 min.
2. 70% alcohol - - - - - - - - - - - - - - - - - - 2 "
3. 70% iodine-alcohol- - - - - - - - - - - - - - - 2 "
4. 70% alcohol - - - - - - - - - - - - - - - - - - 2 "
5. 50% alcohol - - - - - - - - - - - - - - - - - - 2 "
6. Running water - - - - - - - - - - - - - - - - - 2 "
7. Harris hematoxylin - - - - - - - - - - - - - - - 20 "
8. Running water - - - - - - - - - - - - - - - - - 2 "
9. 50% alcohol - - - - - - - - - - - - - - - - - - 2 "
10. Acid alcohol - - - - - - - - - - - - - - - - - - 15 to 20 sec.
11. 50% alcohol - - - - - - - - - - - - - - - - - - 2 Min.
12. Running water - - - - - - - - - - - - - - - - - 5 "
13. Ammonia water - - - - - - - - - - - - - - - - - 1 "

(2 drops in 100 cc. distilled water)

14. Running water - - - - - - - - - - - - - - - - - 2 "
15. Best's carmine - - - - - - - - - - - - - - - - - 25 "

The carmine staining - fluid was freshly prepared each time and flooded onto the slide with a dropper. The slides were covered with large Petri dishes to reduce evaporation.

16. Differentiating fluid - - - - - - - - - - - - - - - - 2 min.

17. Absolute alcohol .....80 cc.

Methyl alcohol .....40 cc.

Distilled water .....100 cc.

The differentiating fluid can be divided into two staining jars with vaseloned lids and the slides rinsed 1 minute in each. With care not to carry too much of the stain over into them they may be used over and over again.

17. 50% alcohol - - - - - - - - - - - - 2 min.

18. Running water - - - - - - - - - - - - 1½ ".

19. 50, 70, 80, 90, 100% alcohol, each 2 "

20. Xylol - - - - - - - - - - - - - - - - 3 "

21. Mount in balsam.

SUMMARY

1. This paper reviews the previously described methods of staining intestinal amebae and records experiments carried out in an attempt to determine what factors are involved in the staining of cysts and torphozoites with carmine.

2. It appears that these organisms may be deeply stained in a differential manner in addition to staining of their glycogen contents.

3. If it is desired clearly to demonstrate glycogen contents the preparations should not be washed in water after carmine staining and the time for the latter may be cut to five minutes.

4. Of all methods tried, drip-staining, with Harris hematoxylin and Best's carmine gave the best results. It was found that if carmine-stained smears were washed in water for ninety seconds, that the cysts will retain a distinctive red color against a decolorized background and could be easily seen under a low-power objective.

Nuclear details were clear, although usually not quite equal to the iron-hematoxylin. The cromatoidal bodies stained so clearly against a red background as to be seen under low power. Iodamoeba butchlii may be found with this technic

missed by other methods.

5. A more thorough trial is necessary to prove the worth of the Harris-hematoxylin-Best's-carmine technic as a diagnostic routine, but it shows considerable merit. Whether on six routine examinations it will show more or less than the 90% results secured by Kessell cannot be predicted without such a trial. In finding certain types of the dysentery ameba and Iodamoeba butchlii it appears to offer definite advantages.

6. The technic described takes ninety-one minutes, or about twice as long as the iron-hematoxylin method. Because of the resistant walls of the cysts it seems unlikely that a shorter method will produce satisfactory details. In staining tyophozoites only eighty-three to eighty-four minutes is required. Measured by time spent in staining preparations of tissue it is not a long one, and it can be easily carried out by any technician. If it will save time for the diagnostician the extra time in preparation will be well spent.

IRON HAEMATOXYLIN-EOSIN METHOD

If unable to identify the protozoan parasites in the iodine preparation, make several preparations and stain them with iron hematoxylin, as follows:

1. Prepare thin films of the stool on slides; do not allow them to dry.
2. Place these preparations, film down, in warm Schaudinn's fluid for from two to five minutes. Heat this solution only to the point at which steam rises.
3. Harden by passing thrcugh graded alcohols:
   a. 50% alcohol 5 min.
   b. 70% " 5 "
   c. 95% " 15 "
   d. 70% " 5 "
   e. 50% " 5 "
4. Mordant in 2% aqueous solution of iron alum (ammonium ferric sulfate) for from thirty minutes to two hours.

5. Wash in distilled water for five minutes.

6. Stain in 0.5 per cent aqueous-hematoxylin solution for from two to 16 hours or longer.

7. Wash in distilled water for five minutes.

8. Decolorize in 2% aqueous solution of iron acum. Wash carefully.

9. Wash in distilled water for five minutes.

10. Dehydrate by passing through:

50% alcohol 5 min.

70% " 5 "

11. Counterstain with 1% alcohol eosin for from 5 to 10 seconds.

12. Continue dehydration by using:

95% alcohol 15 min.

Absolute alcohol 10 min.

13. Clear in xylol: 15 minutes.

14. Mount in balsam and examine.

When no protozoa are found after this examination, advise physician to submit a specimen in 10% formalin. Prepare moist preparations and examine them by the iron-hematoxylin method beginning with step 3 e.

CALKINS METHOD

FIXING, STAINING AND MOUNTING OF PERMANENT PREPARATIONS

If the material is very rich in forms, a small drop may be placed on a slide and a cover-glass placed over it. Allow such slides to stand for an hour or more to quiet the organisms before trying to study them with the higher power. Avoid gums or other agents for retarding normal movements.

COVER GLASS METHODS

Rub a clean, dry cover-glass lightly on your hair and drop it on the

sufsce of your culture dish. Allow it to stand undisturbed for 12 to 24 hours. Different kinds of protozoa will collect on the surface film below it and these, with the cover-glass, may be transferred to a clean slide for study. Several such cover-glasses should be set at night.

Smear a cover-glass with egg-albumin and desposit, albumin side up, on the bottom of the culture-dish. Leave over night; remove with forceps, dry underside, and mount for study.

PERMANENT PREPARATIONS.

General cultures.

Miscellaneous protozoa, collected on cover-glasses as described above, may be fixed and stained as follows:

1. Remove cover-glass from culture and wipe under side clean and dry.
2. Place gently on surface of killing fluid (sat. $HgCl_2$ in 95% alcohol) in a Syracuse dish (which should be used for nothing else), organisms UP. Leave for 5 minutes.
3. Remove cover-glass, hold until crystals appear, then immerse, organisms UP, in Syracuse dish containing 95% alcohol. Leave for 1-2 minutes or longer if desired.
4. Remove cover-glass, drain, dry under side and place, organisms UP, in a dry Syracuse dish, and leave for 10 minutes.
5. Remove cover-glass, drain, dry under side, and place again in dry Syracuse dish, organisms UP.
6. Flood organisms with about 5 drops of 0.5% aqueous hematoxylin. Leave for 10 minutes.
7. Remove cover-glass, drain, and place again in dry Syracuse dish. Flood with 5 drops of 2% iron alum. Transfer Syracuse dish to microscope and watch progress of destaining of any typical protozoan.
8. After 30 seconds or more, the nucleus will be clearly differentiated from the remaining protoplasm. At this stage drain the cover-glass and immerse in Syracuse dish containing fresh tap water, organisms side UP. Leave for 5 minutes.

9. Remove cover-glass and transfer to Syracuse dish containing 95% alcohol. Leave for 3-5 minutes.

10. Transfer to 100% alcohol, organism side UP.

11. Transfer to second dish of fresh 100% alcohol.

12. Transfer to xylol, organism side UP.

N.B. If the xylol clouds when cover-glass is immersed in it, the preparation has not been properly dehydrated and must be immersed again in fresh absolute alcohol. Clouding may be avoided by performing the entire operations within the heat radius of a Bunsen burner or an electric light.

13. Remove cover-glass from xylol, wipe the under side dry, and mount on a drop of Canada balsam on a slide.

Intestinal amoebae, sporozoa and ciliates.

Prepare clean cover-glass; smear one side with egg albumin; tease out contents of section of intestine on egg albumin without salt solution, and proceed as directed in section above.

Intestinal flagellates.

Prepare smear as above, fix in killing fluid as above, hold cover-glass with forceps, organisms UP, and flood with 5 drops of strong ammonia water. Drain in 5 seconds; then proceed as directed in section above.

Preparation of single individual.

Prepare clean cover-glass; allow organism to be drawn into a capillary tube pipette by capillary attraction, taking as little water as possible; despoit organism in center of smeared cover-glass. The less water deposited the better your preparation. Add ONE drop of killing agent ($HgCl_2$ in 95% alcohol); allow alcohol to evaporate until salt begins to crystallize on cover-glass; then proceed as directed in above sections and after.

Embedding in Paraffin.

A. For sectioning en masse.

Collect organisms in round bottom vial, centrifuging if necessary; add

some thick scoglees from surface of an old culture; in killing, flood collection, using 10 times more killing agent than water in vial. Shake gently and allow organisms to settle to bottom. When settled, decant killing agent and replace with 95% alcohol.

Allow organisms to settle at bottom of vial, decant, and drain off all the alcohol, leaving organisms and zoolcea in a mass. Allow this mass to contentrate by evaporation of alcohol but not to dryness; add absolute alcohol carefully, and drop into it a very few crystals of eosin. Let it stand for 10 minutes, decant colored alcohol, replace with fresh 100% alcohol, and let stand for 5 minutes. Decant again and add xylol. Embed mass in paraffin in a watch-glass.

Embedding a single individual.

After killing, transfer with capillary pipette to 95% alcohol, stain with eosin dissolved in absolute alcohol; change to 3 consecutive baths of absolute alcohol, and transfer to xylol.

Remove from xylol with capillary pipette and deposit on smooth surface of hard paraffin; drain off xylol leaving specimen stranded. Insert point of scalpel in paraffin, lift paraffin and specimen, and drop into watch crystal of melted hard paraffin. When specimen has settled to the bottom, cool rapidly in cold water. The pink organism can be found in the white paraffin.

The Borril Stain For Protozoa.

Fix the organisms on cover glass in saturated solution of sublimate in 95% alcohol, as above, and wash in 70% alcohol. Stain as follows:

a. Magenta in saturated aqueous solution.

b. Picric acid in saturated aqueous solution.

c. Indigo carmine in saturated aqueous solution.

Flood cover glass with solution a an leave 20 minutes. Pour off, add 3-5 drops of a mixture of one part b to two parts c, and leave for 5 minutes. Dip cover glass once in water, once in 70% alcohol, twice in 95%, four times in 100%, five times in a second jar of 100%. Then dip in xylol several times

until the liquid turns smoothly, wipe off back of cover glass with dry cloth, and mount in balsam.

ADDITIONAL CULTURE MEDIA FORMULAE

See Fantham, Stephens, and Theobald "Animal Parasites of Man", pp. 742-43.

REPORTABLE PARASITIC PROTOZOA

AT B. C. SAN.

Parasites	Forms found	Habitat	Pathogenicity
E. Coli	Act. & cystic	Large intestine	Doubtful - See Stitt.
E. histolytica	act. & cystic	Large intestine	Acute dysentery.
E. nana	act. & cystic	Large Intestine	Doubtful -- See Stitt.
Iodo. Butschlii	act. & cystic	Large intestine	Doubtful - See Stitt.
Chilo. mesnili	act. & cystic	Large intestine	Doubtful
Trich. hominis	act.	Large intestine	Generally regarded as harmless. Evidence to show may cause dysentery. See Chant.
Giardia intest.	act. & cystic	Upper part of Sm. intest.	Cause of malnutrition, intermittent diarrhea. Irritability of intestinal tract. See Stitt.
Ent. hominis	act.	Large intest.	Doubtful
Bal. coli	act.	Large intest.	Symptoms of pernicious anemia. Acute dysentery. Malnutrition. See Stitt.

NOTES COLLECTED FROM LABORATORY PRACTICE

AMOEBAE.

Coli cysts usually found larger than others even though larger forms of histolytica have been reported.

Coli cysts average eight nuclei.

Eight nucleated stage of coli, thought to be only infective stage.

Histolytica cysts average four nuclei.

Coli nucleus has karyosome at the side.

Histolytica has karyosome at the center.

Coli cysts are rare found with chromatoid, and if it is present, it appears as a glass splinter, with pointed ends. Authors vary in finding it present in from one percent to thirty per cent.

Histolytica cysts present karyosome as a thick rod with blunt ends, present in about 70%.

Karyosome, if present, diagnostic.

Karyosome seen in direct as translucent; in a permanent stain as dark.

Histolytica in active stage show finger like, narrow, hyaline, pseudopodia.

Histolytica actively, progressively motile.

Coli show blunt granular pseudopodia.

Coli not actively motile. Coli not progressively motile.

Coli show no distinction between ectoplasm and endoplasm.

Coli rich in nucleas chromatin.

Endolimax nanacysts, oval, granular, smaller than histolytica or coli.

One nucleus usually large in proportion, and conglomerate.

Chromotoid bodies not often found, but round in form.

Iodomeba butschlii, no chromotoid body.

Iodomeba butschlii cyst shape irregular, size about like histolytica.

Iodamoeba butschlii show high percentage of glycogen granules.

FLAGELLATES.

Chilomastix mesnili cysts show as clear, egg shaped, bodies, with the appearance of a bubble in the pointed end, on the acetic acid-ether preparation.

Giardia intestinalis, sysnonym Lamblia intestinalis, appear in water concentration slides as very large, oval, transparent bodies.

Trichomonas hominis have no cysts.

Chilomastix mesnili said to be present in 4% of all persons. Active forms appear larger than trichomonas, and broader at the anterior ends.

Ehterominis hominis, synonym Cercomonas hominis, appears as a very small, rapidly gyrating body.

EGGS OF FLAT OR ROUND WORMS.

Most eggs are brown or bile stained.

Hookworm (American and English) and pin worm (Oxyuris vermicularis), and Strongylus eggs are yellow or transparent.

Dibothriocephalus latus (Fish tapeworm) eggs show cap-like structure which always springs open when pressure is applied.

Strongylus eggs seldom found. Usually found as roving larvae.

Trichuris trichiura, sysnonyms Trichocephalus dispar, Trichocephalus trichiuris, Trichocephalus hominis and Ascaris trichiurae, commonly known as the whipworm.

Whipworm usually about two inches long.

Oxyuris vermicularis three to five mm. in length.

Anclostima intestinalis also called Anclostoma duodenale, 1½ in. or less in length.

Hookworm disease also called Uncinariastis or Acnlostomiasis or Diet Eaters Anemia.

Serum Diagnosis of Echinococcus

For serum diagnosis of Echinococcus, either precipitin reactions or complement deviation, Hydatid fluid of the sheep is used as the antigen.

For the technique of such reactions, see Fantham, Stephens, and Theobald "The Animal Parasites of Man" pp. 359.

INTRA VITAM STAINING OF FRESH PREPARATIONS

See Fantham, Stephens, and Theobald, "The Animal Parasites of Man". p. 746.

An extract from Dr. H. Tsuchiya's paper, showing the effect of animal parasites upon the bacterial flora:

> *Pathogenic Parasites.*—Pathogenic parasites are obstacles to the transformation of the flora. The changes that take place in the intestinal tract owing to their presence are not favorable for the growth and proliferation of *B. acidophilus*. In parasitic diseases, there is more or less a continual destruction of the intestinal wall; toxic substances are readily absorbed into the blood stream, and fermentative processes do not take place under such circumstances.

FECAL SUSPENSION FOR BACTERIAL EXAMINATION

As a preface to the bacteriological examinations suspension of the organisms present is necessary, as free as possible of coarse material.

A method for preparing this suspension as given by Dr. Hiromu Tsuchiya is as follows:

> *Fecal Suspension.*—This is prepared by thoroughly mixing about a pea-sized stool or 1 c.c., if liquid, with 10 c.c. of sterilized physiologic sodium chlorid solution to make a uniformly homogeneous emulsion. A small ball of cotton should be inserted clear to the bottom of the tube to serve as an automatic filter. The supernatant suspension thus made is devoid of food remnants, which often interfere with technic.

BACTERIOLOGICAL EXAMINATION

A Gram stained smear of the specimen is prepared and examined. Particular attention is given to the relative percentages of Gram positive and Gram negative organisms. This percentage is indicated by 1 plus, 2 plus or 3 plus, and is for the benefit of the one who finally estimates the type of flora. This evaluation is in no way to be taken as a final analysis.

MICROSCOPIC EXAMINATION:-- (a) Smear: The uniform smear is made from the suspension by means of a platinum wire, and dried either by flame or air.

(b) Gram Stain Classification of Bacteria: This is made by examining at least from ten to fifteen microscopic fields and estimating the percentage of Gram positive and Gram negative organisms. Special attention is paid to the presence of acidophilus-like organisms that are of a polymorphic nature. If there is a dominance of a particular type of bacteria, this is recorded by the plus sign to the degree at which the dominance occurs. For the convenience of the study the following bacterial groups are placed in the working blank: colon-like bacteria, acidophilus-like bacteria, Gram positive cocci, and yeast. Under these headings the following bacteria are Gram positive: L. acidophilus, Cl. welchii, Cl. butyricus, Cl. putrificus, streptococci and diplococci. Most other bacteria are Gram negative.

Microscopic Morphology of L. Acidophilus: This should be carefully studied as the determination of the flora depends entirely on the findings of this particular organism. It is a Gram positive rod and polymorphus. They generally appear singly but often in pairs or in a short chain. The single bacillus is a slender rod often slightly

tapering on both ends and resembling a part of the corkscrew-like formation of spirocheta, and again it may present almost a cocus-like appearance. The smear made from an old culture often fails to retain gram iodin, and gives an appearance of a Gram negative organism. L. acidophilus does not possess spore capsule or flagella. They are non-motile.

Morphology of Colon-like Bacteria: All the Gram negative bacteria of every description are included in this category. Due consideration must be given to those forms which appear similar to the Gram negative forms of L. Acidophilus.

Consideration has been given in the past to the appearance of spore-bearing forms in the microcopic field. This consideration has not been continued recently since it was observed that the presence of spore forms in the microscopic field did not necessarily indicate that any segregated putrefactive forms were present in the specimen and therefore the determination of the fecal flora was not necessaryily influenced by their presence.

The higher the percentage of Gram positive bacteria, as a rule, the better the condition of the intestinal flora, while with the higher percentage of Gram negative the worse the condition, providing the cultural findings coincide with the microscopic observations. A higher percentage of Gram positive therefore does not necessarily indicate a fermentative flora, as there are often cases in which the microscopic fields are crowded with Gram positive bacteria of the spore-bearing type and diplococcil However, if there is a predominance of Gram positive bacteria, together with good cultural findings, it is safe to make a favorable diagnosis of the flora.

The microscopic test therefore is not an accurate method and should be wholly or partially dependent on the cultural findings. The higher percentage of Gram negative bacteria is always found in putrefactive flora.

CULTURAL EXAMINATION

The cultural examination in which the greater dependence is placed and from which most of the material for the estimation of the type of flora is drawn is accomplished by the following methods:

Four cultures are inoculated:

A brom-cresol-purple milk Durham tube.

A 1% lactose Durham tube.

A 5 cc. tube of sterile litmus milk under paraffin oil.

A 1% lactose tomato agar plate.

A milk Durham tube culture:

A description of the cultural examination is here given:

Brom-cresol-purple Milk Culture: The test tube used for this purpose is one inch (2.5 cm.) in diameter and 6 inches (15.2 cm.) in length. A small inverted tube is inserted in order to determine the percentage of gas formation. The media is distributed in culture tubes and sterilized in the autoclave at 15 lbs. pressure for 20 min. Inoculation is made into this medium by inserting a glass rod in the fecal suspension and then into the milk culture. The tubes are then incubated at 37° C. for 48 hours.

Reaction: The reduction of the indicator by the acidity formed in the growth of the bacteria is designated on the sheets by plus signs according to the degree of acidity. Whether the flora is putrefactive or fermentative, the reaction is always acid, except in the cases of special types of bacteria, such as B. typhosus, B. dysenteriae, and B. fecalis-alkagenes. The longer the incubation, the greater the production of acidity. B. coli and L. Acidophilus as well as Cl. welchii intensity the acidity in prolonged incubation.

Coagulation: This is classified under the following headings:

(a) Cheeselike or stormy fermentation. The coagulated milk presents lattice-like furrows. If accompanied by floating gas bubbles with a large amount of whey, the presence of Cl. welchii is suspected. Its presence is confirmed by a special test described later.

(b) Soft curd. Yellowish soft curd with or without whey formation is indication of a putrefactive flora dominated by B. proteus vulgaris. If such a culture is left incubating for a longer period, complete peptonization takes place.

(c) Retraction: Complete retraction of the curd is a putrefactive process. Partial retraction is often found in any type of flora. The interpretation varies according to other findings in milk.

(d) Firm, massive coagulation: The firm, massive coagulation with whey indicates the fermentative type of flora.

If the flora is distinctly dominated by L. Acidophilus, the coagulation is slimy at 24 hours incubation. On further incubation the acidity of the milk increases owing tothe formation of lactic acid from lactose and consequently a small amount of whey is produced. The amount of whey increases as the incubation is prolonged.

Whey: The amount of whey is designated by a plus sign. The test tube is tilted slightly to measure the approximate amount. The interpretation of whey varies according to other findings. If accompanied by a story fermentation, it indicates the presence of spore-bearing bacteria, notably Cl. welchii; with firm, massive coagulation the presence of the fermentative type is indicated. Complete peptonization of the milk is a putrefactive process.

Gas Formation: The entire tube takes the place of an ordinary fermentation tube elsewhere. It is less expensive, and for routine procedure it answers the purpose just as well. The whole length of the tube is considered as 100%. If half the tube is filled with gas, it is considered as 50%; one-fourth, 25%, and so on.

The amount of gas in the fermentative type is probably low ranging from 0 to 20%, while in the putrefactive flora it is higher, often almost 100%.

Summarizing the findings obtained from milk culture in the typical cases, a putrefactive flora is characterized either by stormy fermentation or yellow soft curd with considerable whey and gas bubbles, accompanied by 40% or more of gas in the entire tube. A fermentative flora shows a firm, massive coagulation with some whey and a small percentage of gas or none at all in the entiretube. A distinctly acid reaction is usually noted. Emphasis is therefore placed chiefly on the types of coagulation and of the peptonizing process.

Symbols used in this laboratory for determining the brom-cresol-purple milk fermentation reactions are :

Reaction-

1 plus, slightly acid

2 plus, decidedly acid

3 plus, completely acidified.

Coagulation-

Firm

Cheesy

Partially firm and partially cheesy (soft curd).

Rennet curd

Peptonization.

Whey production.

Symbols used in this laboratory for indicating the 1% Lactose Durham tube culture reactions are:

Cloudiness:

1 plus, slightly cloudy

2 " Cloudy

3 " very cloudy

Gas:

Percentage read in accordance with gascometer chart.

Anaerobic Milk Culture:

Confirmatory Test for *B. welchii*: Litmus milk is used for the culture. About 5 c.c. of the medium is distributed into each tube, and a small amount of liquid petrolatum is added in order to make the culture favorable for anaerobic growth. Then it is sterilized at 15 pounds pressure for twenty minutes. Fecal suspension, 0.5 c.c., is inoculated into the tube, and is heated in a water bath at 80 degrees C. for twenty minutes to kill off vegetative forms of flora. This is incubated at 37 degrees C. for two days.

If *B. welchii* is present, characteristic stormy fermentation takes place by the breaking up of the coagulated casein accompanied by the butyric odor. The evolution of gas bubbles can be detected by shaking the tube gently.

The findings in milk, broth and Veillon cultures can be confirmed well by employing the foregoing method. In case there is a slight doubt as to the character of the gas formation in the Veillon tube, this test will help to differentiate *B. welchii* from the gas formation caused by *B. aerogenes* or its allied bacteria.

Although it is generally admitted that *B. welchii* is a strictly fermentative bacteria of saccharolytic type, as advanced by Rettger,[5] its presence in the cultural and microscopic examination is always indicative of putrefactive flora. In all the decisively fermentative type of flora there is hardly any *B. welchii* present. In the combination of coli group bacteria with *B. welchii,* the putrefactive process is very much augmented. According to Herter,[6] *B. welchii* is one of the most important factors of intestinal putrefaction, being responsible for the so-called saccharobutyric fermentation. As the flora gradually improves, the percentage of *B. welchii* and other spore-bearing bacteria gradually decreases. This has been proved time after time in the examination. The increase of the percentage of *B. acidophilus* is almost directly proportional to the decrease of that of *B. welchii.* In broth, the percentage of gas in the inner tube is greatly diminished, and in milk culture there is no stormy fermentation. The most striking change takes place in the Veillon tube in which there is a total disappearance of anaerobic gas formation characteristic of *B. welchii.* Microscopically, the fermentative flora present no typical morphology of *B. welchii,* and instead the fields are covered with gram-positive rods of the acidophilus group. In the intestinal flora *B. welchii* and *B. acidophilus* are the two antagonistic organisms; the presence of one is inimical to the other. When *B. welchii* is suppressed, *B. acidophilus* is the dominant organism to take its place. I agree with Mever and others that in fermentative flora there is no *B. welchii* present.

The theory of bacteriophage has been timely advanced by d'Herelle,[7] and it is my belief that in some future time this interesting phenomenon can well be brought out in dealing with the relationship between these two organisms for the determination of intestinal flora.

I placed streptococci, diplococci and micrococci of any variety under the heading of gram-positive cocci, beause they are very similar in their significance in the determination of flora. Torrey[8] asserts that a high casein or milk diet stimulates the growth of saprophitic streptococci and diplococci. Among the streptococci present, the brevis type is the most prevalent. According to Andrew and Horder,[9] this short type is *Streptococcus fecalis,* which ferments lactose, saccharose and mannite but not ruffinose. The significance of this type in the intestinal flora has not yet been definitely brought out, but they often are present in a large number of diarrheal cases secondary to protozoan diseases, or any other intestinal disorder favorable for the production of diarrhea. The hemolytic type is rarely found in the stool. If present, it may be the result of metastasis due to focal infection in the upper respiratory tract. It is undeniable in diarrhea that the number of diplococci is very much increased, especially of the enterococci type described as *Micrococcus ovalis* by Thiercelin.[10] The number of diplococci is often increased in the arthritic cases secondary to focal infection, and in such the fields are often crowded with gram-positive diplococci, the number being approximately 90 per cent.

Yeasts do not bear any significance in interpreting the character of

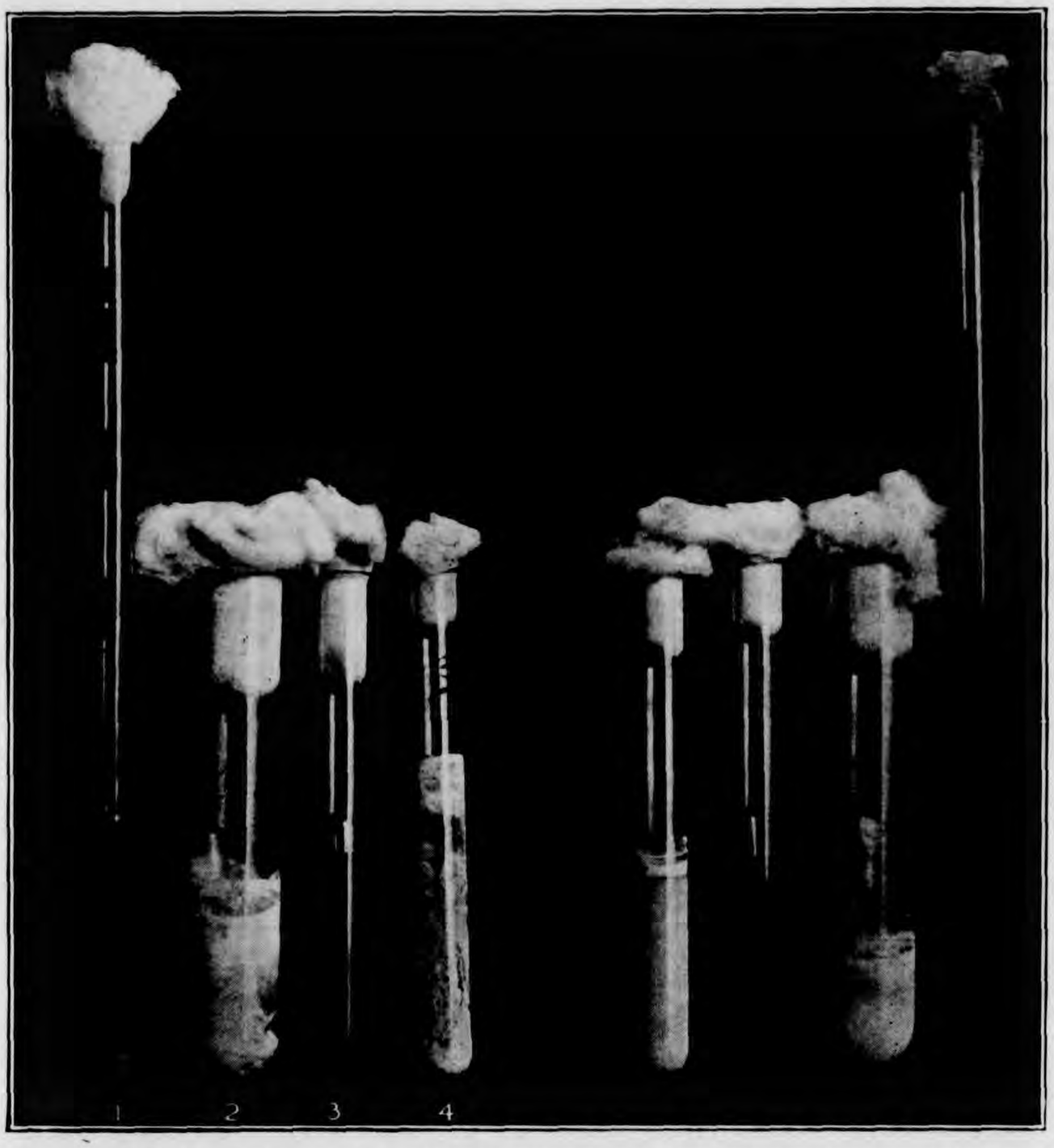

Fig. 2.—Cultural findings of intestinal flora; first group of tubes of putrefactive type, second of fermentative type. 1. Veillon tube; 2. litmus milk; 3, 1 per cent lactose broth, and 4, milk for confirmatory test for *Bacillus welchii*.

intestinal flora. They are found as frequently in the putrefactive type as in the fermentative type. So far as my experience goes with the organism, there is no ground for the belief that the fermentative process is favored by their presence. They are often found in large numbers in a diarrheal stool. This, however, can be accounted tor by an exaggerated peristalsis in these cases, appearing thus in the specimen without having undergone the destructive process in the digestive tract.

Symbols used in this laboratory for indicating the reactions of the Anaerobic Milk Cultures are:

Stormy Fermentation:

- none

1 plus

2 "

3 "

4 "

Odor:

B, butyric, this being the odor indicative of welchii fermentation; it is the only reading necessary.

Reaction:

Acid

1 plus

2 plus

Reduction 0

Alkali production -

1% Lactose Tomato Agar Plate Culture: The manner of inoculation of this medium is the same as that for Brom-cresol-purple milk tubes. The agar plates are inverted and placed in tin cans preparatory to receiving from 10 to 20% carbon dioxide. The carbon dioxide is introduced from Kip generators and the plates placed in the incubator for 48 hours at 37° C. (The use of carbon dioxide has recently proven to be very efficient in bringing out colonies of L. Acidophilus. If there are any vegetative forms of this organism present, they will

appear on the plate culture in at least 90% of the cases.)

The plate is made primarily for the determination of colonies of L. Acidophilus. The colonies of L. Acidophilus present a very different appearance in each individual and oftentimes a different appearance in the same individual according to the diet and the time at which the speciment is taken. Since the incorporation of the CO_2 agar plate method, the colonies of acidophilus which appear are more or less uniform in size and shape. Some difference is noted, however, when a considerable number of cases are examined. However, this difference is not so far from the nominal that any difficulty is experienced in identifying them. It has been observed that the H-ion concentration of the medium plays a very important part in the appearance of the colonies. If the concentration is too acid, the colonies present a very abnormal appearance, the abnormailty observed being the decrease in size and shape of the colony. If the reaction of the medium is too alkaline, the colony-like bacteria will grow very well and it is very likely that the Acidophilus if present at all will not be observed. Experimentation has shown that a reaction of p. H. of 6.2 gives very typical Acidophilus colonies.

The percentage of L. Acidophilus colonies is taken in proportion to the number of other colonies present on the plate. It has been observed that the higher the dilution, the great will be the number of Acidophilus colonies observed. This explains the reason for so small an amount of inoculum bing used. It is necessary to examine at least ten different microscopic fields on the plate and make the average count of percentages. For routine purpose the percentage of L. Acidophilus colonies is conveniently designated by few, many and abundant.

Summarising the findings obtained from the plate, we may say that in the putrefactive type there are no Acidophilus colonies present and the variety of colonies of other forms is numbrous. In the fermentative type of flora there are numerous associated colonies with very few kinds of colonies on the plate.

