

NORMAL COLON HABITS

The capacious colon of man and other mammals is provided by nature to serve as a reservoir for the accumulation of alimentary residues and body wastes and their evacuation at regular intervals rather than almost continuously as in fishes and other lower forms of animal life. This arrangement permits the disposal of refuse with the least possible interference with movement and other bodily activities.

The possible injury resulting from the over-accumulation of residues and especially the fact that food residues readily undergo putrefaction and other changes due to active bacterial development at temperatures near that of the body, resulting in the production of highly toxic substances wherewith the blood and other tissue fluids may be contaminated, render the question of the proper spacing of the evacuations of the colon reservoir one of high importance. The researches of Bouchard,¹ Metchnikoff,² Christian Herter,³ Combe⁴ and other physiologists and clinicians have clearly shown that the stasis or prolonged retention of food residues, bile and other body wastes results in the development in the colon of a great number of animal and vegetable parasites, bacteria, pus-forming streptococci and other disease-producing bacteria, amebae, various types of dangerous protozoa, yeasts, molds, worms and other parasitic organisms hostile to human life and health.

Delayed evacuation necessarily results in accumulation of residues and undue ~~extension~~^{dilation} of the colon, which may be voluminosly increased by the formation of carbon dioxide and various noxious and malodorous gases. Gases are chiefly the result of the decomposition of carbohydrates and sugars. Fats give rise to butyric acid and other toxic products. Protein encourages

unduly retained

the development of prodigious numbers of proteolytic or putrefactive bacteria, colon germs, Welch's bacillus, sporogenes, putrificus and scores of other organisms which, according to Strassburger, may attain such prodigious numbers as 300 trillions in 24 hours. It is evident, then, that the evacuation of the colon residues at reasonably frequent intervals is desirable while retention in the colon for a sufficient length of time to permit fermentative and putrefactive changes to take place with the development of noxious and pernicious intestinal flora is in every way undesirable and may become a menace to life and health.

That nature has provided for the evacuation of colon residues soon after a periodical food intake or meal is clearly evidenced by the new light thrown upon the structure and functions of the colon through studies and observations made possible by the development of reentgenological methods of exploring internal bodily structures.

The colon, or large intestine, is about five feet in length. It is anatomically divided into three sections, the cecum and ascending colon, the transverse colon and the descending or distal colon.

In an ordinary bowel movement only the third portion or descending colon is emptied. At the same time a forward movement begins in the ascending and transverse colons which continues until the third section of the colon is again filled which occurs chiefly as the result of the advancement of the colon contents during the taking of the next meal. If the advancement is sufficiently active, shortly after the end of the meal the residues will enter the rectum and produce a "call" leading to evacuation of the third section of the colon. When this is repeated after each of the three daily meals, the colon will be entirely cleared of the residues of the food eaten during the preceding 24 hours; that is, if a test meal is given in the morning, the residues of the meal will be

evacuated before or soon after the morning meal of the next day.

As shown by the X-ray observations of ^{Hurst} ~~Hertz~~ of London, "the time required for [passing through] each part of the colon-- ascending, transverse, and descending-- is about two hours. That is, about the same period is occupied in passing through the 2 feet of colon between the caecum and the splenic flexure as through the $22\frac{1}{2}$ feet of small intestine." The movements of the human colon, however, appear to be less active at night than during the day."

The careful ^{studies} observations of ^{Hurst} ~~Hertz~~ showed that the activity of the colon is greatly accelerated during the taking of food. He found that, apart from meals, progress through the colon was slow, but that after each meal there was perceptible advancement of the contents. More progress occurred, for example, during the dinner hour than during the previous four hours. (b)

Commenting upon these observations Cannon remarks, "If approximately nine hours are required for material to reach the descending colon in man, the waste from food taken at eight o'clock in the morning might be discharged at five o'clock in the afternoon. If defecation should occur regularly at four o'clock, however, the waste from breakfast must be retained for another twenty-four hours. Thus, as Hertz has pointed out, the interval between a meal and the excretion of its residue will vary, ^[usually] when the bowels are opened regularly once a day, between nine and thirty-two hours, the period depending on the time of eating and the time of defecation." 7**

*Hertz, Constipation and Allied Intestinal Disorders, London, 1909, p. 9.
** Hertz, loc. cit., p. 18.

From the above it is very clear that the number of evacuations will be strongly influenced by the number of meals since, as pointed out by Hurst, the taking of food is the chief cause of colon activity. If a person takes but two meals a day, the contents of the bowel will not be advanced toward the exit with sufficient rapidity to secure more than two movements during the waking hours. If, however, the diet is of such a character that a good intestinal flora is maintained and if the entire colon contents are evacuated every 24 hours, no harm will result because putrefaction is inhibited and toxins, virulent bacteria and other harmful factors are not present.

The number of evacuations per diem is also influenced to a marked degree by the amount of exercise taken. The movements of the diaphragm in breathing aid the colon by compressing and advancing its contents toward the exit. The amount of help which the colon receives from the diaphragm depends largely, however, in sedentary persons upon the maintenance of an erect posture so that the diaphragm in its descent compresses the colon against tense abdominal muscles. In a stooped or forward bent posture this helpful action is lost. Exercise with the body held in an erect posture with tense abdominal muscles and accelerated and deep breathing movements is a great aid to normal colon activity. The writer has known many persons who believed that they were greatly profited by securing a fourth evacuation before breakfast by a horseback ride, a brisk walk, a daily dozen or some other form of exercise.

The above facts seem to justify the conclusion that under normal conditions an intake of food is ^{should be} soon followed by an output of residues of a previous meal, the natural result of the forward movement of the colon contents due to the act of eating which pushes the residues forward into the pelvic colon, an automatic and ~~under natural conditions~~ a highly efficient discharging device. There are other factors and considerations which strongly support and strengthen this view and justify the conclusion that the common practice of moving the bowels once a day is really a form of constipation and that by delaying the evacuation of residues it encourages the development of conditions which promote disease and shorten life.

Miss → Tissier, an assistant of Pasteur, began in the latter part of the last century and continued for many years an exhaustive study of the intestinal bacteria. He discovered in 1900 that although the stools of infants though sterile at birth, within a few hours become contaminated and show the presence ^{in great numbers} of colon bacilli and other germs found in adult stools. ^{the us} These objectionable bacteria are speedily driven out by a new germ which appears in the stools within two days after the infant begins to nurse and within two weeks occupy the entire field. This germ, the Lactobacillus acidophilus, produces lactic acid in such quantities that the growth of putrefactive and other harmful bacteria is inhibited and in consequence they quickly disappear.

The rapid development of the Lactobacillus acidophilus ^{in the infant's intestines} is the result of the presence ^{the mother's} in milk of a large percentage of lactose, or milk sugar. So long as the diet of the infant ^{contains} affords this sugar in sufficient amount, the Lactobacillus acidophilus continues to flourish. Dextrin, a derivative of starch, likewise encourages the growth of the Lactobacillus acidophilus and the production of lactic acid; in other words, growth of a

protective aciduric flora.

The facts seem clearly to justify the conclusion that nature has provided for the maintenance of a condition in the colon which, while not sterile, is kept free from harmful bacteria by the luxurious growth of a harmless acid-forming organism which renders the conditions so inhospitable to putrefactive and other offensive organisms that their development is prevented and thus protection afforded against a grave cause of disease. Confirmation of this view is afforded by the fact that so long as an infant ^{is} ~~maintains~~ an intestinal flora consisting of 90 to 100 per cent ^{aciduric or} ~~of~~ Lactobacillus acidophilus, it remains free from the intestinal infections which produce diarrhea, gas and other disturbances to which bottle-fed infants are greatly subject. *Jan 6 67 107*

Furthermore when ^a potent cultures of the Lactobacillus acidophilus ^{are} administered to ^{an} infants suffering from intestinal troubles ~~in proper~~ doses together with lactose in some form to ~~promote their development~~, their disturbing bacteria quickly disappear and within a few days the stools lose their offensive character, gas and other symptoms disappear, appetite returns and normal conditions are restored.

This was well illustrated in the case of the famous Canadian quintuplets, when in spite of the most meticulous care to prevent infection were attacked by a form of intestinal trouble which destroys the lives of many thousands of budding citizens of this country annually. When at the suggestion of the writer ^{Dr. Dajodig gave them} ~~they were given~~ soy milk cultures of Lactobacillus acidophilus, they quickly recovered and have since ^{now more than} ~~been kept~~ ^{three years} free from bowel troubles by the daily use of the culture. The quintuplets required the artificial culture for the reason that although they had been fed with breast milk from their fourth day, they had missed the protection of the Lactobacillus acidophilus which infants normally receive in the act

of nursing.

When the colon is emptied with normal frequency, that is, within less than 24 hours after the food is taken, the time between intake and output is insufficient for the development of advanced putrefaction; and if the diet is of proper character, an aciduric flora ^{once established,} may be maintained. ^{One-day stools show a protective flora for}

I ~~recently had a~~ ^A bacteriological examination made of the stools of a nine year old chimpanzee. ^{showed} I found a well developed protective flora, 85 per cent Lactobacillus acidophilus. The animal was thoroughly healthy, ^{It and} had never suffered from bowel troubles.

A few days later my attention was called to a five months old infant chimpanzee suffering from bowel trouble to which bottle-fed babies are highly subject. It was quickly cured by acidophilus culture and lactose as were the quintuplets.

In the examination of many thousands of ~~adult~~ stools made at the Battle Creek Sanitarium, ^{occasionally} now and then one has been found which showed 75 per cent acidophilus and freedom from evidence of putrefaction. ^{over}

Carl Akeley ^{informed the writer} told me that in his studies of the gorilla in his native African wilds he observed that the animal evacuated several times daily and that the stools were free from putrefactive odor, and added that examination of the alimentary tract ^{complete} ~~from one end to the other~~ ^{in one which he dissected,} did not encounter ^{showed nothing} anything in the slightest degree offensive and added with emphasis, "It was the cleanest thing, internally and externally, that I ever encountered in my life."

On inquiry at the London Zoo in reference to the bowel habits of the chimpanzee and other large apes, I was told by the keeper that they moved their bowels regularly four times a day. Dr. Hornaday informed me that the anthropoids of the Bronx Zoological Garden evacuated three times a day.

At the Washington Zoo the keeper ~~informed~~ ^{stated} me that the chimpanzee Koko normally evacuates four to six times a day. He observed that occasionally the number of evacuations was only two or three and that then he ^{the animal} seemed depressed and uncomfortable, would not perform and sat crouched in a corner most of the time clasping his head with his hands.

A questionnaire sent to a large number of missionary physicians located among wild and primitive people brought 140 replies. The evidence obtained from these original sources clearly indicates that among native tribes which have been uninfluenced by the customs of civilization and who still adhere to primitive habits of diet, living a free and active life, two or three evacuations of ~~the bowels~~ ^{the bowels} daily ~~is the almost universal practice~~, the number of evacuations depending upon the number of meals eaten. A single daily movement is regarded by such people as constipation, and gives rise to alarm. The one-^{them} ~~movement-a-~~ ^{evacuation} day habit appears only among those classes or castes ^{whose habits} who ~~live a~~ sedentary ~~life.~~

A physician writing from South Africa said, "A native called on me yesterday morning and asked for medicine to relieve a dreadful constipation. I said to him, 'When did your bowels move last?' He replied, 'This morning, Doctor.' 'But I understood you to say you were constipated.' 'Yes,' replied the native, 'I am horribly constipated. My bowels only move once a day.'"

This state of one-a-day constipation is ^{very} quite prevalent in many highly civilized countries, but by no means universal. Among working men the habit of two and three evacuations daily is quite common.

The advantage of suppressing putrefaction in the intestinal canal by frequent evacuation is shown by the fact that ^{among people} persons who move the

A mass of minor answers. Numerous replies activity and immediate response

bowels frequently, ~~are remarkably free from bowel troubles and other disorders associated with intestinal infections and intoxications.~~ *are relatively free*

For example, of ^{American} 112 physicians in the following countries, 43 reported that they had never seen cancer of the bowels: *practicing among the natives of* Mexico, Palestine,

Arabia, Turkey, Egypt, South Africa, East Africa, Central Africa,

Nigeria, Japan, Syria, Korea, Persia, Siam, India, Asia Minor, New

Hebrides, *appendicitis was likewise infrequent*

~~Not only bowel troubles but systemic disorders of various sorts are by eminent members of the profession believed to be attributable to colon poisons.~~

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In a symposium on alimentary toxemia at a meeting of the British Royal Society of Medicine, the evil effects of retention of colon residues long enough to permit putrefaction was pointed out by numerous eminent authorities of which we mention only a few. Dr. W. E. *Dawson* ~~Dixon~~, Professor of Materia Medica in King's College, London, enumerated among other highly poisonous substances produced in the colon by the putrefaction of food residues, ammonia, which causes hardening and degeneration of the liver; tyramin, a very highly poisonous product; indol, skatol and cholin; sepsin (of which a small dose killed a large dog), a ptomain which is always found in the colon of meat-eaters, and which is decomposed into pressure-raising poisons (Barger and Walpole).

Lord Dawson of Penn, physician to King George, ~~some years~~ ~~and~~ drew the following picture of persons suffering from alimentary toxemia, the result of intestinal stasis: "The sallow, dirty complexion, the inelastic skin, the dusky lips and nails, the dirty tongue, evil-smelling breath, constant abdominal discomfort of one kind and other, doughy, inelastic abdomen, cold extremities, the physical and mental depression, are among the prominent features." *AL*

When the bowels move but once a day, the residues of a test meal are, according to ^{Hurst J.T. Case, M.D.} ~~Hertz~~ and other roentgenologists, retained in the body 53 to 54 hours, or 2 $\frac{1}{2}$ days. In the meantime seven other meals have been taken and the residues of these meals are still retained so that the colon, which at the most should never contain the residues of more than three meals, contains the residues of six, or more than twice as many meals, and naturally becomes ~~packed and distended~~ with putrefying residues and ~~it is almost invariably over-distended still farther~~ by gases, the result of putrefaction and fermentation. This ^{stretching} over-distension of the intestinal walls causes redundancy, atrophy and inability to evacuate completely. Pouches and diverticula are formed and colitis with its long train of ills and a predisposition to appendicitis. ^{and diverticulitis}

~~At the symposium above referred to Dr. Jordan, roentgenologist of Guy's Hospital, attributed hardening of the arteries to intestinal poisons.~~

Dr. Munnery of St. Mark's Hospital said, "I believe that many of the cases of crippling arthritis that we see from time to time are due to poisons formed in the large bowel."

Dr. Sigley ^{a skin specialist} believed these colon poisons to be the cause of a large number of skin eruptions and added, "It is not the frequency of the evacuation that is important, but the quantity, that is to say, that the contents of the large bowel be systematically completely removed, and that there be not an ever-increasing residue left behind."

Dr. Davidson of Travancore, ^{India}, wrote me in reply to a questionnaire, "Appendicitis is very rare here. Only six cases out of 1000 operations." An annual report of the Mayo Clinic showed 19 per cent of all cases examined to be suffering from appendicitis and 21 per cent of all cases operated upon.

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The highly beneficial results which follow the adoption of the practice of evacuation after each meal bear very eloquent evidence of the physiologic value and correctness of this practice. Among the over 200,000 persons who visited the Battle Creek Sanitarium for medical relief during the last 30 years, many hundreds have become convinced of the importance of regular after-meal evacuations. The writer has been informed by ^{every large number of persons} ~~many of them~~ that they had experienced notable relief from headache, dullness, inability to concentrate, deficient appetite, foul breath ^{and chronic fatigue} and coated tongue and other symptoms usually attributed to intestinal toxemia, ^{and had noted a remarkable} ~~together with a notable~~ increase in endurance and working power. One well known college professor, who for years found it necessary to rest a couple of hours in the middle of the day, within three weeks after the adoption of the practice of evacuating after each meal reported himself, as he said, "able to keep up a full head of steam the entire day, thereby adding two hours to ^{my} ~~his~~ working ^{day} ~~period~~."

Strong evidence that after-meal evacuation is physiological is afforded by the ease with which the ^{habit} ~~practice~~ is acquired. Many years ago, I received a letter from the superintendent of an institution for the care of idiotic and feeble minded children in which the writer stated that having heard of my advocacy of the three-a-day evacuation practice, ^{she} thought I might be interested in ^{an} observations she had made. She stated that she had often been complimented by the fact that her institution was free from the bad odors usually present in such ^{establishments} ~~institutions~~ because of the lack of intelligent control of evacuations by the inmates. She said she was often asked the question, "How do you manage it?" The answer was, "After each meal I place each child upon the toilet. Nature does the rest."

If in addition to a regular visit to the toilet within an hour after each meal a person whose bowels move but once a day will add to *a laxative* his diet some colon-stimulating food accessory, and if prompt attention is habitually given to the "call," which indicates readiness for action by the colon, the bowels ^{colon usually} may be easily trained to prompt ^{elimination} ejection of its contents after every intake of food, and in many cases when the best aids are employed, the colon may become so sensitive to the stimulus of eating that a visit to the toilet is found necessary immediately after the meal is finished and in many cases even when an apple or fruit of other sort is taken between meals.

Laxative drugs must be scrupulously avoided. Exercise, and other measures for encouraging colon activity must not be neglected. In cases in which X-ray examination shows that the colon is permanently crippled, the colon ~~must~~ ^{should} be emptied ^{daily} at bedtime by an enema of 3 or 4 pints of water at 105°-110°. This has been a mechanical measure may be used indefinitely without (over)

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THE CASE AGAINST MEAT EATING

The limited space assigned for the discussion of this subject will permit only a concise summary of authenticated facts with very brief comments.

Meat is not the natural diet of man.

Each species of animals subsists upon the foods to which it has through long ages of development become adapted in structure and function. This is a fundamental and indisputable biologic fact.

A classical grouping of animals divides them according to their eating habits as carnivorous, herbivorous, granivorous, frugivorous and omnivorous. A well trained naturalist finds no difficulty in assigning to its proper class any new or strange animal which he may encounter by simple examination of its teeth and other obvious characteristics. Indeed, the adaptation of structure to function in animals is so definite and perfect that a zoologist can readily determine the dietetic habits of an animal by examination of its skeleton even though its bones may have been buried in the earth's crust for thousands of years.

If we will then for a moment divest our minds of all knowledge and preconceived opinions concerning the natural dietary of the genus homo and place a man before a body of zoologic experts and ask the question "What shall we feed him?" the reply would unquestionably be the words of the great French naturalist Cuvier, "The natural food of man, judging from his structure, appears to consist of fruits, roots, and other succulent parts of vegetables; and his hands offer him every facility for gathering them. His short and moderately strong jaws on the one hand, and his cuspidati being equal in length to the remaining teeth, and his tubercular molares on the other, would allow him neither to feed on grass nor devour flesh, were these aliments not previously prepared by cooking."¹

The chimpanzee and its relatives, the orang-utan, the gorilla and the gibbon are primates. All primates feed upon plant products. Man is likewise a primate. All horses eat the same sort of food, as do all sheep, all lions, all animals of any class. We do not find one horse eating hay, oats and corn while another eats cats, grasshoppers and rodents.

