

FACTS ABOUT LACTOSE

Lusk (1915) showed that **lactose** in the dog failed to materially increase the respiratory quotient.

The food value of lactose as shown by increase of weight is only about half that of other sugars (Koehler and Allen, 1934).

The feeding of lactose causes increased absorption of calcium by increasing lactic acid in the intestines.

Rats given lactose increased in weight much faster than those fed cane sugar (Cary and Ellis, 1934).

Adult rats fed lactose gained more weight on cane sugar than on the same weight of lactose (Cary and Ellis, 1934.) This was due to the greater production of fat by the cane sugar-fed rats.

The lactose-fed rats lived longer than the cane sugar-fed rats.

The difference in weight was not due to the effect of the lactose on the flora, because dextrin does not have this effect on the weight while it has the same effect on the flora as does lactose.

"For age weight the lactose-fed infant possesses more living tissue than does the infant fed on vegetable sugar." (Jarvis, 1930.)

A cane sugar diet produces more rapid gain in weight than does glucose due to its more complete and rapid absorption and greater production of fat, a considerable proportion of the lactose eaten being used in the production of lactic acid by acidophilus and other aciduric organisms.

The digestibility of food is impaired by combination with cane sugar or other sugars, impairment being greatest with cane sugar, less with fruit sugar, and least with milk sugar.

Lactose increased the utilization of phosphorus as well as calcium. (H.H.Mitchell, 1937).

Fifty to one hundred grams of lactose daily prevented tetany in a dog from which the thyroid and parathyroid glands had been removed.

Dextrin as well as lactose encourages the development of an aciduric flora "whereas other carbohydrates seem to be without influence on the intestinal flora."

"Lactose in contrast with other carbohydrates produces an aciduric flora " (Hudson and Parr, 1924).

Lactose feeding prevented rickets in chickens fed a ricket-producing diet. Forty percent lactose was used. Forty percent maltose produced no effect.

Galactose feeding produces the same effect as lactose in preventing tetany in dogs (Inouye, 1924).

Lactose to the extent of 15 percent in the diet of babies did not cause diarrhea.

Fifteen to 17 grams of lactose per kilogram in infants, either sick or well, did not cause sugar to appear in the urine or stools. The lactose-fed infants grew faster than the controls. (Barenberg and Abramson, 1930).

From this these authors conclude that milk sugar is safe for modifying cow's milk.

In large quantities it does not cause diarrhea, even in high concentrations. It causes more rapid growth and more rapid development of muscle (Gerstley, 1930).

The relation of lactose to protein in the infant's diet is of great importance. Lactose he believes is preferable to maltose-dextrin preparations.

Kopeloff and Cohen (1930) express similar views.

A normal infant thrives on a lactose-rich diet.

"Lactose is as much a food for beneficial microbes as for man (Kopeloff and Cohen, 1930).

Lactose stimulates the acidophilus bacilli native to the individual's intestinal tract, which is preferable to an alien strain. Its slow absorption enables it to reach the colon.

The normal tolerance limit for lactose is about 100 grams for both men and women. It is increased in women during the menstrual period to 20 grams.

Speaking of the products of protein decomposition in the colon, McCollum says, "There has been much discussion as to whether the latter products are of physiological significance. Certainly they are unwholesome, have no physiological value, and pollute the blood stream."

While lactose is a special sugar designed for the nutrition and protection of infants, an equally efficient provision is made for the protection of adults in dextrin. In the digestion of starch, the huge starch molecule, with a molecular weight of _____, is divided up into four different kinds of dextrin, amylo-dextrin, erythro-dextrin, malt dextrin, and achroo-dextrin. The latter is not converted into maltose in the small intestine and then into dextrose in preparation for absorption as are the other dextrans, and hence is not absorbed in the small intestines but passes on into the colon, where it feeds the bacillus acidophilus and B.coli. The latter produces carbon dioxide, lactic and acetic acids, but no toxins so long as it is feeding upon dextrin or other available carbohydrates. Acidophilus produces only harmless acids, chiefly lactic acid, and no toxins and no pathogenic effects. The growth of B.coli, Cl.Welchii, and other anaerobes is arrested when acidophilus is present because of the high degree of acidity produced which acidophilus is able to tolerate.

When the achroo["]dextrin and other carbohydrates are wholly used up, a condition which soon develops when stasis is present, B.coli and other anaerobes become pathogenic and produce sulphuretted hydrogen, ammonia, indol, skatol, and other toxic substances that acquire active pathogenic properties, producing peritonitis, appendicitis, colitis, gallstones, cystitis, Cholecystitis, duodenitis, angiocholitis and other lesions of the intestinal tract and abdominal viscera.

Lactose and dextrin are the two carbohydrates especially adapted to the intestinal tract. Of the two, dextrin seems to be the more efficient, probably because of the fact that one-fourth part of the starch eaten is converted into a form

of dextrin, which is not converted into sugar and is not absorbed, being designed for protection of the intestinal tract against disease-producing organisms.

The natural or biologic dietary of primates, which include man and the four anthropoids, the gorilla, the chimpanzee, the orang-utan and the gibbon, abounds in starch or dextrin, thus making dextrin a dependable source of protection, whereas lactose, being found only in milk, is of special service to human infants and the young of mammals who nurse their infants. In general only about half of the lactose received by infants in their food is assimilated so that an abundance remains to nourish the protective aciduric flora.