Symbols used in this laboratory for indicating growth characters on 1% dextrose tomato agar plate culture:

F - few acidophilus colonies

M - many " "

VM - very many " "

ESTIMATION OF THE BACTERIAL FLORA

(TYPE)

The estimation of the bacterial flora is an arbitrary affair based upon the sum of the entire laboratory findings. No rigid formula may be devised to place the specimen in its right class. A great deal of skill and practice is necessary before one is qualifited to make such a classification even with the most complete laboratory findings, as contradictory results may be reconciled if the true estimations are to be accomplished. The technician for the most part must rely upon a general knowledge of bacterial reactions and a complete realization of the multiple variations possible in the mixed culture associations. The accompanying laboratory work sheet illustrates the ideal observations which go to make up the various types of flora. It cannot be stressed too strongly that many ramifications of these observations are observed and that no stated system can be adopted for determining the type. The various grades of intestinal flora which are reported to the doctor and their outstanding characteristics are presented on the enclosed sheet.

Since this paper was published it has been judged unnecessary to make use of the Veillon cultures as the Brom-cresol-purple milk formation tube expressed the same things.

Summarizing the entire bacterial method for determining the type of flora we may say that we are only interested in a determination of the general character of the flora by the various reactions of the groups of organisms present.

Brom-cresol-purple milk, Lactose broth, and tomato agar plates, together with a special milk culture to determine the spore-bearing type and microscopic examination constitute the analysis of the intestinal flora.

INTESTINAL FLORA

GRADES

A Very excellent.
Characteristics: Sour odor, reaction acid. No Welchii. Aciduric organisms numerous.

A- Excellent flora.
Characteristics: Sour odor, reaction acid. No welchii. Few aciduric organisms.

B+ Very good flora.
Characteristics: Sour odor, reaction acid. Few Welchii. Few aciduric.

B Good flora.
Characteristics: Sour odor, reaction alkaline. Few Welchii. Aciduric organisms.

B- Fair flora.
Characteristics: Sour odor, reaction alkaline. Many Welchii. Few aciduric.

C Bad flora: Putrefactive.
Characteristics: Putrid odor, reaction alkaline. Welchii abundant. No aciduric.

D Bad flora. Butyric putrefaction.
Characteristics: Rancid odor. Reaction acid. Many Welchii. No aciduric organisms.

100	A	Aciduric.	Very excellent.
90	A-	"	Excellent
70	B+	"	Very good
50	B	"	Good
30	B-	"	Fair
10	C	Alkaline.	Bad
10	D	Butyric	Bad

Macroscopic and chemical examinations are necessary to corroborate the bacterial analysis but these tests should be made independently.

The classification of the flora is an arbitrary affair. The interpretations should be made on the summarized findings of all the examinations concerned.

WORK SHEET

BACTERIOLOGICAL EXAMINATION OF FECES

DATE

SPECIMEN NUMBER	GROSS EXAM.			BROM CRESOL PURPLE MILK				LACTOSE BROTH		ANAEROBIC REACTION			TOMATO AGAR PLATE	MICROSCOPICAL EXAM.				TYPE OF FLORA
	ODOR	COLOR	REACTION	REACTION	COAGULATION	WHEY	GAS %	TURBIDITY	GAS %	REACTION	TYPE OF FERMENTATION	ODOR	L. ACIDOPHILUS LIKE COLONIES	COLI - LIKE ORGANISMS	ACIDOP-LIKE ORGANISMS	GRAM POS. COCCI	YEASTS	
1	Sour	Lt. Yell.	Acid	2+	Firm	trace	10%	trace	15%	N. to A.	0	None	V. many	V. Few	Many	Few	Few	A
2	"	"	# "	2+	"	+	20%	+	30%	"	0	"	Many	V. Few	"	"	"	A-
3	Sl. "	Yellow	+ "	2+	"	+	30%	+	40%	Neutral	0	"	Many	Few	Few	"	"	B+
4	No O.	"	Neutral	+	Soft Curd	+	40%	+	45%	"	trace	B"	Few	Few	"	0	0	B
5	"	Lt. brown	"	+	"	#	50%	#	55%	"	"	butyric	"	Many	"	0	0	B-
6	Butyric	brown	talk.	trace	Cheesy	##	75%	3+	75%	Alk.	H63+	"	0	"	0	0	0	C
7	Putrid	Dk. "	## "	0	"	##	100%	3+	95%	"	4+	"	0	V. "	0	0	0	D

The above are a few of the possible readings, though they are by no means the only ones which may average any given type.

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FECAL LABORATORY MANUAL

PATHOLOGY LABORATORY NOTES

Of The Battle Creek Sanitarium

Compiled by Josephine F. Williams, M. S.

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FECAL LABORATORY MANUAL

PATHOLOGY LABORATORY NOTES

Of The Battle Creek Sanitarium

GROSS MICROSCOPIC EXAMINATION

This examination is made as soon as possible after the specimen reaches the laboratory. The amount in grams, the form, color, odor, reaction, presence of food remnants, mucus, or fresh blood are recorded with the following terminology:

1. Amount - Recorded in grams.
2. Color - Brown, green and yellow are the colors indicative of well defined types of stools, but various conditions produce a great variation. Especially frequent are the stools of a gray to yellow tint that are the result of the administration of a barium meal.
3. Form - Scybalic, formed, part-formed, mushy, semi-liquid or liquid.
4. Odor - Odorless, sour, butyric, putrid.
5. Food Remnants - Almost infinite possibilities. Vegetable fibres, seeds, skins, and undigested food are frequently found.
6. Mucus - May be reported as much or little, and as mixed, free, or mucus curds.
7. Fresh Blood - May be confirmed by tests found described under Occult Blood Tests in Chemical Analysis.

Here are appended extracts explanatory of the above topics, taken from a paper by Hiromu Tsuchiya: "Clinical Diagnosis and Intestinal Flora," published in the Bulletin of the Battle Creek Sanitarium and Hospital Clinic, July, 1926, Archives of Internal Medicine, 36, No. 5, pp. 636.

"Amount of Stool. The amount of the stool has nothing to do with the types of intestinal flora, except in the case of constipation, especially of the atonic type. Here the quantity of the stool is much diminished, owing to the excessive absorption by the intestinal mucus. The number of bacteria also is generally reduced, and the flora chiefly consists of the putrefactive bacteria. The aciduric type cannot exist in any obstructions along the intestinal tract favorable for chronic constipation.

Color. A dark brown suggests the putrefactive type of flora. The presence of this color is often characteristic of the meat regimen responsible for the condition. In green stools characteristic of the vegetable diet, putrefactive processes are very much lessened, while in the yellowish stools of the milk regimen, the fermentative flora is often found."

"Consistency. The scybalic stool harbors putrefactive bacteria. The fermentative type is mostly found in partly formed or mushy consistencies. Semiliquid and liquid types are not of desirable form so far as the character of the flora is concerned. In the latter, bacterial congregation is very numerous, both in quality and quantity.

Odor. The odor of the stool has more to do with the interpretation of the flora than all other physical examinations put together. If the examiner accurately conducts his olfactory sense, the determination of flora is partially or wholly made before the bacteriologic examination is completed. The putrefactive type imparts an offensive odor owing to the presence of indol, skatol, and mercaptan, particularly methyl mercaptan, as well as ammonia and hydrogen sulphid. The butyric acid odor is characterized by saccharobutyric fermentation in the flora, dominated by B. Welchii. The fermentative type is characterized by either sour or non-odor. The sour odor is due to the liberation of acetic and lactic acid by the activities of aciduric bacteria, which often partially or wholly inhibit the growth of purely alkaline or putrefactive bacteria. In a mixed type the odor varies according to the diet taken or the type of bacteria dominant in the flora. Thus, in this type bacterial antagonism and symbiosis are at their height. The non-odor that often prevails in a putrefactive stool is probably due to excessive absorption of toxic substances by intestinal mucus, and the feces are usually scybalic. The reduction of the quantity of putrefactive by-products, therefore, means the betterment of the flora, and consequently, that the odor of the stool is less offensive.

Mucus. The fermentative type is seldom found in the stool in which mucus is detected in large quantity. The presence of mucus always interferes with the process of transformation. Mucus is an albuminous substance, and favors the development of putrefactive bacteria. The presence of mucus, therefore, hinders the progress of the intestinal transformation. In cases of mucus colitis and other inflammatory and infectious diseases, mucus can be detected either separately or mixed with the stools. In those instances, the change of flora takes on a very slow course.

Summarizing these findings, we may say that the conditions favorable for the process of the transformation are a yellowish, soft, fluffy stool with sour or non-odor, and an absence of mucus and blood as well as of parasites regardless of reaction. On the other hand, if the stool shows scybalic or diarrheal types, is dark brown, of putrid odor, with or without mucus, blood and parasites, regardless of reaction, the putrefactive process is evident provided the bacteriologic examination presents the equivalent picture."

1. Reaction - Determined by placing a few drops of 1% solution of alizarin on a glass plate and mixing with it a small amount of feces. Reaction reported as alkaline, neutral or acid.

2. Occult Blood. - Gregersen test used.

0.025 gm. of benzidin base.

0.20 gm. barium peroxide.

5.0 c.c. 50% acetic acid.

Freshly mixed and allowed to stand until solution assumes a tea-brown color, at which time it must be used. The feces are then spread on a glass plate and two to four drops of the benzidin-barium-peroxide-acetic acid reagent dropped on them. If pathologic blood is present, a blue or greenish blue color appears within one minute. If color appears later than one minute, the reaction is not considered positive. Color may be detected easily by placing the slide on a black background. Degree of reaction if indicated not by the intensity of the color, but by time elapsed before color appears.

"1. If it takes from fifteen to sixty seconds for more greenish-blue or pale blue to develop, this is called a weak positive reaction and is marked 1 plus. The blood content in this case is less than 1%.

2. If it takes from three to fifteen seconds and the coloring is deeper, the reaction is definitely positive and is marked 2 plus. Here we have from 1 to 5% of blood.

3. When the change appears almost instantly and is deep blue, almost black, the reaction is strongly positive and is marked 3 plus. More than 5% of blood is indicated."

Extract from Dr. Tsuchiya's paper here appended:-

Reaction: — The reaction varies according to the kinds of diet taken. In a strictly fruit regimen the reaction is acid, while in a meat regimen alkalinity prevails. In a carbohydrate regimen, the reaction is often acid. In my study, an acid reaction does not necessarily indicate a good flora, while the same can be said in regard to the alkalinity of the putrefactive flora. Robinson[11] concluded that the hydrogen ion concentration of the intestinal content has no relation to the type of the bacterial flora.

FECAL OCCULT BLOOD TESTS

The following test is recommended where special attention should be paid to occult blood in the feces, as for example in cases of suspected gastric ulcer.

Quotation from paper by Horace W. Soper, "Carcinoma and other lesions of the small intestine," J. A. M. A. 92: No. 4, 286, Jan. 26, 1929.

"In 1912 I (Soper, H. S.: Interstate M.J. 19:201,1912) again called attention to the value of the occult blood test in the stomach contents and feces. I advocated Weber's modification of the guaiac test, as the benzidine, phenolphthalein and other tests were too sensitive to be relied on. The test is performed as follows:

"A portion of the feces, about the size of a walnut, should be selected, surfaces covered with mucus being avoided, mixed with water and rubbed well in a mortar to a thin mushy consistency. If the stool is liquid, the sediment should be selected without the addition of water. From 5 to 10 c.c. is poured into a large test tube; one-third the volume of glacial acetic acid is added; the solution is mixed well, and an equal volume of ether is added, extraction being carried out slowly. A rubber cork should be used and the tube tilted in order to bring the largest possible surface of the fluid into contact with the ether without permitting them to be mixed together. Should a mixture occur, however, the resulting emulsion may be filtered and the filtrate tested. At least three minutes is required to complete the extraction. The ethereal extract is carefully poured off into a second test tube and from 10 to 15 drops freshly prepared tincture of guaiac and from 20 to 30 drops of old

oil of turpentine or hydrogen dioxide is added. The mixture is shaken well in the air without corking or covering with the thumb. The appearance of a blue or violet color indicates the presence of blood. If the color does not appear at once, the test tube should be filled two-thirds full with water. The ethereal extract will float on the surface, and the color change will be more readily detected. Other colors may appear, but after much discussion observers are practically unanimous in advising that only a blue or violet color should be accepted as a positive reaction. The color is not lasting but fades and disappears in a few minutes."

Extract from Dr. Hiromu Tsuchiya's paper here appended:

> Blood —The presence of either occult or fresh blood suggests the inflammatory or infectious processes going on in the intestinal tract. It may be due to hemorrhoids, fissure or ulcer in the lower part of colon in case fresh blood is found, and ulcer or cancer of the gastro-entoric tract in case of occult blood. Any infectious processes, such as typhoid, tuberculosis, or diseases of a parasitic nature, often result in the presence of fresh blood. In such a case transformation takes place very slowly, and in the majority of cases will never occur until the interference is removed.

The wet smear examination is used to identify starch granules, fat globules, oil, fatty acid crystals, soap crystal, calcium salts, triple phosphate crystals, epithelial cells, pus cells, blood cells.

Two smears are prepared upon a slide from the feces; upon one a drop of glacial acetic acid is placed. Upon the other a drop of Gram's iodine is placed. Examination is made, using a four mm. objective. Upon one or the other, the above mentioned characters may be recognized. The following references given in the bibliography should be studied before examination is attempted. — Aaron, Webster, Haden, Cummer, Stitt, or Todd.

PARASITOLOGICAL EXAMINATION

The examination for animal parasites is made chiefly from a direct smear. The feces is picked from the specimen with great care. It should be picked from those parts slightly mucoid or moist. These are sometimes found upon the outside of the stool and sometimes they must be picked from the center.

A few drops of saline solution are added and a cover slip pressed down gently. These smears should be examined before they are allowed to dry. The following protozoan parasites are relatively frequent findings. Entamoeba coli, Entamoeba Histolytica, Endolimax nana, Iodamoeba butschlii (Williamsii) Giardia intestinalis, Entoromonis hominis, Trichomonas intestinalis, and Balantidium coli, Chilomastic mesnili.

For descriptions of these forms it would be best to refer to: Webster, Stitt, Chandler, Hegner Cort and Root, Fantham Stephens and Theobald, Hegner, Minchin, Brumpt, or Wenyon.

BACTERIAL EXAMINATION

A Gram stained smear is examined and the percentage of Gram positive and Gram negative organisms are estimated. This percentage is for the benefit of he who finally estimates the type of flora. This evaluation is in no way to be taken as a final analysis.

The following is an extract from Dr. Hiromu Tsuchiya's paper, descriptive of this phase of the work:

Microscopic Examination --(a) Smear: The uniform smear is made from the suspension by means of a platinum wire, wooden applicator or pipette, and dried either by flame or air. The slide is stained according to the Gram method.

(b) Gram Stain Classification of Bacteria: This is made by examining at least from ten to fifteen microscopic fields with the aid of a square field ocular, and calculating the percentage of gram positive and negative. Special attention is paid to the presence of acidophilus-like organisms that are of polymorphous rod shape. If there is dominance of particular type of bacteria, note is made by the plus sign. For the convenience of the study, the following bacterial groups are placed in the working blank: colon-like bacteria, acidophilus-like bacteria, spore-bearing bacteria, streptococci and yeasts. Under these headings the following bacteria are gram-positive: B. acidophilus, B.Welchii, B. butyricus, B.putrificus, streptococci and diplococci. Most other bacteria are gram-negative.

Microscopic Morphology of B. Acidophilus: This should be carefully studied, as the determination of the flora depends entirely on the findings of this particular organism. It is a gram-positive rod and polymorphous. They generally appear singly, but often in pairs or in a short chain. The single bacillus is a slender rod, often slightly tapering at both ends and resembling a part of the corkscrew-like formation of spirochota, and again it may present almost a coccus-like appearance. The smear made from an old culture often fails to retain gram iodine and gives an appearance of a gram-negative organism. B.acidophilus does not possess spore, capsule or flagella. They are immotile.

Morphology of Colon-like Bacteria: All the gram-negative bacteria of every description are included in this category.

Morphology of Spore-bearing Type: They are short and thick rods, usually found in pairs, but often singly. The consideration of butyricus and putrificus should be more or less dependent on the cultural findings.

The higher the percentage of gram-positive bacteria, as a rule, the better the condition of the intestinal flora, while with the higher percentage of gram-negative, the worse the condition, provided the cultural findings coincide with the microscopic. A higher percentage of gram-positive, there, does not necessarily indicate, in all cases, fermentative flora, as there are often cases in which the microscopic fields are crowded with gram-positive bacteria of the spore-bearing type and diplococci. However, if there is a predominance of gram-positive bacteria, coupled with good cultural findings, it is safe to make a favorable diagnosis of the flora. The microscopic test is not, therefore, an accurate method, and should be wholly or partially dependent on the cultural findings. The higher percentage of gram-negative bacteria is always found in putrefactive flora. The approximate percentage of gram-positive bacteria in different types of intestinal flora is: Fermentative, from 70 to 100; semi-fermentative, from 55 to 70; mixed, from 35 to 50; semi-putrefactive, from 10 to 30; putrefactive, from 5 to 20.

CULTURAL EXAMINATION

The cultural examination in which the greater dependence is placed and from which most of the material for the estimation of the type of flora is drawn, is accomplished by the following methods:

Four cultures are inoculated.

A litmus milk Durham tube.

A 1% lactose Durham tube.

A 5 cc. tube of sterile milk under paraffin oil.

A 2% lactose agar plate.

For the method of preparing and reading these cultures, abstracts of Dr. Hiromu Tsuchiya's paper are appended.

Litmus milk Durham tube culture:

Cultural Examination: -- Litmus Milk Culture: The test tube used for this purpose is 1 inch (2.5cm.) in diameter and 6 inches (15.2 cm.) in length. A small inverted tube is inserted in order to determine the percentage of gas formation. The media is distributed in culture tubes, and sterilized in the autoclave at 15 pounds pressure for 20 minutes; 1 cc. of fecal suspension is inoculated into milk culture, and incubated at 37 degrees C. for 48 hours.

Reaction: The reduction of litmus by the acidity formed by bacteria is designated by plus signs according to the degree of acidity. Whether the flora is putrefactive or fermentative, the reaction is always acid except in the cases of special types of bacteria, such as B. typhosus, B. dysenterias, and B. fecalis-alkagenes. The longer the incubation, the higher the production of acidity. B.coli and B.acidophilus, as well as B. Welchii, intensify the acidity in prolonged incubation.

Coagulation: This is classified under the following headings:
(a) Cheese-like or stormy fermentation. The coagulated milk presents lattice-like furrows. If accompanied by floating gas bubbles with a large amount of whey, the presence of B. Welchii is suspected. This is confirmed by a special test described later.
(b) Soft curd. Yellowish soft curd with or without whey formation is indicative of putrefactive flora dominated by B. proteus vulgaris. If such a culture is left incubated for a longer period, a complete peptonization takes place.
(c) Retraction. Complete retraction of the curd is a putrefactive process. Partial retraction is often found in any type of flora. The interpretation varies according to other findings in milk.
(d) Firm massive coagulation. The firm massive coagulation with whey indicates the fermentative type.
If the flora is distinctly dominated by B. acidophilus, the coagulation is slimy at twenty-four hours incubation. On further incubation, the acidity of the milk increases, owing to the fermentation of lactic acid from lactose, and consequently there is a production of whey. The amount increases as the incubation is prolonged.
Whey: The amount of whey is designated by a plus sign. The test tube is tilted slightly to measure the approximate amount. The interpretation of whey varies according to other findings. If accompanied by stormy fermentation it indicates the presence of spore-bearing bacteria, notably B.Welchii; with firm massive coagulation, the presence of the fermentative type is indicated. The complete peptonization is a putrefactive process.
Gas formation: The inner tube takes the place of an ordinary fermentation tube used elsewhere. It is less expensive, and for routine procedure it answers the purpose just as well. The whole length of the tube is considered as 100 per cent; one-fourth, 25 per cent.
The amount of gas in the fermentative type is probably low, ranging from 0 to 20 per cent, while in the putrefactive flora it is higher, often almost 100 per cent.
Summarizing the findings obtained from milk culture in the typical cases, putrefactive flora is characterized either by stormy fermentation or yellow soft curd with considerable whey and gas bubbles, accompanied by 40 per cent or more of gas in the inner tube. Fermentative flora shows a firm, massive coagulation with some whey and a small percentage of gas or none at all in the inner tube, with a distinctly acid reaction. An analysis of the types of flora is given in the accompanying table.

Emphasis is therefore placed chiefly on the types of coagulation and of the peptonizing process.

Symbols used in this laboratory for determining the litmus milk fermentation reactions are:

Reaction -
1 plus, slightly acid.
2 plus, decidedly acid.
3 plus, completely acidified.

Coagulation -
Firm.
Cheesy.
Partially firm and partially cheesy (soft curd.)
Rennet curd.
Peptonization.

Whey production -
1 plus, slight.
2 plus, considerable.
3 plus, much.

Gas -
Percentage read in accordance with gasometer chart.

1% Lactose Durham tube culture -
One per cent Lactose Broth: The reaction is adjusted to 0.7 per cent of acidity, according to an ordinary titration method, and the mediums are distributed in test tubes. The small tubes are inserted as in the milk culture for a similar purpose. It is autoclaved at 15 pounds pressure for twenty minutes. One-half cubic centimeter of focal suspension is inoculated into each broth culture, and is incubated at 37 degrees C, for forty-eight hours.

Turbidity:-
This is designated by plus signs, according to its degree. The presence of the coli group, streptococci, and enterococci induces an intense degree of turbidity.

Formation of Scum; Sediment, and Pellicle: In the putrefactive type these formations are noticeable, especially if dominated by the coli group and spore-bearing bacteria. Sediment is observed when the streptococci group plays a dominant part. In the fermentative type, their formation as a rule is scarce, except in the case of a luxuriant growth of yeasts when a thick pellicle frequently develops.

Gas Formation: The percentage of gas is computed as in the case of a milk culture. In the putrefactive type, the percentage always increases and often reaches as high as 90 per cent. If there is over 60 per cent of gas in the broth culture coupled with the characteristic appearance of a stormy fermentation in the milk culture, it is safe to determine the dominance of B.Welchii. In the fermentative type, in which B.acidophilus plays an extensive part, the gas formation is reduced to a minimum. The hydrogen ion concentration of the forming bacteria is partially or totally suppressed owing to the excessive evolution of acetic and lactic acid by aciduric bacteria.

Summarizing the findings obtained from broth culture, we may say that the putrefactive type is characterized by the presence of intense turbidity with the formation of a scum and pellicle accompanied by a large percentage of gas in the inner tube. Over 60 per cent sometimes indicates the presence of B. Welchii. The fermentative type shows turbidity to a small extent with or without scum or pellicle and accompanied by a small percentage of gas.

Microscopically, the formentative flora present no typical morphology of B. Welchii, and instead the fields are covered with gram-positive rods of the acidophilus group. In the intestinal flora B. Welchii and B. acidophilus are the two antagonistic organisms; the presence of one is inimical to the other. When B.Welchii is suppressed, B. acidophilus is the dominant organism to take its place. I agree with Meyer and others that in formentative flora there is no B. Welchii present.

Symbols used in this laboratory for indicating the 1% Lactose Durham tube culture reactions are:

Cloudiness:
1 plus, slightly cloudy.
2 " cloudy.
3 " very cloudy.
Scum or pellicle formation:
S, Scum present.
P. Pellicle present.
Gas:
Percentage read in accordance with gasometer chart.
Anaerobic Milk Culture:

Confirmatory test for B. Welchii: - Litmus milk is used for the culture. About 5 c.c. of the medium is distributed into each tube, and a small amount of liquid petrolatum is added in order to make the culture favorable for anearobic growth. Then it is sterilized at 15 pounds pressure for twenty minutes. Fecal suspension, 0.5 cc., is inoculated into the tube, and is heated in a water bath at 80 degrees C. for twenty minutes to kill off vegetative forms of flora. This is incubated at 37 degrees C. for two days.

If B.Welchii is present, characteristic stormy formentation takes place by the breaking up of the coagulated casein accompanied by the butyric odor. The evolution of gas bubbles can be detected by shaking the tube gently.

The findings in milk, broth and Veillon cultures can be confirmed well by employing the foregoing method. In case there is a slight doubt as to the character of the gas formation in the Veillon tube, this test will help to differentiate B. Welchii from the gas formation caused by B.aerogenes or its allied bacteria.

Although it is generally admitted that B. Welchii is a strictly formentative bacteria of saccharolytic type, as advanced by Rottger,[5], its presence in the cultural and microscopic examination is always indicative of putrefactive flora. In all the decisively formentative type of flora there is hardly any B. Welchii present. In the combination of coli group bacteria with B. Welchii, the putrefactive process is very much augmented. According to Herter[6], B. Welchii is one of the most important factors of intestinal putrefaction, being responsible for the so-called saccharobutyric formentation. As the flora gradually improves, the percentage of B.Welchii and other spore-bearing bacteria gradually decreases. This has been proved time after time in the examination. The increase of the percentage of B.acidophilus is almost directly proportional to the decrease of that of B.Welchii. In broth, intestinal flora. They are found as frequently in the putrefactive type as in the formentative type. So far as my experience goes with the organism, there is no ground for the belief that the formentative process is favored by their presence. They are often found in large numbers in a diarrheal stool. This, however, can be accounted for by an exaggerated peristalsis in these cases, appearing thus in the specimen without having undergone the destructive process in the digestive tract.

Symbols used in this laberatory for indicating the reactions of the Anaerobic Milk Cultures are:

Stormy Fermentation.
- None.
1 plus.
2 plus.
3 "
4 "

Odor:

B.Butyric, this being the odor indicative of Welchii formontation; it is the only reading necessary.

2% Lactose Agar Plate Culture:

Lactose or Dextrose Agar Plate: A fecal suspension, 0.5 cc., is inoculated into the medium, and is poured into the plate. The streak method is not desirable for this particular examination. Two aerobic plates are prepared for each specimen, and incubated for forty-eight hours at 37 degrees C.

The plate is made primarily for the determination of colonies of B.Acidophilus. The colonies of B.acidophilus are different for each individual, and at different times in the same individual. There are no corresponding colonies in all the specimens examined. Thus, briefly, so far as my experience goes with this particular organism in regard to its characteristic colony formation, there are at least the following variations:

Fimbriated type. It is characterized by a microscopic fuzzy colony of unusually compact form, resembling bits of wool interlaced with radiating threads. The colony resembles that of B. tetanus. Under this group there are several subdivisions:

Non-fimbriated type. It is characterized by an oval or round colony without fimbriation. It is also microscopic, and if we carefully focus very short fimbriation may sometimes be detected, but not always. Whether or not these two main types of colonies are separate entities has not been fully brought out. I incline, however, to the belief that they are the same except under different concentrations of agar. Thus, if the agar is concentrated higher than 2.5 per cent, the pressure is brought to bear on the colonies to such an extent that the characteristic fimbriation may not be recognized. The hydrogen ion concentration of the medium as well as that of the fecal suspension is probably another important factor to be considered in this connection.

The percentage of B.acidophilus colonies is taken in proportion to the number of other colonies present in the plate. For accurate work, different dilutions should be prepared to facilitate the work. As the dilution increases, the number of colonies present become less, and the computation of the percentage of the acidophilus colonies can be made very easily. For instance, if there are 100 mixed colonies present, and ten are those of B.acidophilus, the percentage of the latter is 10. It is necessary to examine at least ten different microscopic fields on the plate, and make the average count of percentages. For routine purposes, the percentage of B.acidophilus colonies is conveniently designated by few, many, and abundant.

The study is also made of the relationship of the various kinds of colonies with the type of the intestinal flora. Thus, in the putrefactive type there is wide variation — a congregation of different types of bacteria, while in the formentative type, the variety is reduced. In other words, the reduction of the

variety of colonies present means a step by which the improvement of the flora takes place.

Summarizing the findings obtained from the plate, we may say that in the putrefactive type there is no acidophilus colony present, and the variety of colonies is numerous, while on the fermentative type there are numerous acidophilus colonies with a few other kinds of colonies on the plate.

Symbols used in this laboratory for indicating growth characters on 2% dextrose agar plate culture:

F - few acidophilus colonies.

M - many " ""

VM - very many acidophilus colonies.

(a) Irregular shaped nucleus, dense or comparatively transparent with numerous fimbriations.
(b) Oval or round colonies with few or numerous fimbriations. The nuclear matter is somewhat granular.
(c) A very small colony, usually irregularly shaped, and at times slightly triangular with a few fimbriations. When this species is being examined, care should be taken not to confuse it with the artefact present in the plate.
(d) Conglomerate type with chains of two, three or several colonies, each having a sort of bottle shaped structure with a few fimbriations. The conglomeration is mostly longitudinal, but seldom transverse.

Below is quited the summary of Dr. Hiromu Tsuchiya's paper which briefly states our method of bacterial analysis.

Since this paper was published it has been judged unnecessary to make use of the Veillon cultures as the anaerobic milk culture and the Litmus milk fermentation tube expressed the same findings.

1. The bacteriologic examination advanced here is not for a detailed study of the intestinal bacteria, but to determine the general character of the flora.
2. Litmus milk, lactose broth, Veillon tube and dextrose agar plate, together with special milk culture to determine the spore-bearing type and microscopic examination, constitute the analysis of the intestinal flora.
3. Macroscopic and chemical examinations are necessary to corroborate the bacterial analysis, but the test should be made independently.
4. The classification of the flora is an arbitrary affair. The interpretation should be made on the summarized findings of all the examinations concerned.

ESTIMATION OF THE BACTERIAL FLORA (TYPE)

The estimation of the bacterial flora is an arbitrary affair, based upon the sum of the entire laboratory findings. No rigid formula may be devised to place the specimen in its right class. A great deal of skill and practice is necessary before one is qualified to make such a classification, even with the most complete laboratory findings, as contradictory results must be reconciled if the true estimations are to be accomplished.

A few illustrations, charts, and quotations may serve to guide the technician but for the most part he must rely upon general knowledge of bacterial reactions and complete realization of the multiple variations possible in mixed culture association.

Here is inserted a copy of a letter sent by Dr. Hiromu Tsuchiya to the members of the Sanitarium Staff in explanation of the system of reporting fecal types:

March 28, 1938.

Dear Doctor:

Enclosed please find a new report blank on Fecal Analysis. The type of bacterial flora are designated by #1 (Aciduric), #2 (Semi-Aciduric), #3 (Mixed), #4 (Semi-Putrefactive), #5 (Putrefactive). The brief explanation of the types is as follows:

#1 (Aciduric). This type contains a large percentage of B.Acidophilus and A#1 from bacteriologic standpoint. In it the percentage of colon-like bacilli is small. B. Welchii is always absent.

#2 (Semi-Aciduric). This type contains a fairly large percentage of B.Acidophilus with some percentage of colon-like bacilli. The presents of B.Welchii is very rare.

#3 (Mixed). This type is a congregation of all sorts of bacteria. A small percentage of B.Acidophilus and B.Welchii is present, with a fairly large percentage of colon-like bacilli.

#4.(Semi-Putrefactive). This type shows the dominance of putrefactive bacteria, with or without B.Acidophilus. If B. Acidophilus be present, the percentage is very small. B. Welchii are present in all but rare cases.

#5. (Putrefactive). This type is decidedly dominated by colon-like bacilli, with spore-bearing type. Bacillus acidophilus is always absent. B.Welchii invariably present.

Here are appended a group of references from Dr. H. Tsuchiya's paper on "Clinical Diagnosis and the Intestinal Flora."

In this study the intestinal bacteria are classified under the following groups:

(a) Colon-like bacteria (Bacillus coli, B.proteus-vulgaris, B.aergenes, B.enteriditis, B. fecalis-alkaligenes, etc.)
(b) Acidophilus-like bacteria (B.Acidophilus, B.Bifidus);
(c) Spore-bearing bacteria (B.Welchii, B.putrificus; B.butyricus,etc.);
(d) Gram-positive cocci (Streptococcus fecalis, micrococci, diplococci, and enterococci), and
(e) Yeasts.

For diagnostic purpose the intestinal flora is classified under the following headings:

(a) Fermentative. This type contains a large percentage of Bacillus Acidophilus, and is excellent in every respect. Fermentation does not imply an excessive gas production. The percentage of coli-like organisms is very small.

(b) Semi-fermentative. This type contains a fairly large number of Bacillus acidophilus with some coli-like bacteria, with or without streptococci.

(c) Mixed. This type is a congregation of all sorts of bacteria. A small percentage of Bacillus acidophilus and Bacillus Welchii are often present in this type.

(d) Semi-putrefactive. This type shows the dominance of putrefactive bacteria, with or without Bacillus acidophilus.

(e) Putrefactive. This type is characterized by being distinctly putrefactive, dominated by the Bacillus coli group and spore-bearing without the presence of Bacillus acidophilus. The bacterial metabolism is strongly proteolytic.

Types are reported in this laboratory as:

Type I Fermentative.

Type II Semi-fermentative.

Type III Mixed.

Type IV Semi-putrefactive.

Type V Putrefactive.

To give a greater range of classification in response to range of variability, we have adopted the practice of also reporting the various types as sub-divided into A and B Groups. Thus, Type III A is slightly more aciduric in nature than is Type III B.