Evidently, in eating meat man has turned away from his own natural bill of fare and chosen that of another class to which he does not belong. Prehistoric man who roamed the ancient forest with his primitive relatives, the chimpanzee and other anthropoids, was not an eater of meat. Says Prof. Elliott,²

"Moreover, there was not, so far as we are aware, any carnivorous creature in the Eocene period, or one which might have been a serious enemy."

Said Dr. Ami, author of the Geological Geography of North America, one of the world's greatest living anthropologists in a public lecture, "The diet of the human race in its earliest history did not include flesh in any form. All paleontologists agree that man did not become a flesh eater until after the arrival of the Glacier Period, when the great forests of nut trees and wild fruits which had previously constituted his chief food resources were destroyed by the great ice cap which crept down over the northern hemisphere."

The Heidelberg jaw, believed to be at least 200,000 years old, one of the oldest and most perfectly preserved of human relics, is recognized as taurident or vegetable feeding in character.

Most Human Beings Eat Little or No Meat.

It is a significant fact that by far the great majority of

the human race still adhere to the original bill of fare and are plant feeders. Two hundred million Hindus in India, most of the four hundred millions of China, the teeming millions of Central Africa, probably more than half the whole human race either never eat meat or eat it in such small quantities it cannot be considered as a ^{necessary} definite part of their bill of fare.

The race memories of prehistoric times as preserved in the most ancient writings and in myths and legends of the oldest civilized nations agree in picturing primitive man as a plant feeder.⁴

"The oldest races of animals are plant feeders."
Dryden.

It is likewise a significant fact that among those living races of animals whose origins date farthest back in geologic time, the oldest are plant feeders. In this group are to be found such ancient types as the elephant and its relatives as well as the anthropoids and man.

This tendency to degeneracy may be clearly discovered also in some living races. The most degenerate types are not to be found among plant feeders but among large eaters of flesh such as the Kamchatkadales, the Tierra del Fuegians and the Eskimos. The finest living types of homo sapiens are to be found among plant feeders such as the natives of the South Pacific Islands discovered by Captain Cook and the Hunzas of Northern India described by Sir Robert McCarrison as the finest specimens of the human species he had ever seen.

A notable fact is the striking difference in degenerative tendencies between the highly civilized white races and the less advanced yellow races. Recent statistics show that depopulation through physical decadence has so steadily advanced during the last one hundred years in England that if continued for another century at the same rate the population of England will be reduced from 40,000,000 to 4,400,000,³ and a similar if less rapid decadence has been recently shown to exist

in every highly civilized country, not excepting the United States. On the other hand, in Japan and China, the natives of which are practically plant feeders, consuming only 1 to 4 pounds of meat per capita annually, no such depopulation tendency exists. The increase of population in Japan is so rapid that that country is at the present moment making desperate efforts to find room for its growing millions.

Meat is an inferior food. While admitting, then, that meat is a substance which may be utilized as a food, there is not the slightest ground for giving it preference to other foods and still less for considering it a necessary or essential food. The truth is that while meat is in general easily digestible and readily assimilable, it is nevertheless an inferior food and one which should be used if at all only in emergency and certainly not as a staple food.

Orientals have flourished for thousands of years on a fleshless diet. With few exceptions, the people of the Orient still adhere to the simple natural dietary which has served them so well for many thousands of years; and although China and India have behind them the longest history of any civilized nation, they still retain practically intact their primitive national vigor notwithstanding the almost entire lack of the protection afforded by modern organized sanitation, which has rendered possible the development of our Western civilization to its present high status. It is not to be forgotten, however, that sanitation with its prophylactic and protective influence is a priceless boon in saving human life, it is nevertheless a powerful factor in promoting race degeneracy through its preservation of the unfit.

In the most populous portions of the celestial empire, meats, including fish, are so little used that they are not mentioned in national food budgets, and the same may almost be said with reference to milk and eggs. The glycine of the soybean has enabled this humble

legume, known in China as "the little honorable plant," to furnish to 400,000,000 people an adequate supply of protein of the finest quality equal to milk protein in nutrient value and superior to meat proteins of every sort.

Human beings have no natural liking for raw flesh, and young children usually refuse cooked flesh until taught to like it.

It is a significant fact that young children acquire the appetite for meat through training or following the example of their parents and that not infrequently a child's aversion to meat is so great that the habit of eating it is never acquired. Said the late eminent Sir Henry Thompson, "Few children like that part of the meal which consists of meat. I am satisfied that if children followed their own instinct in that matter, the result would be a gain in more ways than one."

John Evelyn, the diarist, contemporary with the famous Pepys, wrote, "Children choose to eat fruit rather than flesh, and might persist in so doing if custom did not compel them against the dictates of nature."

The preference shown for meat by those accustomed to its use is due to its flavors, the so-called "osmazomes" of the older writers on dietetics. As a nutrient, it is inferior because greatly lacking in several important food essentials, particularly in vitamins and calcium. Meat is deficient in most of the vitamins; in fact, it is not a good source of any of these highly essential food factors. This is naturally the case for the reason that vitamins are plant products and are produced in animal bodies, if at all, on only very small amounts. The vitamin content of cooked meats is still less since most of the vitamins are impaired by cooking and some are destroyed.

Meat lacks calcium. A pound of beef, for example, contains less than half of one grain of lime, only about one-twentieth of the daily food requirement. This is due to the fact that the distribution of the lime in the body is very unequal, 99 per cent of all the lime intake being deposited in the bones.

~~Meat diet causes acidosis and arteriosclerosis.~~ While deficient in calcium and other basic or alkaline substance,^v meat contains a large excess of phosphoric acid. As a result, its free use *tends to cause* ~~gives rise to~~ acidosis, a condition which favors the development of arteriosclerosis, high blood pressure and disease of the kidneys.

Newburgh,⁴ of the University of Michigan, produces arteriosclerosis in rabbits by the addition of meat powder to their diet. He also produced acute Bright's disease in rats by meat feeding.

Herbert Fox, Director of the Laboratory of Comparative Pathology of the Philadelphia Zoological Garden observed that while arteriosclerosis is much less frequently developed in lower animals than in human beings post mortem examination made of animals that died after having been for some years in the collection showed a marked difference between carnivorous and herbivorous. Disease of the kidneys and arteries was found to be confined almost entirely to carnivorous animals.

Carnivorous animals are adapted to a flesh diet; man ^{and other primates are not} is not. ~~Carnivorous animals are in both structure and function better adapted to a flesh diet than are human beings and other primates.~~ The dog, for example, is equipped with a liver four times as large in proportion to its body weight as is the human liver. In addition the liver of the dog and other carnivorous animals converts uric acid into urea, whereas the human liver, like that of higher apes, does not. ~~This explains the pronounced effects of meat eating as a cause of gout in human beings.~~ In view of the fact that beefsteak and chops contain

14 grains of uric acid to the pound and sweetbreads 70 grains to the pound (Hall), it is evident that the body is very poorly prepared to defend itself against injury from foods of this character. This is still more apparent in view of the observation by Dr. Fox that the poison-destroying glands of internal secretion-- pituitary, adrenal and thyroid-- are larger in cats, dogs and eagles, flesh eating animals, than in man and other animals that are non-carnivorous.

Another adaptation to meat eating which human beings and other primates do not possess is found in the relative length of the colon which, as pointed out by Metchnikoff, is in carnivorous animals short in proportion to the length of the body (one to four), is much longer in plant feeders (10 to 30 times the body length), the same as in the chimpanzee. The short colon of carnivorous animals is evidently intended to be a partial protection against the absorption of poisons from putrefying food residues remaining long in the colon. The stools of carnivorous animals are always highly putrefactive and malodorous.

It is thus very clear that man is a low protein feeder; hence not adapted to the use of flesh foods since the intake of protein by meat eaters is almost invariably much greater than they can utilize.

Meat eaters suffer from protein poisoning. Folin, Professor of Physiologic Chemistry of Harvard University, many years ago called attention to the fact that when the intake of protein is greater than is needed for replacement necessitated by tissue wear and tear and other very limited uses, the surplus must be at once converted into urea by the liver and eliminated by the

kidneys, no provision being made for the storage of surplus protein as in the case of carbohydrates and fats. When the intake of these fuel foods is greater than needed to replenish the fuel supply of the body, the excess is stored up beneath the skin and in other places as adipose tissue and held in reserve for future needs.

These well known physiologic facts show clearly the great importance of carefully limiting the protein intake to the needs of the body, making, of course, a liberal allowance for the body's requirements while carefully avoiding so great an excess as to burden the liver and kidneys which have to deal promptly with the surplus intake to prevent the "protein poisoning" which in some degree always results when an excess of protein is eaten.

Stefansson relates an incident in which a number of men became very ill and several died from acute inflammation of the kidneys. "An illustration of the generally accepted fact that a diet consisting almost entirely of protein leads to 'protein-poisoning,' which is poisoning only in the sense that illness results because the kidneys are overtaxed with trying to excrete the excess nitrates. This leads to nephritis." ⁵ Bright's disease may in many cases, perhaps the majority, be justly regarded as chronic protein poisoning. There are of course other causes of renal damage. These naturally tend to increase the susceptibility to protein poisoning.

That ordinary meat, steak, chops, etc., does not meet the general nutritive needs of the body, is clearly shown by Stefansson's observations in the Arctic regions. ⁶ Even though

enormous quantities of food were eaten, hunger was not relieved. The Indians, although supplied with rabbits in abundance, called their diet "starvation" because their hunger was not at all appeased.

Meat eating does not promote strength. The strongest animals in the world, the elephant, the rhinoceros, the hippopotamus, the camel, are all vegetable feeders. The giant sloth, the megatherium, the mammoth, and most of the huge reptiles, the mightiest beasts which ever roamed the surface of the earth, were plant feeders.

Milo, a disciple of Pythagoras, whose mighty prowess is still remembered after more than twenty centuries, was, like his master, a flesh-abstainer. The athletes of ancient Greece and the gladiators of ancient Rome were trained on barley cakes and wheat.

The Arab laborers who constructed the Suez Canal lived upon wheat and dates; and De Lesseps, the great engineer who projected and successfully completed this remarkable work, was so impressed by observing the superiority of the wheat-fed Arabs over the beef-fed Englishmen engaged in the same work that he became a flesh-abstainer and an earnest advocate of the fleshless regimen, and continued so until his death many years later.

Meat-eaters are notably inferior to plant feeders in endurance. This toxic effect of high protein feeding affords a clear explanation of the superiority of flesh abstainers and plant feeding animals in feats of endurance. For example, Theodore Roosevelt⁷ in his East African hunting expedition, observed that a horse with a heavy man on his back could al-

ways run down a lion fleeing for his life in a mile and a half. Even such carnivorous animals as dogs have greater endurance and are better hunters when not fed meat. When I asked a Highland shepherd what he fed his dogs, he replied, "The same as I eat myself, sir,-- brose, bannocks and potatoes." When asked his reason for not feeding meat to his dogs, he said, "Because they would have nae so guid wind."

On inquiry of an Oregon bear hunter about the feeding of his pack, he replied that he gave them only potatoes and oatmeal, declaring that he never gave them meat. When asked for his reason for withholding meat he replied, "Because they can not run."

Karl Mann, a grocer's clerk not professionally trained, competing in a government supervised walking race from Dresden to Berlin, 123 miles, against the picked pedestrians of the German army and several professionals, won easily on a fleshless diet consisting of nuts and fresh vegetables which he pulled out of the vegetable gardens as he hurried by. The only protein he ate was derived from nuts.

The famous pedestrian, Weston, informed me that on his long walks he never ate meat and on his walk across the continent lived on cereal flakes and milk.

The Tarahumari Indians of Mexico are the most tireless runners in the world. Their ancestors were the dispatch runners of Montezuma in pre-Columbian days, and they still adhere to the simple plant regimen of their forebears. A government record shows that one of these runners carried a dispatch a distance of 400 miles in three days over a roadless

mountainous region.

The feats of endurance performed every day by rice-eating jinrikisha men are well known. Baeltz, a German army surgeon, testing the endurance of a couple of jinrikisha men who subsisted on rice barley and potatoes, offered them meat which they ate with relish, but after a day or two discarded it because they found it impossible to do their task.

Some years ago Professor Irving Fisher made a comparative test of endurance of meat eaters and non-meat eaters, the following brief account of which we quote from a compendious work on dietetics by Professor William E. Fitch, M. D. of the Vanderbilt Clinic of the College of Physicians and Surgeons of New York City:

"Fisher carried out some comparative endurance tests between sixteen meat eaters (students from Yale University) and thirty-two vegetarians connected with the Battle Creek Sanitarium. The latter had been vegetarians from four to twenty years. They not only abstained from meat, but also from coffee, tea and condiments, and they were also teetotalers and non-smokers. The endurance tests were as follows:

"1. Squatting on the heels and rising thence to upright position as many times as possible.

"2. Holding out the arms fully extended for as long a time as possible.

The results are shown in the following table:

FISHER'S COMPARATIVE ENDURANCE TESTS

	Meat Eaters	Vege- terians	Percentage of Difference
Knee bendings	383	846	121%
Holding arms out (minutes)	10	49	390%

"According to the result tabulated above, the standard of meat eaters is shown as 100, while the endurance of the vegetarians is from 121 to 390, and we may therefore draw the conclusion that strength and endurance have nothing to do with the consumption of generous quantities of protein, as was formerly a matter of faith. Furthermore, it is an admitted fact that great endurance is possible on simple food of low protein value, in support of which we may cite the example of the Japanese and the Arabs."

How meat-eating lessens endurance. The physiologic explanation of the superior endurance of flesh abstainers is simple and conclusive. Endurance is controlled by fatigue poisons and the poisons which produce fatigue have three sources: (1) Chemical changes which occur in the muscles themselves during exercise. (2) Mineral acids and other fatigue-producing substances swallowed in the food. (3) Poisons produced by proteolytic bacteria which give rise to the putrefaction of unabsorbed protein in the colon. Poisons of the second and third classes are derived from protein which by introducing an excess of phosphoric acid lowers the alkalinity of the blood and so lessens its power to neutralize lactic

acid produced during muscular activity which Hill, the English physiologist has shown may be produced at the rate of one dram per second by a speedy runner. When flesh is eaten, from 8 to 15 per cent of it escapes digestion and while lying in the colon awaiting evacuation undergoes putrefaction.

Dr. Lee, Professor of Physiology of Columbia University, tested putrefaction products sent to him by Christian Herter and found them to be powerful fatigue poisons.

In view of these facts it is evident that a meat eater enters an endurance test seriously handicapped by the fact that his blood is already to a degree saturated with toxic matters which cause fatigue so that the limit of his endurance will be reached much more quickly than in the case of the flesh abstainer whose blood alkalinity is high and his tissue fluids free from colon poisons.

Meat-eating lowers resistance to disease. The same poisons which lessen endurance, thereby lowering efficiency, likewise lower resistance to disease and shorten life by encouraging senile changes such as changes in the arteries, the heart, the liver, kidneys and other glandular structures.

Captain Sanderson, director of the elephant service of the English army in India, who for fifteen years hunted the wild animals in the tropical jungles, observed that lions usually died of blood poisoning after slight wounds, whereas wild buffaloes recovered after being terribly torn by predatory beasts.^B After having become disabled by chronic jungle fever, he recovered quickly and found, as he said, that when he followed the monkey in diet, he could follow him anywhere

and could live wherever the monkey could live. His generalization was of course too sweeping. Abstinence from flesh will not insure immunity.

Meat-eating raises blood pressure. Hunter, in studying the influence of meat eating on blood pressure, showed the systolic blood pressure to be 10 points higher in flesh eaters than in flesh abstainers. He was led to make his research by the fact that agents of the New York Life Insurance Company, of which he is the chief actuary, reported finding the blood pressure of the average Chinaman to be 8 points lower than that of the average American.

In concluding his paper⁷ Dr. Hunter says, "Taking the population of the United States as a whole, I believe that a better adjusted diet, with less animal food, would result in a lower blood pressure and in greater longevity with an equal ability to carry on their occupations."

A non-flesh diet increases life ~~expectancy~~^{expectation} and lowers insurance cost. I think it proper to mention in this connection the fact that a large group of employees at the Battle Creek Sanitarium who are for the most part flesh abstainers or make very little use of meat, are because of their health record, insured by a standard life insurance company at a cost 20 per cent below the regular rate.

The Arabs of a large extent of North Africa live chiefly on dates and milk. Their agility, endurance, and health are extraordinary.

Some years ago (1899) the Emperor of Japan appointed a commission to determine by investigation whether it was necessary to add meat to the national dietary to improve the

physique of the race, especially to increase their stature. As regards the use of meat, the commission reported "that the Japanese had always managed to do without it, and that their powers of endurance and their athletic prowess exceeded that of any of the Caucasian races."

Commander Donald MacMillan, the famous arctic explorer, stated to the writer that "the Eskimo is short lived. He goes to pieces at fifty, his teeth fall out and he becomes decrepid and worthless and rarely lives beyond sixty years, never beyond sixty-five."

The Arctic traveler Stefansson said to me in my office, "I do not claim to have proven that a man can live better or longer on a flesh diet, but only that he can live. Of course the scientific argument is against such a diet."

According to McCarrison, the finest examples of physical development and vigor are to be found among the flesh abstaining Hunzas, natives of North India, "an example of a race unsurpassed in perfection of physique and in freedom from disease in general, whose sole food consists to this day of grains, vegetables and fruits, with a certain amount of milk and butter, and goat's meat only on feast days."⁸ During seven years of medical practice among these people, he found appendicitis unknown, as well as cancer, colitis, gallstones and peptic ulcers.

Meats not the best sources of blood building minerals.
The very generally held idea that meat is especially needed by persons suffering from anemia and malnutrition, because of its richness in iron, is not justified by the facts concerning the mineral contents of meat and the results of feed-

ing experiments with both animals and human beings. It is true that meat contains a larger percentage of iron than most foods. It is also true that there are 25 common vegetable foods which contain as much as or more iron than beefsteak. All the whole grain cereals are richer in iron than is meat. An egg contains as much iron as an equal weight of meat, and the yolk of egg, beans and lima beans, more than three times as much. Dates are richer in iron than is meat, and the delicious avocado affords a percentage of iron more than twice as much as does meat.

Sherman and von Noorden, most eminent authorities on nutrition, clearly demonstrated the superiority of fruits, cereals and vegetables to meat as a source of food iron. Says von Noorden, "If we limit the most important sources of iron,-- the vegetables and the fruits,-- we cause a certain sluggishness of blood formation."