In the case of adults, different individuals differ greatly as regards their ability to assimilate lactose. In some persons the digestive ferment lactase, which is required for the conversion of lactose, is present in such quantity that a large part of the lactose is utilized in the small intestine. In such cases large doses (one or two ounces two or three times a day) of lactose are needed to insure the entrance into the colon of a sufficient amount of lactose to maintain a vigorous growth of acidophilus and so protect the intestine against the harmful effects of colon germs and other disease-producing organisms. In other cases lactose is present in only very small amounts and as a result most of the lactose passes through the small intestine without digestion and absorption, and so small doses (one-third to two-thirds of an ounce three times a day) will be found sufficient to maintain a non-putrefactive flora and odorless stools.

Adolph Schmidt, the famous German **internist**, pioneer in the clinical study of the intestinal flora, maintained that indican never appears in the urine except when the ileocecal valve is incompetent, resulting in reflux of the colon contents into the small intestines where absorption takes place much more freely than in the colon. In general, indican appears in the urine when the stools are foul smelling, indicating the dominance of B.coli and other putrefactive bacteria in the large intestine. That indican does not always appear in the urine with malodorous stools,

according to Schmidt, may be due to the fact that the ileocecal valve is competent. In most cases of chronic constipation with foul stools, this important valve is incompetent, having been broken down by dilatation of the cecum, the natural result of a spastic or obstructed state of the distal colon.

VITAL ENERGY

12-27-39

The body is a series of storage batteries. Every organ, every individual cell is a storage battery which gathers energy from the blood. Energy exists in two forms, active or dynamic energy, and inactive or latent energy. The food we eat consists largely of latent energy, chiefly in the form of sugar, dextrin and fats. Substances which disappear in the body, being converted into carbonic gas and water. Just as coal disappears in a furnace, the body fires consume three quarters of a pound of carbon, like the carbon of coal, every twenty-four hours.

Latent energy may be released with contact with some activitating substance or by an electrical current. The original source of energy is the sun. The energy of the sun is captured by the chlorophyl, the green coloring matter of plants, and stored as foodstuffs. By the process of digestion the energy masses of food are converted into minute bundles of energy, so small that they may be easily absorbed and distributed to the various cells and organs which store them for use as needed. The energy stored in explosives may be released either by contact with an activitating substance or by an electrical current.

The same is true of the body. The energy stored in the cells and organs is constantly being released by activitating substances circulating in the blood or by impulses sent out by the brain or other nerve centers found in the spinal cord and scattered throughout the body. The release of energy by the body cells is thus subject to control in two ways: - messages sent from the brain and activitating substances introduced through the blood which might be designated as psychic control and chemical control.

Chemical control, chiefly by the action of hormones, vitamins, oxygen and other substances in the blood, is almost wholly automatic or involuntary. This is the chief source of animal heat and is under control by regulating nerve centers, the energy released by nerve impulses through the nerve centers and muscles under voluntary control and highly unstable, and they vary from almost complete inactivity during sleep to such tremendous outbursts of energy which may be compared to a hurricane or an explosion.

PHYSICAL CAUSES OF TENSION.

Frog experiments.

Jumpy patients.

Jumping frogs.

^h
Corea.

Vagatonia.

Normal nice balance of energy releasing.

Balance easily upset by coffee, tea, drugs, colon poisons.

PHYSICAL HEALTH THROUGH RELAXATION

Insanity.

Normal energy expenditure.

Heart 10%

Lungs 10%

Digestion 15%

Heat Production 20%

THE MISSION OF GOOD HEALTH IS TO HELP SAVE
CIVILIZATION THROUGH RACE BETTERMENT
AND BIOLOGIC LIVING

Scientists unanimously declare that civilization is doomed and that the death struggle has already begun.

Ask a statistician "Can civilization be saved?" and he will tell you, "No."

Professor Gini, head of the world famous Statistical Institute at Rome, Italy, offers historical proof that every nation that has tried civilization has perished.

Depopulation, the beginning of dissolution, is active in every white nation of the world, even in America, the youngest and most vigorous of all the great nations. There are a million and a half empty seats in our primary schools and more empty seats appearing every year.

Ask a geologist and he will reply, "No, the case is hopeless. The crust of the earth is filled with the bones of many species and types of animals that have disappeared. Man is destined to perish with the rest."

Ask an economist and he will say, "No. All of the world's great sources of wealth have been exploited and show signs of being exhausted. There are no new lands to settle. Machinery has reduced millions to poverty. Economics offers no solution for the world's problems.

Ask a politician. "No," he will say, for the only sound government must be democratic, and a democracy is not

possible without the Golden Rule. But the Golden Rule is obsolete.

Intellectual and moral standards have fallen until man has lost his capacity for self-government. Every nation in the world today is ruled by dictators,-- by force, not by reason and righteousness. A few, like Italy and Germany, are ruled by single individual dictators, the rest by party dictatorship, the tyranny of a majority over a minority.

Ask a physician and he will answer, "No. Civilization is sick unto death. Many acute maladies have been mastered, but degeneracy is rampant. The young live longer, but the old die sooner. Centennarians are disappearing. Civilization is dying at the top."

Ask the theologian, the preacher, "No," he will tell you. Christianity has lost its hold. So-called Christian nations are doing their best to destroy one another. Christian Germans are fighting Christian French and English with more fierce and pitiless ferocity than savages ever fought. Christian missionaries have inoculated heathendom with the deadly vices of civilization, but have made no progress toward Christianizing it. The World War destroyed all future hope for foreign missions as a Christianizing force. The Prince of Peace is welcomed nowhere.