INTERPRETATION OF

Type	Putrefactive	Semi-putrefactive
Litmus Milk	Stormy fermentation or soft curd;floating gas bubbles;complete peptonization; large percentage of gas in inner tube, slight reduction of litmus	Soft curd with or without whey; moderate percontage of gas; partial retraction,accompanied by stormy fermentation
Confirmatory test	B.Welchii positive	B.Welchii positive
Lactose Broth	Turbidity,with scum and pellicle or sediment; gas in inner tube, over 60 per cent	Turbidity, with scum, pellicle or sediment; gas in inner tube, 40-60 per cent
Veillon Tube	Large percentage of gas chiefly of anaerobic type; no acidophilus colony	Large percentage of gas consisting of colon and Welchii types, with or without acidophilus colony.
Petri Plate	No acidophilus colon present; other colonies numerous and variable in type	With or without acidophilus colony; other colonies are quite numerous and variable
Microscopic Examination	Gram-positive, 0-30 per cent; predominance of coli group with spore-bearers and cocci; gram-negative abundant	Gram-positive,10-30 per cent; a few rod shaped acidophilus-like bacilli; spores often scattered; B. Welchii present.
Macroscopic examination	Scybala or formed; liquid or semi-liquid; putrid,hydrogen sulphid, ammonia or butyric odor; dark brown; mucus often present, with or without blood	Formed or liquid; putrid odor; dark brown; mucus often present, with or without blood
Chemical Tests	Reaction alkaline, acid or neutral Occult blood often present	With or without occult blood
Parasites	Present or absent	Present or absent

INTESTINAL FLORA

Mixed	Semi-formentative	Formentative
Soft curd or firm coagulation with or without whey; moderate percentage of gas; fair reduction of litmus	Firm massive coagulation with moderate amount of whey; small percentage of gas; reaction acid	Firm massive coagulation with whey; 0-10 per cent of gas in inner tube; reaction distinctly acid
B. Welchii positive or negative	B. Welchii negative	B.Welchii negative
Turbidith,with or without scum; polliclo sodimont moderate; gas in inner tube, 25-40 per cent	Turbidity, with or without scum or polliclo; gas 5-25 per cent according to the number of B.coli	Turbidity slight,with or without scum or polliclo;.gas 0-10 per cent according to the number of B.coli.
Fair amount of gas dominated by B.coli type; some acidophilus colonies	No gas or little of B.coli group; moderate number of acidophilus colonies	No gas formation; Abundant acidophilus colonies
Some acidophilus colonies; other colonies fairly variable.	Many acidophilus colonies; a few other types	Abundant acidophilus colonies; a very few other types
Gram-positive, 35-50 per cent; acidophilus-like bacilli mixed coli type; B.Welchii in small numbers or absent	Gram-positive,55-70 per cent; presence of many acidophilus bacteria; total absence of spore-bearers	Gram-positive,75 per cent up; presence of abundant acidophilus-like bacteria with a few coli group; no spore-bearers
Partly formed or mushy; no odor or slightly putrid; color variable; with or without mucus or blood.	Partly formed or mushy; no odor or sour; green or yellow; no mucus; no blood.	Fluffy, mushy or partly formed; sour or no odor; green or yellow; no mucus; no blood.
Occult blood seldom present	Occult blood negative	Occult blood negative
Absent	Absent	Absent

INTESTINAL FLORA

GRADES

A. Very excellent.

Characteristics: Sour odor, reaction acid. No Welchii. Aciduric organism numerous.

A. Excellent flora.

Characteristics: Sour odor, reaction acid. No Welchii. Few aciduric organisms.

B+ Very good flora.

Characteristics: Sour odor, reaction acid. Few Welchii. Few aciduric.

B. Good flora.

Characteristics: Sour odor, reaction alkaline. Few Welchii. Aciduric organisms.

B- Fair flora.

Characteristics: Sour odor, reaction alkaline. Many Welchii. Few aciduric.

C. Bad flora. Putrefactive.

Characteristics: Putrid odor, reaction alkaline. Welchii abundant. No aciduric.

D. Bad flora. Butyric putrefaction.

Characteristics: Rancid odor. Reaction acid. Many Welchii. No aciduric organisms.

100	A	Aciduric	Very excellent.
90	A	"	Excellent.
70	B+	"	Very good.
50	B	"	Good.
30	B-	"	Fair.
10	C	Alkaline	Bad.
10	C	Butyric	Bad.

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12. Wenyon - Protozoology: A Manual for Medical Men, Veterinarians, and Zoologists. William Wood and Co.

13. Hegner and Taliaferro - Human Protozoology. Macmillan,

14. Luger - Grundness der Klinischen Stuhluntersuchung. Julius Springer, Wein.

15. Brumpt - Precis de Parasitologie, Masson et Cie, Paris,

16. Kendall - Bacteriology: General, Pathological, Intestinal. Lea and Febiger.

~~April 1st 1881~~

The object of this circular is to present ~~facts and figures of~~ interest to the stockholders, bondholders, and other friends of the Sanitarium facts and figures of interest to all ~~sister~~ who are interested in the prosperity of the institution.

The Sanitarium, ~~under~~ the title of the western Health Reform Institute was formally opened for the reception of patients, - - - - - - - - - - 1866. In the spring of the following year the legal steps necessary to constitute it a legally incorporated institution were taken, a sufficient

amount of stock having been pledged and paid in to to meet the requirements of the law.

~~About the same time~~
~~That the Health Institute was~~
~~opened~~
~~In order to forward the~~ interests of the institution, its managers began the publication of the Health Reformer ~~which~~ now known as Good Health. The journal in two years ~~has~~ attained a subscription list ~~circulation~~ of several thousand, and ~~which~~ has maintained a paying circulation ~~or~~ ever since. As its prosperity has increased, so has that of the institution. Each has been a help to the other. The patronage of the institution increased so rapidly that it very soon seemed necessary to enlarge its

facilities, and a new main
building was started upon
and in - - - - - - - - - - - - - -
about $13,000 was expended
on the building when the
work ceased for lack of
funds. A change of manage-
ment occured about this
time, and as the prospects
for raising the necessary
funds did not seem very
bright, so much of the structure ~~which~~
~~had been reared as far as~~
as had been erected was torn
down. This of course involved
a loss of $13,000, and brought
great embarassment upon
the finances of the institution;
~~But~~ but as the patronage
~~did~~ increased and a large
amount of additional stock
was taken, the debt was

wiped out within three years and considerable real property ad estate added to the prosperity of the institution. From this time there was a steady growth in the prosperity of the institution, until its fame as an institution for the treatment of invalids chronic invalids has extended to every State in the Union. As the times have grown better within the last few years, the patronage of the institution has increased with great rapidity. Many years ago the old facilities for housing and treating patients were found to be entirely inadequate, and the present main building was begun. In about one year it was completed, and with appropri-

ate ceremonies dedicated to the treatment of the sick and the relief of suffering. ~~The~~ The erection of new and more commodious buildings, and the introduction of ~~and~~ improved facilities and modes of treatment, gave to the Hospital a prosperity of the institution a great influence, ~~and~~ the influence of which increased with each year. The number of patients treated ~~that~~ in the last three years more than equalled the whole number treated previous to that time. In addition to the ordinary medical treatment employed in ~~most~~ other institutions of this sort, some of the more difficult branches of surgery have become prominent features

in the institution, which, together with the completeness of its facilities and the perfection of its sanitary arrangements, has given to the institution a standing among scientific medical authorities foremost among all institutions of its class. A large share of the patronage of the institution now comes through the recommendations of the many physicians who were already prejudiced against it.

Financial Standing of the Institution.

While the institution has been gaining in professional repute, it has also gained in financial strength and

Stuart brought several

prosperity. From a small beginning it has become the largest and most prosperous institution of the sort in the west, and this ~~not~~ in spite of many obstacles, ~~& foes~~ of chief among which should be mentioned the large demands made upon the institution for charity treatment. These demands come from many different sources but particularly from the following:-

1. S. D. Adventists who are in reduced circumstances, depending upon their daily labor for support, with dependent and needy families. In many instances these persons are ~~located~~ members of poor Churches & Conferences from which no help can be

expected. The come to the Sanitarium sick and suffering and they always find a door open to receive them. For it would be inhuman to turn them away, although they 2. may have no money to ~~pay~~ meet their expenses, even for food and fuel.

2. Poor Sabbath keepers who come to visit the Sanitarium and become only humbugs to pay, ain remuneration for their treatment. They are sick and suffering, and it is as much a part of the object of the institution to give them relief. They must be helped if possible. It is almost impossible to resist their entreaties to trust them. They cannot be turned away. In many cases these

Persons recommended by
~~the~~ ~~&~~ ministers in good
standing, presidents of State
conferences, or elders of churches.

3. The employes of
the Review & Herald
Office and most of whom
work for very small
wages, barely enough to
pay for food and room rent
with a pittance for cloth-
ing, and have nothing left
to pay for medical
treatment, when these
struggling ~~struggling~~ sacrificing persons
~~struggling~~ with loves
are frustrated by disease,
they look to the Sanitarium
for help and Sanitarium
doctors and helpers toil
without compensation for
their relief in many cases
and the funds of the institution
are used to settle the bills.

4. Poor students, when taken ill, are generally ~~treated~~ cared for largely at the expense of the institution, and if any charge at all is made it is less than actual cost, and the bill is rarely collected.

5. The church of the Battle creek church is very large church made up chiefly of our members who look to the Sanitarium for help in time of illness, and if not are here in fine is the institution ever remunerated for the expense incurred.

6. The managers of the institution also find daily knocking at its doors the sick, sad, suffering ones

who look to this as their
last hope after having
sought in vain for health
elsewhere, and having spent
their money in fruitless attempts
~~to~~ re efforts. They have a
few dollars, and expect
more in a week or two. Their
tearful appeals are too +
touching to be resisted. They
are disappointed in the ex-
pected help. Pecuniary help,
but in a few days find
pee evidences of returning
health, hope returns, the
sad face lightens, the step
grows more buoyant, the
grateful heart
pours forth a lavish
utterance of gratitude, ~~but~~
~~each week's bill goes unpaid~~
at and who can have the

heart to snatch from the
suffering ones their last hope
for earthly comfort & even
though each weeks bill goes
unpaid? As soon as they
are well started on the road
to health, they are sent to their
homes with a home fees
discipline, but an unpaid account
bill stands upon the books
destined to swell the
charity bill.

Some shrewd business
man will say, why allow
these persons too poor to pay
their bills to receive favors
the benefits of the institution?
We answer, the suffering sick
poor need help and more
than the wealthy invalid.
The latter can surround him-
self with comforts which

greatly mitigate his sufferings
while the severely stricken
sick one must suffer the more
on account of his illness, even
for the ~~necessaries~~ & comforts
necessary in health. The
object of the institution
would never be attained if
the sick poor were ~~turned~~
heartlessly turned from its
doors. Furthermore, the
greater portion of those who
hold responsible positions
in the institution labor there
at a sacrifice, some sacri-
fice thousands of dollars
every year; these could
never be induced to labor
and toil, often carrying
heavy burdens, at salaries
far ~~from~~ short of what they
could command elsewhere

were it not for the fact that this institution is a benevolent and philanthropic enterprise, offering relief and succor to the worthy poor as well as the rich. the charitable character of the institution being well known abroad, hundreds who know not where else to go, or what else to do, flock to its doors, and entreat admittance.

The grand total of all these charities since the foundation during the fifteen years of the existence of the institution amount to the magnificent sum of $600,000. We say magnificent sum; for although this

it does not represent a dollar of profit in the treasury of the institution it does represent health, happiness, comfort, and spiritual as well as physical blessings to hundreds, yes thousands, who though too poor or too neglectful of duty to make remuneration for the good done them may be have blessed the world in some way sufficiently to more than compensate for the expense incurred in their behalf.

A little comparison just here ~~will~~ may be of interest. The total amount of stock taken in the institution, ~~accounts~~ to date, deducting what has been purchased

back, is ~~or~~ a little less than $34,000. The amount of treatment ~~for~~ administered for which no compensation has been received, to date, is over $10,000. Deducting the former sum we have $6,000, from which we see that every dollar ~~that~~ donated to the institution has been given to the poor, and ~~get~~ 1,000 more. And yet, notwithstanding this munificent liberality, the property of the institution has been managed with sufficient care to annul the value of every dollar of stock taken. The net assets of the institution after ~~paying~~ deducting all demands of ~~agent~~ every sort against

The total amount of donations to date is $2,000, making $3.5,000 the whole amount donated to the institution in stock, and gifts, and legacies.

~~Has~~ passed it, amount to over $7--.000, according to the last annual report, which was prepared with very great care so as to insure absolute accuracy, an expert being employed for several weeks in auditing all the accounts ~~and~~ of the ~~co~~ and business and examining the financial standing of the institution, which is enough to say every stock holder every dollar of ~~stock~~ money paid in, and seven per-cent interest on the same from the time the stock was taken.

Of the ~~charity~~ amount earned on charity should be added & the amount really saved, each share of stock

costing only $25 would
~~xxxx~~ be worth $75. instead
of $50 as is really the
case.

We would like to ask,
where is there an institution in the country, in the world, that can make a better showing than this capital stock has been all given away, and pure, and yet it has left two dollars for each to return to the stockholders in case the property should be sold and the corporation disorganized. Surely we have here a verification of the words of the Wise Man, "There is that scattereth and yet increaseth."

It should be added that

the institution has not been favored in any way financially and has not been the recipient of any emoluments of any sort. It has not even had the benefit of large funds held on deposit ~~more~~ until used, sometimes for years, nor of large deposits at ~~nominal~~ without interest, or at merely nominal rates. ~~Even~~ The profits on health ~~New~~ new work which really ~~New~~ new art of this institution have gone to build up other institutions instead of this. Even the ~~health~~ annual statement by the ~~Health~~ Health Institute of a loss of several hundred dollars, ~~has~~ while it has yielded ~~as~~ profits to the amount of several thousand dollars ~~to Dollars~~ during the last

twelve years, has been of no pecuniary benefit to this institution which fostered it except as an advertising medium, until the present year.

It ~~does not~~ is not
necessary to emphasize
the fact that the Sanitarium
as a financial enterprise
has not only been self-sus-
taining, but has carried burdens
such as have been sustained
by no other institution. No
other institution has donated
~~more~~ to assist other the poor or-
to, other institutions, paid
sufficient, to equal ~~to~~ ~~five~~ ~~per cent~~ seven per cent interest
on its capital stock. ~~to pay~~
~~nothing of the cost~~
~~which made than the whole~~
~~capital stock~~ ~~&~~
amount raised to
The managers of the institution
do not complain of the bur-
dens which have fallen
upon the institution, since
they fully believe that it

true mission is to relieve and
comfort the sick and suffering
poor, to do a work of philan-
thropy, to imitate the example
of Christ is his mission of
healing diseased bodies and
sin-sick souls, ~~And~~ and
if there were no debts to be
paid, there would be no
occasion for thus speaking
so explicitly of the charities
supported by an institution
whose principle and
object is charity; but
the embarrassment of a large
debt and the large amount of
anxiety and care growing
out the ~~to~~ efforts necessary
to meet all our obligations
as they mature, ~~and make~~
~~it desirable~~ and the large
sum annually paid for
interest which might otherwise

Paper

$180.60
52.00
$242.00

.24
40
.64

35

40

40

47

.65
24
.89

90

.24
.22
44

32
5 1.20

be used for the relief of the sick and suffering, make it desirable, & and necessary for the best good of the institution, that the debt should be paid as soon as possible, or at least so reduced as to free the institution from all embarrassment. This in order to accomplish this, the only help asked for is this: aid in carrying an burden of charity. If the institution could be relieved of this burden for a time, or a considerable portion of the past amounts expended in the past could be refunded, no other help would be needed; but with a charity bill

amounting to over $14,000 a year, and add interest bill of $6,000, it must be readily seen that the institution is struggling with against heavy odds; but notwithstanding all the embarrassment, a considerable amount can be saved, as shown by the fact that after all charity bills have been met, and interest paid, there has been still left a profit of several thousand dollars on the labor of last year. If to this could be added the amount really earned on charity, a large annual reduction could be made on the debt.

We ask, in view of these facts, are the

the friends of health re-
form, the friends of suf-
fering humanity & the
friends & the Sanitarium
kind of the cause, willing
to see this institution
struggling along under
its heavy load of debt,
incurred for the purpose
of increasing its power for
usefulness, and at the
same time carrying
doing every year more
charity work than all
our other institutions
together have ever done
from their establishment
to the present date. We
do not complain of the
work, this is in a line,
and just what ought
to ~~do~~ be done; but is it
not asking rather something

very extraordinary to require the institution to ~~annex~~ pay several thousand dollars interest on facilities for doing good and then expend about one-half of its profits every year, sometimes more, in retiring the poor without compensation, and still expect it to make a large annual reduction in its debt? One the friends of this enterprise willing by their silence or by their inability failure to help carry the burdens of their unfortunate and suffering fellow men, to compel the managers of this institution to ~~refuse~~ place it upon a strictly money making basis exclusive

and to resolutely close its doors to all but those who are able to pay will for what they receive? On what principle of ~~~~ This must certainly be done unless if debts are to be paid, ~~and~~ the necessaries ~~of~~ unless other institutions and the friends of the cause ~~and~~ ~~or other institutions~~ take hold to help carry these burdens. Can any person show a sufficient reason why a single institution should be obliged by to do nearly all the charity work of the whole denomination? Certainly After ~~the~~ an institution has given away more than was ever given to it, ~~it ca~~ has it not done its full

duty until ~~+~~ its treasury has been refilled by new ~~donations.~~ contributions?

But the question will be asked: Why was so large a debt created? ~~The only answer~~ We answer, the facilities of the institution had become so deteriorated and inadequate to meet the demands of the times that ~~it to~~ improvements were absolutely necessary to prevent the decay ~~and~~ of the institution Before the recent improvements scores of patients left the institution after remaining but a few days because the facilities afforded were so much behind the times. Now the Sanitarium stands ahead of all other institutions in this respect, and patients are thoroughly satisfied of the fact. Those persons who have

visited many other institutions are generally the best satisfied of any who visit the Sa. class of patients.

Some have questioned the propriety of the erection of so large a building. It is true that at the time the building was started it was not supposed that it would cost nearly so much as ~~the event~~ proved to be the case, since the builder's estimates were less than half the actual cost, and it is probable that if the real cost had been known at the first so large a building would not have been attempted at that time; but it is nevertheless true that the present building, notwithstanding its size is even now inadequate for the accommodation of the inmates of the institution. In fact, there has not been a time since the building was

erected when it would have
been ~~possible to~~ sufficient to
accommodate the whole number of
guests and employees, and it has
been necessary all the time to ~~have~~ rent ~~all the~~ the
~~room~~ ~~for to~~ two ~~to~~ or more cotta-
ges in addition to the six other
buildings owned by the institution, ~~in~~
~~order to get along.~~ It has already become necessary
to provide some twenty additional
rooms by renting neighboring cottages,
to meet the ~~present~~ demands of the present
season. The managers of the institution
can see no way in which it would have
been possible to have got along with
~~any~~ a building any smaller; ~~than the~~
~~present~~ and, indeed, the necessity
for additional buildings, and the
difficulties in the way of providing
them is one of the embarrassing
problems which threatens to speedily
demand a prompt solution. Nearly

way a smaller building could be made to ~~answer the demands of the wants meet the wan~~ answer the purpose would be by refusing admittance ~~to~~ to new comers during the ~~most~~ crowded season of the year. Within two weeks of the present writing every bed in the whole institution, main building and cottages, was occupied; ~~by the~~ and the present prospect is that the present facilities will be quite inadequate ~~&~~ for the accommodation of guests during the present season, notwithstanding the extra provisions made by renting several cottages in the neighborhood.

Dated

A. Although the present Board of Directors does not comprise in its number a single person who was a member of the Board at the time the new building was begun, and hence have no occasion to plead in self defense, they feel under obligations to say that the Board of Directors then acting gave to the matter careful and prayerful consideration and acted according to the best light they then had and in full harmony with those of most experience in the cause; and it is even more difficult to say what ~~else~~ more could have been greatly preferable. There is room ~~for~~ much room.

How to Help.

We believe there are ~~[illegible]~~ hundreds of true friends of the institution who are ready to lend a helping hand as soon as they learn of the necessities of the case, ~~and provided they~~ and further benefit will say that there are four ways in which very substantial assistance may be rendered to this institution; as follows:—

1. By taking stock to replace that which has been given away, and inducing

~~2. By~~ others to do the same.

2. By donations and legacies to the institution or to the Sick Poor Fund.

3. By the loan of funds at low or moderate rates of interest.

4. By presenting to the sick, everywhere, the merits of the institution and inducing them to ~~come here~~ visit it.

Ministers, Y. & M. ~~Directors~~ and others whose duties lead them much among the people, can be especially serviceable in this work, and to them we appeal & in particular, to aid us in ~~the~~ ~~same~~ one or more of the ways pointed out. The institution must be maintained its charity work, and by the aid of its numerous friends who ~~do~~ ~~by~~ ~~needs only to be~~ hearts need only to be made aware of the assistance ~~needed~~

required to inspire them to do
their duty ~~nobly~~ freely and
promptly, its ~~real objects~~
philanthropic objects must
and will be carried out. It
is especially desired that
~~advantageous~~ loans on
long time and at low rates
of interest should be secured,
~~there is a considerable amount~~
~~of money~~ by means of which many
obligations may be met, ~~as it~~
~~has~~ so far, ~~as it~~ every obli-
gation has been promptly
met when due, and the
managers take care to be in
readiness ~~to meet anything~~
to fulfil all agreements.
If the same confidence
~~that~~ which has been ~~manifested~~
in the past shall be continued
in the future, this may be

the case until the last dollar of the debt is paid. All we ask is a continuation of confidence and coöperation.

Great care is taken to ~~make~~ keep the finances of the institution in such a condition that all claims against it will be perfectly safe. The Board of Directors keep a jealous watch over this matter, as they value above estimate the excellent financial standing which the institution enjoys among with business men and institutions in all parts of the United States. The bonds of the institution are at a premium of 3 % per cent. Its stock is worth 200 per cent of par value.

A person who pays $ into the treasury of the institution $25 per week, receives a certificate which entitles him to $50 in case there should be a decrease of the property. The institution has a credit of several thousand dollars at the bank, in readiness to meet any obligation due. It is more prosperous in every way than at any previous time in its history. Last year the profits for the labor performed was $17,000; of this $6,000 was expended for interest and $4,000 for charity, leaving ~~only~~ $7,000 actual gain. ~~It~~ If the charity bill could be lightened, and as the interest bill lessens, the actual profits will of course greatly

increase. The present year the prospects are much better than last. By various changes which have been made looking toward economy by the acquisition of the profits of the publication of Wood Dealer, and by other favorable circumstances, it is believed that the profits of this year will be made to exceed the last by several thousand dollars. Those who believe in the institution as one which was founded by God to accomplish a special work, will certainly not entertain any fears as to its ultimate success; but in order to make security doubly sure, the managers take the precaution to keep the institution insured for a suf-

ficient sum w that in
case of ~~fire~~ such a calamity
as fire the cash received
for insurance added to the
cash value of the real estate
would be simply suppient
to meet every obligation
promptly. ~~The~~ This mak
~~as loan to this institution~~
~~more certainly secure than~~
the security offered by this ins
tion ~~better than that of any othe~~
as good as could be asked f
and it affords ^ no little satisfactim t
managers to be able to say this.

Another cause of good f
prosperity of the institution whic
we should not omit to mention is th
fact that Mrs. Lowell, all, whose
faithful and efficient labors in
connection with the office of the
Signs of the Times, of Oakland, Cal.,

during the last few years has added greatly to the prosperity of that institution, has finally accepted the urgent invitation of the Board of Directors to connect herself with the Sanitarium, by filling a very important position. Her long and varied experience and natural qualifications for the position will render her services almost invaluable and

Much of importance has been left unsaid on account of the limited space allowable in a circular like this; but any further information respecting any point will be gladly furnished by any one of the officers of the Board.

Form 15-10m-8-30 97.

STATEMENT.

Battle Creek, Mich., _____ 189'

M. Weekly Pay Roll

LEDGER FOLIO _____

. . . IN ACCOUNT WITH . . .

Battle Creek Sanitarium.

3/10/00	10 00	
3/24/00	10 00	
3/31/01	10 00	
4/21/01	15 00	
4/28/01	14 00	
5/5/00	10 00	
5/12/00	10 00	
5/19/00	20 00	
5/24/00	8 00	
6/2/00	19 00	
6/9/00	20 00	
6/16/00	30 00	
6/23/00	20 00	
6/30/00	5 00	
7/7/00	10 00	
7/14/00	20 00	
7/21/00	20 00	
7/28/00	15 00	
8/4/00	24 00	
8/18/00	20 00	
8/25/00	20 00	
9/1/00	30 00	
9/8/00	20 00	
9/15/00	30 00	31 00
9/22/00	10 00	
9/30/00	15 00	
10/6/00	22 00	
10/13/00	20 00	
10/20/00	20 00	
10/27/00	—	
11/3/00	—	
11/10/00	10 00	
11/17/00	20 00	
11/24/00	10 00	
11/30/00	10 00	
12/8/00	10 00	
12/15/00	20 00	
12/22/00	7 75	
12/29/00	10 00	
1/5/01	10 00	
1/12/01	10 00	
1/19/01	10 00	
2/3/01	—	
2/10/01	—	
2/15/01	—	
2/24/01	—	

Form 15-10m-8-30 97.

STATEMENT. Battle Creek, Mich., 189

M

LEDGER FOLIO . . . IN ACCOUNT WITH . . .

Battle Creek Sanitarium.

Mch 3/01
3/10/01
3/19/01
3/24/01
3/31/00 500

592

Form 15-10m-8-30 97.

STATEMENT.

Battle Creek, Mich., 189

Mr. Monthly Pay Roll

LEDGER FOLIO

. . . IN ACCOUNT WITH . . .

Battle Creek Sanitarium.

February 1900

4 98		
4 40		
4 96		
4 24		
4 72		
4 97		
4 88		
4 66		
4 64		
4 84		
4 98		
4 72		
4 99	61	98

March

4 98		
4 88		
4 80		
4 04		
4 95		
4 44		
4 98		
3 06		
4 96		
4 99		
3 85		
4 96		
4 43		
4 68		
4 34		
4 69		
3 60		
3 06		
3 84		
4 34		
4 23		
3 60		
4 52		
4 89		15½
4 52	109	63
	171	61
	203	47
	$375	08
	592	00
	967	08
	37	75
	1004	83

Work

Form 15-10m-8-30 97.

STATEMENT.

Battle Creek, Mich., 189

M

LEDGER FOLIO

. . . IN ACCOUNT WITH . . .

Battle Creek Sanitarium.

April

4	90		
4	92		
4	80		
4	90		
4	48		
4	80		
4	72		
4	96		
4	80		
4	68		
4	78		
3	89		
4	42		
4	86		
4	80		
4	62		
3	79		
4	96		
4	68		
4	14		
4	92		
4	86		
4	96		
3	85		
3	12		
4	26		10
4	80	123	47

May

4	80		
4	15		
4	15		
4	86		
4	34		
4	96		
4	40		
4	32		
4	92		
4	68		
4	48		
4	80		
4	93		
4	70		
4	10		
4	98		
3	79		
2	64	80	00

Eat slowly, masticate thoroughly. | No spice but appetite.

SANITARIUM

BILL OF FARE.

VEGETARIAN TABLE.

DINNER.

Hour. 1:30 P. M.

The Dinner will be served in four
courses, ten or fifteen minutes being occupied by each course.

The dishes marked constitute the Bill of Fare for this day and meal.

As a man eateth, so is he. | Eat ye that which is good.

DINNER.

SOUPS.

Potato Soup,	Green Corn Soup,	Parsnip Soup,
Vermicelli Soup,	Pea Soup,	Vegetable-Oyster Soup
Rice Soup,	Tomato Soup,	Vegetable Soup,
Celery Soup,	Barley Soup,	Macaroni and Tomato Soup,
Milk Soup,	Scotch Broth,	Bean and Tapioca Soup.
Brown Soup,	Bean Soup,	Lentil Soup,

GRAINS.

Oatmeal Mush,	Cracked Wheat,	Farina,
Graham Mush,	Crushed Wheat,	Wheaten Grits.
Cornmeal Mush,	Hominy,	Rice,
Samp,	Crushed Barley,	Maizena,
Pearl Wheat,	Granola,	Gluten.
Wheatena,	Pearl Barley,	Frumenty.

VEGETABLES.

Potatoes (Baked),	Corn & Tomatoes,	Macaroni a l'Italian,
Potatoes (Boiled),	Beets,	Squash,
Potatoes (Mashed),	Parsnips,	Beans (Baked),
Scalloped Potatoes,	Carrots,	String Beans,
Sweet Potatoes (Baked),	Asparagus,	Lima Beans,
Sweet Potatoes (Boiled),	Peas,	Sweet Corn,
Potato Croquettes,	Rice Croquettes,	Green Corn Croquettes,
Chopped Potatoes,	Stewed Tomatoes,	Succotash,
Turnips,	Baked Tomatoes,	Spinach.
Cabbage,		

DESSERT.

Hydropathic Pudding,	Farina Custard Pudding,	Bread Pudding,
Variety Pudding,	Apple Pudding (Steamed),	Fruit Blanc Mange,
Baked Indian Pudding,	Fruit Pudding (Steamed),	Peach Pudding,
Baked Apple Pudding,	Cracked Wheat Pudding,	Apple Custard,
Lemon Pudding,	Fig Pudding,	Orange Pudding,
Chocolate Pudding,	Jellied Rice,	Corn Starch,
Tapioca, Manioca,	Sago,	Rice.

☞ An extra charge will be made for articles furnished which are not on the Bill of Fare for the day.

PIE.

Apple Pie,
Custard Pie,
Pumpkin Pie,
Berry Pie,
Lemon Pie,
Prune Pie.

CAKE.

Plain Graham Cake,
Cream Puffs,
Marble Cake,
Fruit Cake,
Fruit Cookies,
Washington Pie,
Buns,
Cookies,
Custard Cake.

NUTS.

Pecans,
Filberts,
English Walnuts,
Almonds,
Chestnuts,
Hickory Nuts.

BREADS.

Graham,
Fine Flour,
Corn Bread,
Rusks,
Graham Gems,
Corn Muffins,
Oatmeal Crackers,
Graham Crackers,
Fine Flour Crackers,
Boston Brown Bread,
Dyspeptic Wafers,
Whole Wheat Puffs,
Oatmeal Gems,
Gluten Gems,
French Rolls,
Finger Rolls,
Buns,
Snow Bread.

FRUITS.

Apples (Raw),
Apples (Stewed),
Apples (Baked),
Dried Apple Sauce,
Canned Peaches,
Canned Cherries,
Raisins,
Pine-apple,
Bananas,
Plums,
Melons,
Rhubarb,
Prunes,
Dates,
Stewed Peaches,
Canned Pears,
Stewed Cranberries,
Figs,
Tomatoes,
Currants,
Grapes,
Stewed Apricots,
Dried Peaches,
Canned Blackberries,
Canned Raspberries (Red),
Canned Raspberries (Black),
Canned Strawberries,
Prunelles,
Peaches,
Oranges,
Pears,
Canned Pears,
Whortleberries.

LIQUID FOODS.

Graham Gruel,
Corn-meal Gruel,
Oatmeal Gruel,
Farina Gruel,
Milk Porridge,
Milk.

RELISHES.

Apple Jelly,
Cranberry Jelly,
Currant Jelly,
Grape Jelly,
Honey,
Maple Syrup,
Cream,
Celery,
Lemons.

MISCELLANEOUS DISHES.

Dry Toast,
Caramel Coffee,
Fruit Toast,
Cracker Dust,
Cream Toast,
Cream Gravy,

CHRISTMAS 1891

"ON EARTH PEACE, GOOD WILL TOWARD MEN."