Sherman presents convincing evidence⁹ that iron from plant sources is more readily assimilated than that from flesh foods. Plant products are equally superior as a source for copper, now known to be a necessary accompaniment of iron for blood-building. This is a matter of much importance since copper is as essential as iron for blood-making. Although it is not a constituent of the red blood cells, as is iron, it is necessary to serve as a catalyst in enabling the body to utilize iron in blood-making. According to Sherman, meat contains only one part of copper in a million, whereas dried fruits and cereals contain four or five times as much copper; legumes, nine, and nuts more than eleven times as much as does meat.

The above facts prove most conclusively that vegetable

sources of blood-making minerals are far superior to meat as sources of blood-building minerals.

Meat consumption diminishing. Not only have modern nutrition researches clearly demonstrated that meats are not superior to plant products as nutrients, but so much indisputable evidence has accumulated in recent years which associate it as a causative factor with grave diseases of various sorts it is not surprising that there has been since the beginning of the present century a notable decline in its use in spite of extraordinary efforts made by the promoters of the livestock and meat packing industries to increase the consumption of meat.

Meat-eating spreads parasitic infection. There are in the United States today not less than ten or fifteen million human beings who have become infected by trichinosis and are carrying in their muscles millions of trichina worms with which they have become incurably infected through eating the flesh of hogs who acquire the parasites through their cannibal habits and the eating of garbage. The trichina parasite has been a menace for more than half a century. No effective means have been adopted to prevent its spread among either hogs or human beings. If an equally serious source of injury were associated with the potato, the cabbage, carrots or any other ordinary plant food, its use would have been discarded long ago, perhaps even forbidden by law. The popular predilection for bacon and vested financial interests appear to be the only reasons for this astonishing tolerance.

Meats of all sorts are purveyors of parasites. Tape-

worms of various sorts are acquired only through the eating of meat. Still more extensive infection with parasitic bacteria is chiefly chargeable to the use of meat. This is the source of the pernicious bacteria to which colitis, appendicitis and other intestinal infections which cause an endless amount of misery and an increasing number of deaths in this country owe their origin.

McCarrison states that during seven years extensive surgical practice in the state of Hunza, North India, he found appendicitis entirely unknown.¹²

All fresh meats are infected with colon germs. The observations of Tissier showed plainly that all meat becomes infected with colon germs in the act of slaughtering. This is not surprising in view of the fact that surgical cleanliness is not observed in the slaughtering of animals which go straight from the pens in which they are crowded with their bodies smeared with filth to the slaughtering floor and thence directly to the chambers where they are hung to undergo the "ripening" process, which in part consists in the spreading of the colon germs with which they have become infected throughout the entire carcass. Fresh meats are always found swarming with these germs and when meat has been kept long enough to become tender, as usually served in hotels, the number may amount to a million or more per gram, or half a billion to the pound. Hamburger steak, liver, and game usually contain one to ten million colon germs to the gram.

There are strict ordinances everywhere against purveying colon germs in water and milk, and many other foods, but no bacteriological standard has been established for meat,

notwithstanding the fact that uncooked meat products are always infected with germs of a dangerous and highly infectious character. Some years ago, an attempt was made to establish as a standard for sausage 1,000,000 bacteria per gram, or 30,000,000 to the ounce. The attempt was abandoned, however, when it was discovered that such a standard would require the condemnation of a large share of the products of this sort now offered for sale.

Recently, another attempt to standardize meats bacteriologically has been made by the Board of Health of the city of Seattle, Washington, which a few months ago passed an ordinance prohibiting the sale of hamburger steak containing more than 10,000,000 bacteria (colon germs) per gram.

Ordinary cooking lessens the number of bacteria found in meat to a variable extent, but does not completely destroy them. In rare roasted meats the number is sometimes increased, the heat being only sufficient to accelerate growth.

Sanitary authorities condemn water as unfit for domestic use when it contains two colon germs in 100 c.c. (3½ ounces) of water. Live colon germs are no more wholesome in roasts or sausages than in water.

One of
~~But~~, the chief source^s of injury through the use of meat from a bacterial standpoint may be traced to the enormous development of the pernicious "meat bacteria" (Herter) which takes place in the undigested remnants of meat while awaiting evacuation in the colon. According to Strassburger, the average production of these poison-forming organisms in the average colon of meat eaters is not less than 300,000,000,000,000 every 24 hours. *Ordinary stools consist in considerable part of dead bacteria.*

According to Prof. A. B. Macallum of McGill University,¹³ the poisons produced by intestinal putrefaction through failure on the part of the intestinal mucous membrane to prevent their absorption may become the cause of "arteriosclerosis, hepatic cirrhosis, acute yellow atrophy of the liver, nephritis in some of its forms, angina pectoris, senile dementia and dementia praecox."

All pathologists may not agree with Prof. Macallum as regards the specific effects of the colon poisons, but an increasing number of both pathologists and clinicians are becoming thoroughly convinced that alimentary toxemia is a factor of first importance in the causation of chronic disease.

Prof. Macallum in calling attention to the way in which the wall of resistance against parasites and poisons which nature has provided in the lining membrane of the intestine may be broken down by the prolonged attack upon it of countless billions of pernicious bacteria and an overwhelming flood of virulent toxins resulting from their activity shows that the colon may become a veritable Pandora's box of maladies.

Being normally intended to transport and discharge from the body the innocuous residues of a non-putrefactive dietary, the colon when required to harbor for many hours or even days the putrefying remnants of animal flesh swallowed in a state of more or less advanced decomposition becomes, as Prof. Macallum well said, "A portal through which a host of toxic substances enter the blood stream and carry potent causes of degeneration and disease to every part of the body." The

liver, the glands of internal secretion, the skin and the kidneys which defend the body by destroying and eliminating

poisons are worn out prematurely by the unnatural and overwhelming demands made upon them. This loss of efficiency leads to accumulation of poisons in the blood which causes hardening of the arteries and degenerative changes in nerves, muscles, heart and other organs, lower vital resistance and premature senility.

Newburgh of the University of Michigan finds in these damaging effects of meat eating the chief cause of chronic Bright's disease. A paper read before the American Medical Association supported his views by a series of animal experiments in which both acute and chronic inflammation of the kidneys had been induced by meat feeding.

At the last Race Betterment Conference, Hindhede, Food Commissioner of Denmark during the World War and for several years after, in a paper presented at the Race Betterment Conference held at the Battle Creek Sanitarium in 1928, showed that the death rate from Bright's disease in Denmark, where the consumption of meat is less than half that in this country, is only 24 to the hundred thousand as compared with 82 to the hundred thousand in this country.

Said Dr. Hindhede, "One notices the terrible death toll in America due to Bright's disease. I can no longer doubt that the high meat diet ruins the kidneys, especially in view of Dr. Newburgh's experiments, proving as they do that we may, with mathematical certainty, produce Bright's disease even in rats by placing them on a high meat diet." Dr. Hindhede attributes the enormous death rate in this country from nephritis to the excessive use of meat.

Although the above indictment of meat as an essential of the human dietary is far from complete, I will close by calling attention to the fact that, once considered as being highly essential, meat is now officially and authoritatively recognized as not an essential food. The Inter-Allied Scientific Food Commission which met in London, Rome and Paris during the World War was without doubt the most authoritative body which ever met to consider the subject of human nutrition. At its Paris meeting at which the necessary quantities per diem of essential foods was determined, the question of the minimum meat requirement was discussed by the commission, but it was decided to be unnecessary to fix a minimum meat ration. In the words of the committee's report, "no absolute physiologic need exists for meat, since the proteins of meat can be replaced by other proteins of animal origin, such as those contained in milk, cheese and eggs, as well as by proteins of vegetable origin."

Soon after the beginning of the World War, the German government issued and distributed to its nationals a statement prepared and signed by Rubner, Zuntz and all its leading physiologists which declared that the use of meat might be entirely dispensed with without fear of any injury resulting. The results fully justified this forecast as is clearly shown by the following statement made by the medical director of one of the world's largest life insurance companies:

"Notwithstanding the fatalities due to active warfare, the death rate among the company's policyholders in Continental Europe was very considerably less during the War than before

it began.¹⁰ In Denmark, the mortality rate was reduced one-third, and the reduction of the morbidity rate was still more pronounced. Diabetes, obesity, gout and other disorders of nutrition nearly disappeared from the mortality tables. In this country and other countries the death rate has been lower since the war than before."

It will hardly be questioned that the dietary restrictions imposed by the war, including the lessened meat consumption, was an important factor in lowering mortality and morbidity rates.

The lowering of the death rate in this country in recent years may well be attributed in part at least to the increased use of fruits and green vegetables, the consumption of which has been quadrupled within the last dozen years, and the diminished consumption of beef which has steadily progressed notwithstanding the frantic efforts of the Meat Board and other agencies to the contrary.

In conclusion I quote with cordial endorsement the following sentiment from Thoreau, "I have no doubt that it is a part of the destiny of the human race, in its gradual development, to leave off eating animals, as surely as the savage tribes have left off eating each other when they came in contact with the more civilized."

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1-21-38

DIRECTIONS FOR USING LD-LAX

LD-LAX aids bowel action by means of soft lubricating bulkage and expedites change of the intestinal flora by supplying the special nutrients needed to produce luxuriant growth of the Lactobacillus acidophilus and carry them to the colon where they are especially needed. LD-LAX is food, not medicine and may be used indefinitely like other foods without harm. It is remarkably efficient. The bowels need only bulkage, not roughage.

How to Take

Stir the LD-LAX into a tumblerful of cold water, fruit juice or other cool liquid. Swallow at once before it thickens. A drinking tube is convenient. Then swallow another tumblerful of water, either warm or cold. Drink 5 or 6 glasses more at intervals during the day. Much liquid is necessary.

Time of Taking

LD-LAX may be taken at meal times, but an hour or two before or after meals is preferable as this avoids burdening the stomach with too much bulkage. The third dose may be taken on retiring. In some cases, two daily doses suffice to insure normal bowel action, or evacuation after each meal.

Size of Dose

Two to four rounded teaspoonfuls or more if necessary to secure two or three full bowel movements daily. Larger doses are needed at first than later.

For best results in toxic conditions, colitis and foul breath, take at first one or two large dessert-spoonfuls of Lacto-Dextrin with each dose of LD-LAX. Later, when the stools are no longer offensive, take less Lacto-Dextrin or omit it.

Dose for infants one-third to one-half level teaspoonful.

It may be added to the feeding mixture. For older children, one or two level teaspoonfuls or more if needed with a well rounded dessert-spoonful of Lacto-Dextrin.

Do not forget to chew. Long chewing and tasting of the food is necessary to awaken in the colon the periodical activity by which the colon contents are pushed forward to the exit in readiness for evacuation after each meal. Thirty to 40 minutes' chewing is necessary to induce efficient action. This is one of the best means of encouraging efficient colon action.

Do not fail to read the accompanying circular for further important information.

THE IDEAL FOOD LAXATIVE

Is found in LD-LAX, the result of long and costly research for a food laxative which would help the crippled colon without doing it harm.

Medicinal laxatives drive the colon by irritating or stimulating it, but the colon should not be driven. It is never lazy. It always does the best it can. If it fails, it is because it is crippled or handicapped in some way. Stimulation, which like a whip forces action in spite of handicaps, always does harm, increasing disability. It is for this reason that drug laxatives should never be used except in emergency and when other better means are not available.

LD-LAX is a Purely Physiologic Aid to the Colon.

It does not stimulate or force, but helps by removing obstacles, energizing the colon and supplying special nutrients which promote vigorous growth and development of the protective germ acidophilus which successfully combats all known disease-producing and putrefactive bacteria.

The extraordinary bulkage property of LD-LAX is due to a combination of highly hygroscopic tropical gums, which in the presence of adequate moisture swell to many times their original bulk. A teaspoonful of this gum complex with added water will fill a half pint cup with a transparent emollient jelly which by gently stretching the walls of the intestine brings into action propulsive peristaltic waves which easily push the jelly-like mass along as they slowly traverse the bowel. These oriental gums sweep the intestine clean, gathering up every particle of wastes and residues and slip along the digestive tube in a long coherent mass to be finally discharged after each meal as a soft, bulky inoffensive stool without griping, soreness, looseness, or effort.

The water taken with LD-LAX is not absorbed by the body but is evacuated. Five or six additional glasses of water should be taken at intervals during the

day. This greatly aids bowel action. Dryness of the mouth, viscid of scanty saliva is a positive indication of the need of water even if not thirsty.

Lacto-Dextrin. For the most prompt results in efforts to reform the crippled colon, Lacto-Dextrin in tablespoonful doses is most helpful and in cases of colitis is quite necessary. In very chronic or obstinate cases Soy Acidophilus Milk is highly efficacious as well as in the acute bowel troubles of infants, as is demonstrated in the well known case of the quintuplets who after being cured of bowel trouble at the age of four months have been kept in excellent health by its thorough use.

After the flora is changed, as shown by the disappearance of gas and offensive odor of the stools, the regular use of LD-LAX in proper dosage will maintain regular bowel movements after each meal and with inoffensive stools and relief and often cure from hemorrhoids and other rectal troubles which are the natural result and usual accompaniment of constipation.

Gastric disturbances, as indicated by coated tongue, pain, heaviness after meals, gastric ulcer, biliousness, "sick headaches," skin troubles due to intestinal toxemia, frequently recurring colds, sinus troubles, chronic fatigue and a host of other troubles usually associated with constipation either disappear entirely or are very greatly mitigated by the regular use of LD-LAX as above directed.

The Diet. An antitoxic and vitamin-rich dietary is necessary for best and permanent results. Such a dietary will include as a part of every meal one or more of such vitamin-rich foods as parsley, spinach and other greens, dairy products, carrots and other fresh vegetables, etc. Meats, fried foods and raw eggs must be discarded in order to suppress the

putrefaction which gives rise to foul smelling stools. Alcoholic liquors and tobacco must be strictly avoided, also tea and coffee and hot condiments such as mustard, pepper, etc. These irritate the bowel and prepare the way for infections which cause colitis, gastric ulcer, appendicitis and gall bladder troubles.

Thorough chewing of the food, care to avoid overeating and especially care to see that the colon is thoroughly emptied daily by a bowel movement after each meal are highly important.

When gas is present or there is other evidence of retained residues, an enema of warm water (two quarts, temperature 105° - 100° F.) should be taken at bedtime. Retention of fecal residues over night gives opportunity for putrefaction and absorption of poisonous putrefaction products. These colon poisons also paralyze the bowel and prepare the way for colitis and other infections and through absorption give rise to a "tired feeling" on rising and chronic fatigue.

Medicinal laxatives of all sorts must be strictly avoided.

NOTICE

If you desire to learn how to live so as to enjoy super health, to increase efficiency and length of life, you should join the Aristocracy of Health. A letter addressed Aristocracy of Health, Battle Creek, Michigan or to the undersigned, accompanied with a dime or three 3 cent stamps will bring you a copy of Rules for Right Living by Dr. John Harvey Kellogg, "a code of health" which has helped many thousands of persons to notable health betterment and greatly increased efficiency and physical comfort. You may also receive with the booklet an invitation to join the Aristocracy of Health which will keep you in touch with the world's progress in health promoting ideas and methods, including new foods and new health literature.

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Enclosed find one dime or three 3 cent postage stamps for which send me the booklet Rules for Right Living and also information about the Aristocracy of Health and two application blanks, one of which I will sign and return, keeping the other as a reminder.

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THE IDEAL FOOD LAXATIVE

Is found ~~at last~~ in LD-LAX, the reward of ^{result} a long and costly search for a food laxative which would help the crippled colon without doing it harm.

Medicinal All ordinary laxatives drive the colon by irritating or stimulating it, but the colon should not be driven. It is never lazy. It always does the best it can. If it fails, it is because it is crippled or handicapped in some way. Stimulation, which like a whip forces action in spite of handicaps, always does harm, increasing disability. It is for this reason that drug laxatives should never be used except in emergency and when other better means are not available.

LD-LAX is a purely physiologic aid to the colon. It does not stimulate or force, but helps by removing obstacles and supplying energy.

The extraordinary bulkage property of LD-Lax is due to a combination of highly hygroscopic tropical gums, which in the presence of adequate moisture swell to many times their original bulk. A teaspoonful of this gum complex with added water will fill a ^{half pint} pint cup with a transparent emollient jelly which by gently stretching the walls of the intestine brings into action propulsive peristaltic waves which easily push the jelly-like mass along as they slowly traverse the bowel. These oriental gums sweep the intestine clean, gathering up every particle of wastes and residues and slip along the digestive tube in a long coherent mass to be finally discharged ^{after each meal} as a soft, bulky inoffensive stool without griping, soreness, looseness, or effort.

The water taken with LD-LAX is not absorbed by the body but is evacuated. Five or six ^{additional} glasses of water should be taken at intervals

viscid
 during the day. This greatly aids bowel action. Dryness of the mouth
 or a deficient flow of saliva is a positive indication of the need of water
 not thirsty
 even if thirst is not experienced.

Lacto-Dextrin
 For the most prompt results in efforts to reform the crippled
 colon, Lacto-Dextrin in tablespoonful doses is most helpful and in cases of
 colitis is quite necessary. In very chronic or obstinate cases soy acidophilus
 milk is highly efficacious as well as in the acute bowel troubles of in-
 fants, as is well shown in the well known case of the quintuplets who after
 being cured of bowel trouble at the age of four months have been kept in
 excellent health by its thorough use.

After the flora is changed, as shown by the disappearance of gas
 and offensive odor of the stools, the regular use of LD-LAX in proper
 dosage alone will usually maintain regular bowel movements, occurring after
 each meal with inoffensive stools, absence of gas, freedom from hemorrhoids
 and other rectal troubles which are the natural result and usual accompani-
 ment of constipation.

Gastric disturbances, as indicated by coated tongue, pain, heavi-
 ness after meals, gastric ulcer, biliousness, "sick headaches," skin
 troubles due to intestinal toxemia, frequently recurring colds, sinus
 troubles, chronic fatigue and a host of other troubles usually associated
 with constipation either disappear entirely or are very greatly mitigated
 by the regular use of LD-LAX as above directed.

The Diet
 An antitoxic and vitamin-rich dietary is necessary for best and
 permanent results. Such a dietary will include as a part of every meal
 one or more of such vitamin-rich foods as parsley, spinach and other greens,
 dairy products, carrots and other fresh vegetables, etc. Meats, fried foods
 and raw eggs must be discarded in order to suppress the putrefaction which

gives rise to foul smelling stools. Alcoholic liquors and tobacco must be strictly avoided, also tea and coffee and hot condiments such as mustard, pepper, etc. These irritate the bowel and prepare the way for infections which give rise to colitis, gastric ulcer, appendicitis and gall bladder troubles. Thorough chewing of the food, care to avoid overeating and especially care to see that the colon is thoroughly emptied daily by a bowel movement after each meal are measures of the utmost importance.