Force rules the world. Lunatics have seized the reins of governments. There is less hope than ever for world peace based upon world understanding and unity.

Call up the father of eugenics, the great Galton, and ask him if there is any hope for the human race and he will

tell you, "Yes." There is hope in eugenics. Make a religion of genetics. Make a cult of pedigree. Teach every man and every woman to reverence, respect, protect and if possible improve his germ plasm, the precious endowment of race life which has been committed to his care with the power through heredity to pass it on to succeeding generations. Witness the miracles which genetics has wrought for fruits and flowers, field crops and domestic animals within the last 50 years.

Call up Mr. Burbank, the plant wizard, and ask him, "Can homo sapiens and his boasted civilization be saved?" and he will reply, "Certainly it can be saved." Look at the Shasta daisy! and a long list of glorious creations which have astonished the world as they have one by one come out of biologic laboratories and experiment stations within the last fifty years.

Read the story of maize, our greatest food plant, in its rise from teosinte, the Mexican weed, of humble origin. Six generations will create a new type of the genus homo as much superior to the average man of today as the finest Belgian draft horse is superior to the poor drudge of the farm.

Ask Good Health, "Can civilization be rescued and saved from the shipwreck pictured for the ship of state with all the passengers on board and the jewels which represent age-long accumulations of achievements?" Good Health will answer, "Yes, civilization may be saved through race betterment and

biologic ideals." There is no hope for the race through politics or economics, force, human ingenuity or philosophy. Only the great creative forces which created the world and made man, the Infinite Personality that St. Paul in his great Mars Hill speech introduced to the Athenians,-- the unknown god whom they "ignorantly worshipped" and urged to seek after him "though He be not far from every one of us, for in Him we live and move and have our being."

The great creative intelligence which has been kept out of our sight by the worship of the false god Nature, working through eugenics and the marvelous germ plasm, may save the race and even improve it. The germ plasm clings tenaciously to those noble and mysterious capacities which make man the image of his Creator and stubbornly refused to be deformed and destroyed by the abuses to which its human host subjects it.

Here is the creating force, the transforming power that can rescue poor depreciated, degenerated humanity and bring it back to its Edenic excellence, which even when viewed through the eyes of infinite wisdom and judgment was pronounced "Very good." There is enough left in man of the qualities planted in him by his Maker to make his salvation possible.

And how shall this be done? This and kindred topics, the most important that can occupy the human mind, will be the chief topics.

Good Health has for months been engaged in seeking

out a group of the most eminent leaders in the search for the better way of life, the way of salvation for the race and for civilization. A partial list of these notable teachers will appear next month, and during the coming year the contributions from these eminent and highly informed and most dependable sources of information on race betterment subjects will each month aid in making Good Health one of the most important and most interesting magazines published.

The size has been cut down so that the price might be reduced and as a result its contents will be made to represent the quintessence of cogent information relating to the up-to-date progress of inquiries into the world's needs and the latest discoveries of potent remedies.

Every number of Good Health will reach many thousands of homes. Plans that have been made will soon bring the journal to the eyes of several hundred thousand readers.

Please note in other columns the extraordinarily liberal terms offered to subscribers and join the American Good Health Club which is starting out to create the greatest health organization in the world with the hope of helping to solve the world's greatest problem, how to save not simply America but humanity and civilization.

IS B. COLI A PROTECTIVE ORGANISM OR A MENACE?

By

2-29-40

Dr. John Harvey Kellogg

Here are facts which no bacteriologist will question from which definite conclusions may be drawn:

1. When Escherich discovered B.coli, he announced it to be a parasitic organism and reported it as pathogenic in character.

2. When its wide dispersion and general presence in the colons and in the intestines of animals and human beings was later noted, the conclusion was drawn by many bacteriologists that B.coli was a normal resident of the colon.

3. Facts have recently come to light which, added to well established facts long known to bacteriologists, offer good grounds for raising the question whether Escherich was not right in regarding the B.coli as a parasite and an undesirable and even dangerous tenant of the alimentary canal.

4. B.coli is a facultative anaerobe and when growing in the colon may get its oxygen from either carbohydrates or proteins, showing a strong preference for carbohydrates and attacking proteins only when available carbohydrates are not present.

5. When B.coli subsists on carbohydrates; that is, sugar or dextrin, it produces gas, carbon dioxid and acetic acid, and, as Kendall says, is a harmless parasite.

6. When carbohydrates are absent, so that proteins are attacked, B.coli changes its character and is no longer a harmless parasite, but becomes virulent and pathogenic, producing sulphuretted hydrogen, ammonia, indol, skatol, and various toxic putrefaction products, some of which appear in the urine as indican, etc.

7. As a proteolytic organism, B.coli may show a high degree of virulence. Contact of the organism and its products with the mucous membrane of the colon causes irritation of the mucous membrane and a hypertonic state of the musculature of the gut, the so-called "irritable colon" of the roentgenologists.

Park* and also Kendall** enumerate the following pathological conditions which have been clinically shown to result from B.coli infection: peritonitis, appendicitis, colitis, fever resembling typhoid, infection of the abdominal viscera, followed by fatty degeneration, general septicemia, infection of the gallbladder, gallstones, cholangitis, cystitis, and pyelonephritis.

8. Tissier³, of the Pasteur Institute, in 1900 in the study of the stools of new-born and nursing infants made the following interesting observations:

(a) Sterile at birth, the infant's stool in four hours becomes infected with B.coli and other organisms which multiply rapidly so that within 10 hours the stool is swarming with colon germs of various species.