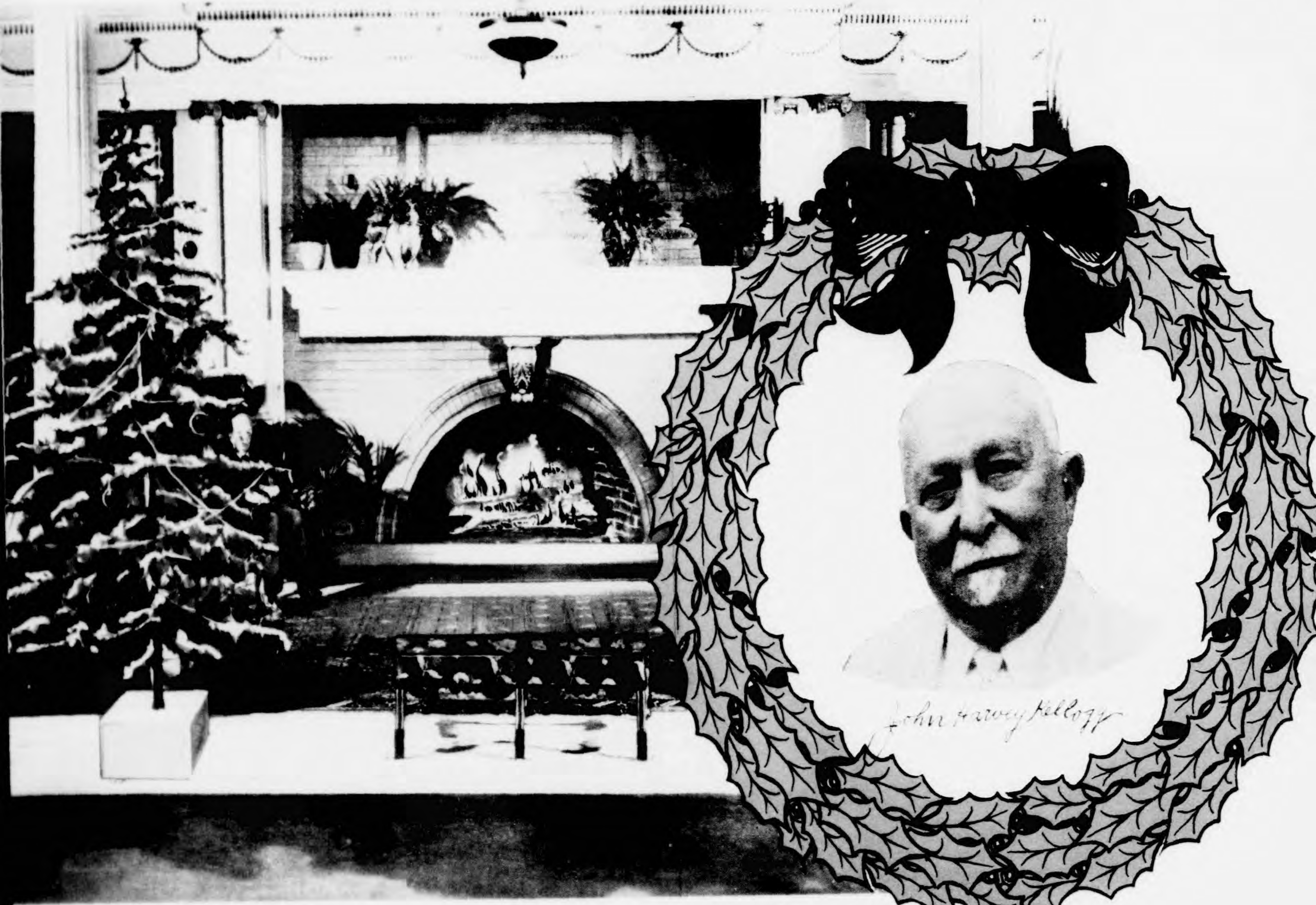
ACCEPT THE BEST WISHES OF DR. AND MRS. KELLOGG

Cordial Holiday Greetings

John Harvey Kellogg

Battle Creek Sanitarium

Season's Greetings 1942


John Harvey Kellogg

"Keep yourselves in the love of God looking for the mercy of our Lord Jesus Christ, unto Eternal Life."—Jude 21.

With Cordial Greetings:

Dr. & Mrs. J. H. Kellogg.

Battle Creek,

Mich.

Christmas. 1897.

New Year. 1898.

Dr. and Mrs. John Harvey Kellogg

request the honor of your presence

at the marriage of their daughter

Agnes Grace

to

Dr. Benton Noble Calver

on the evening of Tuesday, the fourteenth of July

One thousand nine hundred and eight

at half after six o'clock

The Oaks

Battle Creek, Michigan

T. H. Horne

after the first of October

315 Chancery Street

SANITARIUM

BILL OF FARE.

BREAKFAST.

Hour 7:30 A. M.

GRAINS.

Oatmeal Mush,	Cracked Wheat,	Farina,
Graham Mush,	Crushed wheat,	Wheaten Grits.

MEAT AND EGGS.

Cold Meat,	Dried Beef,	Hash,	Beefsteak,
Boiled Eggs,	Poached Eggs,	Egg-nog,	Scrambled Eggs.

VEGETABLES.

Potatoes (Baked),	Sweet Potatoes (Baked),	Beans (Baked),
Potatoes (Mashed),	Sweet Potatoes (Boiled),	Peas,
Potatoes (Boiled).		

BREADS.

Graham,	Cornmeal Gems,	Rusks,
Fine Flour,	Boston Brown Bread,	Oatmeal Crackers (Shortened),
Finger Rolls,	Corn Bread,	Oatmeal Crackers (Unleavened.)
French Rolls,	Oatmeal Gems,	Graham Crackers,
Graham Gems,	Dyspeptic Bread,	Fine Flour Crackers,
Whole Wheat Puffs.		

The dishes marked constitute the Bill of Fare for this day and meal. (OVER)

LIQUID FOODS.

Graham Gruel,	Oatmeal Gruel,	Milk Porridge,
Corn-meal Gruel,	Farina Gruel,	Milk.

FRUITS.

Apples (Raw),	Rhubarb,	Dried Peaches,
Apples (Stewed),	Prunes,	Canned Blackberries,
Apples (Baked),	Dates,	Canned Raspberries (Red),
Dried Apple Sauce,	Stewed Peaches,	Canned Raspberries (Black).

MISCELLANEOUS DISHES.

Butter,	Coffee,	Fruit Toast,
Cream,	Caramel Coffee,	Dry Toast,
Tea,	Cream Toast,	Beef Tea,
Cracker Dust.	Chicken Broth,	Lemon,
Cream Gravy,	Tomato Toast.	

An extra charge will be made for articles furnished which are not on the Bill of Fare for the day.

The

Battle Creek

Sanitarium and Hospital

Nurses Alumni

Association

Invite Your Presence

at a Tea

Honoring Mrs. Mary Staines Foy

Thursday, June 19, 1941

2:30 - 4:30 P.M.

Sanitarium Mezzanine Parlors

The SCIENTIFIC PLAN OF HEALTH BUILDING

Arranged for the average person who is below par physically. Based upon the well-known Battle Creek Sanitarium System of Health Training

Health Extension Bureau
The Battle Creek Sanitarium
Battle Creek, Michigan

SCIENTIFIC PLAN OF "HEALTH BUILDING"

The Battle Creek Sanitarium System

FIRST STEP

COMPLETE PHYSICAL "INVENTORY"

- Blood and Blood Pressure
- Colon Examination
- Preliminary Examination of Eyes and Throat
- Examination of Mouth and Teeth
- Physical Strength Tests
- Bacteriological and Pathological Tests
- Fluoroscopic of Heart and Lungs
- General Physical Examination
- Taking of Medical History
- Registration and Assignment

SECOND STEP

MEDICAL TREATMENT AND DIET

- Manual Swedish Movements
- Prescribed Body Massage
- Corrective Gymnastics
- Special Treatments if Indicated
- Sanitarium Diet System
- Application of Mechanotherapy
- Application of Phototherapy
- Application of Electrotherapy
- Application of Hydrotherapy
- Daily Medical Supervision

THIRD STEP

SCIENTIFIC HEALTH TRAINING

- Dressing for Health
- Personal Hygiene
- Wholesome Habits
- Lectures and Demonstrations
- Home Study Helps
- Fresh Air Sleeping
- Healthful Recreation
- Outdoor Life and Exercise
- Eating for Efficiency
- The Annual Inventory

Battle Creek Sanitarium Co., Ltd.

Successor to

5

ESTABLISHED 1876.

Battle Creek Sanitarium

HEALTH FOOD CO.

MANUFACTURERS OF

Sanitas Nut Food Co., Ltd.

Choice Cereal Products and Canned Goods.

Battle Creek, Mich.

Friday Jan 5, 87

ORDER TABLE

Menu.

BREAKFAST

WEDNESDAY NOVEMBER 22, 1893.

BATTLE CREEK, MICH.

FRUITS.

3 Apples. 3 d Baked Apples. 3 Grapes.

GRAINS.

3 Farinose. 2 Graham Apple Mush.
2 Gluten Mush. 2 *Rolled Oats.* 2 *Graham Grits.* G *Gofio*
2 *Granola.* 3 *Avenola.* 2 *Dry Gluten.* 3 *Wheatena.*

VEGETABLES.

4 Baked Potatoes Brown Sauce. 3 Macaroni with Tomatoes.
4 Potatoes Stewed with Celery.

TOASTS.

Toasted Whole-wheat Wafers A *Zwieback.* 2 Cream Toast.
3 *Grape Toast.* 3 Cravy Toast.

BREADS.

A Graham Crackers. A *Dyspeptic Wafers.*
A Patent Flour Crackers. A *Plain Oatmeal Crackers.*
A Breakfast Rolls. A *Graham Gems.* A Whole Wheat Puffs

SAUCES.

3 Apple. 3-d Stewed Prune. 3 Pear.

LIQUID FOODS.

Caramel Coffee. 2 *Graham Grits Gruel.*
1 Boiled Milk. 1 Cream. 1 Milk.

ARTICLES PREPARED TO ORDER.

4 *Peas Puree.* 1 Buttermilk. 1 Milk, with Lime Water.
5 *Poached Eggs.* 5 Milk Custard. Snowflake Toast.
5 Egg Toast. 2 Cream Toast. 3 *Lemon Rice.*
3 Tomato Toast. 2 Egg Nogg. 2 Egg Cream.
3 *Prune Toast.* 5 *Floated Eggs.* 8 *Gluten Biscuit No.*
1 Junket. 5 *Poached Yolks of Eggs.* *Charcoal Crackers.*
Grape Toast. 2 *Pop Corn.* 3 *Baked Sweet Apples.*

Not more than three dishes will be served from this list to one person at a single meal.

☞ **Articles the names of which are printed in Italic, do not contain milk, or will be served without milk if so ordered.**
The numbers and letters preceding the articles named in the Bill of Fare refer to classified diet lists as indicated in the Diet Prescription Food, Dishes, Spoons, etc., must not be taken from the Dining Room. A charge will be made for articles taken in violation of this rule.
Patients ordering meals in room should write the name and room number below this line.

Mr..... ROOM NO,.....

Dr.Narancio in North America.
The Battle Creek Sanitarium.
An Emporium of Health.

One day a large steamer left upom our shores a great number of doctors and surgeons from North America. They came on a pleasure trip, but, as they were humanitarians they freely gave of their great knowledge for the benefit of all. One of the most distinguished of these was Dr.James T. Case, professor of radiology and an eminent surgeon of the great Sanitarium at Battle Creek, Michigan. Our doctors surrounded him with great affection and in return for the kindnesses shown him by our doctors, he liberally advised them from his wide experience. The great respect which we bear Dr.Case ma'es us think of him as a great mountain-peak whence the horizon is broader and the vision clearer. To him, Dr.Narancio was sent, so that he might seek his approbation of things accomplished and his advice concerning things to be done in future. Juan Jacobo, who accompanied Dr.Narancio, can speak with authority about this great "Mecca" of health established at Battle Creek, a very famous city for its large manufactures of nutritious and wholesome foods.

Dr.Narancio arrived there on one of these immense trains which have so shortened the distance between New York and Chicago that these g eat cities have become neighbors.

I.. When I heard the trainmen call "Battle Creek," I glanced out of the Pullman window and caught sight of a beautiful little city.

2. But .....where am I? Are you going to make me believe that this is a Sanitarium?

3. We had scarcely got off the train when a healthy-looking porter welcomed us with cordiality taking our baggage a nd inviting us to follow

him to one of the handsome big Sanitarium taxicabs. We were taken through beautiful paved avenues lined with trees. After passing several beautiful parks, we reached a large building of six stories, situated in a dominating spot on a hill and surrounded by others of no less splendor, it was the main building of the B.C.Sanitarium--the first and greatest institution of its kind in the world. As we turned into the main driveway I was very much impressed with the imposing fascade over the main entrance with its massive columns and porticos.

I had scarcely presented my credentials when I found friends to greet me and an atmosphere favorable to my plans. Juan Jacobo was very pleased, indeed, to have Dr.Case speak to him in the beautiful and familiar Spanish language, which is spoken by so few in that country. Not only did he speak Spanish well, but he also introduced us to the respected professor of Spanish in the High School, Me.E.A.Bray, a former resident of Mexico who has been living in Battle Creek many years and who will probably reside there permanently.

To see and to speak was all that Jacobo's soul wanted in this moment, for in this great institution there was a great deal to be seeing and to be admiring, so that, it could afterwards be told to everybody in Uruguay .

On either side of the lobby open long corridors which lead to the physicians offices, special consultation, examination, treatment rooms, clerical and business offices, which are always filled with patients going to and from consultations.

Connected with this great pavilion a large central wing is the palm garden which leads to the big in-door gymnasium. Two other large four story wings on either side of the gymnasium are the treatment rooms, bathrooms and swimming pools for men and women where several times during the day a great number of patients meet to take the prescribed treatment.

Opposite this building is another large building surrounded by gardens and tennis courts. Here are the great laboratories of the institution . Nearby is East Hall, a large brick building used as a home for the feminine personnel and as a lodging for the students in the nursing, dietetic and physical culture courses.

From here we see the larhe Sanitarium Annex, a beautiful structure of five stories, about as large as the Main Building. I have not told everything yet. In the midst of this green world, rise as if by magic art, I know not how many white chalets. They have all bean annexed to the Sanitarium and all filled with patients.

The power-house, laundry, pumps and storehouses are in buildings which by the harmony of their lines and the beauty of construction, do not mar the beauty of the landscape, but on the contrary, enhance it.

I have scarcely mentioned what there is there and it seems to me that in the enumeration I have forgotten many details; as the outdoor gymnasiums, the swimming pools, the solariums, and some distance from the city, the dairy, with its 250 registered Holstein cows and poultry farm, with its 500 chickens, from which fresh milk and eggs are brought daily for the use of the Sanitarium.

"Yes, there are 1400 patients and as many more attendants. During June , July, and August the buildings are filled and many suffering from minor ailments must be sent to lodge in the city hotels."

"But," I asked the one who gave me this data "is it possible that

you have more than enough patients to fill these buildings?"

"So possible that even now there is planned and work will soon be begun on another large building which will double the capacity. It is improbable but nevertheless it is true. It was my privilege to see the occupying of the cottages and the filling of the Annex. I also saw many who were lodged in the hotels and come each morning for consultation and treatment.

"But," you will say, "is this another Lourdes?'

"Yes," I answer, "A Lourdes but with this difference; there, idolatry and faith which is ignorance, make the cure by suggestion to the wills of hysterics and invalids: here, the imperious will of science, coupled with great experience permits those who carry out explicitly the instructions and advice of the specialists directing their treatment to obtain health. Here, the miracle is the result of a series of co-incidental forces which, little by little, cure the human organism. There the miracle is the product of ignorance and prejudgment practised by artists of hypocricy, crafty deceivers of the simply honesty of the people.

Therefore, there comes to Battle Creek pilgrims from the five continents not to bow before a tomb, but to undergo treatments more or less vigorous, but always rational.

Before continuing, I will make this remark: Juan Jacobo is not a vegetarian; he enjoys a good fish or a whole "bouillabaisse" a fine piece of meat, rare or made into balls or a chicken more or less "Supreme" or a la "Portuguese." No, he is not a "gourmete" but-----he likes to eat and if the meal is good, so much the better.

In spite of this bad habit of Juan Jacobo, he observed strictly the diet, almost lacto- vegetarian of this institution. Take into consideration

that this submission was based on the fact that they gave him nothing else to eat, since there was no alternative but that caprice of the patriotic Irish which leads to the grave. Juan Jacobo, not wishing to be capricious, accepted as a good thing that which under other conditions he perhaps would not have acepted. Moreover, this severe regimen was mitigated by two facts which made it extremely tolerable.

In the first place, all the milk and eggs used in this place, came from the farm belonging to the institution. In the sevond place, the menu was varied and interesting. This second reason more than the first won over the hostile spirit of Juan Jacobo, who in questions of meals has the motto: "rich and abundant." This vegetarian institution would delight even Carbonell and other promoters of this system in our own Uruguay.

In order to succeed in establishing the lacto-vegetarian diet in the Battle Creek Sanitarium, they proceeded in a scientific manner. They tried on subjects contracted for the purpose for the advantages of each system and noted the deficiencies which were evident in each diet. Thus was found that average which is used in the kitchens of the institution. But, thinking that taste often has an important position in the nutrition of the invalid, they sought means to approach even equal the savour of the food excluded from the vegetarian diet. So it was common to see and relish a very good dish of fine bran dressed with tomoto sauce served as the "piece de resistance" of the lunch or dinner.

Experimental work with white rats was carried on in order to form the list of foods which ought to be included in the normal diet. They tested the effect of rodents by shutting up many pairs of them in especially prepared cages and feeding each pair exclusively on one or two foods after an examination of weight, pulse, temperature, etc., had been taken and recorded.

The pair fed on nuts and milk were far superior to that fed on meat alone. That would convince the most daring opponent of vegetarianism--among rodents. It may be that conditions in man are not the same, for not all men are in my opinion white rats or even mice.

The medical knowledge of Juan Jacobo made him capable of judging the scientific methods used at Battle Creek. People fitted for a normal life, pay a high price for the success they achieve in the business or social world. Dyspepsia, hysteria, nervous attacks, mental inertia, neurasthenia, a hundred different diseases, in fact, with one origin: fatigue caused by overwork and poisoning from deficient hourishment. I,000 out of I,400 are in this class.

No one is treated without, as a first-step, a thorough physical examination. Often patients suffering from a so-thought incurable disease are completely cured when treated for a lesion more or less serious which is found in this examination. In the first place, the fluoroscopic X-ray operated by an e expert finds any possible imperfections in the heart or lungs. The X-ray shows how the digestive action takes place, shows anamolies, lesions, or slight irregularities of function. The X-ray expert sends his report to the physician who cares for the patient. Then they take his respiratory capacity and test his blood by the Wassermann. The urine is also tested. In one office they examine his hearing, in another his vision. A careful search is made for possible infection in teeth, tonsils, colon or other parts. Nothing is left to be clear or to be known positively and everything is carefully searched out. Each department sends separately its report, which combined, constitutes the base for the doctor to diagnosticate the case of the patient. The entire analysis is completed with a particular revision of the physical strength examination which is done by means of an ingenious apparatus invented by Dr.Kellogg, a patriachal figure, recognized as a technical and eminent man, appreciated and profoundly respected and who is head of this great institution.

Urine, blood and feces are analyzed by specialists. Many other observations are done by different doctors who are experts in each case.

When the former reviewing has been ended, the work of the principal doctor begins. With the information and analysis already studied and with the patient who is examined carefully, he has enough information on which to base his diagnosis and to prescribe the treatment which the patient must follow. When some doubt arises in the doctor's mind, he asks some advice after which the diagnosis is the result of the study among thirty or more specialists who have affirmed their opinion with their signature.

I would not say that an error is impossible. In case there is an error, the continued observation of the patient by the doctors verifies the correction, leaving no doubt whatever in the patient's mind.

Shall I speak something about the treatments? Well, scientifically, I cannot say very much; because I don't want to go very deep into details, for it would be something like ostentation on my part.

I will speak something about dinner. Well, somebody will say, what kind of a treatment! and yet, in the Sanitarium, dinner is perhaps, one of the main and most important thing for the treatment of the patient. There are three meals every day; breakfast at 8:00 a.m., dinner at 12:30 p.m., and supper at 6:00 p.m.

The large dining-rooms are filled with patients and guests.

Each patient finds his menu marked daily and left beside his plate. The proper food is selected for each patient. The calories are carefully computed and the proper amount of carbohydrates, protein and fats is accurately proportioned by the dietitians

You can well imagine the willingness with which one is shifted the responsibility of the food selection to one of these efficient white-costumed young women. There are many bright, intelligent, young women who are serving in the capacity of dietitians.

All the foods are delicious and are served in the most appetizing style imaginable. One does not miss the things which are forbidden because many other things are provided to take their place. Juan Jacobo thinks there is no hotel in the world which can serve better food than in the Battle Creek Sanitarium.

Let us now speak something about baths. There are many kinds of baths. I was told that there are many forms of hydriatic treatments; comprising sun baths, electric baths, Russian baths, sprays and douches, each having a different effect and being designed to relieve different conditions of suffering.

There are two large solariums, one for each sex with large swimming pools and an open gymnasium. Each patient lays down on a cot undressed and with the head covered with a cold towel, so that, the body will receive the intense heat of the sun from 10, 20, 30 or more minutes. In a few days the body will change its color from the white to the brown color.

In these solariums, the patients gather together under a physical director who directs all kinds of exercises, games like volley ball, basket-ball, foot-ball, base-ball and some other games.

I will now try to describe to you something about the scientific baths which have made Battle Creek Sanitarium famous and well known through the world.

In a large three-story bath department, one section of which is for men and one for women, the baths are administered.

On the first floor are what we may call the hydriatic treatments, comprising sprays, douches, electric light baths, salt rubs, legs and foot baths, sitz baths and fomentations of many different kinds, such treatment having a different effect and being designed to relieve various conditions of suffering.

On the second floor are found another kind of electric baths; like galvanic, and sinusoidal, where electricity is applied through the water. Also on this floor is found the massage department.

On the third floor we find the application of the galvanic current, the faradic current, static current and high frequency current. Five large rooms are fairly filled with electrical apparatus and this department of the Sanitarium is one of the most interesting and popular of the institution.

On the basement floor is found the mechanotherapy department which is full of various kinds of mechanical apparatus. To those who are weak and to many others suffering from neurasthenia , these exercises are a great help; for many who are unable to walk, they obtain good effects from the mechanical exercise they do. Many of these mechanical exercises give rest to the tired organs and help to dissipate aches and pains. All these treatments are under attendants who are thoroughly conscientious and zealous in their work and everybody feels confident that the physician's orders are being intelligently and effectively carried out.

I have to confess that under the manipulation of two Mexican brethers I lost 30 pounds. When I speak of these two Mexican brothers, I refer to the Yepex brothers who had to deal with a man whose weight was 286 pounds.

The large five-story Hospital Building occupies a block. Hundreds of critical operations are performed in this department by some of the surgeons of the institution, principally by Dr.James T. Case, who has a vast knowledge both in surgery and radiology.

I do not hesitate to say that Dr.Case is considered as the first roentgenologist in America and one of the best surgeons too.

This eminent gentleman of science will make a scientific trip through South America. He will go to Peru as a delegate if the Surgeons' Union, as a representative of the Battle Creek Sanitarium, as an official delegate of the U.S.Government and especially as a guest of the School of Medicine of Lima. All these honorable titles will speak more than my own words about the great scientific value of Dr.Case, a surgeon of the Battle Creek Sanitarium.

Now I am going to speak about the chicken farm. You may say, what a nonsense. From the hospital to a chicken farm.

Well,I can write and write for many months without any good order and arrangement of the many things I saw in that place, but I am telling you just the plain things.

Well, the chicken farm. There are thousands and thousands, all white, all about the same size, all full of life, joy and in great confusion, all with one purpose, to provide the eggs for the three thousand people in the Sanitarium.

Small and white for they were all Leghorns, with little flesh but great layers, happy and lively because they were well fed and have a good lodging.

In this great institution they do not eat meat of any kind. The roosters which are not kept for breed as well as the old hens are sold. The object of having so many hens is to get every

day fresh eggs and such eggs!

Now, I will talk about the dairy; this subject is very interesting. Large stables can be seen in this place The animal's head is placed in an apparatus in such a manner that she can move her head up and down without hurting; the purpose of doing this, is for her not to lick any part of her body while the milker does his work. The cow has nothing to do but to fill great buckets. They are very good animals; there are 250 of them and the one which gives the least, is twenty-two quarts a day. A dozen or more give 50 quarts a day.

As you see, it is like a spring of milk of which many people have the pleasure of drinking good frosh milk all the time but the fat ones.

Now, we come back to the institution again. I will take you through the laundry, where you can see hundreds and hundreds of linens for the institution, white as snow and smooth as velvet. Yes, that is so. Juan Jacobo has been to and fro and never has seen even in the big hotels to change so much linen and washing, to bleach and to sterilize.

The building is a very large one. I was told that they washed seven thousand towels, seven thousand napkins, four thousand sheets and some hundreds of tablecloths every day.

Besides the washing for the institution they have to do the washing for the patients and employees.

Everything is done by machine; few things are done by hand. No clothing from contagious people is allowed; the Sanitarium don't admit in its departments any people with infectious or contagious diseases.

The whole institution is so amazing in its operation that it is hard for the patient to determine just which phase of the work interests him most. Life at the Sanitarium is one of continued variety and interest. Every day there are concerts where one can hear good singers of both sexes or hear a good band or a good orchestra.

Dancing and smoking are forbidden. These are two things which seem to be repulsive, but there are a good many reasons. To substitute the first, they have some kind of gymnastics called choreography in pairs and with music. To replace the second they do respiratory exercises; that means to inhale oxygen instead of nicotine.

There are conferences given by some of the doctors in the institution.

On Monday night, Dr.Kellogg answers all kinds of questions which are placed in a box during the day.

Dr.Riley, specialist in neurology gives also conferences on nervous diseases, giving some advice how to get rid of them and explaining its dangers.

There are stereopticon or motion pictures as good as those which are given atthe best theatres. Life within the Sanitarium never grows dull of monotonous, always something to engage the patient's time pleasantly and profitably.

The rest hour is at 10 o'clock P.M.; everybody must be in bed at that time.

Some doctors and some nurses are on duty during the night for emergency cause or as they say in the Sanitarium watching the "sweet dreams" of everybody.

I cannot say any more about this great institution for lack of words. My vocabulary is too limited to express all what I would like to say about the Battle Creek Sanitarium, the emporium of health.

There is nothing so great in my mind as to admire this institution so well organized. A place where one can find life, health and comfort in every way. The founders, directors and managers have known how to work among great obstacles in order to help humanity, teaching her how to live right in this great world.

Juan Jacobo.

1925.

(CORPORATION FOR PECUNIARY PROFIT)

ARTICLES OF ASSOCIATION

OF

BATTLE CREEK CORRESPONDENCE SCHOOLS.

We, the undersigned, desiring to become incorporated under the provisions of Act No. 84 of the Public Acts of 1921, entitled "An act to provide for the organization, regulation and classification of domestic corporations; to prescribe their rights, powers, privileges and immunities, to prescribe the conditions upon which corporations may exercise their franchises," etc., do hereby make, execute and adopt the following articles of association, towit:

ARTICLE I.

The name assumed by this association, and by which it shall be known in law, is BATTLE CREEK CORRESPONDENCE SCHOOLS.

ARTICLE II.

This corporation intends to proceed under Section 1, Chapter 1, Part 1, of the above act.

ARTICLE III.

The purpose or purposes of this corporation are as follows:

Practical and theoretical instruction by correspondence and otherwise, including classes and lectures, in the art of right living, with special reference to the hygiene of the home and the individual, race betterment, eugenics and euthenics.

ARTICLE IV.

The principal place at which operations are to be conducted is the city of Battle Creek, in the county of Calhoun, State of Michigan, which shall be the post office of its main business office in Michigan, there being no business office without the State of Michigan.

ARTICLE V.

The capital stock of the corporation hereby authorized is the sum of Fifty Thousand Dollars ($50,000.00).

The amount of capital stock subscribed is the sum of Five Thousand Dollars ($5,000.00).

The amount of subscribed and paid in capital stock with which this corporation shall commence business is:

Subscribed, Five Thousand Dollars ($5,000.00).

Paid in, Five Thousand Dollars ($5,000.00).

The number of shares of common stock is five thousand (5,000) of the par value of Ten Dollars ($10.00) each.

The amount of common stock actually paid in is the sum of Five Thousand Dollars ($5,000.00), all of which has been paid in cash.

The amount of actual capital, in cash or property or both, which this corporation owned and possessed at the time of executing these articles is Five Thousand Dollars ($5,000.00).

ARTICLE VI.

The term of existence of this corporation is fixed at thirty (30) years from the date hereof.

ARTICLE VII.

The names of the stockholders, their respective residences and the number of shares of stock subscribed for by each are as follows:

G. Estill,	202 Manchester St., Battle Creek, Michigan,	200 Shares
B. C. Kirkland,	161 Oaklawn Ave., Battle Creek, Michigan,	100 Shares
L. Clyde Parshall,	123 Ann Avenue, Battle Creek, Michigan,	100 Shares
L. F. Cooper,	Battle Creek Sanitarium, Battle Creek, Michigan,	100 Shares

ARTICLE VIII.

No provisional officers and directors have been elected by the incorporators hereof to act for the corporation for the first year, and therefore in compliance with Section 6, Chapter 2, Part 1 of the said Act, the incorporators herein have named G. Estill, one of the said incorporators to represent them in filing these Articles of Association and to call a first meeting of the stockholders for the further organization of this corporation.

IN WITNESS WHEREOF, We, the parties associating, as shown under Article VII of these Articles, for the purpose of giving legal effect to these Articles, hereunto sign our names this 26th day of August, A. D. 1921.

G. Estill

B. C. Kirkland

L. Clyde Parshall

L. F. Cooper

STATE OF MICHIGAN)
) ss.
COUNTY OF CALHOUN)

On this 26th day of August, A. D. 1921, before me, a notary public in and for said County, personally appeared G. Estill, B. C. Kirkland, L. Clyde Parshall and L. F. Cooper, known to me to be the persons named in, and who executed the foregoing instrument, and severally acknowledged that they executed the same freely and for the intents and purposes therein mentioned.

Cyrus Saunders

Notary Public, Calhoun County, Michigan.

My commission expires July 2, 1923

ARTICLES OF ASSOCIATION

(CORPORATION FOR PECUNIARY PROFIT)

OF THE

BATTLE CREEK CORRESPONDENCE SCHOOLS.

Under Act No. 84, Public Acts of 1921

FILED
DEPT. OF STATE

..M.
AUG 31 1921

AUG 31 1921 P.M.

Copy

Cyrus J. Goodrich,
Attorney and Counselor,
626-627 Post Building,
Battle Creek, Michigan.

Where articles of association
Received and filed in this office
at 1:30 o'clock P.M. Oct-25-1921

Agnes M. Fleming
Deputy County Clerk

Calhoun County

613.12

NOTE FOR THE REVIEW.

While the Sanitarium fire destroyed a large amount of property, a sufficient amount was left to pay all the debts of the institution in full, so that the institution is not reduced to insolvency, and the insurance money, amounting to $154,900.00, has been promptly allowed, the loss on the building and contents being complete.

The sum of $200,000.00 must be raised to replace the buildings and contents. It is not necessary that the raising of this money should be a burden to any one, or that it should diminish the contributions to any other needy branch of the work. The management are endeavoring to lay plans by which the necessary funds can be secured without involving the institution in debt, and without embarrassment to any other branch of the work. Old patients will be called upon to make a thank offering for the benefit received through the ministering of this healing enterprise.

Already contributions from grateful patients are coming in. One gentleman of wealth, who has been for years a patron of the Sanitarium, has contributed $10,000.00 - another sends his check for $500.00. Others are sending in sums varying from one hundred to several hundred dollars. The business men of Battle Creek are raising the sum of $50,000.00, and the City is making many kindly offers of assistance in various other ways. The doctors, nurses and other employees are taking hold nobly to lift all they possibly can. One physician has offered his home and a few hundred dollars which he has at interest - all his earthly possessions, he and his wife having determined that they can cheerfully make this sacrifice for the sake of helping to lift the

great burden which has so suddenly fallen upon us. Everybody connected with the Sanitarium is laboring earnestly to help in this great emergency.

Other plans are being laid for raising money, which will be fully explained in the near future, after the details have been all completely arranged.

A council of leading brethren will be held at the earliest moment possible, to determine several important points in relation to the new building, as the Sanitarium managers feel that the enterprise is one which is too great for them to undertake without much ~~council~~ and deliberate council.

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613.17

Notice for the Papers.

I wish for myself and in behalf of the managers of the Battle Creek Sanitarium, to thank the many citizens of Battle Creek who rendered valuable assistance at the occasion of our recent disastrous fire, in helping our patients to places of safety, and for the kind spirit of hospitality manifested by so many in receiving patients and nurses into their homes. I wish also to thank the firemen for their brave efforts to save the buildings. Although their efforts were unsuccessful, I am sure that everyone did his best.

The East Hall and other buildings belonging to the Sanitarium which the fire spared have now been fitted up for guests and we are able to accommodate very comfortably the two hundred patients who still remain in the city. Treatment rooms being rapidly fitted up will be ready for use in a few days. Patients can receive as efficient and thorough-going treatment as before. Meals are served both in West Hall and East Hall. Treatment of various sorts is being administered to patients in their rooms. All are doing well and some declare that they are improving even faster than before. We appreciate exceedingly the loyalty of our patients which leads them to remain with us under such trying circumstances, and trust that they will be amply rewarded for their confidence.

At the Tabernacle, May 31,1903, 7 o'clock P.M.

Eld. A.T.Jones, Chairman.

----oOo----

"Religion and Health." (Address by Chairman.)

DIVINE AND HUMAN CO-OPERATION. Rev. D.D.Martin.

I am very sure there are hundreds in this audience that covet the small moment that I have in taking part in this program. We are glad for the auspices under which we are gathered. I must insist that I have the best topic on the program.

We are in a Christian land. We are recognizing Christian principles in all our doings. Every institution as well as every truth and principle, to be of value to men must be born of God,--in fact it is through him that we are lifted higher and higher, so that we can gain some degree of life and knowledge which had been hitherto shut away from us. And the whole revelation of His will in His word, which we seek from time to time to interpret, lifts us up, and the whole spirit of the Gospel of Jesus Christ is to lift the whole man, and make the whole community and the whole world better.