When gas is present or other evidence of retained residues, at bedtime an enema of warm water (two quarts) should be taken. Retention over night gives opportunity for putrefaction and absorption of poisonous putrefaction products. These colon poisons also paralyze the bowel and prepare the way for colitis and through absorption give rise to chronic fatigue and "tired feeling" on rising.

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LECTURE TO PATIENTS OF THE MIAMI-BATTLE CREEK IN THE SANITARIUM

LOBBY BY DR. JOHN HARVEY KELLOGG, JANUARY 31, 1938

The white race is dying of civilization. A man wrote a book a little time ago entitled, "The Cause and Cure of Civilization." The cause of civilization seems to be chiefly that man has wandered away from the wilderness and got into the city and the city is destroying him. Because of ^{the} our city life and because of the congregation of people into dense masses, they have lost the opportunity for living in a thoroughly wholesome way.

The chimpanzee and the gorilla have adhered to the old-fashioned way of life. They are relatives of ours that live in the forest. They have the same muscles, the same bones, the same glands and the same digestive organs. The brain of a young monkey is so nearly like that of a young human being that it takes an expert to tell them apart.

I happen to be acquainted at the present time with a chimpanzee that I hope will be making us a visit in the near future. I have already made arrangements for a gentleman who has a chimpanzee baby to bring ^{it} the baby here. This baby is less than two years old

in some ways
 and he is ~~a great deal~~ smarter than any human baby you ever saw
 of that age.

~~An interesting circumstance occurred at Yale University~~
~~not long ago. They have discovered that we can learn something~~
~~from the apes, and so they~~ *there is* now have a department devoted ~~entirely~~
 to the study of apes. ~~They have such a department at Yale, New~~
~~Haven, and down here in Florida they have a colony of apes a little~~
~~ways north of here. They have several professors who are devoting~~
~~their entire time to the study of these apes to learn something~~ *for the purpose of*
 about our primeval ~~ancestors~~ *forebears* away back in the ages somewhere when
 our ancestors and the ~~apes were associated together in the same~~ *big* *lived* *tropical*
 forest. I do not imagine we are descended from apes, but we ~~may~~
~~possibly be of a common ancestor.~~ *resemble them closely in our bodily structure* If there was a common ancestor *was*
~~he has not been discovered as yet, but I am sure we lived in the~~
~~same forest and had the same habits because we have the same kind~~ *and number*
~~of teeth,~~ *and* the same number of teeth, *both* the same shaped teeth and the
~~same kind of hands and our bodies are very much alike with the same~~ *much like ours,* *and*
 sort of digestive organs.

The apes have adhered to the old-fashioned bill of fare, to the original bill of fare and to the original mode of life in the forest. They have not degenerated as we have. They have even improved a little. At any rate, they are just as large as they ever were and apparently their brains are just as big, whereas the human race is going down hill very fast. The Cro-Magnon man who lived in England several thousand years ago was a larger man with a much larger head and a larger brain. It is generally conceded by anthropologists that the Cro-Magnon man that lived in England 20,000 years ago was a more intellectual man and had a bigger brain than our modern man. When we consider ourselves so much smarter and brighter and capable than our ancestors, we forget that we have all the knowledge that has been accumulated during the last five, six, seven or eight thousand years, a longer time than that, probably. We have the advantage of that knowledge to start with. When we consider who made the first wheelbarrow, who originated the first lock, who made the first canoe,—men who originated these ideas had more initiative than the modern man with all the accumulated knowledge he has to help him to start out with, we do not perhaps appreciate how much

superior those pioneers were in original devising than we are.

The trouble is we have departed from the simple modes of life of our ancestors and we have taken on a great many incongruous habits. For example, our use of meat. Our ancestors did not use meat. They did not taste meat because it did not belong to them. Meat is no more natural for a man than for a horse. You may teach a horse to eat beefsteaks. A hunter told me some years ago ^{that} he had a horse that liked venison steaks as well as he did. When he went hunting and the horse smelled the steaks on the coals, he would paw and whinny and make a great disturbance until he was given a venison steak to eat and then he was content. Cows and sheep may be taught to eat meat.

Man started out as a fruit eater. That is why I happen to be a vegetarian. Seventy-two years ago I renounced the use of meat and I have lived my life since I was 14 years old without meat and I have no hankering for it; in fact, meat is very abhorrent to me.

When we stop to think what meat-eating has done for the human race, when we look into it, it has certainly been a great stigma upon the race and a great damage to the race. Think of

Here is the exact quotation if you would care to see it:

And God said, "Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat." Gen. 1: 29

all the slaughterhouses. A stream of blood continually flows from them. This was strongly impressed upon me a good many years ago. In Chicago you will find a river that is actually thick with blood from great abattoirs. A river of blood flows from abattoirs down into the Chicago river and pollutes the water down to the Ohio and finally into the Mississippi.

In the beginning, man was not a flesh eater. We find, according to the Good Book, if you read the 29th verse ^{of the} first chapter of Genesis, "God said to Adam, 'Every herb bearing seed and every fruit tree bearing fruit to you they shall be for meat.'" ~~That is what the Good Book says.~~ Whatever your views about the Bible are, whether it is inspired or whether it is ancient history, or whether it is simply a record of the legends and you may say myths of the people in those early times, this is true, but it must be conceded that it is the best record we have of the race memory that existed at that time. The people of those ancient times, when that book was written, believed that the early diet of man was wholly from the plant kingdom. "Every herb bearing seed and every fruit tree bearing fruit to you they shall be for meat." Certainly it

is an impressive fact that the very first chapter in the Bible gives man information as to what his diet ought to be.

When we come to investigate the matter further, we find that at the present time the scientists are all agreed that that was the first diet of man. The diet of the first man was wholly from the plant kingdom.

I was very much impressed not long ago in reading a book by Prof. Elliot of Oxford University entitled "Prehistoric Man." In this book he says, "In the Eocene period there was not one carnivorous animal in the world." I was really surprised to find that statement. I began making inquiries among anthropologists and talked with Dr. Ami of Montreal. He is the ablest anthropologist of this country. He spends a great part of his time working in the caves of southern France, where he is studying the men of the ice period. They moved into these caves because it was too cold outside before any houses were built.

Prof. ^{Ami} Ami said in a lecture to our patients that the diet of early man was strictly from the plant kingdom and no flesh food was eaten by human beings, just as no flesh food is eaten at the

present time by gorillas, chimpanzees and higher apes, which all adhere closely to a non-flesh diet. He, by the way, is the editor of the "Geography of Geology of America," so he knows probably as much as any living man about what he is talking about.

For many years, in fact, for about half of my life, I have had apes or monkeys living on my premises. I learned a great deal from studying them. I had a large ape who was a very smart fellow. Prof. ^{Irving} Fisher of Yale was stopping a week with me at Battle Creek, as were quite a number of other doctors. We have had in all something like 8,000 doctors with us at Battle Creek as patients and as guests, and I was discussing meat with a little group of doctors and I suggested to the doctors ^{that} we go out to my animal house and make inquiry of our ape. We went out and I took with me a banana, an apple and a bit of meat. I kept the meat out of sight. I gave him the banana and he took it and also the apple and liked them very much, and then I offered a bit of meat. He looked suspiciously at it and withdrew from it. I insisted, pushing it toward him. I had put the meat on the end of a stick. He finally seized it and threw it away as far as he could, put his hand in the sand and rubbed

it and rubbed it on his thigh, and kept rubbing and smelling it, and rubbed it again and kept at it for five or ten minutes.

The doctors present were intensely interested. The Professor said, "That is the best sermon I ever heard on the subject of diet." The monkey showed his dislike for meat.

Down at the monkey jungle they have a very intelligent chimpanzee, Mary, and I took down ^{to her} one day an apple, an onion, a carrot, and an ear of green corn, and a head of lettuce. When I offered them to her she took the apple in one hand, the onion in another, the ear of corn in another and the carrot in another. When I offered the lettuce, she dropped her onion and proceeded to eat the lettuce with a good deal of gusto. She hopped up and down when she saw the lettuce and said, "Hie, hie, hie." She laughed as heartily as any creature I ever saw and was greatly pleased.

Now, when I brought Mary some meat she would not touch it. She just put her nose pretty close to it, and drew back and withdrew to the farthest corner of her cage and gathered up the lettuce and onion and everything else and carried them all as far

away as possible. She was very much offended and insulted.

We have gotten into the habit of meat eating probably as the result of some emergency or scarcity of other food. There are times when men sometimes were put in a situation when there was nothing else to eat. On one occasion there were seven men in a boat and the skeleton left in the boat represented the whole lot. They cast lots to see who should die so the others might live. It was intimated in the report of the Greeley expedition that they ate human flesh, which was their only hope of surviving. They had food cached which was brought in every day. One of the members was caught stealing some of the food and immediately he was shot, and when his body was found only part of it was there. The rest of it had been eaten. It was better to eat human flesh than to die under those circumstances. Certainly I would not hesitate to eat a pig-- I despise pork-- if I was starving. I have not touched pork for 75 years or more. I would eat a hog before I would die. I would not consider it a delicacy as I know some people do. Some people think they can not eat breakfast without bacon. We have acquired a great many filthy and horrible habits.

The idea of killing a creature that can feel, that is happy, that enjoys life, to take away its life is something very repugnant when one comes to think of it from an esthetic standpoint.

I remember a story a gentleman told me about a small boy who had never eaten meat. He had been brought up a strict flesh abstainer. He happened to be at a neighbor's on Thanksgiving day. He saw on the table what he had never seen before, a roast turkey. He looked at it with great amazement and said to the hostess, "Mrs. Jones, that looks like a dead turkey."

"Yes," she said, "that is a roast turkey. Wouldn't you like some?"

"No," he said, "I would not eat a dead turkey."

"She said, "Perhaps you would like some of the stuffing."

As she raked out some of the stuffing and put it on his plate he was greatly astonished. "What, would you eat what the turkey ate?" That whole procedure looked to him as though this lady was going to feed him what the turkey had eaten. It certainly looked exactly like it.

Some years ago we had a patient at Battle Creek, the manager

of the Cleveland Hotel, which at that time was the largest hotel between New York and Chicago. It has over a thousand beds.

The manager told me how he happened to be with us. He said, "I told my secretary I was going to take a vacation and my secretary said, "Go up to Battle Creek. That is the place to go."

He said, "I did not want to come here. After some little time my secretary persuaded me to come here. I am very glad I came because the vegetables are cooked here as I never saw them cooked before. I have learned a lot in the last few weeks. I have spent every minute I could spend in the kitchen learning how to cook vegetables. I am going to make great improvement in my cuisine when I get home. I dropped in a few minutes to get you to tell me something more that I may do to improve the bill of fare for my patrons. I am going to cook vegetables better. I am sure of that."

"Well, now, I think I can make a suggestion right off you will quite approve of. I suggest that you say to your steward when he selects meat for the table that he takes great care to get the flesh of animals that have been recently killed instead of meat

that has been hung a long time.

"Doctor," he said, "my chef is on to that. He knows all about it. You know the meat usually delivered to our hotels for our customers has a beard on it an inch long of green mold and slime. We have to shave it off before we can serve it. Now my chef is very particular. He never allows that beard to be more than a quarter of an inch long."

When I was preparing to open this place here, I interviewed the Chamber of Commerce and everybody I thought could give me information about the running of institutions down here in this region, and the man who was pointed out to me as an expert on that subject, a man who had four or five hotels under his management, said to me, "You know, our biggest expense down here is our meats because the meat comes to us with a beard, slime and great patches of black stuff and we have to cut away almost half of it before we can get any meat that will hang together. Meat costs us more than all the rest of the food we serve put together. We have to throw away at least half of it."

Why do they do that? They do it in order to give it a high flavor and to make it very tender. Before an animal is killed the flesh is very tender. In performing an operation on a human being or an animal, you have to be very careful in handling the flesh. You have to handle it very gently. You can easily rub a muscle into paste with your thumb and finger. Within a few hours after the animal dies, rigor mortis occurs, and it never gets tender again until it decays. So when you have fine, tender meat you know that meat is decayed.

Put meat under a microscope and you find it swarming with germs, but not the kind of germs that you find in sour milk or in cheese, but colon germs. The germs that are in beefsteak that make it tender are the same germs that grow in the human colon. They are the same germs that you find in the droppings of animals. In meats like hamburger steak and some sausages there are actually more colon germs than there are in the fresh droppings of animals. You think that is a rather extravagant statement, but I will tell you a little more about it. I think you will see I am prepared to back it up.

Some years ago, I employed for the Sanitarium at Battle Creek a new bacteriologist. He did not know our Sanitarium ways, a meatless diet, etc., and I wanted him to get original authentic information he could not doubt. So instead of making any statements to him at all, I asked him to make an investigation of meat sold in the town. I said, "I want to make a sanitary survey of Battle Creek and find out what sort of meat is being purveyed here. Go to all the meat shops and get specimens of meat-- mutton, fish, sausage, hamburger steak, etc.-- and examine them and make me a report."

After a few days he called me up on the 'phone. "Doctor," he said, "I am surprised at what I find in this meat I examined. I find it is full of germs and I really feel concerned about it because this morning I bought a piece of mutton for a pot roast. When I found what is in it, I telephoned my wife to cook it five hours so as to be sure to kill those germs. They are colon germs. Why does meat have colon germs? I do not see why meat should have colon germs."

Think of what happens in the slaughterhouse and you will see where the colon germs come from. The animals' bodies become

covered with filth that is dried on and then when they are knocked in the head and throat cut and the butcher begins to take off the skin, he gets his hands soiled. They are soon smeared over with the filth on the skin and when he gets one side skinned, his hands come in contact with the raw, warm flesh and when he turns over the animal the whole side comes in contact with the floor that has become filthy with the discharges of the animal. Of course it is washed off, but in the meantime it has become inoculated. Meat is a good culture medium for germs. The best culture known is meat. It is the same thing as though you had a pan of fresh milk and put a teaspoonful of sour milk in it. It spreads through the pan very quickly. The germs spread in meat just as fast. In a few hours after the animal is slaughtered, the whole carcass is swarming with the germs which are in the animal's colon. That happens every time an animal is killed. So when it is hung up in a storehouse even at a temperature of 40 degrees, germs grow and spread until the whole carcass is full. That is why meat goes down so fast after it is taken out of cold storage. The only difference is this: The germs that grow in meat in cold storage at a low temperature do not produce bad odors, but

you do not get the odor and so do not know they are there. That is why cold storage meats are more objectionable than perfectly fresh meats because they have more of the germs. The germs continue to grow as long as they have an opportunity.

After the bacteriologist got through the research he sent me a report which showed, ^{that} for instance, beefsteak, sausages, and hamburger steak contain two billion colon germs in one ounce. Just one little ounce of meat had two billion colon germs, not sour milk germs, not harmless germs, but poison-forming germs.

A little while ago I picked up a copy of the Journal of the American Public Health Association and found in it an article relating to an ordinance recently passed by the city of Portland. ^{commission of the} ~~the~~ ~~commission of the city of Portland~~ passed an ordinance prohibiting the sale of sausage or hamburger steak ^{that ed} containing more than three billion colon germs in one ounce. It is against the law in Portland to sell meat for human consumption that contains more than three billion colon germs in one ounce. That means in Portland it is possible to sell carrion. It means they have been selling carrion so bad they had to make this law. It must not contain any more than that, but it may

contain that much.

This is going on all over the country. Some time ago a bacteriologist writing in the American Public Health Journal advocated the adoption of a standard of one million, that is, that sausage should not contain more than one million to the gram. That would be thirty million to the ounce. But he found out they could not use that standard because if they adopted that standard it would abolish all the hamburger steak on the market. It would simply prohibit its sale. It would all be discarded, so they could not adopt that standard.

Some time ago I met the health officer of Canada. I said, "Doctor, what is your standard for the bacterial count of meat?" Of course in milk you must not have over 10,000 to the cubic centimeter unless it has been pasteurized. If it is more than 10,000, it has to be pasteurized milk. If it is more than that it can not be called certified; it must be sterilized or pasteurized. I asked the Doctor what his standard was. "Well," he said, "we haven't any. We certainly ought to have a standard because we allow but two colon germs to half a tumblerful of water." Only one colon germ is allowed for two

ounces of water. If it is more than that then the water is too bad to be used for human beings, that is, more than two colon germs in four ounces of water. Four ounces of meat would contain as many as ten billion colon germs.

Well, I published these facts and it began to get into circulation and the packers in Chicago found out about it and they did not like it at all. They found literature was going out from Battle Creek telling about this investigation and they were very indignant, so they went down to Washington and asked the post office department to exclude it from the mails. The post office department said to them, "Is it true?"

"Well, ^{it} probably is true, but then we do not want the public to know about this. It will destroy our business."

"We will have to let it go if it is true."

So they went to the Interstate Commerce Commission. I happened to keep posted about this because the secretary of the Interstate Commerce Commission happened to have a brother who was at the Sanitarium in our employ. His brother was one of my assistants there and so he kept his brother informed about what was going on. So I was

not surprised when a little while after that a burly lawyer came into my office.

"Are you Dr. Kellogg?"

"I am, Sir."

"Well, Sir, are you responsible for this, Sir?" He held out a statement that had appeared in one of my publications telling the facts I have just presented to you.

"I am, Sir."

"Well, Sir, the packers have started suit against you before the Interstate Commerce Commission. They demand an injunction to stop you from circulating this literature. What have you to say about it?"

I said, "I am tickled to death to hear it. I would love to go down to Washington to tell more about it and with the whole country for an audience. I would enjoy it."

I said, "Sit down here and I will tell you," and I presented the proofs. I presented government documents, big volumes from the government that said the same thing, even more deadly facts than I had presented, and pretty soon he said, "Doctor, this is awful. This is

terrible. I never heard anything about this before."

"That is why I am pursuing it. So many people need to know about it."

Finally he got up and left the office, came back and put his head in the door and said, "Doctor, I hope you will make your poster bigger. The people ought to know about this." I met him on the street in Chicago six weeks later. He said, "Doctor, since I was at Battle Creek six weeks ago I have not eaten any meat at all.

The people ought to know the facts, and if they want to go on eating carrion, all right. I have nothing to say about it. I want the people to know the facts. They have a right to know.

I was reading not long ago in a magazine an account by a professor who met a young Japanese on a Pacific steamer who was going home to Japan. The Japanese had been in this country eight or ten years and had become thoroughly Americanized in every way. The Professor said to him, "When you go back to Japan and get home to your family will you continue your American ways?"