(b) After two days of breast feeding, a new organism appears, bifidus or acidophilus, and develops so rapidly that in 10 or 12 days the stools become almost a pure culture of the lactic acid-forming organisms. This condition is maintained so long as the infant is breast-fed because of the presence in milk of a large percentage of lactose, a most excellent nutrient for the lactic acid-forming organisms of the colon.

9. It is interesting to note this provision of Nature for inhibiting the growth of B.coli.

10. So long as the infant continues to nurse its mother it is free from bowel trouble and is healthy. When put on a bottle, its troubles begin. The mortality of bottle-fed infants is ten times that of breast-fed, chiefly due to bowel troubles.

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1. Park and Williams: Pathogenic Microorganisms, 1939.
Lea and Febiger, Philadelphia.
 2. Kendall, A. I.: Bacteriology, 1928.
Lea and Febiger, Philadelphia.
 3. Prof. A. Besredka: Dr. Tissier and His Work at the Pasteur Institute, April, 1929.
Bulletin of the Battle Creek Sanitarium and Hospital Clinic.

11. It has long been known that a return to breast-feeding is a potent remedy for sick bottle-fed babies.

12. Simply feeding breast milk is not a complete substitute for breast feeding for the reason that while milk contains the lactose which Nature provides as the special food for the protective acid-forming organisms, it does not contain the organism itself. There must be actual contact between the infant and the mother's breast, as in the act of nursing.

The Dionne quintuplets at the age of two months developed grave intestinal trouble, notwithstanding the fact that, although they had not been nursed by their mother because of her illness, they had been fed exclusively with mother's milk from the fourth day after their birth. When teaspoonful doses of a potent culture of acidophilus (soy acidophilus) were added to their regular feedings of mother's milk they rapidly recovered.

The character of the intestinal flora is strongly influenced by two factors: (1) the character of the food intake and (2) the intestinal motility.

Kopeloff, of the Medical Center of New York, found no B.coli in the stool of an eleven year old chimpanzee of the Bronx Zoo. Dr. Goss, who kindly sent the stools at the writer's request, stated that the animal ate the day before the following food: 4 apples, 6 carrots, 14 bananas, a pound of Klim (dried full milk), a bowl of rice and 5 eggs. The stool of a gorilla of the same age sent at the same time contained 98 percent Lactobacillus acidophilus.

Metchnikoff found the stools of fruit eating South American bats to be almost entirely sterile when the animals were fed on bananas.

When stasis occurs, the carbohydrates are soon consumed or absorbed, together with the acid resulting from their fermentation. The Lactobacillus acidophilus ceases to develop, and B.coli, feeding upon protein, takes possession of the field and becomes virulent and pathogenic, attacking and penetrating the mucous membrane and producing hypertonicity (the "irritable colon" of the roentgenologists), and a spastic condition of the distal colon and obstruction with

stasis and constipation. The same fact has been observed in the study of the stools of other anthropoids (gibbon and orang-utan) when fed on a strictly non-flesh dietary, which is the normal diet of primates, that is, a lacto-vegetarian diet. By proper regulation of the diet and care to avoid intestinal stasis, it is easily possible to maintain an intestinal flora that is 85 to 90 percent aciduric (*acidophilus*).

In efforts to change the intestinal flora, it is a constant observation that an increase in the percentage of *acidophilus* and a decrease of *B.coli* results in a steady improvement in the sense of well-being and other indications of health, while with an increase in the percentage of *C.coli* opposite results are observed.

L.acidophilus and its associate protective organisms, *bifidus* and *exilis* produce only harmless lactic and other organic acids with no toxins nor carbon dioxide.

On the contrary, *B.coli*, even when feeding exclusively on carbohydrates though not actually pathogenic, nevertheless gives rise to inconvenience through its production of abnormal quantities of gas (CO_2), and when available carbohydrates are not present, *B.coli* necessarily attacks proteins, which are always present in abundance even when no meat is eaten because of the constant presence in the intestinal tract of mucus and remains of digestive fluids, bile and other excretions, and when meats or eggs are eaten is present in great quantities in the colon because meats are never completely digested and absorbed, a residue of one-seventh to one-sixth of meat proteins always remaining undigested and thus reach the colon in considerable quantity.

It thus appears that *B.coli*, though a comparatively "harmless parasite" as pointed out by Kendall, when the dietary and intestinal residues are rich in carbohydrates and contain a minimum amount of protein, quickly becomes virulent and pathogenic when meats are eaten or when from any cause whatever prolonged stasis occurs. The displacement of *acidophilus* by *B.coli* is a condition which may result

in the development of grave pathological conditions (Park, Kendall and other bacteriologists), whereas the disappearance of B.coli never leads to the development of any pathological condition, but is associated with a state of high health and physical fitness, as shown in the Dionne quintuplets and the anthropoids and in multitudes of cases in which the intestinal flora has been changed.

Taking all these facts together, it will appear that B.coli must be regarded as an undesirable rather than a normal resident of the colon and that efforts to eliminate this organism or to limit its development are often highly important therapeutic indications.

X-ray observations have long since established the fact that ordinary constipation is nearly always associated with hypertonicity of the colon, causing spastic contraction of the distal colon and sooner or later dilatation of the proximal colon and in time leading to extensive structural changes which seriously and often permanently cripple the large intestine. Clinical experience affords abundant evidence that hypertension of the colon is primarily due to a hypersensitive state produced by contact with the virulent B.coli and its irritating products always present in the bad smelling stools associated with constipation.