We believe that this Institution that we celebrate and honor in this gathering, and which means so much to us a community, has this distinct end in view.. However much we may differ in matters if teaching, we do not differ in regard to the great end of all religious work,--namely, to make men better. (A voice: ("Amen,") to give them a better physical manhood, and to teach them that self-mastery is the sum of all true living; teaching them to follow the Spirit of the Infinite Master; that in reaching out

toward others, that they may be but "the Voice of a Cry," thus rebuking the selfish spirit of the age,while giving humanity a larger life,--and in this, we are one (A Voice: "Amen"). To this end, as a Christian people, we are all striving. ("Amen.")

The day of controversy is all past. What we want to know of God to-day, is, what He means to teach us in regard to the relationship of our lives to him; if it be a matter of His wisdom, His justice or his power,, we want to know how these attributes of His are going to get hold of our selfhood and bring us into fellowship with the Divine Life. What we want to know in regard to our relationship to our fellow men is, how we may best fulfill our duty and accomplish the great end of our living among our fellows. And in these things in which our religious teachings and thinking and praying are all concentrated in these days of incessant activity, God will accomplish more through us when we can enter into the spirit of an earnest effort to lift humanity up toward himself.

In this Institution that we honor, the very walls vibrate with the voice of prayer. And those who enter into the conversations and listen to the lectures held in its parlors are soon brought to consider some truth of God . In the treatment-rooms also, there is much practical preaching, as well as treating; and somehow, men and women come here and go out to the ends of the world to think of God and to contemplete some of the things that have to do with their life's best interests.

We are glad to recognize God as associated with us in all our doings. There is a thought of encouragement in this :— that while to-day we rejoice over the calamity of yesterday, we discover how

God causes even the wrath of man to praise Him,--and the remainder of wrath does He restrain. (A Voice: "Amen.") And through the furnace of affliction, with institutions as well as with men, there comes out the refined spirit of a nobler life and a larger success in the world. God overrules, even in the shadows of difficulty, for the largest victories known to the world.

And so we come, bringing to these friends of this institution, born of their own heart's life, as they have put into it given to it the best of their thoughts and efforts,--we come, bringing our greetings and our congratulations; and while we do honor to those who have most earnestly labored in this work, yet I am sure they would have us say, "Behold, what hath God wrought ! "/

(Here follows the Address of Rev. W.S.Potter,--"The Old and the New."

Proposed Resolution to be adopted by the Sanitarium

WHEREAS, by the Last Will and Testament of Ella Eaton Kellogg it was provided that a certain sum remaining after payment of certain legacies should be invested by the Race Bettmmmnt Foundation, Trustee named in her Will, and the income thereof used for the care and treatment at the Michigan Sanitarium and Benevolent Association of poor, worthy sick mothers of little children whose care and training depend upon them, and who could not otherwise avail themselves of the means of recovering their health, the majority of the Board of Trustees of said Race Betterment Foundation to be the sole judge of the mothers who are to receive the benefits of this bequest, and it is desired by the Race Betterment Foundation that this corporation express its willingness to co-operate in the carrying out of said provision.

Now, therefore, be it resolved that this corporation does hereby express itself as willing to co-operate in the carrying out of the request of said Ella Eaton Kellogg as above indicated.

BATTLE CREEK

HEALTH SERVICE

HEALTH BETTERMENT

and

RACE BETTERMENT

AN ELEEMOSYNARY ENTERPRISE

From its inception the Battle Creek Sanitarium has been a purely philanthropic enterprise. There have been no dividends and no profit sharing. All earnings have been devoted to "betterments," the treatment of the sick poor and its other philanthropic aims. It has thus become a self-endowed philanthropy, officially recognized as such by exemption from taxes.

HOW IT BEGAN

One hundred years ago idealism was rife in America. The air was tense with new ideas,-- social, political, religious, economic, industrial, hygienic. The spirit of adventure reigned. New cults were born over night. Reforms were rampant. The "Brook Farm Experiment," led by Ripley and Dana and sponsored by Brisbane (father of Arthur Brisbane) and Horace Greeley, exemplified the return to nature idea.

Dr. Sylvester Graham, great uncle of the late eminent physiologist, Dr. Graham Lusk, began his great health campaign, traveled and lectured extensively and launched graham bread. He preached taboos against alcohol, tobacco, tea, coffee, condiments and flesh foods.

In 1866, a group of Graham followers started a water-cure in Battle Creek. After flourishing a few years it failed. The water-cure era had passed. A new management (1876) undertook the development of a new organization which has since become widely known as the Battle Creek Sanitarium, the pioneer institution of its kind, and for many years the only institution where the so-called "natural methods" were grouped together for simultaneous or correlated use under scientific direction.

The physical agents then available for therapeutic use were few and the methods uf using them were crude and empirical. The first task in developing the new system was the elimination of procedures and methods which lacked good scientific grounding, many of which were not only harsh and unpleasant but likely to cause dangerous reactions. New procedures were devised whereby the severities of the "cold water cure" were eliminated and milder, graduated methods substituted. The cold water system originated by the Austrian peasant,

Priessnitz, was tolerated by the sturdy mountaineers of the Silesian hills, accustomed to hardships, but was too severe for the more delicately organized invalids of Western Europe and New England, and for this reason that "water treatment" and "water cures" had fallen into disrepute.

In seeking to arrange a complete correlated system, many gaps were found. New agents and new appliances were needed. To supply them researches and experiments were begun and carried on for many years and finally embodied in a published volume, "Rational Hydrotherapy."

After a time, research laboratories were established and able experts put in charge. As a result of these efforts, notable improvements and some important discoveries have been made. First of these may be mentioned the curative value of artificial light. Among others which may be mentioned are the sinusoidal electrical current, a means of automatic exercise, mechanotherapy appliances, new diagnostic methods.

Most active of all the various lines of researches was the effort to improve the highly defective dietary of those days. The popular diet was palate-tickling, but unwholesome. The "reform diet," if in some respects more healthful, was unattractive and in some respects lacking in adaptation to invalid needs. As special needs were recognized, foods were devised to meet the requirements, and thus began the development of a multitude of special foods which have become known as Battle Creek Sanitarium foods.

Some of the new foods were so novel and attractive that they soon became popular and the demand grew until the making of special ready-to-eat foods became the city's chief industry and food packages have carried the name of Battle Creek to every city and probably every

home in America. Battle Creek foods have changed the American breakfast bill of fare. They have proved their efficiency in every climate--from the tropics to the poles. Foods bearing the name and picture of the Battle Creek Sanitarium were used by Stefansson and Mikkelsen in their Arctic travels and by Byrd in the Antarctic.

Through the advertising of these foods, Battle Creek Sanitarium health ideas have probably had a wider dispersion throughout the civilized world than those of any other center in modern times.

More than two hundred thousand persons have been attracted to a small country town to avail themselves of the health-promoting advantages which it offers. Among them have been numbers of persons of influence, including more than 3,040 business managers, 3,080 merchants, 3,370 lawyers, 3,790 bankers, physicians, 2,200 clergymen, and 6,100 manufacturers.

BATTLE CREEK METHODS

In these days when the voice of the health "barker" is heard in the streets and prophets of healing are crying "Lo, here," and "Lo, there!" the health seeker is often misled and becomes a prey to the exploitation of empirics and charlatans. It is most important to discriminate between pseudo-scientific methods and procedures that are based on a sound rationale deduced from scientific research.

A principle accepted here as basic was thus beautifully expressed by Dietl, able pupil of the famous German pathologist, Rokitanski: "Nature alone can cure; this is the highest law of practical medicine, and the one to which we must adhere. . . . (Bold) Nature creates and maintains; she must therefore be able to cure."

It is the blood that heals. Medicines, baths, and other so-called remedial measures are powerless to heal. All that physicians and remedies can do is to aid in removing causes of disease and supplying favorable conditions. Physiological measures, such as water, electricity, massage, exercise, and sunlight, regulation of diet and clothing, may greatly assist the healing powers of the body by regulating the movements of the blood and by stimulating and regulating the vital mechanisms by which the healing process is carried on.

The Battle Creek Sanitarium employs no secret methods, and does not claim to possess any panacea for human ills. The organized therapeutic methods which have become known throughout the United States, and more or less throughout the world, as "Battle Creek methods" are the result of a systematic and comprehensive effort carried forward for more than half a century, to bring together in one place, under unified control, all the resources afforded by

modern medical science whereby a sick man may be aided to the recovery of his health.

The fact that none of the earnings of the institution have been distributed, but that all have been retained for the building up of its work has placed at the disposal of the management funds sufficient to provide any and every appliance, method, apparatus, or other means or measure which has been proven to be of essential value in the study of disease and promoting health.

CORRELATED PHYSICAL THERAPY

Correlated physical therapy is an organized system of therapeutics which includes all physical agents having therapeutic value and in which each agent is assigned the function for which it is especially qualified. Hydrotherapy, phototherapy, electrotherapy, radiotherapy, mechanotherapy, diet, exercise, with every other non-medicinal agent possessed of curative virtue, are harnessed together in a therapeutic team, or, to use another simile, a battery with which therapeutic broadsides are launched.

Not one of these measures is "sufficient unto itself." Each one possesses supreme qualities, but needs to be supplemented by one or more other measures. And it is always to be remembered that even the most potent of physical agents has in itself no healing virtue. All that any remedy can do is to help Nature.

HYDROTHERAPY

Common water is probably the oldest and certainly it is the most versatile of all remedial agents. For long ages it has been used empirically by wild men and wild animals. A hundred years ago the crude methods of the "water-cure" were for a time popular both in this country and Europe. With the organization of the Battle Creek Sanitarium nearly 60 years ago (1876), pioneer work was begun in the development in this country of scientific hydrotherapy, a physical method which affords the most direct and rapid means of influencing the great functions of life,-- the circulation of the blood, the process of respiration, the action of the brain and nerves, the functions of the liver, kidneys, stomach and bowels. There is no means by which the various bodily functions may be so perfectly and so quickly controlled as by hydriatic measures applied with intelligence and skill. This most versatile and universal of all therapeutic agents, is employed

in scores of ways with almost infinite variety in combination and dosage, to meet varying types of organic and functional disorders presented by large groups of chronic invalids.

No "courses" or "routine" treatment are employed. Such methods are tolerated only by commercial therapy which, unfortunately, dominates the practices of most "bathing places," "resorts," "springs," and "cures." Only when employed with precision which takes careful note of temperature and pressure, as well as of duration, will this powerful therapeutic method demonstrate its right to stand at the head of the list of general therapeutic procedures.

The crude methods of the "cold water-cure" have been here refined and supplemented by carefully graduated procedures, a sort of "hydriatic ladder," by means of which the patient with feeble resistance is gradually lifted to a higher level of vital vigor, through the systematic development of his natural defensive mechanisms.

In "Rational Hydrotherapy," a work of 1200 pages (1900) will be found a detailed description of the methods employed in this department, and a description of the many new methods and modifications of old methods which have here been perfected.

THE HEALING POWER OF SUNLIGHT

THE OUTDOOR GYMNASIUM

The sun is the great source of all life and energy. Indoor life and cloudy skies rob us of the vitalizing influence of light. Our pale skins, weazened bodies, and low resistance to disease are the result. Lung tuberculosis, pneumonia, rheumatism, heart disease, premature old age, are maladies which flourish in the shade. They may be successfully combated by sunshine, the most potent of all rejuvenating agents. The systematic use of the sun bath was begun here more than fifty years ago (1878), long before its general recognition.

THE ELECTRIC LIGHT BATH A BATTLE CREEK DISCOVERY

The uncertainty of natural sunshine and its absence most of the time during the winter season proved a serious handicap to its use. Edison's discovery of the electric light, veritable resuscitated sunlight, provided the means by which this powerful healing agent, which permeates the body with its healing rays, may be utilized at all seasons of the year and at any hour of the day or night.

The electric cabinet bath was devised and first used here, was exhibited at the World's Fair in Chicago in 1893, and was thence introduced into Germany, where it soon became popular through the successful treatment of King Edward and other notables at Homburg. It was installed in the palaces of Emperor William, King Edward of England and King Oscar of Sweden. It was first used in Europe by Prof. Winternitz in the famous royal and imperial hospital of Vienna. It is now used in all the leading hospitals of Europe and this country.

The electric light bath possesses all the virtues of the Turkish bath, with none of its dangers and inconveniences. The luminous heat rays do not stop at the skin, as does ordinary heat, but permeate the soft parts of the body in every direction, searching out painful

painful and sluggish parts and imparting their powerful vital stimulus.

Shortly after perfecting the incandescent light cabinet and various devices (photophores) for local applications, the electric arc was brought into use because of its greater intensity, its rays equaling or even exceeding in potency those of the sun.

A full account of the discovery and history of the electric light bath and of its therapeutic uses may be found in "Light Therapeutics," the first work published on this subject (1910, 1928).

The multiple arc light apparatus of the Battle Creek Sanitarium, with its many highly potent arcs is so efficient a source of light that it satisfactorily replaces the solar rays and is a veritable artificial sunshine bath. The artificial light bath has the further advantage that it is always available, winter as well as summer, on cloudy and rainy days and even at night.

DIATHERMY, OR THERMO-PENETRATION

This is a new method of applying electricity in which the electrical current is converted into heat within the body. None of the ordinary effects of electrical sensation, no muscular contractions are felt; the only sensation is that of warmth. By proper arrangement of the electrodes, the heat may be concentrated in any part of the body. This invention renders it possible to apply heat to internal parts heretofore inaccessible.

Diathermy is a most excellent means of stimulating the activity of the liver, kidneys, and other internal glands when inactive. It is of service in cases of arteriosclerosis, especially in cases in which the disease affects the vessels of the abdomen.

Diathermy is highly useful in cases of deep seated pain, migraine and other forms of headache; also in sciatica, neuritis, and in muscular rheumatism. It promotes the absorption of gouty deposits by raising the temperature of the blood and so rendering the uric acid deposits soluble.

One of the most recent applications of diathermy is for superheating the body in cases of paresis and other chronic infections. One of the most recent applications of the superheating method is its use in certain very obdurate cases of chronic rheumatism in which it promises to be the most valuable of any method yet discovered. It is altogether one of the most useful additions which have been made to physiotherapy in recent years.

THE SINUSOIDAL ELECTRICAL CURRENT

All of the various forms of electrical current, galvanic, faradic, high tension, etc., are here in use. The current known as sinusoidal is found of greatest practical value. The special therapeutic value of this current was discovered here. Many years ago (1890) when various forms of electrical current were being studied to determine their adaptability to therapeutic use, a current was found which produced strong muscular contractions without causing the painful or other disagreeable effects produced by all forms of electrical apparatus at that time in use. This discovery was made known in papers read by a member of the faculty before the American Medical Association ( ) and later (1893) before the American Electro-Therapeutic Association.

A few years later, d'Arsonval of Paris, experimenting with currents of high frequency, discovered that pain was eliminated when the change in the direction of the current was made at zero potential.

This explained the painless character of the new current. The form of the "graphic" produced by this current gave to it the name "sinusoidal."

The discovery of the painless sinusoidal electrical current greatly broadened the field of therapeutic applications of electricity. The new current was immediately utilized for producing gymnastic effects-- particularly for exercising and thus strengthening the weak muscles of the trunk in a large class of cases. The current was subsequently employed in an "Automatic Exercise" apparatus which has proved of great value not only as a reconstructive measure but as a reducing measure in obesity. The sinusoidal current is now in use not only at The Battle Creek Sanitarium, but in army reconstruction hospitals and other medical institutions.

CORRECTIVE EXERCISE OR MEDICAL GYMNASTICS

How strong is a man? This question remained unanswered until a member of the Sanitarium staff invented the Universal Dynamometer, a device for accurately measuring the strength of each of the thirty large groups of muscles of the body.

The Battle Creek system of corrective gymnastics is unique and comprehensive. It is based upon the dynamometer. The results of tests are plotted on a "graph" which shows each point of weak development and the amount of deficiency as compared with normal standards.

The scientific accuracy and efficiency of this system proved so great it was adopted many years ago by the United States Government, and is in constant use in the United States military training schools.

Every cadet that enters the naval training school at Annapolis is tested and retested by the Universal Dynamometer, which is also used in selecting men for the football games and all competing teams.

The famous Ling system perfected in Sweden more than a century ago and much employed in this country by osteopaths and other manipulators, has been in use here for more than 50 years.

The muscles are the engines of the body. Appetite, digestion, blood-building, bone-building, heart action, lung action, general nutrition, endurance, vital resistance and other important functions, are closely related to the muscles. Weak, flabby muscles mean weak heart, low resistance, poor elimination, senile infirmities and premature decay.

The accurate data which is obtainable by means of the Universal Dynamometer supplies a scientific basis for corrective and muscle building exercises to restore the symmetry and strength lost by sedentary habits or abnormal attitudes.

Under judicious training, the total strength increases at a rapid rate, often several hundred pounds a week. Every pound means progress in health building,-- better appetite, better digestion and assimilation, better breathing while asleep as well as when awake, better heart action, increased power to resist disease, greater physical endurance, better mental efficiency, and greater ability to hold Old Father Time and other disabling agencies at bay.

Postural faults, such as flat chest and the "slouch" posture, rapidly disappear under expert instruction and appropriate corrective measures.

The Shadowgraph, another original Battle Creek device, clearly defines postural defects and records progress made under training.

The regular exercise program, in which a large proportion of the patients participate, includes the following: Graduated walking exercises, body-building and corrective exercises under expert trainers, light calisthenics, swimming in indoor or out-of-door pools, gymnastic games, folk dancing, etc. Feeble patients are given Swedish gymnastics, breathing exercises, automatic exercise, "heart gymnastics" and other special forms of muscle training as needed.

Each individual is given a special exercise prescription based upon his strength "graph," which, if persistently followed, will enable him to bring his weak points up to par. A new graph made every two weeks shows him the progress he is making, and often reveals a gain of 500 to 1,000 pounds in strength, which indicates an equal gain in nutrition and vital stamina.

AUTOMATIC EXERCISE

By a special mode of application of the sinusoidal electrical current, any desired amount of muscular exercise may be administered to a patient automatically and painlessly, and without the mental and nervous fatigue which often accompany exercise, especially in neurasthenic cases, and by reason of which such persons often dread and, greatly to their injury avoid, physical activity as much as possible. Indeed, a feeling of refreshment and even of exhilaration, instead of fatigue, is usually experienced after automatic exercise.

This is the way it works. The patient takes his place in an easy reclining chair, electrodes are adjusted to arms, legs, abdomen, and other fleshy parts, and in a moment the muscular contractions begin,-- first one arm, then the other, then one leg, the other leg, the abdomen, the back, then a repetition of the same series again and

again about once every two seconds, until the desired amount of work has been done. An obese patient, though reclining at ease, may be fairly drenched in perspiration after a few minutes and may lose as much as two or three pounds in weight in thirty minutes.

Automatic exercise is found highly beneficial in a considerable number of cases, especially the following: Patients who are too feeble to stand or who cannot walk sufficiently to afford them a proper amount of exercise to maintain a balanced circulation and good digestion. Those in whom so many large muscular groups have been rendered inactive by paralysis that they are unable to walk about, especially cases of hemiplegia; cases of myxedema and all forms of hypothyroidism; cases in which the patient cannot be induced to take a sufficient amount of voluntary exercise either because of indolence, or on account of fear of injury from physical activity; cases of arthritis, or gout affecting the knee, hip, ankle, or toe-joints in such a way as to interfere with exercise upon the feet; cases in which the heart is weakened to such a degree as to require the interdiction of walking or other forms of voluntary exercise; cases of high blood pressure either with or without arteriosclerosis. The effect of voluntary exercise in these cases is to <u>raise</u> blood pressure, at least temporarily, while automatic exercise <u>lowers</u> the blood pressure.

SCIENTIFIC FEEDING

Sixty years ago, when the writer was a student of the elder Austin Flint, the great clinician used to say, "When your patients say to you, 'Doctor, what shall I eat?' say to them, 'Eat what you like.' If they ask, 'When shall I eat?' tell them, 'Eat when you are hungry.' If they ask, 'How much shall I eat?' say to them, 'Eat as much as you want.' I have tried all the diets and found them all equally bad. The patient's instincts are a better guide than any rules."

The Doctor was no doubt justified in his conclusions by the confused empiricism which ruled in matters dietetic at that time. But within the last century the new science of nutrition has been developed. The modern diet reform movement began obscurely and at first met with much opposition and even persecution. The reform started by Sylvester Graham, nearly a century ago, initiated a searching study of foods and their adaptation to human needs in health and disease. Influenced indirectly, as was Benjamin Franklin by the writings of Tryon (1691), Graham, like Franklin, discarded flesh foods, tea and coffee, alcoholics and condiments. Unfortunately the simple diet was so crude and unattractive that ~~its unattractive~~ that its adoption often involved some hardships and sometimes even heroism.

A systematic effort to correct these defects and to develop a rational, practical and attractive regimen begun here sixty years ago (1873) has been uninterruptedly carried on. One result has been the development of a regimen which has become widely known as the Battle Creek Diet System.

The Battle Creek regimen owes its special characteristics to the fact that it is based upon physiology rather than custom. Why should we not follow physiology in our eating and other personal habits

as scrupulously as we do in the care and feeding of our domestic animals?

The Battle Creek regimen or bill of fare is not based upon a theory or a creed, but the findings of scientific research. The nutrition laboratory is far in advance of the American kitchen. Here an earnest effort is being made to bring the kitchen up to the latest laboratory discoveries and likewise to profit by the latest well validated clinical observations. Not only must unnatural and unwholesome foods be eliminated, natural and wholesome foods of superior quality must be supplied in ample variety. Bills of fare must be constructed in such a way as to insure not only a sufficient amount of the choicest foods, but every necessary element. All the various vitamins must be represented and in surplus proportions to make good the deficiencies which are always present. The diet must likewise afford a surplus of food minerals,-- lime, iron, copper, phosphorus, everything the body needs. And the chemical balance must not be overlooked, for chronic acidosis is one of the morbid conditions most frequently encountered. The chronic invalid needs the guidance of an expert dietitian who will make a careful study of his dietary and nutrition needs.

Close contact is maintained with the world's great laboratories and every new discovery is subjected to close scrutiny and thorough tests, and if found serviceable, put into practical use.

BATTLE CREEK SURGERY

While not the leading feature of the institution, the surgical department is by no means insignificant. The records show the number of operations performed since the organization (1876-1933) to be more than . Fortunately, the head of this department had enjoyed the privilege of serving as assistant to the famous abdominal surgeon, the late Dr. Lawson Tait of Birmingham, England. This gave an opportunity for pioneer work in introducing the life-saving Tait methods into this country. An early result was a series of 165 cases of successive abdominal operations for pelvic disease without a single death when the average mortality following the operation in this country was more than ten per cent (before the days of rubber gloves).

Several highly useful operations which have originated in this department have been received with high favor by both American and foreign surgeons.

The most useful contribution of this department to scientific medicine, however, has been the development of a system of care before, during, and after operation, based on physiotherapy which has proved highly serviceable in mitigating the discomforts of the patients, enhancing the success of grave operations and lowering the mortality rate. To these safety methods of caring for patients is attributed the extraordinarily low death rate of two-thirds of one per cent.

Notwithstanding the superior advantages here offered, resort to surgery is regarded as in a sense a confession of failure, and only to be resorted to when a faithful trial of non-surgical methods has been made. This conservative attitude has in a large number of instances been rewarded by seeing the patient make an excellent recovery under non-surgical treatment in cases in which a serious

operative procedure had been advised as imperatively necessary.

EXPERIMENTAL RESEARCH

The reigning principle in all Battle Creek Sanitarium activities is physiology. Every physiologic fact pertaining to physical health is a foundation stone in Battle Creek teaching. Hence physiologic research is a jewel mine from which new truth may be constantly drawn, at the same time affording a means for validating each new development which the steady forward march of science may unfold.

THE PAVLOV LABORATORY

From the laboratory of Pavlov of Russia, the world's greatest physiologist, there has during the last 40 years poured forth a steady stream of marvelous new knowledge especially about digestion. Ten years ago (1923), with the approval of Prof. Pavlov, this laboratory was established under the direction of Prof. W. N. Boldyreff, for many years his chief assistant. A notable event in the history of the institution was a sponsoring visit from the savant himself ( ).

THE NUTRITION LABORATORY

In the Nutrition Laboratory animals take the place of human beings. Rats especially are most serviceable because they eat the same food that men do and live so fast that a rat is as old at 3 years as is a man at 90 years. And so the injuries resulting from wrong feeding may be seen almost immediately.

To the Nutrition Laboratory the world owes the great advance in modern times in our knowledge of foods and the development of a real science of nutrition, for which we are to some degree indebted to so-called faddists, especially raw food faddists. The discovery of vitamins and of the essential rôle played by food minerals so fully demonstrated the importance of fresh, uncooked nutrients that one may now indulge in fresh foods as liberally as he pleases without being

dubbed a faddist. This word seems at present to have little use except as a missile which disputants in food discussions hurl at one another when lacking facts with which to support their contentions.

The Nutrition Laboratory of the Battle Creek Sanitarium and Battle Creek College has rendered great service in the training of several hundred dietitians, students of Home Economics, in the modern fine art of scientific feeding. In addition to this important work, many original researches which have attracted the attention of nutrition workers at home and abroad have been carried on.

The Nutrition Laboratory not only serves as a means of scientifically validating the dietary methods of the institution but affords a means of keeping in touch with other laboratories and investigators and so abreast of the front line of progress in nutrition research.

THE METABOLISM LABORATORY

The researches of the great German chemist Baron Liebig, followed by those of Voit and Pettenkofer, Rubner and Zuntz in Germany, and Atwater and Benedict in this country, resulted in the discovery of methods of measuring and otherwise studying the work done by the body and determining its mechanical equivalents. At first this new line of research was confined to great laboratories because of the elaborate and expensive apparatus required. When the portable metabolism apparatus was devised it was installed in the clinical department of the Sanitarium and employed in the first systematic use of the clinical calorimeter, now almost as indispensable in the study of disease as is the clinical thermometer.

The director of this laboratory has made several valuable contributions to this new method of research, most important of which is a graphic method of reading the results of individual tests and an improved type of portable calorimeter. The oxygen tent, a life-saving measure of almost priceless value in severe cases of pneumonia, is an ingenious adaptation of a metabolism accessory to therapeutic purposes developed by Dr. Roth.

THE HEALTH INVENTORY

The first step toward health betterment is necessarily a physical inventory which should be so thoroughgoing as to detect not only the evidence of fully developed diseased conditions but the very first small departures from normal conditions. Fifty years ago, such an examination was impossible; but the marvelous discoveries in human physiology in modern times and in the applications of chemistry and physics to the study of the body have made possible the establishment of normal standards for every important vital function and the development of practical methods for detecting the slightest departures therefrom.

The usual routine followed in making a general examination is the following:

1. A record of the patient's illness and of his antecedents, habits and all other particulars bearing upon his case.

Especial inquiry is made concerning dietetic habits and particularly in relation to the intake of vitamins, food minerals and bulkage, and the "balance" in relation to protein and base-acids.

2. A thorough physical examination of the body, physique, skin, chest, abdomen, joints, viscera, etc. Special note is made of the physical bearing and the posture.

3. Inspection of the mouth by a competent dentist, which leads to an X-ray study of the teeth in case there are any indications of disease.

4. An inspection of the nose and throat, which may lead to an examination by a specialist with reference to focal infection.

5. Preliminary examination of the eyes by an oculist, which may lead to a more critical examination later if any indications therefor are found.

6. Fluoroscopic X-ray examination of the chest-- heart and lungs-- which visualizes these organs and any gross lesion which may be present.

This examination is followed by a more critical X-ray examination and a study of the heart or lungs when there is an indication therefor.

7. A microscopical and serological examination of the blood. Determination of the blood count, both red cells and leucocytes, of the hemoglobin and color index.

A careful study is made of the individual cells, changes in which afford important indications respecting diseased conditions present.

8. Chemical tests of the blood for determining the amount of sugar present, also the percentage of waste products which the kidneys should eliminate. Also tests for specific infection and for acidosis. More than twenty additional tests of the blood are made when indicated in special cases.

9. An examination of the stools to determine the character of the "flora," that is, the proportion, if any, of protective or aciduric bacteria that may be present. Examination is also made for protozoa and other animal parasites.

10. In addition to a chemical and bacteriological examination of the stools, careful examination of the colon is made.

11. A careful chemical examination of a 24-hour specimen of urine.

12. The blood pressure, systolic and diastolic, is determined.

SPECIAL EXAMINATIONS

LUNGS--When the fluoroscopic examination or the clinical findings give grounds for suspicion of lung disease, the case is studied by a chest expert, a stereoscopic X-ray examination is made, and also a complement fixation test of the blood, together with a bacteriological study of the sputum.

HEART AND BLOOD VESSELS--Suspicious indications lead to an examination by a specialist in this class of disorders, with the aid of the electrocardiograph and other means.

THE KIDNEYS--Suspicion of renal disease leads to a study of the kidney function by means of a renal test ration, combined with a quantitative study of the urine and chemical examination of the blood for urea, uric acid, creatinin, and non-protein nitrogen.

THE STOMACH--Special studies of the chemical work and motility of the stomach are made by means of fractional examinations of the stomach fluid as first made by Hayem and Winter of Paris (1889) and since systematized by Rehfuss, and by the X-ray barium meal and other means.

THE DUODENUM--Special attention is given to the study and treatment of this usually neglected part of the alimentary tract which is usually found to be the real seat of disease in cases of indigestion.

THE INTESTINE--Special studies are made of the colon and of the intestinal tract in general by means of the carmine capsule test, and the X-ray barium meal and barium enema, in addition to microscopic and bacteriological studies of the stools and examination by the proctoscope.

PELVIC DISEASE IN WOMEN--Special examinations, as indicated, are made by experienced gynecologists, both men and women physicians.

JOINT DISEASES--In addition to special X-ray studies, a careful search is made for possible focal infection in teeth, tonsils, colon, or other parts.

NERVOUS DISORDERS--An experienced nerve specialist makes a careful study of each case in which the need of such expert aid is indicated.

METABOLISM--Cases of obesity, diabetes, suspected hyperthyroidism, hypothyroidism, pituitarism, emaciation without apparent cause, myxedema, and other cases of known or suspected metabolic disturbances are subjected to careful study by the aid of the Tissot or Benedict-Roth apparatus, both for the purpose of differential diagnosis and as a means of checking up and regulating the measures of medical or surgical treatment employed.

THE SIGNIFICANCE OF SYMPTOMS

Symptoms are the language of disease. In health and under normal conditions one is quite unconscious of the working of his internal mechanisms. Pain and other abnormal sensations are indications of some departure from normal conditions the nature and causes of which should be inquired into at once. Chronic disease is like a fire in a house. It is an active destructive process which is every moment advancing and doing damage which may be irreparable.

Patients often say when attention is called to some prominent symptom, "Oh! I have had that for years!" evidently thinking that its long existence had made it harmless. A fatal error. Every grave symptom has behind it a disease process which is the farther advanced the longer it has existed. It is true that patients sometimes have exaggerated ideas of the importance of certain symptoms. This is an added reason for the prompt expert investigation of the causes of symptoms so that such action may be taken as the case requires.

The most disturbing symptoms may not be the most serious. The so-called "little symptoms" of disease, likely to be overlooked and neglected, are often indications of the beginning of the gravest and most intractable of maladies. Too often these symptoms are ignored as mere inconveniences or regarded as "thorns" which must be borne with fortitude when, instead, the family physician should be consulted and effective measures adopted to avert the threatened mischief. Of these neglected danger signals some of the most significant are the following:

INDIGESTION--This most common of ailments is usually neglected until it becomes unbearable, or self-treated with soda

or other domestic remedies or drug store nostrums. Nothing is done to remove the cause, which may be some error in diet that could easily be corrected.

Pain or discomfort in connection with meals if persistent demands a careful study by means of the X-ray and gastric tests. The seat of disease is most often the duodenum or second stomach. Chronic duodenitis leads to duodenal ulcer, gall bladder disease, gallstones, and sometimes disease of the pancreas and possibly diabetes. According to the report of the U. S. Bureau of Statistics, _____ persons die annually of cancer of the stomach and liver and gall bladder disease. A large share of these lives would be saved if the early symptoms of indigestion received proper attention. A cure of simple indigestion is always readily possible, but when chronic, something more than dietary regulation is often needed. Indigestion is often associated with infection of the stomach or duodenum. This condition when neglected may lead to ulcer. Most cases of ulcer are curable if given proper attention early.

Says Prof. McDowall of King's College, London, "There is, indeed, much evidence which suggests that chronic nephritis may in many cases be produced by an excessive excretion, necessitated by chronic intestinal stasis and infection."

Foods which are infected with colon germs (fresh meat, game, fish, oysters, cold storage eggs, limburger cheese) cause highly putrescent stools. With sterile food and a biologic diet, the stools should be free from loathsome odors. Physiology teaches that the human intestinal tract when normal is free from putrefaction. A foul tongue and offensive breath are usually due to intestinal stasis, that is, too long retention of alimentary residues.