"Oh, no," he said. "I shall put on my Japanese clothes and go right back to my old Japanese ways at once. The first thing

I have to do when I go home is to stay out of doors for three days because the family can not bear the smell of me. I have to go back to a rice diet. When I go back to a rice diet I will pretty soon lose that bad odor I got from eating meat."

It is the same difference between a puppy and an old dog. The puppy is sweet, but the old dog if he walks through the room leaves a dog smell behind. Every dog suffers from autointoxication. Every dog gets arteriosclerosis and hardening of the arteries.

Some little time ago, the pathologist of the zoological garden of Philadelphia published a great book. I have a copy of it. It costs fifteen dollars. I bought this book on purpose to have in my possession this statement I am going to give. He says in this book that he has examined carefully the bodies of all the animals that have died in that zoological collection in the last 30 years. He has examined every one of them and he said, "I have never found any herbivorous animal that had hard arteries." Every carnivorous animal has hard arteries when very few years old. A donkey even 40 or 50 years old did not have hard arteries.

The reason for that is that hardening of the arteries is

due to poisons circulating in the blood. That is why meat eaters generally and meat-eating animals are short lived while herbivorous animals like the elephant, for example, live to be a hundred years. The gorilla lives a hundred years. The same thing is true of human beings. Those who live on the simple diet, the original diet, the original bill of fare, are long lived people. The human race has adopted so many perverted habits that the effects are cumulative. In the last century the white race particularly has been going to pieces very fast.

There are two great indicators of race vitality and race vigor, the birth rate and the death rate. The birth rate shows the fundamental vitality of the race, the power to reproduce itself and hence perpetuate itself, while the death rate shows the ability of the race to survive against adverse circumstances and conditions.

I discovered over 50 years ago that the human race was going down hill and that the human race is dying, and began to talk about it. I was ridiculed in those days, but recently anthropologists have all reached the conclusion that this is a fact.

Prof. Ginni, lecturing before the University of Chicago,

called attention to the fact that the advanced civilizations were all dying and that the present civilization would undoubtedly disappear after a while and the white race would disappear, and he gave proof of it.

The death rate in England at the present time is 16 and the birth rate is 12. Four more people die than are replaced and the consequence is that if this depopulation goes on in England for a hundred years as rapidly as it has during the last hundred years, in the year 2035 the population of Great Britian will be 4,400,000 instead of 40,000,000 as it is at present, one-ninth of the present population.

The same situation has even developed in America only we are 40 years behind England. The last census shows that the youngest group of one to five in America is smaller and not sufficient to replace the group ahead of it and the next group is also smaller. In 40 years from now we will be in the same position England is today. Within 140 years from today our population will be reduced to one-ninth or one-tenth what it is at the present time instead of going on increasing as it has been calculated it would.

This is not true of the yellow races. Japan and China are

increasing rapidly and are going to increase very rapidly in the next few hundred years because they have been able to survive and maintain their numbers notwithstanding they have no protection from insanitary conditions and no public health laws to amount to anything. In spite of it all-- the terrible losses from insanitation in China and Japan-- they maintain their equilibrium and are increasing. They are increasing so fast that they will pretty soon have control of the world. The white race is going down and they are going up and in 25 or 30 years from now the yellow races will rule the world. The white races will be enslaved by them, and if the yellow races adopt our perverted habits they will later on go down in the same way we are going. That is what the expectation is.

I am trying to sow a little seed that I hope may lead to the survival of a remnant of people who recognize the situation and are determined to do what they can to prevent it and save the human race; and it can be done by simply applying to human beings the same laws of eugenics that have improved our farm animals, our farm crops, our flowers and fruits. Everything we are interested in that has life in it has been improved by the application of modern scientific methods.

The white race is going down, and the yellow races are going up and in 25 or 30 years from now, they will rule the world. 9

Do you wish to tell how you came to have the manuscript of a book Professor Fisher and others are publishing?

If we can apply these same principles to human life, the human race can be improved and we can develop a better human race than has ever existed on this earth.

I was talking with Mr. Burbank about it and he said it will take only six generations to develop a new type of man. The first three or four generations there would be little change, the fifth marked change and the sixth we would have a new man. None of us will live to see that.

I am hoping through the formation of the Aristocracy of Health we may get people interested in this thing and get the thing started. A wealthy lady died in Washington five years ago and left a couple of hundred thousand dollars to be used for developing this Aristocracy. She conceived the idea some 30 or 40 years ago. Professor Irving Fisher became interested by reading her book and that is why he came to Battle Creek some 35 years ago and I became acquainted with him. We have been working together for promoting this idea ever since. A day or two ago I sent off a manuscript for a new book that he and others are just publishing in New York embodying these ideas of biologic living.

This institution has been planted down here as a center for promoting this idea, and I am telling you about this so that you may get an idea of the central thought in the carrying on of this work, which is education. It is not simply to help people who are sick, but it is to help save the human race as well as to save the individuals by showing them the right way to live. I have been trying it myself for 75 years and I find it is very good. I find it works very well. My 86th birthday is the 26th day of February, and I hope on that day to be able to make a record of certainly more than average health at that age, and whatever I am able to present in this way is entirely due to biologic living, for I was born a very puny baby. Nobody thought I would survive, but I pulled through. When I was a boy of 15 or 16 everybody knew I would not live until I was 20. They had good reason for thinking so because I now know I had tuberculosis. I was emaciated and I was very pale. I managed to live through. I got hold of this biologic idea of living and that saved my life, although I lost one lung. It became adherent to my chest. It is only in recent years that I have been able to use my left lung. I find myself coming back in later years and today on the whole I am enjoying better health than ever in my life before, and I owe it all to biologic living, so I recommend it to you and I hope while you are here you will try to learn how to walk back.

February 8, 1938

Prof. Irving Fisher,
460 Prospect St.,
New Haven, Conn.

Dear Prof. Fisher:

I am enclosing herewith the material
on colon poisons.

Sincerely yours,

b

COLON POISONS

Numerous highly poisonous substances have been found in the fecal matters of both animals and human beings by various investigators. Brieger and Selmi found muscarin, cholin, cadaverin, putrescin, neurin, neuridin and saprin, all highly toxic substances.

A toxin found by Marmorek possessed such a high degree of toxicity that a single grain was sufficient to destroy seven billion rabbits.

1913

Several years ago, the Royal Society of Medicine of Great Britain held a symposium on the subject of intestinal toxins and toxemia in which numerous eminent medical men participated. Prof. Dixon of King's College, London, called special attention to sepsin, a very virulent toxin produced by streptococci which is always found in lean meat which has been long hung and in the ^{stools} ~~colons~~ of meat eaters.

Barger and Walpole called attention to two poisons produced by the putrefaction of sepsin which raise the blood pressure, an observation of much importance for the reason that, as stated by Dr. Dixon, "In recent years it has been shown by different workers in our Cambridge Laboratory that any drug that has the power of considerably raising blood pressure will, when injected into the circulation of healthy animals, bring about degeneration of the middle coat of the arteries." These effects were observed in young animals as well as older ones. It has ~~been~~ been shown, according to Dr. Dixon, that the same effects are produced by ^{these} colon poisons that are known to be caused by digitalis, nicotine and the inhalation of tobacco

smoke." Bain found these colon poisons present in the blood of persons who have high blood pressure.

Said the eminent Sir Lauder Brunton, "The Bacillus coli seems to have a special power of producing fatigue toxins, and many people in whose intestines it exists in great abundance suffer from constant weariness and a feeling of fatigue."

Said Dr. Mantle, "Rheumatoid arthritis and other joint symptoms may arise from poisons absorbed from the intestinal mucous membrane. The joints are especially susceptible to certain poisons."

Said Sir Lennox Wainwright, "I am quite sure of this, that the mental effect on many patients of prolonged intestinal toxemia is such as to make them almost demented."

"The state of the tongue may be a good index of intestinal health, and a foul condition of the breath speaks volumes of what may be suspected lower down, although the patient may not be constipated."

Said Lord Dawson of Penn, for many years physician to King George V, in drawing a picture of the effect of these colon poisons, "The sallow, dirty complexion, the inelastic skin, the dusky lips and nails, the dirty tongue, evil-smelling breath, constant abdominal discomfort of one kind and another, the doughy inelastic abdomen, cold extremities, the physical and mental depression, are among the prominent features."

There is perhaps no medical question which during the last 40 years has received more attention and been more widely discussed than that relating to the facts and effects of intestinal toxemia. At the present time I think it may be safely said that by far the great majority of leading clinicians will agree with Metchnikoff that "The microorganisms inhabiting our bodies have set going there a poison factory which shortens our existence and by secreting poisons which penetrate all our tissues, injures our most precious organs, our arteries, brain, liver and kidneys."

That this condition is not normal has been shown by Tissier who clearly demonstrated that in a child brought up on a natural diet 90 per cent of all the microorganisms in the intestine belong to the group of acid formers of which the *Bacillus acidophilus* constitutes four-fifths.

The infected condition of the human colon is due, as Herter has shown, to the character of the diet of the average man.

According to Burnet, the intestinal flora of man "is practically identical with that of the dog," which is due to the fact that his diet is likewise similar to that of the domestic dog.

The chief reason that fatal effects do not ordinarily occur is to be found in the protection afforded by the intestinal mucous membrane and other organs of defense.

b

THE CONSTIPATION PROBLEM SOLVED

Constipation is a disorder of the colon. It is a disease little known among savages and wild animals, but very common among civilized people and domestic animals. The great number of remedies offered and the constant appearance of new ones is evidence of the baffling nature of the disorder and the eager search for better means of relief. No progress was made until the X-ray began to throw light upon the colon functions through the researches of Prof. Cannon of Harvard University on animals, Hurst of London, and the observations of Holzkecht of Vienna and Dr. James T. Case of the Battle Creek (Mich.) Sanitarium.

Old methods of treating constipation were based upon the idea that the colon becomes sluggish or lazy and needs to be aroused or forced to do its work. The new knowledge shows that the colon is never dilatory and rarely if ever paralyzed, but is hindered or crippled and needs help, not irritation.

To cure constipation the cause must be removed. To understand the causes of constipation we must know something of the normal functioning of the colon.

The Physiology of Bowel Action

When in the taking of a meal chewing and tasting of the food begin, movement starts all along the 30 feet of alimentary canal from entrance to exit, and all the various laboratories by which the food is treated, prepare for action. The mouth and stomach liquefy the food and prepare it for the real work of digestion and final absorption which take place in the small intestine. By the end of 3 to 5 hours after eating, the digested food will be found at the lower end of the small intestine. Here most of it remains until the next meal is taken, and then a new movement, initiated by tasting and chewing the food, pushes the

indigestible and unabsorbed remnants of a meal into the colon where they are slowly pushed forward by the movements of the diaphragm in breathing. At the next meal another strong forward push is made which, if there are no hindrances, will bring the residues to the exit and may even result in evacuation which under normal conditions will certainly occur soon after the third meal is taken, that is, the unusable residues of food taken at breakfast today will be dismissed soon after breakfast tomorrow and the same will be true with reference to dinner and supper.

Thus wisely has Nature arranged that the colon shall be completely cleared of its residues every 24 hours, an evacuation occurring soon after each meal for the dismissal of the residues of the corresponding meal of the day before.

The observations of Cannon of Harvard, a pioneer in X-ray studies of the colon, with those of Hurst, Holzkecht and Case, confirmed by many other roentgenologists, clearly show this to be the normal mode of functioning of the colon. Thus Nature has provided for the complete clearance of the colon ever 24 hours or even more frequently.

Important Newly Discovered Causes of Constipation

The great stress that has heretofore been laid upon bulkage is soundly based although it is important to make a distinction between bulkage and roughage. It is essential that there should be a sufficient amount of indigestible and non-absorbable material to properly distend the intestine and stimulate its muscles to activity, but it is not essential that this material should be coarse or capable of causing mechanical irritation; in fact, evidence is accumulating that bulkage of this sort is not only never necessary but is often very harmful.

The importance of regularity and frequency of evacuation has long been recognized and can not be over emphasized. There are, however,

several other factors of equal importance which have only recently begun to receive recognition, each one of which must receive proper attention in combating constipation successfully.

Hurst's discovery that the chief forward movement of residues in the colon takes place during the taking of meals clearly points to hasty eating as a definite and very potent cause of constipation. Thorough mastication of the food is not only necessary for good digestion, but is equally essential as an aid to the prompt discharge of residues. At least 30 or 40 minutes should be devoted to each meal to give the colon time to push its contents toward the exit to be in readiness for evacuation after the next meal. When for lack of appetite or some other reason a meal is omitted, some tasty food which requires chewing should be taken, such as dried raisins or fresh fruit of some kind, for example, so as to prevent interruption of the normal intestinal rhythm.

Vitamins are another recently discovered factor essential to normal colon activity. Vitamin A keeps the colon and other digestive organs in health and maintains high resistance to infection. Vitamin B energizes the colon and cooperates with vitamin A in promoting the secretions necessary for colon health and activity. Ten or twelve thousand units of A and 1,000 units of B are needed for the maintenance of colon health. In cases of chronic constipation, forty or fifty thousand units of vitamin A are needed. The colon can not act normally without a generous supply of vitamins.

Another cause to which insufficient consideration has been given is infection by parasitic bacteria which by producing putrefaction paralyze the colon, irritate the mucous membrane, and give rise to spastic contractions and may ultimately cause colitis with thickening

and rigidity of the intestinal walls, thus preventing normal peristalsis, a condition disclosed by X-ray examinations in a large proportion of persons suffering from constipation.

Directly after birth the infant human being as well as the young of all mammals is by the act of nursing provided with a special intestinal microorganism known to bacteriologists as the *Lactobacillus acidophilus*, an acid-forming germ allied to the ordinary buttermilk germ which by producing lactic acid in the colon prevents other bacteria such as the colon bacillus, Welch's bacillus and other poison-forming and disease-producing bacteria from developing and thus protects the body from these parasitic organisms. It is because of the loss of this protection through dietetic errors and neglect of colon hygiene that bottle-fed babies, older children and adults suffer from intestinal infections by bacteria which give rise to evil smelling putrefactive stools laden with highly active poisons, which when absorbed into the body give rise to many disturbing and distressing ailments. The acid produced by the *Lactobacillus acidophilus* is the normal colon stimulus. When it is replaced by the alkaline products of putrefaction, the colon is semi-paralyzed and the normal reactions which are necessary for bowel activity no longer occur.

Physiologic observation has recently called attention to the fact that normal breathing is an active factor in pushing forward the residues in the colon through pressure of the diaphragm whereby the colon is compressed against the abdominal wall at each inspiration in ordinary breathing. In deep breathing this effect is very greatly increased. This explains the recognized value of vigorous exercise as an aid to bowel action and the harmful effect of sedentary habits. Deep breathing movements are a distinct aid to bowel action.

Correct posture, especially in sitting, is of great importance because of the effect upon the breathing. A relaxed or stooped posture produces a relaxed condition of the abdominal muscles. This prevents compression of the colon by the diaphragm as it descends in inspiration and so interferes with this important means of advancing the colon residues. A correct posture with the chest well raised and the normal forward curve of the lumbar spine maintained by a properly constructed seat will produce tension of the abdominal muscles, thus affording the resistance necessary for diaphragmatic compression of the colon in breathing.

The well known effect of worry in producing constipation is easily understood since Cannon pointed out the fact that worry causes contraction of the descending colon, which Cannon has clearly shown is highly susceptible to emotional influence. The contraction of the colon induced by worry, fear and other depressing influences deprives the contracted portion of its blood supply, thus making the tissues an easy prey to virulent bacteria which may be in contact with the mucous membrane, leading to infection, inflammation or colitis, first acute and then chronic, and may lead ultimately to ulceration. The influence of worry in initiating this condition has given rise to the erroneous opinion long held by neurologists and even many internists that colitis should be considered as a nervous disorder.

A MASTER GERM

Pasteur discovered the subtle and predominant role played by germs in causing disease and death. His pupil, Dr. Tissier, discovered a beneficent germ that combats and under favorable conditions defeats the pernicious bacteria which swarm about us and which are largely responsible for many of our most common ailments, such as so-called biliousness or auto-intoxication, constipation, colitis, many skin troubles, boils, abscesses, etc. Dr. Tissier discovered this germ in the stools of infants which within a few hours after birth are found swarming with putrefactive and other pernicious bacteria.

Soon after they begin nursing, a new germ appears which rapidly increases in numbers while all other species of germs diminish and by the end of two weeks have disappeared, leaving the newcomer complete master of the field. The disappearance of other bacteria is due to the fact that the new germ makes lactic acid in large quantities which is so intolerable to putrefactive disease-producing and other pernicious bacteria that they cease to develop and soon disappear.

Because of its tolerance for acids, the master germ is known as acidophilus, or scientifically as *Lactobacillus acidophilus*. As its name indicates, it belongs to a large class of lactic acid-producing bacteria to which also belong various milk souring germs which are found in buttermilk and cheese. These also combat putrefaction, but are of little value in protecting the body for the reason that they are air growing germs and can not survive in the intestine because of the absence of oxygen. *B. coli* and other colon germs make acids, but also make other substances, some of which are highly toxic and evil smelling, such as indol and skatol. Acidophilus makes only acid and no noxious substance and so plays a most important role as a protector of the body against invasion by bacteria which always do harm by causing putrefaction of the food residues and body wastes while awaiting

evacuation in the colon. Other bacteria such as the colon bacillus and streptococci may give rise to ulcers, abscesses, infections of the kidneys, bladder, appendix, liver, gallbladder and other organs contiguous to the alimentary canal which through contamination and infection of the blood may give rise to infection in remote part of the body.

It is thus apparent that the master germ, acidophilus, supplied to every nursing shortly after birth, is a wonderful provision for the protection of human life in its feeble incipiency. How much protection is afforded is shown by the fact that the death rate of infants raised on a bottle from the start is ten times that of breast-fed infants. If all babies were bottle fed, few, if any, would escape the bowel troubles which sent so many infants to the cemetery, a fate from which the quintuplets barely escaped, thanks to the vigilance of their wonderful physician, Dr. Dafoe. The quintuplets unfortunately missed the protection of the master germ, acidophilus, because they were fed with mother's milk from the beginning of their lives at first with medicine droppers. Thanks to the wonderful care given them by Dr. Dafoe and his faithful nurses, the quintuplets escaped serious infection until they had reached the age of four months when a severe attack of bowel trouble shortened their lives. Fortunately Dr. Dafoe at this critical moment secured and administered an artificial culture of the *Lactobacillus acidophilus* which quickly arrested the bowel trouble and by its continuous use since that time has afforded them the protection which every nursing infant receives from its mother's breast.