Of course there can be no doubt that the hypertonic condition of the colon which gives rise to spastic contractions is often the immediate result of psychic or reflex nervous influence, but it will not be questioned that a colon rendered hypersensitive by contact with acrid putrefying contents may easily be the cause of an abnormal susceptibility to psychic or nervous disturbance. It is also evident that the stasis resulting from prolonged or frequently repeated spastic contraction of nervous or psychic origin and the resulting change of B.coli from a harmless parasite to a virulent pathogen would naturally result in the development of a true colitis, seeming to justify the long maintained contention of neurologists that colitis should be regarded as a neurosis.

This complex of etiological factors affords data which should settle the long maintained controversy between internists and neurologists over the question whether colitis is an infection or a neurosis. A colon rendered highly sensitive by putrid contents develops stasis through nervous reflexes which cause obstruction by spastic contractions of the distal colon and thus increase stasis and lead to infection and inflammation or colitis.

SHORT TALKS ABOUT HEALTH

Fourteen health essentials which every visitor to The Miami-Battle Creek should acquire before he returns to his home in order that the improvement which he has made may be definite and permanent and that he may continue to improve after he goes home.

1. Posture, health and personality.

Correct posture or poise of the body when sitting, standing, reclining or sleeping.

2. Normally active skin.

Training the skin for health and beauty more than skin deep.

3. The drink habit recommended.

Regular and copious water drinking.

4. What to eat and how much.

Proper food for human beings.

5. How to balance the bill of fare.

(a) The amount of protein needed and where to find it;
 (b) Fuel foods and where to find them; (c) food minerals, calcium, phosphorus, iron and manganese and why we need them; (d) avitaminosis, the most universal of all maladies; (e) bulkage versus roughage.

6. Correct eating habits.

The fine art of scientific eating or how to be an epicure.--Savarin.

7. Correct colon habits.

How to teach a crippled colon normal habits.

8. Correct colon habits.

How to get and keep a normal intestinal flora. (Dooley's posey garden.)

9. Proper breathing.

The breath of life.

10. A physiologically proper blood pressure.
Common grave errors about blood pressure.
11. Weights proper for the age and type of development.
Your normal weight and how to keep it.
12. Good digestion.
What to do about a bad stomach.
13. A sure cure for insomnia without drugs.
Sound sleep.
14. A placid mind. Freedom from worry.
A cure for worry.

SOY ACIDOPHILUS

CONCENTRATE

Registered U. S. Patent Office

This is a new type of protective organism, technically known as *Lactobacillus acidophilus*, produced by growing the bacillus in a liquid medium prepared from the soybean with other nutrients which especially promote its growth. The soy type of acidophilus is a much larger and more vigorous organism than the milk grown type. It attains a much higher count and is much more efficient in changing the flora and retains its potency much longer than does the milk-grown type. It is so highly active and so thoroughly dependable that we do not hesitate to guarantee that when properly used, with careful attention to the directions given, it will produce a beneficial and notable change in the intestinal flora within a week or two, often within less time.

The potency of a preparation of acidophilus is indicated by the number of living organisms furnished by one gram (30 to one ounce). When freshly prepared, the usual count is 3,000,000,000 to 5,000,000,000. The count slowly diminishes. Its vitality is such that it retains its potency for two to three months, sometimes longer. It is well to double the dose after it is four to six weeks old.

in every mammal nursing from mice to elephants. Tissier found that although the new-born infant's intestinal tract becomes infested with *B. coli* and other poison-forming and disease-producing germs within two days after the infant begins nursing, a new germ with which the infant becomes inoculated by contact with its mother's breast makes its appearance in the stools and develops so rapidly that within two weeks the intruders have been driven out. This is due to the fact that the protective bacillus produces lactic acid in such quantities that the *B. coli* and other parasitic organisms cease to develop and disappear.

This is Nature's provision for keeping the intestinal tract, especially the colon, free from invasion by parasitic, putrefactive and disease-producing organisms. So long as the diet is such as to provide to the protective germs the nutriment they need and keep them flourishing, *B. coli* and other parasites are kept out. When through errors in diet the protective organism, acidophilus, is permitted to die out or to be very greatly reduced in numbers, the parasitic organisms return and their pernicious effects reappear in symptoms variously known as irritable, hypertonic colon, spastic colon, resulting constipation, and in an advanced stage, colitis and ulceration of the colon.

In very advanced cases of infection the entire alimentary tract, the small intestine and the stomach, the gall ducts and the gallbladder become involved and as the

In _____ Prof. Escherich, an eminent German bacteriologist, discovered B. coli. He described it as a parasite. It has since been studied by many physiologists, who have found that while the colon germ is, as Kendall says, "a harmless parasite" while it feeds on carbohydrates, producing only gas (carbon dioxide) and non-toxic acids, when carbohydrates (starch or sugar) are not present so that it feeds on proteins (meat, albumen, gelatin, etc.), it produces toxins, indol, skatol, ammonia, sepsin, _____ and becomes virulent and capable of attacking and penetrating the intestinal wall and causing peritonitis, appendicitis, colitis, ulceration gallstones, pyelonephritis, cystitis and other grave infections, causing also such common maladies as constipation due to a hypertonic or spastic colon.

Metchnikoff, a biologist who discovered the wonderful usefulness of the white blood cells in defending the body against bacteria and other enemies, maintained that the colon germ through the destructive effect of the poisons which it produces is an active cause of old age, and at the suggestion of his assistant, Quincke, started a quest for the discovery of an organism which could be made to drive out the parasite B. coli and to protect the colon against this dangerous parasite.