Metchnikoff proved the colon bacillus to be an active cause of old age and denounced the colon as man's most dangerous enemy. Sir Wm. Arbuthnot Lane, the famous London Surgeon, took up arms against the monster and removed hundreds of colons. Dr. John Harvey Kellogg and his colleagues of the Battle Creek Sanitarium demonstrated that the colon may be reformed and so fully convinced Sir Wm. Arbuthnot of the fact that he ceased performing operations upon the colon and is now an enthusiastic advocate of the Battle Creek method and the once famous Lane operation on the colon has become obsolete. Result, thousands of colons have escaped extirpation and continued doing useful service and hundreds of lives have been saved, for the operation had a high mortality rate.

By the adoption of a proper diet, that is, one which affords a sufficient amount of bulkage, the use of proper food accessories for bulk and lubrication, by changing the intestinal flora, and by proper training, the colon can be reformed and made to perform its function efficiently. In the rare cases in which surgery is required for removing adhesions or other causes of mechanical obstruction, it should be regarded as a supplementary measure. Changing the flora and other means of assisting the colon should not be forgotten.

COATED TONGUE AND BAD BREATH (HALITOSIS)

Oceans of deodorants and floods of perfumes have failed to cure or even hide the loathsome odor of "my lady's" breath. It is not the mouth that smells bad, it is the whole body. The blood is saturated with stinking aromas absorbed from putrefying food remnants, rotting fragments of fish, chicken, half digested oysters, etc., lying in the colon. The coated tongue is evidence of the low vital resistance due to contaminated blood. When the blood is pure and resistance high, the saliva keeps the tongue clean, the mouth free from germs and the breath sweet.

The same poisons that make the breath foul muddle the brain, cause mental depression, inefficiency and irritability, chronic fatigue, "that tired feeling," especially in the morning.

These colon poisons, especially indol and skatol, have been shown to be active in causing hardening of the arteries and degenerations of the liver, kidneys and other vital organs.

When the breath is bad, the whole alimentary canal is infected and thoroughgoing measures for changing the intestinal flora must be applied. A persevering effort will achieve success in every case.

A foul breath may justly be regarded as a disqualification for social contacts. The possessor of a very foul breath should be quarantined until purged of his halitosis. Fortunately this condition is rapidly curable by the application of rational measures.

Change of the intestinal flora is very simple in theory but in practice is accomplished only by scrupulous attention to the details of a program which is very definite, but neither complicated nor difficult. Here is an outline of the method, the details of which

may be found elsewhere:

The intestinal flora is the scientific name for the group of germs or bacteria which grow in the colon and other parts of the alimentary canal. The character of these germs depends upon the nature of the food eaten, for the germs feed upon the undigested remnants of the food while these residues are waiting in the colon for evacuation. Putrescible foods like meat and eggs undergo the same changes in the intestine as in any warm, moist place and become more putrid and offensive the longer they are retained. The proteins of fruits, nuts and vegetables do not decay so readily and when eaten are free from the germs which cause decay, while fresh, smoked and salted meats are always in a state of beginning decay when eaten. The ripening of meats while hung to render them more tender is simply a process of decay. Hotel meats are often so far advanced in decay that they fairly swarm with colon germs, sometimes actually containing these offensive organisms in larger numbers than do the fresh droppings of animals.

By adhering to a diet from which putrescible and putrefying foods are excluded, the so-called antitoxic or biologic diet, the stools soon become less putrid and by adding to the diet liberal quantities of lactose (lacto-dextrin, B-Lac) the growth of acid-forming germs (B. acidophilus) i encouraged. This is Nature's method of protecting the body against the poison making putrefactive germs.

CHRONIC FATIGUE

Rest and sleep repair the losses due to work and normal activities. If a sense of fatigue persists after a normal opportunity for rest, as in the morning after a good night's sleep, a morbid condition exists which should be corrected. A tired feeling in the morning is <u>toxic fatigue</u>. Though usually charged to nervous exhaustion, the nerves are seldom at fault. The real cause is intestinal toxemia. Usually the tongue is coated, the breath foul, the stools putrid. Unloading the colon and change of the intestinal flora, with restorative hydriatic measures, sun baths and a carefully balanced regimen rich in vitamins and food minerals will rarely fail within a few days to dissipate to a noticeable degree the fatigue and depression from which a patient may have suffered for many months or years.

So-called neurasthenia or nervous prostration is usually nerve poisoning rather than nerve weakness. When serving as assistant to the late Dr. George M. Beard, the inventor of neurasthenia, at the old Demilt Dispensary in New York City (1875), the writer became impressed with the idea that neurasthenia was an invention rather than a discovery. Experience in dealing with hundreds of "tired" lawyers, doctors, bankers, politicians, professors, preachers, mothers and society leaders, has confirmed this opinion. Neurasthenia is not a disease, but a symptom, usually an intoxication due to an overloaded colon flooding the body with putrefactive poisons.

Patients are sometimes sensitized to milk or some other article of food, the elimination of which from the diet works an almost magical revolution in the patient's condition.

PAIN--Acute pains, as a toothache, an earache or a colic, usually receive prompt attention; but chronic pains, often equally

significant and even more portentious, are often neglected. That long endured backache is very likely due to colitis, neglect of which may well be in part at least responsible for the 12,000 deaths from intestinal cancer. And that nagging soreness under the right rib, perhaps running into the back or up into the shoulder, may turn out to be a sore gall bladder, the result of a long neglected duodenitis that might have been easily cured by a correct regimen, change of the intestinal flora and appropriate physiotherapy. These chronic pains about the trunk often mean deep seated visceral disease which is nearly always associated with some habitual error in diet or living conditions.

A search ing medical examination will bring to light these hidden dangers which menace the future and thus nip in the bud destructive disease processes.

HEADACHE--Of the legions of persons who are martyrs to distressing and distracting headaches, the majority would find quick relief by correcting dietary habits or intestinal conditions which induce toxemia, when associated with a foul breath and coated tongue, which is most often the case. Change of the intestinal flora and adoption of a thoroughly antitoxic regimen will most certainly cause quick disappearance of the headache. In the exceptional cases in which the headache persists, a thorough study of the case will probably reveal some allergic cause, such as sensitivity to milk or some other article of food. There are headaches which are caused by brain tumors, which of course yield only to surgery.

It is to be remembered too that headaches are often associated with changes in the blood vessels, with either high or low blood pressure and with grave disease of the kidneys.

The idea that headaches are hereditary has led many persons to abandon efforts to obtain relief and to endure years of suffering who might have been promptly relieved by an antitoxic dietary and rational physiotherapy. The successful treatment of many hundreds of such cases that have passed through the Sanitarium clinic fully justify this statement. It is safe to say that headache is never inherited, although no doubt certain persons inherit from parents subject to certain forms of headache a special susceptibility to the causes of headache and so are likely to suffer from the same distressing ailment as did their parents.

HIGH BLOOD PRESSURE

High blood pressure is of course not a disease, but a symptom. The blood pressure varies in health as well as in disease. Activity of either the brain or the muscles raises the blood pressure because the acting organs need an increased supply of blood. Such elevations of pressure are temporary and harmless, for the vessel walls when healthy are capable of withstanding several times the pressure to which they are likely to be subjected.

The normal blood pressure, according to the life insurance experts, is 100 plus one-half the age. In countries in which much less meat is eaten than in this country, as in China, the blood pressure is ten points lower than in this country (Hunter). The writer found the average blood pressure of four Indian Marathon runners to be systolic 100, diastolic 60. The systolic pressure of the winner of the race was 95 before the race and 100 half an hour after.

With advancing years the arteries lose their elasticity and the blood pressure rises. Said the great John Hunter, "A man is as old as his arteries." Old age is a disease and the seat of the disease is the arteries. As the elastic tissue of the arterial walls deteriorates, losing its rubber like elasticity, the same change takes place in the tissues of the skin. This is the cause of wrinkles and the "chop fallen" appearance of the face. This loss of elasticity in the skin may be easily demonstrated by pinching up the skin of the back of the hand and comparing with the skin of a young person.

This loss of elasticity in both the skin and the arteries if not too far advanced, may be to some extent regained. As Plesch

of Berlin has pointed out, drugs are rarely of any value. Low protein (meatless) diet, sun bathing, graduated exercise, hydrotherapy and other physiologic measures are, however, highly potent restorative means and when skillfully employed may be expected to effect a cure in early cases and to secure notable benefit in all cases.

Says McDowall, "High blood pressure is a disease of civilisation," and to escape from it we must escape from civilization. In other words, "biologic living" and physiologic treatment are the only dependable measures for combating high blood pressure.

Too much stress cannot be laid upon the importance of keeping the blood pressure within normal limits. The common belief that the normal blood pressure is 100 plus the age is a mischievous error. The truth is the normal blood pressure is almost exactly 100 plus one-half the age.* This is true of all ages as shown in the accompanying table which is based upon the tables employed by life insurance companies in fixing the rates for sub-standard risks. It is appalling to notethe rapid fall in life expectancy as the blood pressure rises. At the age of 35, there is a loss of one year in life expectancy for each rise of one point in blood pressure.

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*It is to be noted that the figures of the table are averages. The true normal, according to Hunter, is 10 to 15 points lower.

PREMATURE SENILITY

Old age is not like puberty and the menopause a physiologic stage of human life. Modern physiologists are agreed that senility is a disease. There is no fixed time for its appearance. The human body is like any other mechanism, the length of time it lasts depends upon the way in which it is used and the care it gets. By conforming one's habits to strictly physiologic standards and in every possible way assisting nature in combating destructive forces, and especially in lessening the wear and tear of the vital machinery by discarding such handicaps as drug habits of all sorts, in other words, by habitually cultivating youth and in every possible way conserving the vital energies, Old Father Time may be held at bay for many years.

LOW BLOOD PRESSURE

In a state of shock due to accident or a severe surgical operation, the blood pressure often falls very low. The same is true after a hemorrhage and in some cases of anemia. It is also often too low after a prolonged illness. In such cases the blood pressure rises along with the improvement in quantity and quality of the blood. The blood building process may be greatly accelerated by sun bathing and applications of artificial light, applications of diathermy to the liver, hydrotherapy, automatic exercise and carefully regulated corrective gymnastics, as well as by a carefully balanced dietary. Change of the intestinal flora is of great service.

ANEMIA--The blood is the life. The red blood cells supply oxygen to the tissues. If the blood cells are greatly reduced in number, as with a hemoglobin and blood count of 50 per cent., half the oxygen supply of the tissues is cut off and the body defense is greatly weakened.

In pernicious anemia the blood making process is crippled because the liver fails to produce a substance (hormone) which is necessary to enable the bone marrow and other blood building tissues to do their work of making blood cells. By feeding liver or liver extract, the essential hormone is supplied and the beneficial effects produced are remarkable, sometimes almost magical. The patient seems to be in many cases almost immediately restored to health. But something more needs to be done for these cases. Giving the patient the hormone made by the liver of another animal does not repair the damage done to his own liver and does not arrest the disease which has damaged and continues its destructive work to other organs as well as the liver. Every case of severe anemia should have the benefit of institutional care.

SCANTY AND HIGHLY COLORED URINE

The urine is an extract of the tissues. It holds in solution most of the solid wastes of the body, the gaseous wastes escaping through the lungs. The kidneys are living filters or rather filter mechanisms, each made up of a million unit filters, one of which working day and night for three months is able to separate from the blood one drop of urine. One tablespoonful of urine is the life job of each of these kidney filters. These marvelously delicate structures deal with the most highly toxic of the excretory poisons which the body throws off. The kidneys task is onerous at the best; but when we load on to it in addition to its normal work an enormous burden of unnecessary labor in the elimination of alcohol, the caffein of coffee and the nicotine of tobacco, to say nothing of unwholesome table indulgences and drug store abominations of various sorts with which the average citizen insults his interior, with all of which the kidney must deal, it is indeed no wonder that the mortality tables show each year an increasing death rate, according to Dr. Hindhede, three times as great as in Denmark. The American kidney needs looking after and especially needs protection from the abuses it is suffering and relief from the crushing loads that are being heaped upon it.

So many of our common foods contain an excess of acids it is not to be wondered at that the urine is often found to be highly acid. Not infrequently specimens of urine are received for examination which contain 50 to 100 times more acid than they should contain. Such highly acid urines are damaging to the kidney tissues and to a less extent to all the body tissues, and show the presence of acidosis, a diseased condition which is widespread in this country as a result of the use of tobacco and coffee and the free use of meat and eggs.

Chronic acidosis undoubtedly encourages changes in the blood vessels and hastens the onset of senility;hence the importance of knowing the condition of the body fluids through examinations of the urine and making use of the information in the adjustment of the dietary so as to correct any tendency to acidosis. For several years the medical director of a large life insurance organization has laid great stress upon the correcting of acidosis when found present as shown by a highly acid urine and he reports a notable fall of blood pressure even in advanced cases and a marked improvement in nearly all symptoms in cases of Bright's disease even when well advanced. In these cases the life expectancy may often be doubled and quadrupled.

OBESITY

Life insurance statistics show unmistakably that over weight, especially in persons forty years of age or over, is much more than an inconvenience; it is a serious menace to life. The mortality rate of middle aged adults who are considerably under the average weight is much lower than that of persons of the same age who are over weight.

A person's weight is simply the balance between his intake of energy in the shape of food and his expenditure of energy. We use energy in two ways, in outside work as in walking and other muscular activities, and in inside work. In fact, the larger share of our energy expenditure in most cases is in keeping the inside machinery going (metabolism). For example, the heart uses 10 per cent of our total energy budget (Sherman), the lungs 15 per cent, the stomach and other digestive mechanisms, 10 per cent, and "tension" (automatic muscle action) which makes heat to keep us warm, 20 to 30 per cent,-- about two-thirds for inside work, the care and upkeep of the machine, and one-third for external or productive or creative work.

If no one ate more than just enough to support these two outgoes of energy, obesity would be unknown. But if one expends 2,000 calories of energy, the equivalent of 6,000,000 foot pounds of mechanical work, and takes in food with an energy value of 4,000 calories, half of what he eats will remain with him and will accumulate in heaps about his abdomen, hips, shoulders and chest externally and about his liver, stomach, kidneys and colon, in the abdomen, and in a thick layer lining the chest and in great yellow lumps about the heart. The real man,-- bones, muscles, brain, etc.-- is no bigger than he was before he became obese; he is simply a live man weighing perhaps 150 pounds, stuffed

and plastered over with tallow until he weighs 300 pounds,-- a live man carrying around a dead man of his own weight. And not one ounce of that weight can he ever get rid of except by burning it up!

It is evident that in reducing the weight, the place to begin is at the intake. This seems like an easy problem. One has only to stop eating or to greatly reduce his intake of food and his weight will at once begin to fall off. But there are grave dangers to be considered. It is only the surplus fat that one wishes to lose. A horizontal cut in the bill of fare reduces not only the intake of fat and fat making elements but also the blood, bone, nerve and muscle building elements as well, together with the highly essential vitamins and food minerals. A steady stream of these tissue building elements must flow into the body constantly or it languishes. For this reason fasting is not safe. Long fasts may do serious, even permanent damage. If there are apparent beneficial results from fasting in certain cases, it is in spite of the injury done. The benefits received may be readily obtained by proper modification of the diet and without resort to so drastic a measure as fasting. A wise gardener "weeds" his garden instead of running a mowing machine over it.

The Battle Creek way in fat reduction is an enjoyable experience. There is no starving.

WALKING BACK
DEFEATING SENILITY
REJUVENATION

Benjamin Franklin, the most brilliant intellect of the eighteenth century, when a young man, followed the biologic code and was a prodigy of athletic vigor, agility, and endurance. In later life, he lapsed into luxurious habits and became a victim of gout. When United States Ambassador, in Paris, he wrote to his wife as follows:-

"Being arrived at seventy, and considering that by traveling further in the same road I should probably be led to the grave, I stopped short, turned about, and walked back again; which done these four years, you may now call me sixty-six."

Bad habits are handicaps. When the body defenders are occupied with repair of damages done by neglect of elimination, or by the use of alcohol or tobacco or other unbiologic practices, the degenerative changes which constitute senility advance rapidly.

When normal health-promoting habits are adopted, the process is reversed; old age advances are checked and a measure of rejuvenescence is developed. Walking back with Franklin is a most delightful experience to one who has felt the stern grip of Old Father Time tearing at his vitals. The Battle Creek way is a well tried path by which thousands have walked back, not four years only but a half score of years or more.

Of more than 200,000 persons who have visited The Battle Creek Sanitarium and become more or less adept in the fine art of biologic living, tens of thousands have doubled and tripled their life expectancy. An average increase in longevity of only one year, a low estimate, would be the equivalent of more than 3,000 lives of full sixty years each.

CHANGING THE INTESTINAL FLORA

Prof. Bouchard, the eminent French physiologist, proved that colon contents are highly poisonous. Minute doses injected into guinea pigs cause speedy death.

Prof. Metchnikoff of the Pasteur Institute discovered that the deadly poisons of the colon are produced by germs. He also found that certain of these poisons, indol and skatol, when injected into rabbits in very minute doses, caused the arteries of the rabbits to undergo the same changes seen in human beings in advanced age. He naturally drew the conclusion that colon germs, or the poisons produced by them, are a cause of old age.

Dr. Tissier, an assistant of Prof. Metchnikoff, discovered that the intestinal flora may be changed. That is, that the poison-forming germs could be driven out and friendly or health-promoting germs implanted in their place. Dr. Tissier found that the protective germs which Nature plants in the colon of infants produce lactic acid, and that this acid, though harmless to the body, is deadly to the poison-forming germs. They cease to develop and soon disappear if the acid-forming germs make a vigorous growth so as to occupy the field, just as a thick growth of grass keeps weeds out of a lawn.

Acid-forming germs feed on lactose or milk sugar, a kind of sugar found nowhere in Nature but in animal milk. This is Nature's Scheme for protecting young mammals against the deadly germs which surround us and find easy entrance to the colon through the air we breathe and the food and drink we absorb. Lactose is the only sugar which prevents the development of disease-producing germs while encouraging the growth of the protective acid-forming germs.

Dr. Tissier was for some years retained as consulting bacteriologist of The Battle Creek Sanitarium and by his aid and that of other expert bacteriologists practical methods of changing the intestinal flora were worked out which have been here successfully employed in thousands of cases.

When the B. acidophilus has been lost, that is, when it has died out, it must be reimplanted. This is the situation in cases in which the tongue is badly coated and the breath very foul. By feeding vigorous acidophilus cultures in liberal quantities together with lactose or lacto-dextrin, the protective germ may be reimplanted. When this is done, the stools soon become practically odorless or slightly sour. This change in the stools is quickly followed by a change in the tongue. The coating becomes thinner; the tip and sides of the tongue begin to show their normal color and the fetor of the breath is much less pronounced. In a few weeks, at most, the tongue will be clean and the breath will have lost its fecal aroma.

Our researches have led us to the discovery that a milk prepared from the soybean affords a culture medium so well adapted to the germ acidophilus that it produces an extraordinarily rapid and vigorous growth. The flora may be rapidly changed by the use of lactose, an antitoxic diet, proper treatment of the colon, and liberal feedings of soy acidophilus milk.

If the change is delayed, that is, if the tongue remains coated and the breath foul, in spite of the change in diet, the probable cause is delay in the colon. By the use of Psylla, Fig Bran and other bulkage accessories, the bowels should be made to act after each meal. In many cases the enema must be used at bedtime to ensure complete

cleansing of the colon. In stubborn cases colon irrigation must be employed.

To lose one's protective flora is a major disaster. B. acidophilus, the acid-loving germ, is one of the body's chief defenses. When it is lost or so reduced as to be inoperative, putrefactive, poison-forming, and highly infectious microorganisms become implanted in the intestine and the colon becomes an incubator of disease, a focus of infections which may be scattered by the blood stream throughout the body and give rise to neuritis, rheumatism, headaches, autointoxication, so-called nervous exhaustion, and many other distressing and even dangerous ailments.

To recover one's flora when it has been lost is to enter upon a new lease of life and on a higher vital level. With the elimination of a bad flora, a lot of physical and mental miseries disappear. The tongue loses its yellow coat, the breath is no longer tainted, the skin clears, a load is lifted from the brain, hope and good cheer take the place of pessimism,— the whole world wears a different aspect. Getting the flora changed is really a remarkable, delightful, and much worth-while experience.

When at last the flora has been changed, the regimen by which the change has been accomplished must be continued, with now and then perhaps a slight relaxation of restrictions.

That the stools are normally free from putrefactive changes and hence practically odorless, is admitted by the ablest physiologists and most eminent clinicians. Robert John Stewart McDowall, D. S. C., M. B., F. R. C. P., professor of physiology at King's College, London, says in support of this view, "According to Chalmers Watson, the normal

steel from an intestine not unduly stagnant and loaded with bacteria, should be odorless."

A month at Battle Creek should suffice to effect a radical change of the flora in almost any case. At no other place has so much and such thorough attention been given to the matter of changing the flora and nowhere has the technic of this most important procedure been more thoroughly developed.

BATTLE CREEK TABOOS

A basic principle in the Battle Creek System is to conform circumspectly to the requirements of biologic or physiologic laws. That is, to avoid everything likely to harm the body or to impose upon it unnecessary burdens. The body is a mechanism and like any other mechanism, it is subject to the wear and tear of use. Over-use means shorter life. Over-work of the poison-destroying and poison-removing glands, the liver and kidneys, is particularly harmful because purity of blood is the most important factor in the maintenance of health, high efficiency, and longevity. The invalid needs first of all to lay aside everything that can contaminate his blood, and so divert the vital energies on which his recovery depends from the work of reconstruction on which they should be concentrated.

It is for this reason that the Battle Creek regimen excludes everything known to be hostile to the physical welfare of the body. To this end, a strict taboo is maintained against tobacco, alcohol, tea, coffee, cocoa, cola beverages, and hot condiments.

Flesh foods are excluded from the bill of fare, but is so fully replaced by other proteins of superior character and flavor that they are not missed. Said the eminent German physiologist, Zuntz, of Berlin, when eating at the Sanitarium table, "If I could always have such food as this, I should never taste meat again as long as I live."

The biologic diet is so attractive and satisfying that dietary taboos are no hardship. Meats are soon forgotten,— and in many cases, even become distasteful.

Coffee and tea are not missed when Health Koko, kaffir tea, and other delicious beverages are available.

The craving for alcohol and tobacco disappears. Some old smokers find tobacco actually repulsive after eating biologically for a few weeks.

RACE BETTERMENT

The human race is dying, according to Dr. Davenport, Professor Darwin and other scientists, and will ultimately perish. Animal races perish because of gradual or cataclysmic changes of environment which they are powerless to combat. Man has mastered these destructive forces. It is not Nature, but civilization that is destroying the race. A return to the natural biologic ways of our primitive ancestors will arrest the downward trend and lead the race back to its pristine vigor. Burbank believed that six generations of biologic and eugenic living would produce a veritable new human race.

This optimistic view of the future of the race led to the establishment of the Race Betterment Foundation (1906) and the organization of Battle Creek College (1923), a fully equipped educational institution (affiliated with the Sanitarium) which inculcates and exexplifies the principles of biologic living.

These activities have made Battle Creek the center of a Race Betterment Movement which has won world-wide attention through its notable conferences, the last one of which, held January 2-6, 1928, brought together more than a hundred of the leading scientists of this country, with representatives of the United States and several foreign governments, and scores of national welfare and social organizations.

In his address of welcome to the conference, the chairman defined the Battle Creek movement as an effort to discover and publicize "means whereby the degenerative influences that are dragging down the race may be successfully combated through the application of science, so that our civilized life may be made as biologic and health-promoting as is that of the savage living under ideal conditions."

The president of the conference, Dr. C. C. Little, then president of the University of Michigan, in his opening address outlined a program for racial improvement in which he emphasized the importance of "good environmental assistance," a comprehensive phrase which means physiologic rectitude.

HEALTH EDUCATION

The Battle Creek Sanitarium is not merely a human repair shop. It is rather a Health Training School,— a University of Health. An active health educational work is carried on. By daily lectures and classes, physicians, dietitians and expert health trainers expound the philosophy and demonstrate the technic of biologic living and rational health culture. There are classes in cookery with interesting lectures on foods and nutrition and supervised practice lessons for those who desire to become adepts in the fine art of Healthful Cookery.

A corps of expert and experienced physical trainers give personal instruction in posture and corrective gymnastics. Several fine swimming pools afford opportunity for instruction in swimming, a wonderful health building exercise which just now is commanding well deserved attention because of presidential example.

Both instructive and recreative are the daily "meets" in the gymnasium or the "hop on the top", on the big pavilion over the great dining-room.

Rides and hikes, nature studies on the lawns, in the gardens or afiend in the woods, or along the meandering streams, or visit to some one of the two hundred lakes which nestle among the hills within a radius of twenty miles for boating or sailing, are other recreative opportunities available.

A well developed and ably managed occupational department affords restful and entertaining diversion for weary, gloom-ridden depression victims.

THE MEDICAL CORPS

The medical corps is made up of specially trained physicians, nurses, dietitians, technicians, attendants, who have been carefully educated for their work. The ordinary medical training does not fully equip either doctors or nurses for the broad application of therapeutic means which characterizes the system of correllated physiotherapy developed at Battle Creek. In fact, there is much of current practice to be unlearned. Even the most progressive of our medical schools do not afford opportunity for adequate training, either theoretical or clinical, in the philosophy and elaborate technic of scientific physiotherapy,— hydrotherapy, phototherapy, radiotherapy, thermotherapy, electrotherapy, mechanotherapy, dietotherapy, psychotherapy, and other phases of physical and mental therapeutics. These are special lines, each with its own basis of scientific data— carefully observed and laboratory tested facts of physiology, physics, chemistry, bacteriology, and other sciences, a smattering of which will suffice to conceal ignorance and inspire unmerited confidence, but which must be thoroughly mastered to qualify a person to deal safely and efficiently with the potent agencies which constitute the armamentarium of the competent physiotherapist.

This special training does not take the place of the ordinary medical training but is supplementary to it. The leading members of the faculty, in addition to their 20 to 30 years' experience in the Sanitarium, have enjoyed the advantages of the great European medical centers, besides those of the best clinics in this country.

The personnel of the medical corps varies in number with the season. With 1,000 to 1,200 patients in the busy months, June to September, 40 to 50 doctors and 250 nurses are kept fully occupied, with 50 to 100 attendants, technicians and assistants.

THE DAY'S PROGRAM

EACH PATIENT HAS HIS OWN ITINERARY

For the average patient at Battle Creek the daily program is an active one, not strenuous, of course, but busy from morning to night with varied agreeable and interesting health building activities. There's no "course", no routine formula as in most spas and so-called "watering places" or "resorts", for each patient's therapeutic program is based upon the results of his examination and is adapted to his particular case. But there are some general activities in which all ambulatory patients may participate and which are recreative and entertaining as well as health promoting.

There is no rising bell, but by 6:30 A.M. not a few early risers may be seen in the halls in pajamas and robes making their way to the hydrotherapy rooms for a morning tonic shower or a before breakfast swim. Some prefer a tub dip in their rooms, and the feeble patient may have a cold mitten friction or a towel rub or simply a wet or dry hand rub and an air bath in his room.

By 7:15 a jolly crowd back from a short appetite-seeking hike or hurrying down from their morning toilets will be gathering in the big gymnasium for morning posture drill and deep breathing exercises. "Stand tall", "chests up", "chins in", "breathe deep, fill the chest from the bottom up" are some of the orders heard from the deep voiced physical trainer. Then some light gymnastics, a modification of the wonderful Swedish system which the ingenious Ling, a Swedish army officer, borrowed from the Chinese and improved. Fifty years ago a Sanitarium physician visited Stockholm to learn the system, and later adapted it to Sanitarium use, adding music to set the rhythm and enliven the experience.

By 7:50, stomachs are clamoring and the doors of the big dining-room swing open and breakfast is announced.

A gentleman visiting the dining-room for the first time was asked how he liked his dinner. He replied, "Anything would be enjoyable with such a delightful setting." But the rate at which entrees and stews and toothsome servings of various sorts were disappearing from his plate spoke eloquently of gustatory satisfaction.

Expert and amiable dietitians are at hand to help you with your bill of fare and smiling, well trained waitresses serve you quickly from the most wonderful kitchen in the world. Every useful culinary appliance known except those used exclusively for meats, highly trained culinary experts, many original and unique methods, immaculate cleanliness and asepsis make the Sanitarium kitchen a place well worth visiting.

At 8:30 another gathering at the gymnasium for exercise and setting up drills with music for 20 minutes, then the general program is ended and each one begins his own particular itinerary for the day, some to consultations with their physicians, others to meet appointments in the various treatment departments, massage, hydrotherapy, phototherapy, etc. and the offices of specialists who deal with ailments of the eye, ear, nose, and other local disorders.

On bright days there is a general movement to the outdoor gymnasia, small semi-"nudist" colonies where the trammels and vconventions of civilization are temporarily abandoned and a mild return to savagery indulged. In the men's department there are a large swimming pool (50 by 100 feet) and excellent facilities for volley ball and various other out-of-door sports. An experienced and wide-awake trainer with several assistants carefully directs the activities, both general and individual, so that each one is assured a maximum of benefit without risk of harm.

For feeble patients who cannot engate in vigorous sports, the sky parlor sun baths on the roof of the tall main structure afford a delightful

place for scientific sun bathing under judicious direction.

By 12 o'clock the average patient finds himself sufficiently fatigued to enjoy an hour's rest and sleep before the dinner at 1 P.M. Rest and relaxation in the horizontal position, even without sleep, are a most valuable recuperative measure. Of course worries must be dismissed. Water drinking, one or two glassfuls, either hot or cool (room temperature) is encouraged as a general rule.

At one o'clock the dinner, not luncheon, but dinner, the principal meal of the day. The conventional practice of taking a light lunch in the middle of the day and making the last meal the chief meal is regarded as the most unwholesome, one of the chief causes of insomnia. Eating heartily at night is like getting up steam in a power plant just at closing time, or filling a locomotive with fuel just as it reaches its last station. A flood of rich, freshly digested food pouring into the arteries and bathing the cells and tissues of the several organs, excites them to activity and so causes sleeplessness.

The bill of fare is different, but it is by no means unattractive. Everything is daintily served. There are all the conventional courses, soups, entrees, vegetables, salads and relishes, desserts, beverages, hot and cold, and served so daintily and artistically that there is no lack of esthetic appeal. And there is such a variety of the familiar staples that one is at once assured of ample gustatory satisfaction. Meats and coffee are absent, but the tasty broths and soups, protose fricassees, delicious roasts and saucettes based on nuts and the wonderful soybeans, and meaty sauces supply such a wealth of color and flavor that the flesh pots and their disease-breeding products are quite forgotten. Dining at the Battle Creek Sanitarium is no hardship. Indeed, banquets at the

Sanitarium are very popular with dinner clubs. The service is so excellent, the menus so attractive and the setting so unusually fine, this top-shelf dining commands high appreciation.

To the invalid suffering from malnutrition, there is the really priceless advantage that his dietetic needs have been carefully considered and his diet balanced for proteins, fats, vitamins, food minerals, and all that pertains to his nutritive needs, and so he may forget his stomach and dismiss anxiety about his bill of fare.

After dinner a siesta in a really comfortable rustic rocker or an Adirondack chair or an after-dinner nap alongside a hot water bag to help a sore stomach, and at 5 o'clock a return to the sun gymnasium, or a visit to the department of mechanotherapy, a most interesting and comforting series of passive movements. There's a vibrating chair which stops trembling, dissipates abnormal skin sensations, rests weary muscles, and quiets rampant nerves.

And then there is the oscillator which will do much that the skilled masseur will do and do it much better. The masseur gets tired and stops just when you wish he would go on for a quarter of an hour or more. That is just what the oscillator will do. It rubs and kneads and manipulates the tissues more vigorously than the living hand can do and is tireless.

The mechanical horse is always ready for a canter, fast or slow as you wish, smooth and gentle as a rocking chair, never a jolt nor a "sky", and real horseback exercise. At the end of a quarter of an hour you feel exactly as though you had been riding a live horse,— just a little weary, breathin deeper, sweating slightly, ready for a half hour's rest in the "sky shine" on the roof or the outdoor gym, or, if you like, a swim in the

big pool, where the water is always at just the right temperature to make a swim most agreeable.

The afternoon is well filled with a variety of health betterment activities. Besides special treatments of various sorts for painful joints or sluggish colons, weak muscles or shaky nerves, there are classes for special instruction of various groups, as diabetics, the obese, those who need to change the flora,— a large class — and those suffering from severe forms of anemia.

And there is the cooking class for ladies — men are allowed to attend by special permit.

For those who enjoy vigorous sports there are several excellent tennis courts. Within easy reach are several fine golf courses. For those who enjoy water sports abundant opportunity is afforded for boating and sailing by nearby lakes. The surrounding country is rolling, well wooded, and picturesque, affording many attractive drives.

The woods are alive with birds and large fox squirrels, black and grey. There is an extraordinary opportunity for nature hiking.

In no part of the United States is there to be found such a variety of native trees, shrubs, and flowers as in Michigan. Everything that grows from southern Ohio to northern Minnesota, is found in Michigan because of the protecting influence of the Great Lakes. In the Battle Creek College Preserve, a bit of primitive wild wood, there are many unusual plants — thirty different species of wild orchids and ferns and mosses in such abundance and variety as to attract plant specialists from New England. It is thickly threaded with well paved roads which connect with all the great national highways.