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LECTURE TO PATIENTS OF THE MIAMI-BATTLE CREEK IN THE SANITARIUM

LOUNGE BY DR. JOHN HARVEY KELLOGG, MARCH 27, 1938

I am going to talk to you today about one of the most interesting of all subjects, a subject that is near to everybody's heart, the stomach-- digestion. The miracle of digestion is one of the most wonderful things of all our human experience, the transmutation of food into human beings. Think of it, my friends, what we eat today is walking around and talking tomorrow, perhaps behaving well and perhaps misbehaving. It depends a good deal on what we eat. I heard of a young lady who lived mostly on mustard and peppers and spiced pickles with a little bread and butter now and then. She was anxious to be thin. I found her temper was just as tart as her diet.

We have here a picture of the stomach. That is not a handsome stomach, but it is a great deal better than many stomachs I have met in my lifetime. I met a gentleman in the lobby just a few minutes ago who came here a few months ago with that sort of stomach. He had an ulcer that formed a scar and the scar had contracted, pulling the stomach into the shape of an hour glass. It was so bad that his doctors thought it was a cancer and there was no hope for him and brought him

P

here to die. He was a prominent lawyer, attorney general of the State of Kansas for many years. He came to Miami. He had lost flesh until he was a skeleton and was so weak and feeble he had to have a nurse night and day as he was entirely helpless. He was just a shadow. I met him in the lobby a moment ago, plump, hearty, happy and with fine complexion. He had gained 40 pounds in weight, was driving his own car all about the city here and is as happy as any man I ever saw. It was wholly a matter of diet. We did not do a thing for that man except to feed him properly and to give him proper care, of course. The only thing that helped him in the world was a proper diet.

Now, I am going to tell you some things and Miss Estill is going to show you some experiments. I am going to give you a resumé of the subject of digestion. Digestion is a miracle. It is just as great a mystery today as it was a thousand years ago when man first began to learn a little about the process of digestion. It is just as great a mystery because the wisest physiologist in the world can not tell you why the stomach will digest a beefsteak and will not digest itself. Why the stomach will digest a live oyster and a live oyster's live stomach, and does not digest itself. Have you ever heard anybody

discuss that question? Have you ever heard a doctor talk about it?

Did you get any information from any doctor you know? Try it.

Why do not medical books say anything about it? Because there is nothing to be said. Nobody knows anything about it, and scientific treatises are always very quiet ^{in regard to} about things they do not know about.

All I can do is to tell you something about what happens under conditions under which digestion can operate. I think the best way to get some real information into your minds on the subject is to repeat back to me what I tell you and you will be more likely to remember. We will rub it in just a little bit so it is likely to stick.

There are five digestible food principles,-- starch, protein, fats, sugar, and salts. These are the only digestible food elements. In normal food there is more starch than anything else. Protein is the most essential of all food substances. We must have a certain amount because our bodies are made of protein. We must have a little protein. We can get along for some little time without starch and fats, but protein we must have because the living part of the body is made of protein. Fats are not so essential as starch and protein, but still we need a little fat.

Sugar is a very pleasant element of our food. We can get along without sugar and fat, but the body makes a lot of sugar. Sugar is the fuel of the body and the heart has to have a little sugar every time it beats.

Salts-- these are the mineral elements that we have in the bones-- the lime, iron, iodine, copper, manganese and all the other elements.

There are five digestive organs, one for each food, that is, in number, but it does not work out just that way. The five digestive organs are the mouth, the stomach, the liver, the pancreas and the intestines. Each digestive organ makes a digestive fluid, a chemical fluid to digest the food. So there are five digestive fluids. The whole thing runs on the principle of five, you see.

The saliva is the first digestive fluid. What does it do? It digests starch. What does it do with the starch? Converts it into sugar provided you chew it. Pretty soon Miss Estill is going to make an experiment here to show you what actually happens. Starch, if it is kept in the mouth long enough, is converted by the saliva into sugar. The saliva does not convert raw starch into sugar. It must be cooked starch. It digests cooked starch and converts it into sugar, not

cane sugar, not what we call table sugar, but malt sugar. It is a better kind of sugar. It is malt sugar, the sugar of the body.

What does the gastric juice do? It converts protein into peptone.

The gastric juice digests protein.

What does the bile do? The bile digests fats, converts fat into soap so it can be absorbed. You remember, some of you, the old-fashioned lye barrel that used to stand out behind the woodshed or barn into which you dumped wood ashes. I wonder if there is anybody here who ever saw a leach barrel? When I was a boy I used to have to carry water to turn into the leach barrel. You remember the iron kettle underneath that caught the lye as it leached out. When enough was collected it was put into a big iron kettle, the same big iron kettle used for scalding hogs with on butchering day to scrape the bristles off. Then scraps of grease and little odds and ends, pork rinds and little bits of tallow and different kinds of grease were dumped in there with the lye and boiled up together and that made soft soap. That is the way housewives 50, 60 or 70 years ago used to make their own soap.

We have a soap factory in the body. Down below the stomach where the bile comes in it combines with the fat and makes soap. What do we need lye for? What does the lye do? Fat is not soluble in water. It will not mix with water. It rises to the top, but when you put a little lye in it or mix the fat and lye together, it makes something that is soluble in water. So when your hands are greasy you take some soap and wash them. There is a little lye mixed in the soap that is not combined with the fat and that is what cleanses your hands.

The fat can not be absorbed very easily. It does not get through the mucous membrane, but when the bile has combined with the fat it makes soap of it and it is soluble in water. It can then be absorbed into the blood and when it gets back into the blood a re-combination sets up. The bile combines with the fatty acids and makes glycerine and glycerine and fatty acids make oil and the potash in the biles com^{bines} with the fatty acids and lets the glycerine out. Now, fat combined with an alkali is soluble and that is what we call soap.

What does bile digest? Fats. What does it do to the fat? Makes soap of it and helps fats to be absorbed.

Now you come to another digestive fluid, the pancreatic juice, and this you will find very interesting. What do you think the pancreas does?

How many other food substances are there? Two more, sugar and salts.

Well, you would expect the pancreatic juice to digest sugar and salts, wouldn't you, but it does not do either one. It does something to the salts, but does not digest sugar. What the pancreatic juice does is to do what the saliva does and do it better, and do what the gastric juice does and do it a little better, and do what the bile does and do it a great deal better than the bile does. It digests starch and fat and protein, and it digests not only cooked starch but raw starch. The pancreas can digest raw starch. That is the reason why animals can live on raw foods. Animals do not have cooked foods. The dwarfs, for example, living out in the forest do not have cooked foods. There was a time in the world before fire was discovered and man lived and can live just as well as other animals can live without cooking. He would have to be a little careful about the kind of food he takes. Nature has made provision for man to live on natural food-

stuffs without cookery. It is a great question whether the art of cookery has ever done us any good at all. It is true it has enabled man to live in parts of the earth where he could not otherwise have lived, but it is very doubtful whether that did him any good to live on those parts of the world. I think man would have been better off if he had remained where he was made and remained in a country under conditions to which he was normally adapted instead of spreading out all over the earth.

The race has been for a thousand years destroying itself and ultimately will be destroyed because of its great departure from the normal conditions of life.

I want to call attention just at this point that man can live on uncooked food. He would have to be a little careful about the selection, but cookery is not essential to life at all. It has doubtless done the race a great deal of harm. That is one reason why we have less teeth. Human beings are losing their teeth rapidly. We have lost our teeth. Examine all the people in the country, including the school children, and you will find 95 per cent have diseased teeth, where they have any teeth at all. Some of them have lost their teeth

entirely. At the present time a survey of our public schools has shown that 75 per cent of our children in our public schools have more or less decay of the teeth. It is very rare to find an adult without some diseased teeth and very few that have the whole number of 32 teeth. The majority of people have only 28 teeth. That is all they can make use of. Although they have the wisdom teeth, so-called, they are a great deal of trouble, more trouble than they are worth.

I have a model of a jaw of a man that lived two hundred thousand years ago, and it has 16 teeth on the lower jaw, large, well developed teeth, and room behind for two teeth more. A great many people have only two joints in the little toe instead of three. We are beginning to lose our little toe. We have lost a great many other things our forefathers had and the chimpanzee has. Our lower relatives have better bodies than we have, more complete, more perfect bodies. We are losing our sense of smell and losing our eyesight. We are rapidly becoming defunct and degenerate.

What does the pancreatic juice digest? Starch, protein and fats. It does just what the saliva does and does it better, what the gastric juice does and does it better, what the bile does and does it a great

deal better. It is the principal digestive fluid. The pancreatic juice is the most important of all our digestive fluids.

We have another food substance that has not been disposed of yet, sugar. How is sugar digested? Sugar is digested by the intestinal juice. All along down through the small intestine, especially in the lower part of it, juices are produced which digest sugar. Here is where the gastric juice does its work and here is where the pancreatic juice comes in. The pancreas is just behind the stomach here and here is the liver that makes the bile. The bile and pancreatic juice are poured in at this point just below the outlet of the stomach and mixed with the food, and as the food works along down the small intestine the digestive work is carried on and all along down through the intestine enzymes are produced which digest sugar.

There are different kinds of sugar. There is cane sugar, malt sugar and milk sugar; and these three sugars all require digestion before they can be absorbed. Malt sugar is digested the most quickly, that is, converted into dextrose or fruit sugar. The sugars of fruits, in honey, for example, are already digested. The bee picks up sweets of various kinds and puts them into its little honey bag, and in the honey bag they

are digested just the same as they are digested in the intestine. The bee digests them in the same way. When we get honey it is already digested. It is dextrose and levulose. Malt sugar is converted into dextrose. One molecule makes two molecules of dextrose. Cane sugar is converted into dextrose and levulose. There are two fruit sugars in honey and in raisins and in all sweet fruits. We find these two sugars, dextrose and levulose, the natural sugars which the body can utilize. In fruits the sugar is already digested. That is why orange juice and fruit juices in general are so refreshing because they can be absorbed immediately and used at once. Ten minutes after you have swallowed a glass of orange juice the sugar is in the body and is being absorbed and utilized, but if you swallow cane sugar or malt sugar or milk sugar, it will be a long time before you get the benefit of it. Malt sugar is digested and absorbed four times as quick as cane sugar. Cane sugar is digested very much quicker than milk sugar. Milk sugar is digested so slowly that it reaches the colon, and that is the reason why it is useful for changing the flora because it is down in the colon where the battle is. So we use milk sugar especially for that purpose. It is found in

mother's milk, in the milk of mother animals. It is nowhere else. It is found nowhere except in milk. It is made for the benefit of young nurslings.

There is one food more that has not been digested and that is salts. How are the salts digested? Salts are digested by being put into solution. They are chemical substances and they are put into solution by the acid juices which dissolve the salts when they are soluble in acid, and the alkaline juices in the case of those which are soluble in alkalies. So all the digestive fluids digest the salts.

I am going to leave the subject and let Miss Estill tell you about some foods that are most worth while to eat.

jm

LECTURE TO PATIENTS OF THE MIAMI-BATTLE CREEK IN
THE SANITARIUM LOUNGE BY DR. JOHN HARVEY KELLOGG, APRIL 17, 1938

Is there such a thing as mind cure? How many think there is? How many of you believe in mind cure? I see quite a number of people here believe in it.

Are there any Christian Scientists present? I see there are a number. Well, I believe in Christian Science myself more or less. It is a very wholesome thing, a very good thing, and it does a great deal of good.

How many have known of examples of mind cure? I see quite a number of hands. I have seen a great many examples. I remember a lady I had under my care a great many years ago. She was supposed to be an incurable case, and all the doctors had given her up. She had been brought to Battle Creek and had been with us several months, but was confined to her bed and it was only with great difficulty that we could get her on her feet at all to try to take a step. One day we had an unfortunate occurrence. Someone smelled smoke somewhere in the house and shouted out, "The house is on fire! The house is on fire!" Shortly afterward I met this lady coming down the stairs. She had come down

one flight of stairs and was going down another and at a pretty good gait. She said, "I am killed, I am killed. I am dead." She remained in bed the next day, but on the second day she was on her feet and has been on her feet ever since.

Some of you remember, perhaps, the Charleston earthquake. It was announced in the papers that in the Charleston earthquake some fifteen cripples who had been bedridden for years from rheumatism and other troubles were cured by that earthquake. The earthquake shook them up so they thought the house was coming down on their heads and they got out of bed.

Some of you perhaps remember the story of a St. Louis man many years ago. I think it was when many of you were still too young, perhaps, to remember. Some of the older ones I am sure will remember the cholera epidemic in St. Louis. I remember very well the St. Louis cholera epidemic, which was the last time that cholera prevailed extensively in this country. It started in New York and gradually got into all of our great cities. It was most severe in Buffalo. Thousands of people died there.

There was one circumstance that was very amusing. A man

was sure he was going to catch cholera, so he provided himself with a cholera medicine. He put it right beside his bed at night so that in case he should have a sudden attack of cholera he could reach out his hand and get the medicine at once and find immediate relief. He had lobsters for supper and woke about midnight feeling an uncomfortable pain in his stomach, and he thought certainly the cholera had come. He woke his wife and shouted to her, "The cholera has come. I have got it. Hand me the medicine quick!" She passed the bottle to him and he took a good swallow and took some more and rubbed some on his stomach and felt better and in a short time was sleeping very soundly and slept until morning. He was cured immediately. You can imagine the feeling of himself and his wife, too, when they found in the morning she had made a mistake and handed him an ink bottle instead of the medicine bottle, but it cured him just the same.

The widespread use of nostrums of various sorts is often chiefly due to popular faith. I remember very well the liver pad. Every year there were sold trainloads of liver pads all through the malarial district, through the South particularly, and up in Indiana. Almost everybody wore a liver pad. The pad had pennyroyal in it and several

other things that gave it a very strong odor, and so people were very sure it had curative efficiency because it had a medicinal smell.

The medicinal smell was its sole property. I have a suspicion, however, that the warmth of this pad about the stomach and liver was something of a comfort. It may possibly have had a tiny bit of influence, but there was no special curative power in the pad itself.

I remember very well a man who called on me once and gave a report that he had rheumatism, and he took out of his pocket a horse chestnut. "Doctor," he said, "if I had not had this horse chestnut I know I should have been a crippled by this time. My father carried this chestnut in his pocket and it prevented him from having rheumatism and he gave it to me and I have been carrying it all my life, and I am certain I should have suffered from rheumatism if I had not had it."

Emerson tells a story of a man who had carried a chestnut for many years which prevented him from suffering from rheumatism. It was certainly an effective remedy because he had never had it before. Emerson said it was retroactive. It not only cured him for the present, but cured him for all the years before he put it in his pocket.

In the practice of medicine the healing power of magnets

has been relied upon, and at the present time magnets are still being used as a cure-all. However, it is known that a magnet has no effect whatever. One of the first magnetic healers was a man by the name of Mesmer. He was a German who went to France. It happened to be at the time when Benjamin Franklin was our Ambassador there. He had become a member of the French Academy in recognition of his numerous discoveries in electricity and his wonderful inventions.

Mesmer was healing a great number of people. He had what he called a powerful magnet that he had in a tub with handles reaching from the magnet out of the tub, and people who came to him were placed in a circle around the tub, holding these handles, and he had crowds of people every day and was making wonderful cures. People were cured of all sorts of things by simply holding the handles of this powerful magnet.

The French Academy began to make an investigation of this man's claims. He claimed that this magnet that he had magnetized in Germany and brought over there was the most powerful magnet in the world, and it was able to produce these miraculous effects by the magnetism passed out through the handles. Franklin, with two other members of the French Academy, were appointed a committee to examine this matter and to

look into it. Franklin said, "Let us make a very positive and definite demonstration that the magnet is absolutely powerless by putting in a substitute of wood." So they made a bogus magnet, painted it black, the exact color of the real magnet, and substituted it for the magnet they had removed. But the effects were just the same.

But Mesmer was quite equal to the occasion. He said, "This experiment has led to a great discovery. I find that the magnetism is in myself. I was mistaken about it. I had supposed it was in the magnet. I have discovered by this experiment which has been made here it is in myself. I am the magnet."

This man was the originator of mesmerism. His name was Mesmer and this is where mesmerism originated. He healed people by making them take hold of his hand, made them feel the magnetism thrilling through them as he held their hand, and he had a great reputation and greater success and greater fame than before. So the French Academy had really helped him by the publicity.

There have been thousands of people who felt themselves to be healed by mesmerism and applications of animal magnetism of which this was the original. There are plenty of examples of people who think

they have been cured by mental influences. I remember a man who came to Battle Creek many years ago, who announced himself as being a wonderful healer; that he had the power of healing people by touch; and he wanted to help us in our efforts to effect a cure in obstinate patients. If we had any obstinate patients we could not cure he would be glad to make an attempt. He was very certain he could effect a cure. We had a lady who was completely paralyzed from the waist down and had not stood on her feet or walked for several years, and I pronounced the case incurable. I did not think we could do anything for her as the spinal cord was actually destroyed and there was nothing to cure, as a matter of fact. It was simply gone, as though a person had lost a finger or hand. There was nothing to treat. But the man came and gave her his mental treatment, and she was supposed to be getting better. He announced that at two o'clock in the afternoon on a certain day two weeks after he began the treatments this patient would be cured; and so her friends came and a great company gathered around to see her stand on her feet at the end of two weeks. At this time the gentleman appeared and announced to this lady that she was well, that she was entirely cured and might arise and walk. She made a great attempt to rise, but fell

helpless back into her chair.

I must report another case, however, a real cure, a lady who visited us whom we had not helped. In those days we did not have all the facilities we have now. The lady stayed a couple of weeks. We would have helped her if she had remained longer, perhaps, but she had not gotten any better at any rate when she went home. I did not think the case was hopeless at all. She had not had time enough. She was suffering from sour stomach. She made arrangements with a mind cure doctor living in Chicago to treat her at exactly two o'clock every Friday afternoon. He was going to apply absent treatment to her at that time and was certain he could cure her. After a couple of weeks she wrote to me that she was entirely cured. She wrote me that the effect of the treatment was wonderful. At two o'clock on Friday afternoon thrills began to go through her body. The man began his absent treatment in Chicago at exactly two o'clock, and she was entirely well after only two treatments. That was before the time was standardized. We were going on sun time, and the lady had neglected to make allowance for the difference in time between Adrian and Chicago, so that her thrills would come just twenty

minutes before the man began to give the treatment, you see.

I might mention a good many cases. I recall a lady who, however, was really cured, a lady who had been in bed for fifteen years. In that time she had gotten very fleshy and her poor husband was having a pretty hard time to lift her out of bed and carry her about as she insisted on his doing. A mind cure doctor came in and gave her four treatments and she arose from her bed and walked off as well as ever. It was a wonderful cure. The neighbors were tremendously excited until later the lady made a confession that she had been able to walk all the time, but she resorted to that means of maintaining her husband's sympathy. In fact, one of the nurses had been suspicious for a long time. She had peeped through the keyhole on one occasion and had seen the lady getting about the room in very lively fashion. So it was established that this case was one of real mind cure for the lady's mind had been in very bad shape and it had changed her mind.