In pursuit of this idea Tissier studied the stools of infants and found that the idea of protection against parasitic infection was not a new one, but was already in wide use throughout the animal world, exemplified

B. coli and its associates become more virulent, the gallbladder, liver, kidneys and the urinary bladder become involved, gallstones, kidney stones, bladder stones or calculi are developed. Through the absorption of toxins into the blood stream the blood vessels become damaged and the blood pressure is raised because of hardening and contracting of the arteries or damage to the kidneys through the elimination of indol, skatol and other poisons produced by the colon germ.

b

WHO AND WHAT ARE FADDISTS?

The opprobrious term faddists is most frequently used as a convenient subterfuge by incompetent critics who lack any scientific foundation on which to base their criticisms. Such epithets are most likely to be hurled forth by persons who have college degrees and are well educated and cultured even, in certain lines, but whose stock of knowledge is unfortunately not altogether made up of solid nuggets of truth but contain many vacuoles like the cheese which the girl took back to the grocer, demanding a refund of part of the purchase price because of the holes she found when she cut into it.

If these self-constituted validators of information will take the trouble to look a little into the history of progress they might make the disconcerting discovery that the advanced steps in human progress have generally been made by men who were called faddists, extremists and fanatics and dubbed with various other contemptuous titles by the great mass of unprogressive people with whom they were associated. People who summarily bandy about these contumacious epithetics as substitutes for the facts which they are not able to offer because they do not exist have their feet so tangled in the meshes of the mores that any idea or course of action which differs from prevailing or current custom must be regarded as necessarily wrong because it is different.

Seventy-five years ago, when the writer first began the study of dietetics, one of the first things that his eye

encountered was a statement quoted by the pioneer food reformer, Sylvester Graham, great uncle of the late Dr. Graham Lusk, who swelled with pride when he informed me that he derived his given name Graham from this illustrious ancestor. The statement which profoundly impressed me was made by the great French naturalist, Cuvier, and this was the statement, "The natural diet of man is the same as that of the higher apes,-- fruits, nuts, soft grains, tender shoots and succulent roots."

The idea occurred to me at once if fruits, nuts, soft grains, tender shoots and succulent roots are the natural diet of man, why should we not be eating them instead of the fried bacon, roast beef, mutton chops, calves' brains, spare-ribs, pigs' feet, tripe and some of the other parts of defunct animals, all of which I directly discarded from my bill of fare and since have adhered to the natural bill of fare notwithstanding the criticisms and depreciative comments which have been hurled at me by multitudes of people who never so much as heard of Cuvier or Sylvester Graham, though they may have used his name a thousand times when they ate the graham bread which he invented and the use of which he recommended in place of the denatured fine white flour bread which is now known to have shortened millions of lives because of its lack of vitamins.

I was a puny infant because I was fed on sugar teats and brought up on hog and hominy like other western boys at that time and got tuberculosis while I was young, which put one of my lungs out of commission before I was twenty. What

I learned from Cuvier and Graham enabled me to survive on a "natural" dietary.

And where are the boys who stoned me at school because I lived on a horse's diet, graham bread and oatmeal? Dead, every one of them, along with the people who then denounced me as a faddist, and if I live a few months longer will celebrate my ninetieth birthday.

During all these years I have been looking vigilantly for a logical reason for the eating of the flesh of animals, and although I have inquired sedulously in most of the great libraries of the world, I have found only one valid reason, and that is the absence of other and better food.

Seventy-five years ago every grocer's shelf displayed tin cans containing half a pound of Liebig's beef extract, each of which was declared to represent the food value of 20 pounds of the best beef. Beef tea was fed to typhoid fever patients by the gallon. Beef tea was given to feeble babies and was one of the leading items on the convalescent's bill of fare in every hospital. Chicken broth was the very quintessence of nutrition. Anyone who objected to these decoctions of dead flesh was considered an ignoramus and called a faddist.

Ten years later when I was a student at Bellevue Hospital Medical College under one of the greatest medical teachers this country has ever produced, the late Austin Flint I, I had the pleasure many times of hearing Dr. Flint denounce beef tea as having no greater nutritive value than urine, which he declared chemical analysis showed to have

practically the same composition as beef tea and other animals broths. The same urea, uric acid and other urinary poisons were found in both, he declared, and added, "Thousands of typhoid fever patients have been starved to death on a diet of beef tea." This statement he also published in his great work on the practice of medicine.

Some years later the famous physiologist, Claude Bernard, made an experiment with two dogs. He gave one only water, the other beef tea. The dog which had water only lived for 35 days; the dog given beef tea died in 30 days, three days sooner of the poisons in beef tea.

Fifty years later _____, the great physiologic chemist, declared, "Beef tea is an ox's urine in a teacup." And no one has disputed any of these statements.

Where now are the people who ridiculed those who followed the teaching of Cuvier, Claude Bernard, Austin Flint, and Sylvester Graham and called them and their follower faddists? I do not know of one of them who is alive. Isn't it better to be a live faddist than a dead scoffer?

B. COLI A PARASITE AND NOT A DESIRABLE RESIDENT OF THE COLON

Here are authenticated facts regarding B. coli which the writer thinks are worthy of consideration:

1. When Escherich discovered B. coli he pronounced it to be a parasite. It is still so regarded by bacteriologists, many of whom refer to it as a normal resident of the colon because of the fact that it is usually found to be the dominant organism of the human intestinal flora as well as in that of other species of animals which have been studied by them.