Within a mile or two of the Sanitarium is a well equipped airport connected with the city and the Sanitarium by an excellent bus line.

Supper at 6 P.M., not a heavy dinner, but a compromise with a leaning toward the more hygienic plan which makes the noonday meal the principal meal of the day.

After supper comes the event of the day to which everybody looks forward, the "hop-on-the-top" as patients call the evening exercise on the beautiful pavilion provided for the purpose on the broad roof over the dining-room. The roof is easily reached by a commodious electric elevator. After a series of light exercises for chest expansion and posture correction, there is a grand march with military evolutions, ending with some simple folk dance of the old-fashioned sort in which all join with zest and enthusiasm.

At 8 P.M. the evening program begins.

Monday night, Question Box, still presided over by Dr. John Harvey Kellogg, who started the Monday night Question Box nearly 60 years ago (1876).

Tuesday night, reception and musical concert by the Drever orchestra.

Wednesday night, etc.

AN INVESTMENT IN HEALTH.

The cost of a wise health betterment effort is an investment, not an expense. The cost is insignificant compared with the magnificent returns. Health is a commodity which may be purchased and at a low cost. The cash outlay is small, on an average less than the price of a Ford automobile,— certainly a cheap price to pay for such priceless things as a keen appetite, good digestion, sound refreshing sleep, a clear head, mental alertness, "pep", stamina, freedom from pain, a sense of joy in living.

The chief item of cost is the effort required. Health, comfort, efficiency, added years of life are too valuable to be gotten cheaply. The price must be paid, and the chief item is the effort,— first determination to obtain not a modicum of health, merely, a relief from pain or discomfort, a start toward improvement, but the largest measure of health attainable in the individual case; not simple arrest of the disease process but as complete restoration and rejuvenation as possible.

This means the discovery and removal of causes, not merely relief of symptoms, and a repair of damages which the body may have suffered so far as this can be done. This thoroughgoing work is necessary for the accomplishment of permanent results. The institutional case required for this costs more than the drug store method which at best affords only temporary relief while actually making the disease worse.

The small investment required for a few weeks' intensive treatment and training under institutional conditions— the vigilant care and careful direction of an experienced physician, dietitians, bath attendants, masseurs, technicians, physical trainers— is insignificant when compared with the cost of being sick in loss of time and efficiency, to say nothing of the discomforts and miseries of chronic invalidism.

The great progress which has been made in recent years in accuracy of diagnosis makes it possible through intensive methods to secure in a few weeks improvement which formerly required as many months. The rational method removes causes. As this is accomplished, symptoms disappear. In most cases, evidences of improvement begin at once.

Since the promotion of public welfare is the sole aim of the enterprise, every effort is made to extend its activities as widely as possible and to make its services available to those in need of them. The rates or charges are given a wide range. Special concessions are made to persons in limited circumstances, missionaries, clergymen, teachers, social and welfare workers.

CONSULTATIONS

The interests of the patient as well as the interests and reputation of the institution require that consultation should be had in every case in which there is any possibility of securing for the patient greater accuracy or definiteness of diagnosis or efficiency in treatment or in which consultation may help to establish the patient's confidence. There can be no doubt that the confidence of the patient both in the institution and in the physician in charge of his case will be increased rather than diminished by consultation and on this account it is desirable that each case should be reviewed by one or more consultants. This should be considered as an established rule.

In many instances several consultants may be advantageously called in, but in no case should the patient come to the institution and go away without more than one physician having seen and become acquainted with the case. This is necessary not only in the interest of the patient but of the attending physician and also from a medico-legal standpoint.

It is the duty of the attending physician to call in a specialist before giving to the patient a decision in all cases in which there seems to be a probability that a grave diagnosis must be made. This is especially true in reference to cardiovascular cases, neurological cases and cases involving the lungs or other vital organs; also in cases in which surgery should be considered or in which it may seem necessary to recommend to the patient a change of climate or treatment or consultation elsewhere. For example, in cases of suspected mental disease such a diagnosis should not be intimated to the friends, and of course not to the patient, until after a neurological consultation

has been held and a diagnostic decision definitely made.

The same rule applies in cases of serious disease of the heart, blood vessels or kidneys; likewise cases of pulmonary disease and especially in cases of surgery. Patients come to the institution often for the purpose of escaping surgery and become alarmed at once when surgery is suggested and begin to think of going home. It is probable that many persons miss the surgical advantages that we could give them because they become alarmed in this way.

When there is thought to be reason for believing that a patient may require the attention of a surgeon or a specialist, instead of announcing the fact to the patient that he may need surgical treatment, the proper way is to arrange for an examination by the proper consultant and then after a conference between the attending physician and the consultant the patient may be informed of the conclusion in such a manner as will be least likely to cause alarm or anxiety and most likely to secure his compliance with the advice given. In general, the specialist, surgeon or other consultant will be best qualified to explain to the patient the indications and to impress upon him the importance of the special measures recommended. In case of inability to arrive at a definite or agreed conclusion, or if the patient declines to follow the advice given, the case should be brought to the notice of the Superintendent's office.

CONSULTATIONS

It should be understood that the purpose of consultation is not only to insure to the patient the most skillful professional attention which the institution provides for his particular case, but also to aid in establishing his confidence that his case is receiving full attention. Frequent consultation is necessary to accomplish this and to insure efficient team work.

CONSULTANTS ARE OF THREE CLASSES.

Internist, surgical and specialists.

The recognized consultants in the institution of these several classes are as follows:

INTERNISTS.

Dr. Riley, neurology and psychiatry.

Dr. Stewart.

Dr. Mortonsen, cardiovascular renal disease.

Dr. Eggleston, gastro-enterology.

GENERAL SURGERY AND GYNECOLOGY.

Dr. Kellogg and Dr. Case.

EYE, EAR, NOSE AND THROAT.

Dr. Colver.

Eye, Dr. Stegman.

GENITO-URINARY AND PROCTOLOGY.

Dr. Martin.

CHEST.

Dr. Pritchard.

Dr. Whyte.

Dr. Gordon.

RE-EXAMINATIONS

When tests show pathologic conditions the tests should be repeated at intervals until the pathological conditions disappear, as follows:

URINE

Weekly or more often. When albumin or casts, pus, blood or bile are present, acidity plus 3 or more, alkalinity, quantity constantly excessive or less than 800 cc in 24 hours. Sugar and acetone require daily.

BLOOD

Every two weeks or oftener when the hemoglobin or red cell count are below 90%, or color index more than 5 points above or below 100, or white cell count above 10,000 or below 5,000.

BLOOD COUNT--DIFFERENTIAL AND LEUCOCYTE

Repeat weekly or more often as indicated when pathological.

STOOLS

Repeat weekly until the flora is changed to 75-25 or better, or until the disappearance of parasites; also whenever blood, pus, mucus, parasites or any other pathological indication is present.

METABOLISM TEST

When abnormally high or low this test should be repeated as a check to treatment until the normal standard is approximated.

CHEMICAL EXAMINATION OF THE BLOOD

Repeat weekly, when 70, or more frequently when pathological, as indicated.

CO_2 TENSION

Repeat daily until the symptoms of acidosis disappear.

STRENGTH TEST

Repeat every two weeks.

BLOOD PRESSURE

When above normal should be repeated weekly or more frequently if indicated.

In every case all tests showing abnormal conditions should so far as possible be repeated within a week before the patient leaves the institution.

CHEST EXAMINATIONS

When active pathology is present repeat weekly or more often as indicated. In chronic cases repeat as requested by the department.

INDICATIONS FOR SPECIAL EXAMINATIONS

BACTERIOLOGICAL EXAMINATIONS

All abnormal or purulent discharges.

BLOOD.--In all chronic febrile cases when the source of infection is not apparent.

URINE.--When pus is present or other evidence of infection of the genito-urinary tract. Cases of suspected coli infection.

BLOOD COUNT--DIFFERENTIAL.--In all cases in which the color index differs more than five percent from normal. Cases of suspected malarial or other parasitic infection of the blood. Chronic infections. Hypothyroidism. In all cases in which abnormal blood cells are reported.

BLOOD COUNT--FOR LEUKOCYTOSIS.--All febrile cases or suspected appendicitis or other acute infections.

BLOOD ANALYSIS--CHEMICAL.--Cases of acute acidosis, coma, or appearance of sugar in the urine.

CARDIAC EXAMINATION

Irregular pulse, abnormally slow or rapid pulse. Systolic blood pressure constantly above 145 or diastolic constantly above 80 or pulse pressure 30 or less. Abnormal heart sounds, oedema, cyanosis, arteriosclerosis, shortness of breath, any marked evidence of cardiac or vascular disease. X-ray indications of disease of the heart or aorta.

CHEST EXAMINATION

Cough, dyspnoea, asthmatic attacks, fluoroscopic or other reasons for suspicion of active or latent tubercular disease. Suspicion of aneurysm or X-ray report of enlarged mediastinal glands or indications

of active or latent lung pathology. Hystery of pleurisy, hemoptysis, or fever of unknown cause. Anal fisula. Great susceptibility to colds and unexplained loss of weight.

CO2 TENSION TEST

The presence of acetone in the breath or the urine, drowsiness, highly acid urine, shortness of breath without lung or heart lesion, suspicion of acidosis.

COMPLEMENT FIXATION TEST

Doubtful cases of gonorrheal or tuberculous infection.

EAR EXAMINATION

Impaired hearing, vertigo, nausea and vomiting.

Head noises.

EYE EXAMINATION--OPHTHALMOSCOPIC

High blood pressure, pain in eye or impaired vision, Casts, sugar or albumin in urine, Anemias, Diplopia, Strabismus, Ptosis, Exophthalmos, Inequality of pupils, Headaches, Indigestion, Dizziness, Nystagmus, Asthenopia.

GASTRIC ANALYSIS

Gastric pain, vomiting, nausea, suspicion of ulcer or malignant disease. All cases of abdominal pathology. Primary anemia.

GENITO-URINARY

Any case with active symptoms; every case showing any pathology of the urine such as pus, blood or albumin; any case giving a history of hematuria present or past, and any case with abdominal pain not otherwise positively explained. Obstinate cases of arthritis, sterility, sexual neurosis, history of renal colic, calculi in urine, ammoniacal urine, urinary retention.

GRAHAM TEST

Clinical symptoms or X-ray report pointing to gall-bladder disease. and cases of "indigestion" in which the X-ray, gastric tests and other

examinations give negative findings.

LIVER FUNCTION TEST

Jaundice, hypertrophy or atrophy of the liver, suspected malignant disease of the liver, bile in the urine, clay colored stools.

METABOLISM TEST

Enlarged thyroid, toxic goitre, pronounced toxemia, cachetic appearance, abnormal dryness of hair and skin and other evidence of hypothyroidism, diabetes, obesity, emaciation. Primary anemia. Malignant disease.

NEUROLOGICAL EXAMINATION

Emotional depression, emotional exhaltation, failure of memory, abnormal behavior, delusional ideas, insomnia, pain in any part of the body, headaches, abnormal sensations, abnormal movements, special weakness or paralysis in any part, abnormal reflexes, disturbancesbof gait, motor, secretory and trophic disturbances in any part of the body, or any evidence of upset in the autonmmic nervous system.

NOSE AND THROAT EXAMINATION

Discharge from the nose or throat, repeated upper respiratory infection, headache or neuralgia, cough or mouth breathing, lower respiratory trouble, focal infections.

RENAL EFFICEINCY TEST

High blood pressure, arterioclerosis, albumin or casts in the urine, pronounced intestinal toxemia, chronic headaches.

SENSITIVITY TEST

Asthma, urticaria, persistent eczema, headaches, hay fever, dietary idiosyncracies.

X-RAY--BARIUM MEAL

Indigestion, gas in the stomach, sour eructations, sour stomach,

opigastric pain, constipation, chronic flatulence, gastric or intestinal hemorrhage, or a history of any of these, biliary colic, history of jaundice.

X-RAY EXAMINATION

Rheumatism of the joints, chronic pain in back, hips or head, deep seated pain in trunk or limbs, accidental injuries, suspected metastasis.

REPRINTS.

Dear Doctor:

I thank you very much for your courtesy in sending me a copy of the reprint of your paper entitled ----------. I am sure the paper will prove of value to any physician who is interested in the special subject with which it deals.

Again thanking you for your courtesy, I remain, dear Doctor,

Very sincerely yours,

. .

NURSING.

It would be impossible to state without having further information concerning your mother's case as to whether or not she would require a special nurse. The extra charge for a private nurse is sixty to seventy-five cents per hour for the time the nurse is on duty.

AMBULANCE.

If you will let us know on what train your(mother) will arrive, we shall be glad to see that the train is met with a comfortable ambulance that will bring (her) to the Sanitarium with the least possible inconvenience.

ACCOMMODATIONS.

1. We are prepared at the present time to offer ------a choice of excellent accommodations and shall be glad to see -----at any time that it suits -------convenience to come.

2. We shall be glad to receive -------- at any time and are prepared at present to offer a choice of excellent accommodations.

3. It might be well for (you) to advise us a few days in advance of (your) arrival as to just what sort of accommodations (you) prefer so as to give us an opportunity to have the proper accommodations in readinessfor ---- when ----arrive.

4. Our main buildings are so full at the present time that it is impossible for us to make a definite promise of specific accommodations. We shall be able to take care of you when you come, however, and to make you entirely comfortable and at the earliest possible moment will be glad to provide you with the sort of accommodations you may select. A number of rooms are vacated every day and those on the ground, of course, have the first choice of such vacated accommodations.

5. In view of the large number of patients and guests we have with us at the present time, it is just possible that we might not have available any of our own rooms at the time you arrive. Insuch case, you can be very nicely accommodated as regards room at one of the hotels in the city. You could, of course, obtain board and treatment at the Sanitarium the same as though you occupied one of our own rooms. If it should be necessary on your arrival to assign you temporarily to a hotel room, we should, of course, be glad to furnish you accommodations in one of our own buildings at the earliest possible moment.

6. We are prepared to offer at the present time comfortable accommodations which we believe would please you.

7. Our room clerk has promised to have ready for you on your arrival such a room as we believe will meet your requirements.

8. Our room clerk has promised to do his best to have ready for you on your arrival such a room as you desire, but patients are arriving so rapidly that it is just possible he may not be able to locate you to your entire satisfaction until a few days after you come. In such a case, you could, of course, obtain temporarily an entirely comfortable room either at a hotel or at some private residence in the city.

9. If ----- will advise us a few days in advance as to the date of ------ arrival here, we shall be glad to reserve accommodations for ----

10. If you will kindly advise us definitely as to the date of your arrival here, we shall be pleased to reserve accommodations for you.

11. As you request, we have instructed our room clerk to reserve accommodations for ----- for (date) (if date is given)

12. Mr.J.C. Riggs or Annex Room Clerk:

Please reserve ---- for (name) for ------ (date).

13. It might be well for you to advise us a few days in advance as to the date of your arrival so that we may be on the lookout for suitable accommodations for you.

160-A TAXI SERVICE.

You will experience no difficulty in making the trip from the station to the Sanitarium. The trip which is somewhat less than a mile is made by limousine taxicab service over paved streets the entire distance. Porters from the Sanitarium meet all day trains and are prepared to render patients every possible assistance in the transfer of patients from the station to the Sanitarium.

TRAIN SERVICE.

1. You may take any train on the Michigan Central Railroad. The fast trains make the run from Chicago to Battle Creek in about four hours. Porters from the Sanitarium meet all day trains and will meet night trains when requested to do so. The trip from the station to the Sanitarium is made in a very comfortable limousine taxicab so we believe you will have no difficulty whatever in getting from the train to the Sanitarium.

2. You may take any train on the mainline of the New York Central Railroad for Battle Creek. Perhaps the best train is one that leaves the Grand Central Station at 5:00 P. M. This train carries through sleepers which arrive at Battle Creek at 10:00 o'clock the following morning.

3. You may take any Chicago train on the Michigan Central Railroad and it will bring you direct to Battle Creek.

Dear Doctor:

Yours of ----inquiring with reference to the case of ------received.

In accordance with our usual custom and with medical ethics, as well as to comply with the laws of the State of Michigan, we must have written permission from the patient before making a medical statement in relation to the case. If you or the patient will send us such authorization, we shall be very glad to send you such information as we can concerning the case.

As regards tic douloureux, we are glad to tell you that we have obtained complete relief in a number of cases. We never guarantee cures in any case even in the mildest form of disease as it is entirely contrary to the ethics of the medical profession to do so. In tic douloureux we do not succeed in curing all cases as some cases are absolutely incurable. We often succeed in securing a considerable degree of improvement, however, and, as stated, have obtained complete cures in a number of cases who have remained under our treatment and observation for a considerable length oftime. The treatment of the disease is not at all simple and sometimes the trouble continues for a long time and with little relief in spite of everything that can be done. In very extreme cases an operation which gives relief, is sometimes performed on the brain,but this remedy is employed only as a last resort.

If your ------ is suffering from this disease, we should be very glad to have ---- visit us and believe we could give the best possible opportunity for recovery although, as stated above, we could not promise a cure. We trust, however, that we might be able to secure sufficient improvement to make the effort and expense of the journey here well worth while and should hope for satisfactory results.

SURGERY.

1. We have had an excellent surgical department here for many years. We opened recently a fine new hospital with thoroughly up-to-date equipment and facilities of every sort. We believe we are prepared to offer exceptional advantages to surgical patients as we find the special preparation and care which our cases of this class receive, a most important factor in promoting rapid and complete recovery after operation. We never operate, however, until all other measures of relief have been exhausted.

2. The charge for operation is always made to suit the patient's circumstances, whatever they are, and is arranged by our Business Manager with each individual patient before the operation.

3. We do not have fixed charges for operation but are pleased to make a reasonable charge such as may be within the means of the patient in each particular case.

4. The charge for operation is always arranged with the individual patient or friends by the Business Manager before the time for operation.

1. As regards the ear trouble, we should be unable to advise you intelligently without first having an opportunity for making a personal examination. We are constantly treating many cases of this sort here, having a fully equipped department for the care of patients suffering from various ear troubles. We have excellent specialists in diseases of the eye, ear, nose and throat who are prepared to give such special attention to these cases as may be required. Some cases practically recover under treatment; other cases show remarkable improvement, still other cases show moderate improvement and a few cases do not respond to treatment at all. We are prepared, however, to give these cases the best possible chance for recovery and to apply all the methods which have been proven useful in the treatment of such cases.

2. We have excellent specialists in diseases of the eye, ear, nose and throat who are prepared to give such special attention to these cases as may be required. Some cases practically recover under treatment; other cases showremarkable improvement; still other cases show moderate improvement and a few cases do not respond to treatment at all. We are prepared, however, to give these patients the best possible chance for recovery and to apply all the methods which have been proven useful in the treatment of such cases.

3. We have an extensive department thoroughly equipped, several skilled specialists in the treatment of diseases of the eye, ear, nose and throat, and two operating rooms especially for the surgical treatment of these cases. Surgery is not undertaken unless the indications for it are clear and definite. Our surgical patients enjoy unusual advantages in special preparation and after care some features of which are peculiar to this institution.

ANSWERED AWAY.

Dear -----

Yours of ------addressed to Dr. J. H. Kellogg, has been received in the Doctor's temporary absence. Your letter will be brought to his personal attention as soon as possible after he returns which we now believe will be about -----

Sincerely yours,

THE BATTLE CREEK SANITARIUM.

Yours of -------received.

We have had the Telegraphone in use here continously since October, 1912 and really do not know how we should be able to get along without it. We find it much more satisfactory as a means of mechanical dictation than any wax cylinder dictating machine with which we are acquainted.

We enclose with this a copy of a statement prepared by the writer for our Board of Directors before we purchased any of these machines. This will give you some idea of the comparative advantages of the Telegraphone over other means of mechanical dictation.

Our recommendation of the machine is based, of course, upon its performance. We doubt if the machine in its present form would be so successful as it has been with us in places where an expert electrician, who thoroughly understands the mechanical details of the machine, is not available. We consider that the machine has a number of mechanical defects which we should think it necessary to be overcome before the machine will ever prove to be a decided commercial success.

We have always found the Telegraphone Sales Company who, we understand have the exclusive sales rights for this machine in the United States, entirely reliable and their dealings with us have always been attended by the utmost courtesy.

As regards the American Telegraphone Company, who manufacture the machine with whom we have had practically no direct dealings, we are not in any position to recommend the stock of this Company as an investment. In fact, from the information which we have received concerning the methods which have been used in marketing this stock, we should consider an investment in it a decided risk. Our recommendation of the machine is not intended in any way to be a recommendation of the stock of the American Telegraphone Company as an investment.

MILK REGIMEN.

We employ the milk regimen which differs in some important particulars from the ordinary milk diet and in our experience produces very much more satisfactory results.

CLIMATE.

1. The summer climate of Battle Creek is very pleasant indeed. Battle Creek is situated at the highest point between Lake Michigan and Lake Huron so we get the full benefit of the cooling breezes from the lakes. The temperature rarely exceeds 90° and, when it does, it is usually only for a few hours.

2. The fall is a most excellent season for a visit here. We usually have very fine weather during these months and our patients have the full benefit of out of door as well as indoor activities and without the excessive heat or the crowded conditions of mid-summer.

3. Spring is a delightful season at Battle Creek. The days are warm enough to invite one to a full enjoyment of the outdoor life, and the nights cool enough to afford a deliciously tonic influence--a very valuable part of the process of getting well.

4. You need not hesitate to come here in the winter time because of cold weather. We find that our patients as a rule recover more rapidly under the influence of the cool tonic air of winter than in the warmer months. Besides, in our large Main Building, we have temperature conditions under absolute control so that we are able to maintain a practically tropical climate indoors even in the coldest weather.

1. Please send full information with reference to the Natural Abdominal Supporter to -----

2. We have asked the Sanitarium Equipment Company of this city to send you full information about ----

3. ' Replying to yours of ---the Sanitarium Equipment Company was organized for the purpose of manufacturing the various apparatus developed for the use of this institution and others who desire similar apparatus. Any statements they make can be thoro ghly relied upon.

Sincerely yours,

THE BATTLE CREEK SANITARIUM.

4. I have yours of ----

The Battle Creek Sanitarium has nothing at all to do with the Sanitarium Equipment Company which sells the vaporizer. However, the vaporizer is a good thing. It originated here and we use it. The Sanitarium Equipment Company is passing it along to the public but, as stated before, the Sanitarium is not interested in a business way.

Sincerely yours,

5. Yours of ---received.

We have referred your inquiry to the Sanitarium Equipment Company of this city, and asked them to give the matter their careful attention. We trust you will hear from them promptly.

Sincerely yours,

THE BATTLE CREEK SANITARIUM.

6. Equipment Co:

Enclosed find a letter from ----which explains itself. Please send -----full information about ----------.

LEUKEMIA.

From what you say of your case, we should advise you by all means to come here. We have treated a number of cases of leukemia and with very good results. The X-ray examination in our experience proves most effective. A patient recently left us after eight weeks' treatment who arrived with a greatly enlarged spleen and enlarged lymphatic glands in various parts of the body. On arrival he had 4300 per cent white cells and on leaving 143 per cent. All of the enlarged glands had been reduced so that the enlargements were scarcely perceptible. In some of the glands, the enlargement had entirely disappeared. The spleen was reduced at least 75% in size and the patient's general health was very greatly improved. The X-ray in combination with our antitoxic diet and hydriatic treatments seems to produce very gratifying results in these cases. Many, however, are liable to recur, especially unless the patient adheres closely to the diet and regimen outlined for him here.

INTERNS

Dear Doctor:

Yours of --------received.

We have no opening here at the present time as our faculty is completely filled, but will be glad to have further particulars about you in view of a possible opening later.

We are sending you with this copies of two pamphlets entitled respectively, "The Simple Life in a Nutshell" and "The Reason Why" which will give you an outline of the Battle Creek Sanitarium system and of the ideals which we endeavor to uphold. We shall be glad to have information not only as to your training and experience and your special fitness for any particular line or lines of medical work, but also to know whether or not you are in sympathy with the general aims, purposes and ideals of our work. We dislike very much to have anyone connect with us and then find conditions so uncongenial as to necessitate an early change.

Hoping to hear from you further, we remain

Sincerely yours,

THE BATTLE CREEK SANITARIUM.

URINARY EXAMINATIONS.

Dear Sir:

Yours of (date) received.

The charge for making urinary examinations is $2.00.

A specimen for twenty-four hours should be saved. Six ounces of this should be put in a sterile jar and packed carefully and shipped to us by express. About a teaspoonful of thymol should be put into the specimen as a preservative.

Very truly yours,

URIC ACID.

By restricting the diet almost exclusively to fruits and fresh vegetables, cutting out meats, and using grains sparingly, the urine may be made so strongly alkaline that it will dissolve a considerable amount of uric acid. Free water drinking also by increasing the output of water through the kidneys assists, but sometimes stones are formed in the kidney so large that they can neither be dissolved nor forced out through the ureter. This is particularly true of phosphatic stones which are often very large and cannot be dissolved or materially benefited by any change of diet.

The proper thing to do is to have an X-ray examination so as to ascertain just where the stones are and how large they are, etc.

EQUIPMENT COMPANY.

1. Please send full information with reference to the natural abdominal supporter to --------

2. We have asked the Sanitarium Equipment Company of this city to send you full information about -------

ALOPECIA AREATA . (Baldness)

Alopecia areata is often due to autointoxication. Exposure of the scalp to sunlight, making the bowels move three or four times a day, discarding meats, and living on a biologic diet, are the best means of effecting a cure. In many cases a cure is not accomplished or possible.

HERNIA OR RUPTURE.

There is no radical relief for hernia by other than surgical means. The operation when properly done is uniformly successful and affords a measure of relief out of all proportion to the temporary inconvenience involved. We have treated successfully a large number of cases of this class.

GOLF.

The Battle Creek Country Club maintains a very excellent eighteen hole golf course with a skilled professional in charge. The privileges of the course are available to Sanitarium guests, who are members of other Country Clubs, on payment of the grounds fees. The grounds are located a little more than two miles south of the Sanitarium and are easily reached by motor. The grounds themselves constitute a picturesque landscape and afford many views of the surrounding country.

There is also a municipal course of nine holes, and a Masonic course of nine holes both of which are open to any player. The fees on these two courses at present are fifty cents for eighteen holes. Both courses are easily accessible and each has a professional in charge.

DEMENTIA PRAECOX.

Dementia Praecox is a disease due to toxins affecting the brain. Some cases are curable and many cases are partially curable. When advanced the disease is incurable.

LUMBAGO.

Lumbago is a form of neuritis. Rest and the application of heat are the best measures. The fundamental cause may be infection of the teeth, colitis, a diseased gall-bladder or any one or more of many other forms of local infection. Every case should be carefully investigated. In persistent cases an X-ray examination ought to be made. The pain may be caused by a growth of some sort.

HOME ECONOMICS.

Miss Cooper:

1. Enclosed find a letter from ------inquiring with reference to ----------. Please send (him or her) full information.

2. Yours of --------received.(enclosing exchange for $----------).

We have referred your (order or inquiry) to our school of Home Economics and asked them to give the matter careful attention. We trust you will hear from them promptly.

CENTENARIAN.

Dear ------

I have recently seen a newspaper account of your wonderful accomplishments at a great age. I shall bevery glad to know to what you attribute your advanced years, also to what ages your parents and grandparents lived.

Have you been a large user of tea and coffee? Also, have you used meat largely? If you have had any special habits in diet to which you think your good health at so advanced an age is due, I should be very glad to know what they are.

Enclosed find a self-addressed stamped envelope for reply.

Sincerely yours,

EUGENICS.

Dear -------

Yours of --------received.

We are sending you with this some literature pertaining to the Eugenics Registry and a few otherreprints in which you may be interested. For additional literature and references on the subject of Eugenics, we would suggest that you write to the Eugenics Record Office, Cold Spring Harbor, Long Island, New York.

Sincerely yours,

THE BATTLE CREEK SANITARIUM.

BUNIONS.

Yours of --------received.

We are glad to tell you that we are prepared to treat bunions as the individual case may require. We frequently operate for relief of bunions although in some cases when the bunions are not particularly bad, we find it possible to make the patient entirely comfortable by hot and cold applications and other means, especially by the wearing of properly fitted shoes. When we operate thepatient usually does not begin to walk until after the tenth day, but may be about in a wheel chair after the first day.

SUPERFLUOUS HAIR.

1. It is possible by means of the X-ray to remove superfluous hair and in the majority of instances,it will not return. But in three or four in every 100 cases, a year or two after its removal there will appear a dilatation of the fine blood vessels of the parts treated which to some people is more disagreeable than the superfluous hair. The patient mustrecognize this possibility and be willing to take the chance. With this understanding we should be glad to have you (or patient) visit us. About six weeks would be required to complete the treatments which are given once every three weeks. The first treatment could be given on arrival, another in three weeks, and a third in three weeks more.

2. Superfluous hair can be disposed of by electrical treatments or by an X-ray application. Electrical treatments,leave in place of the hair, a whiteish scar which may be more or less conspicuous. The X-ray treatment is likely to leave dilated blood vessels. So it really is a choice of evils. If we were in your place we should depend upon the frequent use of a safety razor. We are giving you this advice after having had a very large experience in removing superfluous hair by both the methods referred to.

3. The method to which you refer for removing superfluous hair is not very satisfactory. It leaves scars and the remedy is often considered worse than the disease. There are cases, however, to which it is applicable. We formerly used this method more than we do at present.

OLD AGE

We are certain we could make a few weeks here exceedingly profitable for you. The important thing is first of all to check the old age processes which are evidently making inroads upon your constitution.

There are certain definite things which we can do for you which are remarkably effective in holding old age at bay and while you are spending a few weeks here we can develop a special regimen applicable to your particular case which you can follow after returning home and which to a wonderful degree, will be efficient in combating the old age process and enable you to hold your ground against Old Father Time. Many persons who have come to us apparently at the end of their rope have been able to enjoy a good many additional years of useful activity by the aid of the measures suggested.

DENTAL DEPARTMENT.

1. We maintain a fully equipped dental department and are prepared to offer thoroughgoing service in dental work and problems.

2. Any dental work the patient may need can be done here, as we maintain a fully equipped dental department with a thoroughly capable staff.

GUARANTEE.

We never guarantee a cure of any disease as it is entirely contrary to the ethics of the medical profession to guarantee cures, and besides, it is impossible to state in advance just what the results of treatment will be in any particular case.

DENTAL DEPARTMENT.

1. We maintain a fully equipped dental department and are prepared to offer thoroughgoing service in dental work and problems.

2. Any dental work the patient may need can be done here, as we maintain a fully equipped dental department with a thoroughly capable staff.

CLOTHING.

You are not likely to need here other clothing or toilet accessories than you would find comfortable and convenient at home or in ordinary travel.

You will not find use here for other clothing than would be comfortable or convenient at home or in ordinary travel.

X-RAY.

We enclose a copy of the X-ray findings in the case of -----. The X-ray Department tells me that they have no plates which show anything further than what is mentioned in the report and that the important facts elicited in this case wereobtained from the fluoroscopic examination rather than from the plates, so that they cannot send you any plates which will confirm any of the essential statements made in the reports, and have no plates which show anything more than the report indicates.

Regretting that we are not able to comply with your request, we are,

OLD AGE

We are certain we could make a few weeks here exceedingly profitable for you. The important thing is first of all to check the old age processes which are evidently making inroads upon your constitution.

There are certain definite things which we can do for you which are remarkably effective in holding old age at bay and while you are spending a few weeks here we can develop a special regimen applicable to your particular case which you can follow after returning home and which to a wonderful degree, will be efficient in combating the old age process and enable you to hold your ground against Old Father Time. Many persons who have come to us apparently at the end of their rope have been able to enjoy a good many additional years of useful activity by the aid of the measures suggested.

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HEALTH EXTENSION BUREAU.

The Health Extension Bureau is a publicity department of the Battle Creek Sanitarium. The Bureau does not undertake to treat people at home and what it can do for you will be in no way a substitute for a visit to Battle Creek, but it would doubtless be of some service to you.

SQUIRRELS.

The squirrel problem is a little difficult. I have had squirrels caught and boxed and several times have tried shipping them but the squirrels object so strongly to being caught in a trap that they often kill themselves in trying to get out and, if they do not succeed, they die in the shipping case before they reach their destination. I think the only successful plan would be to get some very young squirrels early in the spring and accustom them to confinement and to being handled. These could then be shipped probably without difficulty. If you could arrange with someone here who will do this for you, I think I can get the game warden to give permission to catch the squirrels and ship them.

ABRAMS TREATMENT.

We have made a careful investigation of the Abrams treatment and had Dr. Abrams himself come here to demonstrate it to us. He failed entirely to show the least degree of efficiency in his methods of diagnosis and treatment. Consequently, we were not able to endorse it. We only make use of measures which are of known and proven value. We have made several other investigations of the Abrams method which have convinced us that is without value. If it were of value, we should be very glad to add it to our equipment but we cannot offer to our patients anything which we know has no scientific value.