Of course it is not to be expected that the mind actually effects the cure. There is only one way in which the body can ever be cured. Healing is creating, and it takes the same power to heal a man that it did to make him in the first place. There is no such thing as healing by mind or by medicine. Medicines do not heal. All that

any remedy can do is to make conditions favorable and all that the mind can do. The mind may influence the body favorably.

The simple experiment I will make here will show you the mind actually does influence the body. I will ask somebody to stand up here and make a little experiment. This little cork on a string, just a little pendulum, will actually tell you what you are thinking about. Will anybody volunteer? Here is a lady coming up. Thank you very much. Hold it out, but please do not look at it. Now, this little pendulum somehow has a remarkable way of finding out what you are thinking about. For instance, if you are thinking about a gentleman it will swing back and forth like that, but if you are thinking about a lady it will swing in a circle like that. I will just start it swinging and watch it. It will tell you what you are thinking about. I guess you are thinking about a gentleman.

SUBJECT: I was thinking about a lady.

Thinking about a lady? Then you are telling this pendulum not to swing in a circle. Now really enter upon the experiment in a real scientific manner. When you think of a lady it swings in a circle; when you think of a gentleman it swings in a straight line. You are still

thinking of a lady?

SUBJECT: Yes.

Ah, she hitches the straight line on a lady instead of a man, don't you see.

Note this experiment. We will try the experiment again pretty soon. You see it swings in a circle. Notice my hand. I am not moving my hand in such a way as to make it go in a circle. Suppose I want to change the direction of this pendulum here and make it go in a straight line instead. You see what I have to do with my hand. It takes quite an effort to do that. It takes a little time if I want it to swing in a circle. I have to move my hand another way. Now watch it closely if you will, please. It is going in a straight line. Now I am going to talk to you about a circle. You see what happens. Watch my hand. You see it does not sway when I talk to you about a circle. You see where this pendulum is going. My hand makes no motion at all, but remains right there. I am going to talk about a straight line in a moment and you will see it starts straight off in a straight line. Watch the motion of my hand.

Let us try another subject. This lady is quite an independent

thinker. She was thinking about a lady, but at the same time she was thinking about a straight line. The whole philosophy of this thing is that the circle is attached to the lady, and so, thinking of a lady, if you are impressed by that thought, the thought of a circle, the thinking of a circle will produce a circle. You noticed that. I made no effort whatever. You saw my hand remained still all the time. The moment I began to talk about the circle this began swinging in a circle. When I think of a straight line it will start off in a straight line before I have had time to say straight line. You saw that.

I will give you another demonstration. How many of you have ever seen the phenomenon of mind reading? Have you ever seen that performed? I see a lady has. Did it work? It did work, didn't it? Do you want to try me out as a mind reader and see if I can do it? Let me go outside. Appoint this gentleman a committee to go with me outside while you select a person on this front row. It is a little difficult to get around through the audience or you might select a person anywhere in the room. Select a person on the front row so it will not take too much of our time. You select that person and let the audience know who the person is. I prefer to be blindfolded. I have to have my eyes tightly

closed. I prefer to have my eyes sealed up. You can watch me to see if I keep my eyes closed. I am going to take this lady's hand and put it against my forehead and let her tell me who this person is. Pretty soon I will get a hint. Keep your mind fixed right upon that person. If your mind wanders a bit that immediately will confuse me. (Dr. Kellogg found the person selected by the subject who assisted in the experiment). Now are you satisfied? Are you satisfied that I did read that lady's mind and found out the person you had in mind? Hands up.

How did I do it? I did not do it at all. This lady gave me all the information I had. It came down her arm. The explanation is simply this: When she fixed her mind upon that person it was easier to go toward him than to go away from him and so, as you noticed, I moved the hand out in various directions and tried to lead her in various directions, and finally found a point where it went easily to where it was going. The difference is very slight. One has to be sensitive enough to notice very, very slight differences; but if one can make a very fine distinction such a person can do this thing. I do not believe everybody can, but I believe most people could with a little practice. It is a very simple thing.

The first time I ever tried it I greatly frightened my sister. She was very much alarmed. It was a great many years ago. I was sitting with my sister alone in the evening and I said to her, "I believe I understand mind reading and I believe I can do it." The thought came to me just that moment. I said, "We will try it. Go into the other room and pick out some object and I think I can lead you right to it." So we made the experiment. I placed her hand upon the family Bible and asked her if that was what she was thinking about. She was very much alarmed. She said, "I am afraid this is evil spirits. Evil spirits have got possession of you." She was really very much frightened.

The ancients believed in disease being caused by spirits that could be cast out. When a person was sick he was supposed to be possessed of a demon and this idea still survives in the world. The physicians of Tibet believe that disease is caused by demoniac possession. So when a man is sick in that country he sends for a doctor and the doctor comes, feels his pulse and looks at his tongue and goes into his bag to find a medicine of some sort. If he does not happen to have the medicine along he wants, he writes the name of it on a piece of paper, makes

it up into a little ball and tells the patient to swallow it. The slip of paper is a notification to the demon in the man that the next time it is going to be a medicine that will drive him out if he does not leave. He had better get out at once because he will suffer if he does not. The doctor after giving the pill, if it is a poor man, departs and comes again to see if he is cured later, but if he is a rich man he says to him, "This demon is a very powerful demon and the only way to get him out is to select your best horse, and this medicine will induce the demon to come out of you and enter the horse," and then he mounts the horse and rides away. This is a very common practice in Tibet.

In this country we have a great many people who are laboring under the impression that they are suffering from diseases which they do not really have, and this is true of every country, and the consequence is that almost any medicine will cure them if it is given to them with plenty of assurance that it is going to effect a cure. It is very necessary that faith be attached to the medicine.

After I graduated in medicine I became associated with one of the leading doctors in New York, Dr. Charles M. Beard, and he was

making a study of this very question, the influence of the mind upon the body; and I spent some months with him in a series of experiments. The experiment he made was with the aid of what he called a magnet. He took two brass knobs off of a galvanic battery and he put one of these knobs in the window on the lower sash, and the other knob he showed to his patient and said to his patient, "This is a powerful magnet." Of course you can not magnetize copper because that has no magnetism at all. He said, "I put one of these magnets over in the window and the other I shall apply to your forehead, and as I apply it to your forehead the disease will be extracted from your head, the pain that you are suffering-- the lady had a headache-- will be drawn into this magnet, and its mate over there in the window will attract it so that I will pass it over to the mate and then in that way you will get rid of your disease." He applied it to the lady. "Do you feel it? Do you feel it? Do you feel it? Do you feel it?"

"Yes, I feel it. I believe I feel it."

"Do you feel it in the big toe of your right foot?"

"Yes."

"Do you feel it in the little toe of the left foot?"

So the lady could feel it anywhere he suggested. Finally he said, "Now where is your pain?" She looked all about the room to see if she could see her pain as though she expected to see it perched somewhere, but the pain was gone. Now he gave her some medicine to take. This lady had a very severe pain in the night that kept her awake. She had not had a good night's sleep for several weeks.

My task in connection with the experiment was to tell the patient about this doctor who claimed to be a magnetic doctor and tell about his claims, that he was a noted doctor and had had great experience and inspire faith in the doctor, and afterwards to take the records of the case and later to follow the patient up to see what happened. I worked with the doctor for several months and it was most amazing the results that were secured. They were very surprising. The lady I told you about came once a week. The doctor gave her some magnetized medicine to take. This medicine she was to take one drop on her tongue just as the clock was striking twelve. She must take it exactly at that moment and at no other time and only one drop. The medicine had nothing in it but quassia, simply a solution of quassia, a remedy which had no effect at all except its bad taste, and she was to place once a day one drop

exactly as the clock was striking twelve, on her tongue. As she left the office the doctor said, "You will sleep soundly tonight. You will sleep soundly all night." She went on down the hall and he kept repeating, "You will sleep soundly all night. You will sleep better than you have ever slept in your life." I followed the case up and sure enough the lady slept every night and at the end of a month had gained ten pounds.

Perhaps you remember the case of the great teacher in olden times, "Thy faith has made thee whole." It is the faith that does it.

The question is, how does faith heal? I must tell you a little more about that, how the nervous system influences the body. The first experiment I made demonstrates the influence of the mind upon the muscles. Both experiments were really of the same sort, the influence of the mind on the muscles.

The whole body is under the direct or indirect influence of the mind in the same way. We have two nervous systems, (1) the voluntary and (2) the involuntary nervous system. The voluntary nervous system rules the muscles and the mind to a certain extent, but only to a very small extent. Perhaps you do not appreciate the very little

control we actually have of the body. For example, I feel too warm. I can not cool myself by simply thinking about it. I say, "Now I am too warm and I think I had better sweat a little." I can not make myself sweat by simply thinking about it. I say, "I am too cold." I can not warm myself up and send the blood into my skin by simply thinking about it.

I must qualify that a little bit. There is a story told of Horace Greeley how he often used to sit down at a certain register to warm his feet in cold weather. He got the habit of sitting at that register. One day after sitting there two or three hours, one of his associates said to him, "Mr. Greeley, there has not been any fire in the furnace for three months."

He said, "Why did you tell me that? I was warming myself very comfortably."

I confess I am more or less subject to the same kind of deception. I can not pass a stove or other heating apparatus of any kind any time of the year, summer or winter, without feeling the heat from it. I discovered that when I was quite a youngster. I think I was about twenty years of age. I was assisting in the editorial department. I

had an office to myself and there was a stove in there, an ordinary old-fashioned iron stove. I remember one very hot summer day going by this stove and feeling a very strong blast of heat from it. I said, "It is strange anybody would start a fire in this stove on this hot day." It was a mid-summer day, and so I actually hunted up a pair of tongs and opened the door of that stove to see the fire, to see if there was a fire in it. I was so sure there was a fire I did not dare touch it without a pair of tongs to open the door.

Our emotions and our sensations are associated to such a degree that they almost are inseparable. This is due to what is called the conditioned reflex. I was a good many years ago with Dr. Pavlov, the famous Dr. Pavlov who was just discovering what he called the conditioned reflex. I wonder how many of you know what the conditioned reflex is. It is not familiar to you. It is a scientific technical term. I must explain to you about it.

Professor Pavlov when he was beginning his experiments made experiments with dogs. Pretty soon the keeper of his dogs reported that when he came in to feed the dogs, he found the saliva was beginning to pour out of their mouths. He was making a little experiment by putting

a tube into the salivary gland so that when the dog's saliva began to flow, it would drop out of this tube and could be collected. The keeper observed when he came into the room and before he fed the dogs, the saliva would begin to flow, so he found what is familiar to us, that the sight or smelling of food will make the mouth water.

When I was with Professor Pavlov one day he said to me-- this was about thirty years ago-- that he had a very interesting experiment, or, as he said in his French speech, that he was using, "Très intéress^sant. Très intéré^ssant." He considered it^a very interesting experiment. It was interesting because it has since developed into a whole new system of psychology. The most recent ideas in psychology are actually based on that experiment which led to a research which occupied the life of this very learned man.

Here was a dog with a little tube in his jaw and the saliva dripping from it as we came in, and at that he was very much surprised. The assistant was there, sitting very quietly. The room was very still. He said, "What does this mean? There should be no saliva dripping. The dog is not being fed anything." His assistant said, "You have been feeding the other dogs and the food still clings to your hands. You did not

wash your hands clean enough." So he went out and returned and in the meantime the dripping ceased. I stood quietly against the wall as he requested. When he came back there was no dripping. Suddenly the harsh shrill note of a fife was sounded. Nobody made a movement. All perfectly still. I think the attendant touched a button with his foot and caused an electrical instrument to make a sound, a very high note. Instantly the saliva began to flow. Why should a sound make the saliva flow? The sight of food and the taste of food will cause the saliva to flow, but why should a sound have this effect? It was not very evident at that time, but he continued the experiment and found it was possible to produce the same kind of association in many different ways, not only sounds but other things. So he elaborated a very complete system of psychology based upon what is known as the conditioned reflex, these automatic reflexes in the body being produced by new associations which we form. He, in fact, had the impression that they might be inherited, but he had to give that up.

This is really a very important matter because it enters into our every day experiences. We laugh, for example, at certain things. Why? We can not always tell. Our laughing is involuntary. We some-

times laugh when we do not want to laugh. I remember a circumstance that occurred many years ago which was almost tragical. A preacher was talking of the events taking place, saying that the world was getting into a more or less chaotic state and telling of the earthquakes that were taking place and hurricanes and tornados, etc., and finally, raising his voice to a very high pitch-- he meant to say the elements are at war-- but he shouted out in a very loud voice, "The very elephants are at war!" One lady on the front seat put her handkerchief to her face, but she could not keep it back and suddenly burst out into a great burst of laughter and the whole audience laughed and the effect of his speech was spoiled.

Little things happen that cause us to weep or to blush. Those are purely automatic things that we can not always control. I remember a young man came to me some time ago who was troubled with blushing. His face became blood red almost on the slightest bit of excitement.

We are continually under the influence of our emotions, and these emotions have a more profound effect upon us than we really always appreciate. I recall a lady who was at the Sanitarium on one

occasion at breakfast. In those days-- it is a long time ago, I guess about sixty years ago that this happened. A mail boy brought in the letters and distributed them at the breakfast table. It was a foolish thing to do. I did not know that the custom had been adopted until I heard of this circumstance. I stopped it at once. We had a new man in charge of the office, and it was a convenient time to reach the patients, so the letters were being distributed. A lady got word from home that her baby was sick with diphtheria and to come home at once. Her breakfast was half eaten. She at once rose from the table and started out of the dining room, but her breakfast was on the floor before she could get out of the room. What had happened? Certainly she had no indigestion. Her stomach was just as well as ever, but her mental state had suddenly changed.

I recall a man, one of my earliest patients, a sturdy farmer who was working in the fields. He turned over a plank and uncovered a most repugnant sight and smell, exceedingly so. He was quite a hearty eater. He had eaten a hearty breakfast. He began to vomit and kept on vomiting for hours, in fact. He said, "I got hold of a limb and hung on the limb and vomited." He was certain he had vomited everything

he had eaten for a week. Every time he sat down at the table what he had seen would come up before his eyes and he would begin to vomit again. This occurred for a couple of days. He could not keep anything on his stomach. I found it necessary to amuse this man, entertain him and divert his mind from this repulsive object in order to enable him to start to taking food again.

We find very often a simple illustration of the same thing. We encounter something that is rather repulsive at the table, a stale egg or something of that kind and we lose our appetite for that thing.

A friend of mine was cured of eating oysters in Washington. The first thing on the bill of fare at a banquet he attended there was a plate of oysters on the half shell. The man next to him suddenly pulled a handkerchief out of his pocket, put it to his mouth and said, "My, that was a bad one." They all lost their appetite for oysters all of a sudden, and this gentleman lost his appetite to such an extent he never wanted oysters again. He was cured completely of his desire for oysters, which was a very good thing, for the oyster is a very filthy creature, a scavenger of the sea, something we can get along without very well.

October 21, 1938

In view of the fact that I am approaching my eighty-seventh birthday and being the only person living who has been associated with the Battle Creek Sanitarium from the beginning of the organization and for other reasons which I will later make clear, I have prepared this statement which I shall endeavor to make as brief as possible, covering only matters of chief importance.

The institution was opened in 1866. For a few years there was a growing interest in what was known as Grahamism, health reform, the water cure movement, vegetarianism, return to nature, etc.

There were then numerous health institutions known as water cures in the country, several in New York, two in Ohio, one in New Jersey and numerous other small establishments. The leading one was located at Dansville, New York. Elder J. N. Andrews sent his young son there for treatment for the results of infantile paralysis. Dr. Lay of Allegan had taken his wife there for treatment of tuberculosis and himself became one of the physicians of the institution. Elder White had had a stroke of apoplexy and had been taken to Dansville by Mrs. White for treatment, remaining there for one year. He was there with Mrs. White when the Western Health Reform Institute, as this institution was then known, was opened, and was an invalid and inactive for a year or two after he returned, although he ultimately made a very remarkable recovery.

A monthly known as the Water Cure Journal was published at Leight Street, New York City, which was one of the oldest water cures in the country. The Dansville institution published a monthly journal called The Laws of Life. Fowler & Wells of New York began at about that time

a journal known as The Science of Health. This was edited by Dr. Trall who had a hydrotherapeutic college at Florence Heights, New Jersey.

150 years before, a return-to-nature movement had been started in England by a clergyman who organized a church, one of the tenets of which was abstinence from meat. This was the origin of the Vegetarian Society of Great Britain. About 120 years ago a preacher of this organization came to America and developed a congregation and erected a church building. The last pastor was a Rev. Clubb from Grand Rapids, Michigan. He became a convert and served as pastor for many years.

In the early forties the great uncle of the late Dr. Graham Lusk of New York City became a convert to the return-to-nature ideas and devoted his life to a study of the subject and lectured throughout the country. His influence was so great that his name became attached to wheat meal which has become widely known as graham flour not only in this country but in Germany where it is still sold in the shops as Graham brodt. Sylvester Graham gave lectures in Michigan on the return-to-nature movement and wrote a large work entitled "Lectures on the Science of Human life" in which he presented with admirable clearness and thoroughness the principles of wholesome living which became the foundation of the health reform movement which began at that time and was adopted by many different groups of comeouters as they were called at that time, many of whom were found in colonies scattered throughout the country and known by various names. The Shakers became vegetarians. I had for many years in my possession an ably written tract against the use of tea and coffee written by Elder Evans of a Shaker colony in New York dated 1847. The Brook Farm Experiment under George Ripley, editor

of the "American Encyclopedia," had a vegetarian table. Charles Dana, founder of the New York Sun, was secretary of the colony. Horace Greeley, founder of the New York Tribune, and Thoreau joined the movement. Wendel Phillips, the famous orator who visited the Sanitarium more than 50 years ago told me that he had scarcely tasted meat for nearly 55 years. Another pioneer was Bronson Alcott, the father of Louisa May Alcott, who with her three sisters, the "Little Women," was raised strictly in accord with biologic ideals. Bronson Alcott's cousin, Dr. William A. Alcott, a learned and able physician, wrote valuable works on health reform, several of which I have in my library.

Dr. Cole's work and that of Graham, "Lectures on Human Life," was largely drawn upon by Elder and Mrs. White in the early days when they were promoting the health reform movement among Seventh-Day Adventists. As a printer's boy in the Review and Herald office I became acquainted with these books through setting type from them in articles for the Health Reformer and How to Live. I studied these books with great interest from the age of fifteen years.