2. Since the food eaten by an animal supplies the culture medium for its intestinal flora, it would seem that in determining the question whether an organism is a normal resident of the colon first consideration should be given to the normal dietetic habits of the animal. Certainly the normal residents of the colon of a frugivore such as that of a banana-eating bat would not be expected to be the same as that of a carnivore.

Man is a primate. He stands at the head of the family of which other members and his nearest relatives in the animal kingdom are the anthropoids, the gorilla, chimpanzee, orangutan and gibbon, and man's natural diet, according to Cuvier and all zoologists, is the same as that of the big apes who still adhere to the ancient family bill of fare while man, through the beguilement of caterers and cooks, has become a mixed feeder more nearly resembling that of the omnivora than that of his nearest relatives.

A recent study of the stool of the chimpanzee made at the writer's request by a leading bacteriologist surprised him by showing 100 percent acidophilus. A gorilla's stool showed 98 percent. The stool of an orangutan showed a minor percentage of colon germs and no evidence of putrefaction. The keeper of several of these animals declared that the stools never had an offensive odor.

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May 3, 1940

OLD AGE IS A DISEASE

Age is not to be measured by the number of years one has lived, but by the damage it has done. A man is as old as he looks, a woman as old as she feels.

Senility results from poisons circulating in the blood. All poisons cause aging of the body by wearing out the liver, kidneys, thyroid glands and other of the organs that defend the body against disease. While all poisons promote old age, certain poisons are particularly active. One of the bad poisons of this class is indoor air. With few exceptions, long-lived people and long-lived animals are out-of-door dwellers. The uric acid, urea and other poisons which the body itself produces and the elimination of which is promoted by exercise, shorten the lives of sedentary people.

The water of a mountain brook is pure, sparkling and wholesome, while that of a stagnant pool is stagnant, noisome and filled with slimy creatures. Exercise does for the body what motion does for water. The oxygen of the air is the cleansing agent in both cases. Most examples of great age are found among the laboring classes, especially agricultural workers.

Cocktails, beer, wine and alcoholic beverages of all sorts shorten life by the damage they do to the liver and kidneys. Tobacco is particularly damaging to the heart because it produces high blood pressure and damages the heart muscles.

Perhaps the most active of all old age producing poisons, however, is the poison produced in the colon by putrefaction when putrefiable foodstuffs are eaten. It is a well known age-resisting formula to eat half as much, sleep twice as much, drink three times as much and laugh four times as much. Strokes of apoplexy are often preceded by a big dinner, a Christmas or Thanksgiving feast. Persons of advanced age require much sleep. Ten to twelve hours is none too much. An extra supply of water is needed to aid the liver, kidneys and skin in elimination and to help the enfeebled heart and bloodvessels in the circulation of the blood. It is also required to maintain the fluidity of the blood so as to facilitate its movement through the capillaries and to aid digestion.

The Good Book says, "A merry heart doeth good like a medicine." Gloom, anger, fear,-- all the depressing emotions stimulate the activity of certain glands which produce poisonous hormones and thus cause disease. Good cheer, hope and happiness suppress the activity of these poison-producing glands and so promote health and longevity.

Elderly persons should drink at least two quarts of water daily. One or two glasses should be taken half an hour before each meal. Another glass should be taken at bedtime and whenever the bladder is emptied.

The will to live is also important. Old age is an enemy which must be combated and faced with defiance.

I understand that in my audience today there are more than 50 persons whose ages are from 80 to 99 years,

with an average of 83. The life expectation is one half the difference between one's age and 90, which is $3\frac{1}{2}$ years, your average life expectation. This may be easily doubled and even tripled by attention to the daily habits. I have devoted most of my life to study and research for the purpose of learning how to live in such a way as to insure the highest degree of health, comfort, efficiency and longevity.

I shall place in the hands of each of you, with my compliments, a booklet giving the results of my efforts to formulate rules for right living, based upon the well established facts of physiology and biology. A Copy of this booklet may be obtained free of charge by addressing the Race Betterment Foundation, Battle Creek, Michigan, or Miami Springs.

b

Copy sent to Mr. Baker.

5-27-40

THE ALCOHOL OF BEER AND WINE AS DAMAGING AS THAT
OF RUM AND WHISKY

The Good Books says, "Wine is a mocker." This is a very exact truthful description. Wine is a deceiver. As a matter of fact, beer and wine differ very little from stronger liquors in their effects upon the human body, ^{of alcohol} the little difference being due to the fact that when used as sold they usually contain not more than 5 to 10 or 12 percent, whereas stronger liquors, rum, gin, whisky, and brandy contain 40 to 60 percent; but it should be noted that the stronger liquors which are commonly used in cocktails, toddies, etc. may contain no more alcohol than do wine or beer. It is the alcohol that is responsible for the damage produced by alcoholic liquors, and the amount of injury done depends chiefly upon the amount used.

In recent years much harm has been done by the widespread doctrine that there are good liquors and bad liquors. This is a great mistake. There are no good liquors. All alcoholic drinks are bad. It is true that some are worse than others, but all produce harmful effects and hence none can be good.

Great stress is laid by the manufacturers of beer upon the fact that it is prepared from barley. The public are led to believe that beer presents in concentrated form the nutrient properties of barley, whereas the truth is its food value is exceedingly small and the proportion of barley which it contains is much smaller still. It is true beer does contain some barley, but the alcohol of beer as well as that of other alcoholic liquors is chiefly derived from cheap sources of starch

such as rice which is unsalable as food because of its inferior quality and corn or wheat, rye or other grain which is not up to standard as a marketable commodity and so is sold to the brewers because in many cases at least it can not be sold as food for human beings because of the pure food laws. Cheap sugars and other sources of fermentable products are often a large source of the alcohol present in beer.