SLONAKER

RATS

The packers have resurrected a defunct experiment by Slonaker whose vegetarian rats starved to death because they did not have the proper diet. McCollum fed his vegetarian rats with success. We have in our laboratory here rats that have for ten generations had no meat and are thriving. Prof. Slonaker cannot show better rats than ours.

GUARANTEE.

We never guarantee a cure of any disease as it is entirely contrary to the ethics of the medical profession to guarantee cures, and besides, it is impossible to state in advance just what the results of treatment will be in any particular case.

DR. BOBO

Dear -----

Replying to yours of ---, we are (I am) informed that the party to whom you refer is not in good standing with the medical profession in this community. Certainly we are not prepared to recommend his products or methods.

Very truly yours,

1-5-44:
CARDS SENT TO THE FOLLOWING TO ACKNOWLEDGE FLOWERS

Mrs. Mae Shaw, 165 Ann Ave.,City
Mr. Paul A. Smith, Shaw Pringing Co., City

Mr. and Mrs. Richard DeLong, 1289 E. Michigan Ave.,City

Miss Katherine Ransom, Oshtemo TB Hospital, Oshtemo, Mich.
Mrs. Elizabeth Thomas Gwinn, Hastings, Michigan

Michigan Tuberculosis Association, 403 Seymour Avenue, Lansing, Michigan

Race Betterment Foundation, c/o Miss G. Estill, Secretary

Hubbard, Dudley Company, 818 Michigan National Bank Bldg., City

Battle Creek College Home Economics, c/o Mrs. George Sykes, 15B Jericho Rd., City (Secretary)

Dr. and Mrs. Chas. E. Stewart, Vista, Calif.

Sanitarium Medical Staff
Dr. E. G. Norman, c/o Sanitarium
Dr. C. V. Radabaugh "
Dr. L. Jesperson "
Dr. B. E. Moshier, 30 North Wabash Ave., City
Dr. Paul and Linda Roth, c/o Sanitarium
Dr. J. R. Jeffrey "
Dr. S. E. Barnhart "
Dr. W. VanderVoort "
Dr. Wilfrid Haughey "
Dr. O. E. Thompson "
Dr. M. J. Gilfillan "

Three Quarter Century Club, c/o Mrs. Carra M. Gray, Secretary, 69 Grand Avenue, City

Miss May Adamsen, Hialeah, Fla.

Miss Enlow (Cloteen), Box 514, Little River, Miami, 38,Fla.

Dr. Frank Hartman, Erwin Wasey & Co., 230 North Michigan Avenue, Chicago, Ill.

1-5-44
CARDS SENT TO THE FOLLOWING TO ACKNOWLEDGE FLOWERS

Mr. and Mrs. John Dickinson Morgan, Moline, Ill.

Miss Lora N. Cooper, 298 W. Van Buren St., City

Mrs. Guy McAllister and Sons, R.F.D.4, Box 194, City

Former Associates at Loma Linda

Miss Lotta Burden, c/o College	Medical	Evangelists,		
Dr. and Mrs. Sanford Edwards	"	Loma Linda,	Cal.	
Drs. W.A. and Lyra George		"	"	"
Mr. and Mrs. Frank B. Howard	"	"	"	"
Mr. and Mrs. S. S. Merrill	"	"	"	"
Mr. and Mrs. Charles Johnson	"	"	"	"
Mrs. Naomi Risley	"	"	"	"
Dr. and Mrs. Alfred Shryock	"	"	"	"
Mr. and Mrs. O. R. Staines	"	"	"	"
Mr. and Mrs. C. F. West	"	"	"	"
Mr. and Mrs. O. E. Yingling	"	"	"	"

A Basket of red roses and daisies

Dr. Newton Evans, White Memorial Hospital, Los Angeles
Dr. and Mrs. Percy T. Magan, " " " "
Dr. and Mrs. D. D. Comstock, 4671 N. Figueroa, "
Dr. and Mrs. H. G. Westphal, 229 N.Central Ave. "
Dr. Nettie A. Aeller, 504 S. Boyle St., Los Angeles
Dr. John W. Hopkins, White Memorial Hospital, L. A.
Mr. O. R. Staines (only 1 card sent - in Loma Linda
Dr. Alfred I. Shryock " " " " " " list)
Dr. Winegar Simpson, White Memorial Hospital, L.A.
Dr. Julia White, 1736 E. Camulos, Glendale, Cal.
Dr. Frank Abbott, 125 W. F. Street, Ontario, Cal.
Dr. Mary Paulson Neall, 870 E. Grand Ave.,Pomona,Cal.
Dr. and Mrs. B. N. Colver, 1611 Melwood Dr.,Glendale
Dr. and Mrs. George Thomason, 1930 Wilshire Blvd.,L.A.

Dr. and Mrs. W. J. McCormick, 16 Gothic Avenue, Toronto,Ont.

Dr. Julius Schulein, Associated Standard Brands, Inc.,
595 Madison Avenue, New York City

Mr. Lewis J. Sarvis, 201 Bailey Building, B.C.

1-5-44:
CARDS SENT TO THE FOLLOWING TO ACKNOWLEDGE FLOWERS

Mrs. Stuart Pritchard, 401 The Inn, City

Calhoun County Medical Society, c/o Dr. L. C. Manni,
Secretary, American Legion Hospital, Ft.Custer,
Michigan

Mr. Douglas D. Felix, Security Building, Miami, Fla.

Mr. L. J. Montgomery, Post Tavern, City
Mr. Carl H. Montgomery, " " "

Sanitarium employees - 1 card to laundry
1 card to Kitchen
1 card on Time clock

Capt. Leroy F. Sineath, Post Hdq., C.A.S.U.No.1112,
Fort Devins, Mass.

Sanitarium Nurses Alumni Association, c/o Miss S. Nickloy,
Sanitarium

Mr. and Mrs. Phillip Giberson, 830 - 20 Street, Newport
News, Va.

Mr. Frank E. Beldon, 2803 Prospect Avenue, Cleveland, Ohio
Miss Linnie Beldon, c/o Sanitarium Hospital

Prof. Irving Fisher, Box 1825,New Haven, Connecticut (8)
Mr. Herbert W. Fisher, Same address

Preston Shoe Co., 7 E. Michigan AVenue, City

Kellogg Company Board of Directors
W. K. Kellogg (all in care of Kellogg Co., City
W. H. Vanderploeg except Mr. Cross and Dr. Morris)
J. S. Mitchell
E. J. Freeman
W. P. Butler
A. E. Udell
E. T. Swan
Glen Cross, 703 Security National Bank Building, City
Dr. Emory Morris, c/o Kellogg Foundation, City

City of Battle Creek, Battle Creek,Michigan

1-5-44
CARDS SENT TO THE FOLLOWING TO ACKNOWLEDGE FLOWERS

Dr. and Mrs. Edmund T. Vince, 49 Manchester St.,City

Sanitarium Mutual Benefit Association, Sanitarium

Mr. and Mrs. Kim Sigler, 1603 Security National Bank Building, City

Battle Creek Food Company Employes, City

Battle Creek Chamber of Commerce, 23 N. McCamly St.,City

Seventh Day Baptist Church, North Washington Ave., City

Dr. and Mrs. W. B. Lewis, 367 Champion St., City
Mr. and Mrs. F. B. Hunt, 10 Burnham Ct., City
Mr. and Mrs. A. Ellis, 39 E. Manchester St., City
Mr. and Mrs. E. H. Clarke, 11 Buckeye St., City

Mr. James Carey, 306 Ward Building, Battle Creek,Mich.

Wells, Kelsey, Cobourn and Harrington, Ohio Building, Toledo, Ohio

Mr. and Mrs. George McKay, 111 Ann Avenue, City

Mr. A. W. Grabe, c/o Sanitarium

Central National Bank, City

Officers of Security National Bank, City

Rotary Club, c/o Harold B. Keyes, Secretary, 607 Michigan National Bank Building, City

Miss Ethel F. Barnes, B C.Food Co., 2121 Virginia Ave., N.W., Washington, D. C.

Dr. and Mrs. Robert Fraser, 198 Fremont Street, City

Enquirer and News, 38 W. State Street, City

1-5-44
CARDS SENT TO THE FOLLOWING TO ACKNOWLEDGE FLOWERS

The Sinners Row, No. 2 Fire Station, 145 N. Washington Avenue, Battle Creek, Michigan

B.P.O.E. - Battle Creek Lodge No. 131
Elks Temple, 24 N. McCamly Street, City

Dr. and Mrs. C. W. Heald, 67 Oaklawn Avenue, City
Dr. and Mrs. R. H. Harris, 40 N. Washington Ave., City
Dr. and Mrs. J. E. Cooper, 298 W. Van Buren St., City
Mrs. W. F. Martin, 608 The Inn, Battle Creek
Mrs. E. L. Eggleston, 63 Oaklawn Ave., City
Mrs. G. E. Judd, 25 Orchard Place, City
Mrs. M. W. Wentworth, 67 Ann Avenue, City
Mrs. Emma Sheridan, 652 Capital Ave., N.E., City

Miss Elma Swift, Good Health Publishing Co., City
Mrs. Ruth Machin, " " " " "
Mr. Henry Stegman, c/o Sanitarium

Miss Gertrude Goodwin, 116 North Avenue, City

The Good Health Publishing Co., City

Michigan National Bank and Trust Company, City

Mr L. E. Denney, B.C.Food Co. Salesman
1221 Hayes Street, San Francisco, Calif.

Miss Emily McCoy, 166 West Liberty Street,
Bridgeport, Conn.

1-5-44:
CARDS SENT TO THE FOLLOWING TO ACKNOWLEDGE FLOWERS AND TELEGRAMS:

Mr. and Mrs. Emil Leffler, 711 Michigan Avenue,
Albion, Michigan

Miss Lenna F. Cooper, c/o Montefiore Hospital,
New York City

Mr. and Mrs. Fred C. Gamer, Security Building,
Miami, Florida

Mr. Burritt Hamilton, 1603 Security National Bank
Building, City

Prof. Irving Fisher, Box 1825, New Haven, 8, Conn.
(on list sending flowers - only 1 card sent)

1-5-44:
CARDS ADDRESSED TO THE FOLLOWING WHO SENT TELEGRAMS, AND MAILED:

The Honorable Frank Knox, Secretary of the Navy, Washington, D. C.
Dr. Will Durant, 5608 Briarcliff Rd.,Los Angeles, 28,Cal
The Honorable A. H. Vandenberg, U.S.Senate, Washington
" " J. J. Davis, U.S.Senate, Washington, D.C.
Dr. C. R. Keyport, President, Michigan State Medical Society, Grayling, Michigan
Mr. Grenville Kleiser, 1 W. 72 Street, New York City
Dr. David Fairchild, 4013 Douglas Rd., Coconut Grove, Fla.
Mayer Bernard Godde, City
The Honorable Paul W. Shafer, U.S.House of Representatives, Washington, D. C.
Mr. Alonzo L. Baker, 1081 Leighton Avenue, Los Angeles, 37, Calif.
Dr. Charles W. Dabney, 2719 Digby Rd.,Clifton, Cincinnati,20,O.
Mr. and Mrs. B. T. McCullough, Dyersburg, Tenn.
Mr. and Mrs. Everett E. Watters, " "
Prof. and Mrs. E. A. Ross, 3545 Topping Road, Madison,Wis
Mr. and Mrs. John Ashe Scott, P.O.Box 2004, Miami,Fla.
Mr. Francis Miller, Security Building, Miami, Fla.
Dr. E. A. Sutherland, Madison Snitarium and Hospital, Madison College, Tenn.
Mrs. W. A. Julian, 206 Taft Road, at Eden, Cincinnati,O.
Mr. and Mrs. R. D. Walker, 2301 Deleon Avenue, Mobile, Ala.
Major and Mrs. W. R. Chynoweth, El Paso, Texas
Dr. Mary Leslie Frasier, 1214 W. 9Street, Los Angeles, Calif.
Mr. J. P. Shannon, 1108 Sinclair Building, Ft.Worth,Tex.
Mr. Edward H. Crump, 1960 Peabody Avenue, Memphis, Tenn.
Dr. Ephram Boldyreff, 524 Crescent Ave., N.E.,Grand Rapids, Michigan
Mr. John D. Rockefeller, Jr., 30 Rockefeller Plaza, Rockefeller Center, New York City
The Honorable Chase Osborn, Poulan, Ga.
Mr. Dale Carnegie, Forest Hills, New York
Dr. Helen S. Mitchell, c/o State Department, Foreign Relief & Rehabilitation , Washington, D.C.
Dr. Paul F. Voelker, President, University of Grand Rapids, Grand Rapids, Michigan
Dr. Reginald M. Atwater, Secretary, American Public Health Association, New York City

1-5-44:
CARDS SENT TO THE FOLLOWING WHO SENT MESSAGES AND CARDS OF SYMPATHY

Mrs. Nella F. Diekema, 506 W. 16th Street, R. F. D. 6, Alta Vista, Holland, Michigan
Mr. Samuel E. Thomas, 340 Crescent Drive, Lake Bluff, Ill.
Dr. A.I. Kendall, Oracle, Arizona
Mr. and Mrs. A. H. Land, Orville, Calif.
Mr. Austin C. Rowell, 104 Magee Building Pittsburgh, 22, Pa.
Mr. Z. Finkelstein, 217 Beach 69th Street, Arvenna, N.Y.
Mr. and Mrs. Leroy Dean, Milford, Michigan
Mr. Julius Aespohl, Quincy, Ill.
Dr. S. R. Ramsay, 607 Sabine St., Houston, Texas
Mr. Maurice H. Mandelbaum, P.O.Box 1108, Chicago, Ill.
Mrs. S. H. Morningstar, 10401 Aurora Avenue, Detroit, 4, Michigan
Miss Laura Strohm, 234 E. 4th Street, Bloomsburg, Pa
London Vegetarian Society, 9 Adam Street, Adelphi, London, W. C. 2, England
Miss Eva Allison, Watervliet, Michigan
Mr. Charles S. Seed, Publisher, Rochester Clarion, Rochester, Michigan

1-5-44:
CARD SENT TO EACH OF THE ACTIVE PALLBEARERS

Mr. J. T. Christianson, c/o Battle Creek Food Co.
Mr. Leroy Sparks, 73 Greenwood Avenue, City
Mr. A. F. Bloese, c/o Sanitarium
Mr, L. C. Coulston, "
Mr. Harry MacCreery, "
Mr. G. L. Knox, c/o Battle Creek Food Company

CARD SENT TO EACH OF THE USHERS AS FOLLOWS:

Mr. Floyd A. Wallace, 53 Elizabeth St., City
Mr. Fred Robbins, 206 W. Territorial Road, City
Mr. Wendell Doty, 928 W. Michigan Avenue, City
Dr. Claud French, 911 Security National Bank Bldg.,City
Mr. Lee Wood, 20 Chestnut St., City
Mr. Theodore Small, 368 Main Street, City
Mr. Floyd Brainerd, 31 High Street, City

(Several of the men who were to act as ushers were ill so could not be there.)

CARD SENT TO SOLOIST:

Mr. and Mrs. Lawrence Mayer, 149 Oaklawn Avenue, City

CARDS SENT TO THE FOLLOWING WHO SENT
TELEGRAMS

The Honorable Herbert Hoover, Stanford University, Cal.
Dr. Charles B. Davenport, Cold Spring Harbor, New York
Mr. W. B. Calkins, Florida Sanitarium, Orlando, Fla.
Mr. Homer Rodeheaver, 28 E. Jackson Boulevard, Chicago, Ill.
Mr. and Mrs. Frank Murillo, Bryan, Ohio
Mr. Wesley Hailliburton, 2275 Court Avenue, Memphis, Tenn.
Mr. and Mrs. George F. Cannon, 1720 Jefferson Avenue, Muskegon, Michigan
Mrs. Ella Reeves, 5205 St. Elmo Avenue, Chattanooga, Tenn.
Mrs. Dorothy Draper, Hampshire House, 150 Central Park South, New York City

Mrs. Agnes Colver, 1611 Melwood Drive, Glendale, Calif.
(Mrs. Colver sent a telegram - Only 1 card sent to Dr. and Mrs. Colver)

Dr. Loiza Elwell Johnston, London, England
49 Worple Road, Wimbledon, S.W.19
(Dr. Johnston sent a telegram to Mr. Bloese Mr. Bloese wrote her a letter so no card was sent.)

Crossing the Bar

Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar,
When I put out to sea.

But such a tide as moving seems asleep,
Too full for sound and foam,
When that which drew from out the
boundless deep,
Turns again home.

Twilight and evening bell,
And after that the dark!
And may there be no sadness of farewell,
When I embark;

For though from out our bourne of Time
and Place
The flood may bear me far,
I hope to see my Pilot face to face
When I have crossed the bar.

—TENNYSON

In Memory of

Dr. John Harvey Kellogg

Birthplace

Tyrone, Mich.

Feb. 26-1852
Date

Departed This Life

Dec. 14-1943
Date

Battle Creek, Mich.
Place

Age

91 *Years* 9 *Months* 28 *Days*

Interment

Oak Hill
Place

Dec. 18-1943
Date

Lot

Battle Creek,
City

Section

Mich.
State

Twenty-Third Psalm

The Lord is my shepherd; I shall not want.

He maketh me to lie down in green pastures: He leadeth me beside the still waters.

He restoreth my soul: He leadeth me in the paths of righteousness for His name's sake.

Yea, though I walk through the valley of the shadow of death, I will fear no evil: for Thou art with me; Thy rod and Thy staff they comfort me.

Thou preparest a table before me in the presence of mine enemies: Thou anointest my head with oil; my cup runneth over.

Surely goodness and mercy shall follow me all the days of my life: and I will dwell in the house of the Lord for ever.

Services

Battle Creek, Mich.
San. Library Bldg.
Place

2:30 PM
Hour

Dec. 18-1943
Date

Officiating

Rev. Carleton B. Miller.
Rev. H. M. Jordan
Elder E. L. Pingenot.

Nearer My God to Thee

Nearer, my God, to Thee,
Nearer to Thee!
E'en though it be a cross
That raiseth me;
Still all my song shall be,
Nearer, my God, to Thee,
Nearer to Thee.

There let the way appear,
Steps unto heaven;
All that thou sendeth me,
In mercy given;
Angels to beckon me
Nearer, my God, to Thee,
Nearer to Thee.

Or if, on joyful wing
Cleaving the sky,
Sun, moon, and stars forgot,
Upward I fly,
Still all my song shall be,
Nearer, my God, to Thee,
Nearer to Thee.

—Sarah Flower Adams

Music

ORGAN SELECTIONS

HYMNS

SPECIAL MUSIC

Blessed are they that mourn: for they shall be comforted.—Matt. 5:4.

Let not your heart be troubled: ye believe in God, believe also in me.

In my Father's house are many mansions: if it were not so I would have told you. I go to prepare a place for you.

And if I go and prepare a place for you, I will come again, and receive you unto myself; that where I am, there ye may be also.—John 14:1-3.

I am the resurrection, and the life: he that believeth in me, though he were dead, yet shall he live. —John 11:25.

For I know that my redeemer liveth, and that he shall stand at the latter day upon the earth:

And though after my skin worms destroy this body, yet in my flesh shall I see God:

Whom I shall see for myself, and mine eyes shall behold, and not another.—Job. 19:25-27.

Sermon Notes

SCRIPTURE

The Dying Christian to His Soul

Vital spark of heavenly flame,
Quit, O quit this mortal frame!
Trembling, hoping, lingering, flying,
O the pain, the bliss of dying!
Cease, fond Nature, cease thy strife,
And let me languish into life.

Hark! they whisper; angels say,
Sister Spirit, come away!
What is this absorbs me quite,
Steals my senses, shuts my sight,
Drowns my spirits, draws my breath?
Tell me, my soul, can this be death?

The world recedes; it disappears!
Heaven opens on my eyes; my ears
With sounds seraphic ring!
Lend, lend your wings! I mount! I fly!
O Grave! where is thy victory?
O Death! where is thy sting?

—Alexander Pope

Pall Bearers

A. F. Boese

L. C. Coulston

Harry MacCreery

J. T. Christianson

G. L. Knox

LeRoy Sparks

Fraternal Organizations

I have friends
in Spirit Land,
Not shadows
in a shadowy band,
Not others
but themselves are they,
And still I think
of them the same
As when the Master's summons came.
Their change,—
the holy morning light breaking
Upon the dream-worn sleeper waking,—
Changed from twilight into day.

—WHITTIER

Friends Who Remembered

Mr & Mrs. Otis B Hague.
Mr J G Leach
Mrs Martin J Leach
Miss Nancy Shoemaker
Mr. R. Andersen
Ethel M. Flower
Amelia Mangum.
Bessie Hampton.
Mrs Edith Stakeley
N. Theodore Peterson
Mrs. C. E. Kolb
Shirley Ricklow
Mrs R. F. MacPherson.
Miss Sarah B. Wakefield & Robert
Mrs. Daisy Pollard Wilson Muse

Fast as the rolling
seasons bring
The hour of fate
to those we love,
Each pearl that leaves
the broken string
Is set in Friendship's
crown above.

As narrower grows
the earthly chain,
The circle widens
in the sky;
These are our treasures
that remain
But those are stars
that beam on high.

—HOLMES

Friends Who Remembered

Henry Jr. Fox

Mr & Mrs S K Leatherman

Mr. & Mrs. Guy M. Hunt Sr

J Ray Summers

Mr. & Mrs. Don Runkle

Paul C Eldridge

Mr. & Mrs. C. W. Sweet.

Hulda Christell

Mr & Mrs Chas Oliver

Mr & Mrs F. Hildebery

Mrs Bertha Moore

Mrs. H. E. Moore

Mrs H M. Hamblin

Mrs J M Wilbur

M O R Van Horn

'Tis But a Little Faded Flower

'Tis but a little faded flower,
But oh, how fondly dear!
'Twill bring me back one golden hour,
Through many a weary year.
I may not to the world impart
The secret of its power,
But treasured in my inmost heart,
I keep my faded flower.

Where is the heart that doth not keep,
Within its inmost core,
Some fond remembrance, hidden deep,
Of days that are no more?
Who hath not saved some trifling thing
More prized than jewels rare—
A faded flower, a broken ring,
A tress of golden hair?

—Ellen Clementine Howarth

Friends Who Remembered

Floral Tributes

Carrie Bonnet

Louise Brackett Ruett.

Marie Anderson

& Z Matherly

~~T. Sposobb.~~

Mr & Mrs R J Green

Dr A R Dickson

Mr. & Mrs H. G. Bayley

Emil E. Stockam

Mr & Mrs Susie Parker Jones.

Leo Spector

Mrs T. G Andre

Laurine Mayer

Grace G. Reed

Mrs Alfred Meyer

The Garden that I Love

The garden that I love is full of
Light;
It lies upon the sloping of a
hill,
Where Dawn first stirs the curtains
of the Night,
And the breeze whispers when
the Noon is still.
The garden that I love is full of
Rest;
God's own fair Acre, where His
dear ones lie,
In the safe shelter of the kind
earth's breast,
Waiting His Easter dawning up
the sky.
There may I rest, asleep with them
awhile,
There may I wake, with them,
that glorious Day,
When, in the sunshine of the
Master's smile,
Sorrow and sighing shall be
swept away!

—Florence L. Henderson

Friends Who Remembered

Floral Tributes

Mrs. H. W. Buckner

C W Sutton,

Mr & Mrs M. C. Haynes

Maxine Duffy

James Jennison

B. E. Hood

Thos Hoffhines

Geo. C. McClain

Floyd A. Mullinex

Mr + Mrs John Carter + girls

O. E. Thompson

Mabel R. Davenport

P. C. Rossman

Mr. + Mrs Vivan Kendel

Ralph Starr

Sometime

And you shall shortly know that lengthened breath
Is not the sweetest gift God sends His friend,
And that, sometimes, the sable pall of death
Conceals the fairest boon His love can send.
If we could push ajar the gates of life,
And stand within and all God's working see,
We could interpret all this doubt and strife
And for each mystery could find a key.

But not to-day. Then be content, poor heart;
God's plans, like lilies pure and white, unfold;
We must not tear the close-shut leaves apart,—
Time will reveal the chalices of gold.
And if, through patient toil, we reach the land
Where tired feet, with sandals loosed, may rest,
When we shall clearly see and understand,
I think that we will say, "God knew the best!"

—May Riley Smith

Loving Messages

If I can stop one heart
from breaking,
I shall not live in vain;
If I can ease one life
the aching,
Or cool one pain,
Or help one fainting robin
Into his nest again,
I shall not live in vain.

—EMILY DICKINSON

Helpful Friends

So live, that, when
thy summons comes to join
The innumerable caravan,
that moves
To that mysterious realm,
where each shall take
His chamber in the silent
halls of death,
Thou go not,
like the quarry-slave at night,
Scourged to his dungeon;
but sustain'd and sooth'd
By an unfaltering trust,
approach thy grave,
Like one that draws
the drapery of his couch
About him,
and lies down to pleasant dreams.

—BRYANT

Friends Who Furnished Cars

Forever

Those we love truly never die,
Though year by year the sad memorial wreath,
A ring and flowers, types of life and death,
Are laid upon their graves.

For death the pure life saves,
And life all pure is love; and love can reach
From heaven to earth, and nobler lessons teach
Than those by mortals read.

Well blest is he who has a dear one dead:
A friend he has whose face will never change—
A dear communion that will not grow strange;
The anchor of a love is death.

The blessed sweetness of a loving breath
Will reach our cheek all fresh through weary years.
For her who died long since, ah! waste not tears,
She's thine unto the end.

—John Boyle O'Reilly

The Battle Creek Sanitarium

BATTLE CREEK, MICHIGAN.

Mr & Mrs L Loyd Fuller
Gladys Hardy
Mrs. J. D. Trapani.
Dr. Lydia Epperson
Gladys White
Sylvia Wood
Zoe Walton
Anne Abbey
Marian Swift
Myra Hebert
Mrs W. A. Mallernee
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Andrew Andersen
Ethel M Andersen
John Jos Morris
1591 St Marys detroit
Chas. E. Stewart Jr.

The Battle Creek Sanitarium

BATTLE CREEK, MICHIGAN.

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L. Johnson
Vera Aagaard
Lydia MacCready
Lee A. Dudley.
G. L. Kneed
A. MacNaughton
M Mellgren
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The Battle Creek Sanitarium

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Ruby F. Stuart
Laura Sprague Talbot
Mrs. M. H. Wentworth.
Mrs. L. C. Nielsen
Mrs W.G. (Maude) Hall.
Mabel Getts —
Mrs. F. G Andre.
Mrs Alice H Ward
Cameron Turner
Roberta Bennett

Friends Who Remembered

Fred A Rafaer

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Nora Linton

Effamae Palmer

Blanche Van Atta

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Virginia Ferguson MacDermott

Verne V. Wilson

Blanche C. Hawkins

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Grace Roomsburg.
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M, M & S Fairchild
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Katherine Vander Voort
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Martha Saunders
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Verna Dickson
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Mr. & Mrs. Earl Keiser
Mr. and Mrs. Wellis Bartelson

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Gretchen G. Carl.
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D. E. Spaicher
H. B. Seeney
Helen Seeney
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Wm E Forlee
Miss Nellie Burton.
Miss Emma Burton
Ruth Tappan
Mrs. F. E Tappan
Mrs Eldora Partain
Miss Bessie Partain
mrs C. E. De Kam
Mr Delbert Ordway
Claude Gorsuch

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J. H. Lewis

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Harold Moore

Mrs Marie Cook.

Mr & Mrs. J. N. De Rees

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Mrs. Louis S. Smith

Mrs J. A. Vaden

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Alice Brantley

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Virginia Willard.

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Chas Ford.

Elizabeth Stakely

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Floyd G Wallace

Mary Jacobs

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Mr & Mrs Charles Follett

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Mrs. Dorothy Adams

Mrs. Ivy Graham

Mrs Anita L. Ludlum

Leroy F. Sparks

June Parker

Shirley Thoms

Jo Ann Stimmel

Sarah Elliott

Louise McMahon.

Friends Who Remembered

~~Floral Tributes~~

Gertrude L Lampee

R. J. Gamble

Mr & Mrs B Allan

Dr. & Mrs D. E. Barnhart

Mrs Belle Pratt

Lucile Hall

Donald K Stiver

Pearl Buckingham

Mr & Mrs C J Foote

Margaret Lair

Clair D. Kendrick

Edith D Snyder

Margaret Becker

Marie Allwardt

Sarah Spore

The Mystery

He came and took me by the hand
Up to a red rose tree,
He kept His meaning to Himself
But gave a rose to me.

I did not pray Him to lay bare
The mystery to me;
Enough the rose was Heaven to smell,
And His own face to see.

—Ralph Hodgson

Family Record

Born ***Died***

Father's Parents:

Mother's Parents:

Father:

Mother:

Deceased:

Married to:

Children:

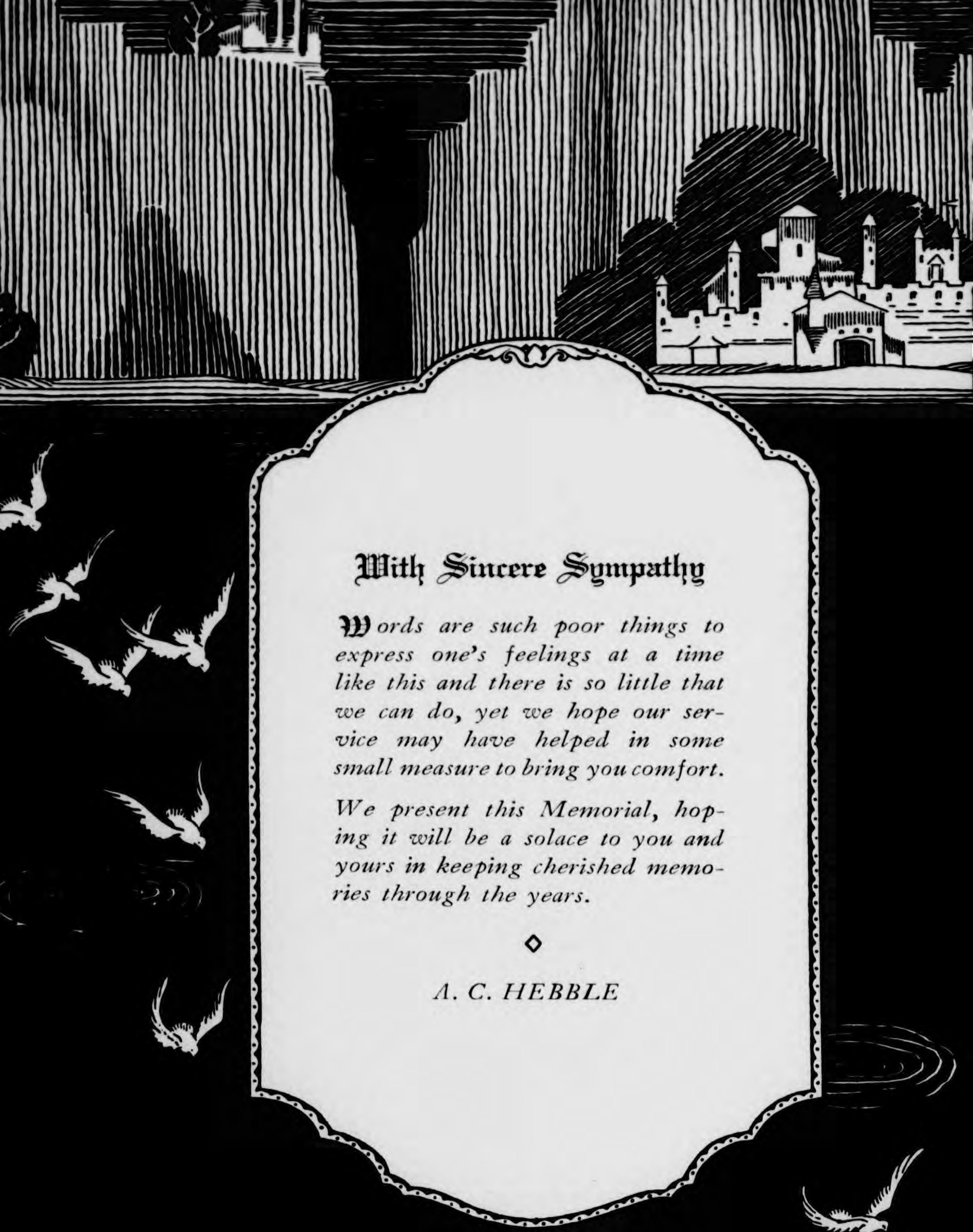
"Oh, Why Should the Spirit of Mortal Be Proud?"

Oh, why should the spirit of mortal
be proud?
Like a swift-flitting meteor, a fast-
flying cloud,
A flash of the lightning, a break of
the wave,
He passeth from life to his rest in
the grave.

'Tis the wink of an eye; 'tis the
draught of a breath
From the blossom of health to the
paleness of death,
From the gilded saloon to the bier
and the shroud;
Oh, why should the spirit of mortal
be proud?

—William Knox

Biography



With Sincere Sympathy

Words are such poor things to express one's feelings at a time like this and there is so little that we can do, yet we hope our service may have helped in some small measure to bring you comfort.

We present this Memorial, hoping it will be a solace to you and yours in keeping cherished memories through the years.

◇

A. C. HEBBLE