In the forties Graham came to Michigan and gave lectures in various places. My father and one of his brothers were pioneers in Michigan in the early thirties. My uncle became a thorough convert to the Graham health reform movement in the forties and my parents then became acquainted with the water cure methods when I was an infant, in the 50's. The water cure methods became household remedies in my home when I was an infant.

Oberlin College discarded meats in the 40's, some 20 years before the Health Institute was started, and for years tea and coffee could not

be purchased in the town of Oberlin.

Joseph Smith, founder of the Latter Day Saints and the Mormons, taught health reform principles to them 20 years before the health reform movement among Seventh-Day Adventists was started. The League of Nations in a recently published statement shows that the Mormons have a lower death rate than any other civilized people in the world. The S. D. A. denomination should have had this distinction.

In the late 40's, Mr. Shipford, a retired clergyman, one of the founders of Oberlin College, had met Dr. Graham in New York and become a convert to health reform principles. On returning to Oberlin he established vegetarianism there and later came up to Michigan and founded another vegetarian college in the town of Olivet a few miles from here nearly 20 years before the health reform movement began in Battle Creek. The movement failed there because of the death of Mr. Shipford.

As regards the methods of treatment employed in the Sanitarium, the fundamentals are all as old as the hills. Many of the different methods of applying water were in use by the peasants of Austria and Germany hundreds of years ago. Many of the methods of what is known as hydrotherapy were invented by a German peasant by the name of Priessnitz, who established the first water cure at Graefenberg, a mountain town near the Russian border of eastern Silesia. The methods were crude but efficient. Out of the work of this remarkable uneducated peasant has grown our modern system of hydrotherapy, the most important and versatile of all curative measures.

Battle Creek can make no claim to having originated or given to the world any new principles of curing or treating disease. All that has

been done is to bring together in one place known effective curative agents and methods and to organize them into an effective system and to make such improvements as experience and research have suggested and the progress of science has made possible.

When I graduated from Bellevue Hospital Medical College in 1875 I was twenty-three years of age. During my three years of medical study I had been editing Good Health, not because I was competent for the work, but because I was a sort of Hobson's choice.

A good many years ago the secretary of the American Hospital Association asked me to prepare a paper for the second meeting of the organization. In this paper I endeavored to give something of an idea of the difference between a sanitarium and an ordinary hospital. My paper was discussed by Dr. Henry Hurd, Medical Director of Johns Hopkins Hospital. Dr. Hurd had formerly been superintendent of the State Hospital for the Insane at Pontiac, Michigan. He surprised, and I must confess, embarrassed me by saying, "Dr. Kellogg deserves credit for having converted into a scientific institution an establishment founded on a vision." When asked to speak to close the discussion, I declined because I did not know what to say.

I had heard it stated that the Institute was built because Sister White had stated that this should be done, but nothing further. On inquiry I found that she had stated that the Lord had shown her that such an institution should be established, and I have never for a moment doubted that a kind Providence planted the work.

I consented to take charge on the condition that I should be permitted to completely reorganize the work and put it on a thoroughly

scientific basis. I had no hope of success except by doing such thoroughly scientific work that the results obtained would overcome the handicap of my youth and my unimpressive personality. I received no instruction from Mrs. White as to what needed to be done in the way of reorganization or what should be prescribed or how it should be given, but excellent instruction as regards the conduct of helpers toward patients, their devotion to their work, the maintenance of high moral and social standards and especially that care should be taken to avoid making even in the prayer and social meetings that were held by the family and which were often attended by patients, doctrinal remarks which would not be understood by patients and might give rise to queries. The instruction we had was that our religious faith should be shown through our lives rather than at attempts to proselyte.

The standards established in those early days I have endeavored to maintain not only while I was a member of the denomination but since. I found Mrs. White a wise counsellor and a friend to whom I constantly appealed for advice which I followed to the best of my ability. I had the utmost confidence that the Lord was leading Mrs. White's mind and I have this same confidence still. She was a godly woman who sought divine guidance and received it. I had many evidences of this, probably more than any other living man ever had. I will mention one or two instances.

As I stated, I began my work as superintendent of the Health

Reform Institute in 1876. It was the first of October that I took charge. By spring every available empty room in the west end of town was occupied. Patients were crowding in with no place to put them. We paid off ten thousand dollars in debts during the winter and had accumulated ten thousand dollars in the bank.

Elder and Mrs. White had been in Colorado during the winter and when they returned in the spring we needed a new building. I had so much confidence that the Lord would send us the building that I had allowed a picture of the one I had planned to be printed in the county history. After we had had two or three talks about the needs of more rooms for patients, the Elder told me one morning that the night before Mrs. White had a remarkable dream. In her dream she saw that the little two story farmhouse with two small additions which had been made to it had grown in size to a huge building which extended clear down to Champion street and that the fame of the institution had extended all over the world. It was on the strength of this dream that Elder White consented to undertake to raise the money to put up our first main building, the plans of which expanded while building, because of the growing influx of patients, from a three story building about one hundred feet long to one twice as long and four stories high with a rear extension. It was dedicated the following spring with every room occupied. The cost was \$125,000, of which we owed \$115,000.

We soon needed additional buildings. I asked advice of the leading brethren who encouraged me to go ahead and borrow all the money we needed, but to take care to make the time at least twelve years as before that time the end would come.

Then came a fire in 1902 which burned up our two main buildings and left us only a dormitory and cottages with a debt of \$250,000, which was

\$18,000 more than our total assets, including insurance. The district presidents were called together and their advice sought as to rebuilding. We were advised to rebuild. The plans which had been tentatively prepared were adopted. Plans were made for raising \$500,000 toward the cost. Later when it was found that the Articles of Incorporation made the Sanitarium undenominational, the offer to raise the funds was withdrawn. The building, already started with the insurance money, was continued, however, with funds which came in every week, just sufficient in amount to meet requirements for the week, usually about \$20,000. This continued for a year aggregating \$1,000,000, and continued after that for five years at a rate just sufficient to meet our weekly needs.

There were during this time many evidences of Providential care. Thousands of dollars in notes and obligations came due every week. Sums of five and ten thousand dollars were often needed without a dollar in the bank to make payment. At the last minute there would come a check just in time to save us from default.

Bonds were issued. At the General Conference in Oakland the bonds were libeled and pronounced unsafe and a committee appointed to investigate them. The committee never appeared. The bonds were all paid several years before they were due.

We received a letter from Sister White saying that the Sanitarium should not have been erected at Battle Creek and should be moved to some other locality. I wrote her that the building had reached the third story and asked her advice as to what we should do. She replied that we must finish it, of course, but to reduce the cost as much as possible. This we did by the aid of loans, mostly unsolicited, being offered by friends.

At the time of the Oakland Conference, the building was completed, but had not been dedicated. At one of the meetings Mrs. White repeated the state-

ments that the Sanitarium should not have been built at Battle Creek, but should have been moved to a salubrious locality. When she finished speaking, I arose and stated that although the building was finished it was not dedicated and it might be sold for what it had cost and the Sanitarium moved elsewhere to any place where the Lord wanted it.

At a later meeting Mrs. White said, "It has been suggested that the Battle Creek Sanitarium be sold. No, let not that institution be sold and fall into the hands of its enemies. Let us all take hold and make it a success." This statement was omitted in the bulletin report of her address, but upon my urgent insistence through Dr. Paulson it was published several days later in a small note in fine print in an obscure corner of the bulletin.

To my knowledge no attention has every been paid to this instruction. However, the work continued to grow and after ten or twelve years and in spite of the fact that just before the fire a large building was erected for a competing institution on the opposite side of the road two blocks north.

A few years after the fire we found ourselves again in need of room. During the summer months we had a growing waiting list of more than a hundred. The institution across the road was empty and was purchased by the Race Betterment Foundation. It was paid for with the earnings of the food business.

In the middle twenties another long waiting list developed. Year after year the waiting list reached 150 or more with a string of private cars waiting on the railroad sidetracks and additional space seemed necessary. An addition was erected at an expense of \$4,000,000. For two years the entire structure was filled to the top. The debt was reduced to less than \$3,000,000. In five years more, if prosperity had continued as President Hoover said it would do, the debt would have been paid. Depression came instead and financial embarrassment and humiliation which I hope has done us good. It has taught us lessons

of economy which were greatly needed and I hope will enable us to recover the missionary objectives and the zeal for reform and human service which characterized the early years of the institution and enabled us to do our part in bringing light and truth to those who are seeking it and in preparing truth seekers for the trying times that are facing the world.

In the humiliating experience of the last six years we recognize the kind hand of Providence teaching us lessons which we greatly needed and we hope will be so thoroughly learned and profited by that they need not be repeated. We are hoping that a merciful Providence who the Good Book tells us "makes the wrath of man to praise Him" may also enable us through loyalty to truth and consecration to our work to make even our mistakes to render human service by filling all these spacious buildings with suffering men and women needing human sympathy and the healing touch of the Great Physician through the divinely appointed agencies of physiotherapy. If my life is prolonged sufficiently to see this realized, I trust that you will join with me and my colleagues in recognizing the complete fulfilment of a prophetic dream.

I have thought it necessary to make the above statements with reference to the early history of health reform and physiotherapy and the true origin of the principles of the Battle Creek Sanitarium because two versions of the matter are extant in Seventh-Day Adventist literature. One version is found in the history of the denomination prepared by Professor Mahlon Olsen. This is a remarkably exact and accurate statement of the facts. I wondered when I read it that the writer should have taken the pains to go so thoroughly and deeply into the ponderous literature of many years to be able to give so accurate a picture of the facts.

Another account presented in a sermon at a fall gathering similar to the present two or three years ago and afterward published in the local papers.

This account is very different, evidently based on hearsay and misinformation. It represents that the principles on which the Battle Creek Sanitarium is based and which have made it a means of human service were revealed as a special revelation to Mrs. E. G. White. Evidently the intention of this sermon was to increase the prestige of the denomination. The fact is the very opposite, because every thoroughly well informed person is familiar with many of the facts which I have above presented and knows that the modern return-to-nature movement is simply a renaissance of truths old as the ancient Egyptians, Greeks and Romans and even known and practiced by savage tribes, natives of Central Africa and the South Sea Islands. To claim credit for having introduced something into the world which is to be found in the most ancient hieroglyphic manuscripts is discreditable. Even for consistency's sake one or the other of these accounts should be suppressed.

I do not for a moment doubt that kind Providence led Mrs. White to recognize the principles on which the Battle Creek Sanitarium is based as divine truth and that this recognition was the motivating impulse which led J. N. Loughborough, Joseph Aldrich, my father and a few others to invest in the enterprise every dollar they could spare from their scanty means.

I am calling attention to this matter not as a complaint or a charge against anyone, but to put myself on record in protest against falacious claims to which my silence might leave me open to suspicion of assenting. In fact, I took care to place the facts before the writer referred to as soon as my attention was called to his error, but he saw no reason for changing his statements.

In the interest of truth and good understanding I desire to make the following brief statements:

1. I have been informed that it has been widely stated that a change

has been made in the title or ownership of the Sanitarium property. This is entirely an error. It has never been changed since my connection with the institution. The institution has always been a private enterprise although from the very start conducted in the public interest. During the first year the owners held it in partnership. At the end of the first year it was incorporated, the owners becoming stockholders. Any person who paid in twenty-five dollars received one share which entitled him to one vote.

When the institution was reincorporated at the end of 30 years when its charter expired, it was made an eleemosynary or non-dividend paying organization. Each known stockholder was asked to nominate for membership in the new organization one person for each share of stock which he held. Thus the original owners through their representatives, with other members who have since joined, are still the owners of the corporation.

Another charge made over Mrs. White's name but for which she was not responsible was that forgery had been committed. The sum of \$50,000 was named as the amount of the defalcation. The fact was that by the error of a clerk of which I knew nothing, the word president was written after my name which was appended to a note for one thousand dollars instead of agent, a purely clerical error which made not an atom of difference to anyone. I never saw the money for which the note was given. When I heard such a charge was made against me, I at once sent a check for a thousand dollars to cover the full amount and shortly after had an explanation sent.

I should not mention this matter except for the wide publicity given my supposed criminality. A member of the General Conference Committee stated from a platform in a camp meeting that I was guilty of states prison offenses and ought to be sent to states prison. Another member of the General Conference Committee carried and widely exhibited in Europe, a statement signed

by Mrs. White plainly declaring that I was a forger.

A great multitude of other statements were made which were equally untrue, but of less consequence so I will not mention them in detail with the exception of two.

I was charged with being a pantheist because of what I wrote in "The Living Temple." It is just that you should know that the views which I elaborated in "The Living Temple" I received from Mrs. White in a special testimony which was delivered to me at the General Conference held in Rome by Elder J. H. Waggoner.

At that time the subject of evolution was being widely discussed and was generally accepted by scientists. I had not accepted the doctrine, but was greatly perplexed in my efforts to understand and reconcile the new views that were being brought to light with the Bible doctrines. Haeckle, the famous German physicist whom the whole scientific world then almost worshipped as an oracle, had devised a highly seductive mechanistic theory of the origin of life and of all natural phenomena. Mrs. White's message to me showed me the way of escape from materialism and infidelity. She said in her letter, "The planets are not moved by blind forces but are under the direct control of God. His hand moves the earth in its orbit round the sun."

This opened to my mind the fact that all Christendom was worshipping a false God that is called Nature, which because of this great error is personified and the word is printed with a capital N, and I recognized the great truth enunciated by Paul in his speech on Mars Hill when he declared to the Athenians, "Whom ye ignorantly worship him declare I unto you," adding, "and is nigh unto every

one of us, for in Him we live and move and have our being."

I was most happy to find that the explanation of all the mysteries of life and all the wonders of nature is the presence of the great Creative Intelligence, the infinite personality, Jehovah. This view is today accepted by nearly if not quite all leading scientists of the world and is a substantial foundation for Christian faith in an ever present help in time of need, and in the guidance of a voice behind the consciousness saying, "This is the way. Walk ye in it."

I dictated "The Living Temple," many times with tears of gratitude in my eyes, that Mrs. White had sent me the light that had settled my faith and with a prayer in my heart that the book might prove as great a blessing to thousands of others as it had to me.

After the book was denounced as pantheistic I placed it in the hands of a member of the General Conference Committee and with tears running down my face begged him to go through the book and mark every word to which he objected, promising to make every change suggested without raising any questions. After some hesitation I was given the promise that this would be done. I telegraphed from Washington to Battle Creek to have all unsold copies of the 5,000 edition published to be boxed up and not another copy sold. On reaching home a few days later I found that 3,000 of the 5,000 copies printed were boxed up and their sale was stopped, only 2,000 copies having been sold.

While these books were boxed up in the basement of the College, a member of the General Conference Committee announced before a large S. D. A. audience 50,000 copies had been published and were being forced upon the people.

As the corrections were not made as promised, I made myself such corrections as I hoped would clear away the misunderstanding and published a small edition. I found objections to the book were still raised, so I suppressed it completely. The book has been now out of print for more than 30 years. I suppressed the book in the interest of peace, although it was a bitter disappointment to me that I was not permitted to pass on to others the great truth Sister White had given to me and which had truly been "a light unto my path" in my wanderings among the pitfalls and snares of scientific theories, old and new.

Another statement I wish to make in refutation of the charge made and strongly urged upon Mrs. White that I had written and was intending to publish a work denouncing her as an imposter and that the manuscript had been seen by a prominent man whose name was mentioned. This statement is absolutely untrue. I have never for one moment entertained the thought of writing such a book. On the contrary, I have always entertained the greatest respect and regard for Mrs. White. Aside from my parents she was the best friend I ever had. She treated me as a son. As a young man I was a member of her family for months at a time.

When I learned that statements of the sort referred to had been made to her, I at once wrote her to assure her that the statements were untrue and that whatever her attitude toward me might become and whatever she might write or say about me, I should never forget her friendship and the help which I received from her counsel, to which I owed so much, and that attitude I have maintained to the present time. I have never assisted with so much as one single postage stamp any effort in opposition to Mrs. White's work and have taken care to see that the

Sanitarium pursued the same policy. My feeling has been that although the things done and said were grievous to bear, the work I had in hand was so important that I must waste no time or energy in battling for self-justification or defense and that especially I must do nothing that might in any way impede or mar the good work that anyone else was doing. I have sought to spend my life in constructive effort in lifting up and not in dragging down.

One point more I desire to mention. When I was asked to resign and withdraw from the church I declined and asked that I should be put on trial. This request was refused. A committee called on me and inquired if I believed the testimonies. I replied, "I believe everything that is true." When my name was dropped without the usual formality of a trial, one of the charges made was that I did not believe the testimonies. The testimony in question related to the misappropriation of funds. In the words of the testimony, I had "Robbed the treasury of the Lord and defrauded the Lord's people to erect buildings in Chicago to harbor the unworthy poor." The testimony had been widely circulated and read in public to large audiences in various parts of the world. My only reply had been the request that the buildings should be located. This was never done and no such transactions had ever taken place.

Soon after Mrs. White reached America on her return from Australia, I received a telegram from her asking me to come to the Pacific coast as it was desired to consult me about matters in Australia. A few weeks later I visited St. Helena while making one of my regular trips to all the smaller sanitariums to do operations as I was then for a few years the only surgeon available.

I had several talks with Mrs. White just before leaving and called her attention to the several testimonies which I had received stating that I had taken money from the Sanitarium to erect buildings. I asked her to tell me where the buildings were located. She at once said, "The Lord has never shown me that you have taken any money from the Sanitarium for any such purpose. I have no recollection of ever having written you anything of the sort." I mention this to make a record of the fact that Mrs. White's view of those statements was the same as my own.

As I have nearly reached my eighty-seventh birthday anniversary and I am admonished that my days on earth must be very short, I am making an earnest effort to leave in as good order as possible the work to which I have devoted my life.

I feel that the people of this world are entering a period of trouble and tribulation such as they have never seen before and that the opportunities for human service before the Battle Creek Sanitarium and all institutions possessed of the same light as a means of helping suffering human beings is immensely greater than ever before and will steadily enlarge. I feel that it is important that all possessed of this light and knowledge shall cooperate in such a way as to make their efforts most effective and desire above all things else that neither myself nor any person associated with me or the work with which I am connected shall be in any way a hindrance or a stumbling block in the way of others who are prepared to help in the great work that needs to be done and to that end am anxious to do what I can to clear away for sympathetic cooperation in every effort in the direction of human service such as we are prepared to give.

In conclusion I wish to present to you one more instance of Mrs. White's prophetic insight and foresight. Some little time before the forcible severance of my connection with the organization I received a letter from Mrs. White telling me of a dream she had had. She said, "I saw in my dream a boat in which there were several leaders and you had been pushed out into the water but were clinging to the sides of the boat. They were beating you off with their oars."

In conclusion, my friends, I wish to say that I have abandoned none of the standards and ideals to which I adhered forty years ago and before. I am still clinging to all the truth I have known.