Wine and beer as well as liquors of all sorts impair digestion. Alcohol destroys the action of the pepsin of the gastric juice.

A fish placed in water contain $2\frac{1}{4}$ percent of alcohol showed evidence of intoxication within a minute and within a few minutes, after making every possible effort to escape, even trying to leap out of the tank, was dead.

PHILOSOPHY OF LIFE

Life philosophy begins with the fact of existence. I am.
I exist. My body and personality show evidence of plan, of thinking.
 There must have been a designer, a thinker, a Creator, a First Cause.

The same is true of every object in Nature. Purely logical consistency would suggest that we should apply the same reasoning to the First Cause. But this would lead us nowhere. Because we are finite beings, we can think and reason only in finite ways. We must have a starting point and must accept an infinite First Cause as a basic fact, a Creative Intelligence, which the Hebrews called Jehovah and Christians call God.

Vain man does not like to acknowledge an intelligence superior to his own, and the scientists of the last century sought to account for creation without a Creator, taking for their starting point inanimate matter instead of Infinite Intelligence and Infinite Personality. This led to the development of a mechanistic concept of the creation process, according to which protoplasm was made the basis of life, being created by a fortuitous concatenation of atoms." Protoplasm, through long ages, evolved all the different forms of living matter, animal and vegetable.

To account for the marvelous display of life about us and within us, a nebulous force called Nature was invented. Strangely enough, this anomalous invention has been endowed with creative attributes and personality, deified, in fact, and, without being assigned any place in philosophy, has actually become the false God of Christendom, supposed to attend to such small things as making men and animals and worlds.

The Nature God idea was necessary to bolster up the ~~manlike or~~ anthropomorphic God, for it was inconceivable that a being with human limitations as regards form, size, etc. could attend to all the minutia of cosmic existences, and so the Nature Creator became necessary to explain

the vast panorama of animate and inanimate things which passes daily before our eyes which are too amazingly wonderful and inconceivably marvelous in number and variety to have created themselves. So while Jehovah theoretically is the maker of all things, to the god Nature is ascribed greater scope and power and prescience than the Creature himself. These illogical, inconsistent and false conceptions of the origins of the fundamentals of things, ethereal and material, are not entertained by the scientific men of today. The great leaders in science at the present time are practically one in the recognition of an infinite creative intelligence as the only explanation of life and energy of animate and inanimate things and look upon Nature as a great panorama which presents a glimpse of the activities of an infinite creative intelligence whose infinite wisdom, intelligence and beneficence are displayed in the work of his hand, of which all the ^{varied} forces of Nature-- gravitation, light, magnetism and other forms of energy and all the properties of matter-- are but illustrative and demonstrative evidence.

The Nature God idea was inherited from heathenism. It was long ago abandoned by philosophers, but appears to be still a feature of the religious faith of ^{many} Christians, both Catholic and Protestant, and doubtless serves a useful end in giving definiteness and fervor to faith in the minds of the average Christian believers. But the time seems to have come when this childish concept of Nature as a sort of sub-deity may be safely as well as properly abandoned for the broader and more satisfying philosophy of the great Apostle Paul who said God to be "all and in all and nigh unto every one of us, for in Him we live and move and have our being."

The marvelous discoveries and developments of science since the early years of the twentieth century have created a veritable revolution

among scientists in their attitude ^{toward} deity. The mechanistic theories of life and the universe have been wholly discarded. The profound researches into the nature of matter, the cosmic ray, and other radiant forces all declare in such unequivocal terms the existence of an active motivating intelligence in all the phenomena of Nature throughout the universe that no standing place is left for atheism or even skepticism. This is true not only in the phenomena of life, but likewise in the rocks, the air and water; in fact, in all the natural world there is the most definite and positive evidence of an Infinite Creative Intelligence forever at work.

Recognition and appreciation of this now well established scientific fact leads to questions of transcendent importance, among which are:

1. Is the Infinite Personality definitely concerned with the individual objects of His creative activity?
2. Is there a definite and cooperative association between the Infinite Intelligence and the human intelligence?
3. Is there such a thing as guidance? In other words, is it of any use to pray, or to seek for help from some superior source?

Let us inquire if science affords any information which will throw light on these questions of paramount interest and importance.

July 28, 1940

EARLY HISTORY OF THE OXYGEN TENT

Sixty years ago, pneumotherapy had a great vogue both in this country and Europe, especially in France. Large steel tanks were in use of size sufficient to accommodate several persons, in which they were subjected to varying degrees of increased atmospheric pressure with the idea that they would inhale an increased amount of oxygen. Clifton Springs installed a very large tank of this sort. Smaller tanks were also in use. A pneumatic cabinet of size sufficient to accommodate one person came into quite extensive use. We had one installed here. This cabinet was supplied with a bellows arrangement by which the pressure could be readily modified.

When modern methods of securing oxygen cheaply were developed, it soon came into wide use by inhalation. We used it freely in the Sanitarium both by inhalation and by injection into the colon. I demonstrated by operations upon dogs that injection of oxygen into the colon caused a change in the color of the venous blood. The veins became the same color as the arteries in the mesentery when oxygen was introduced into the colon. Oxygen enemas were used quite extensively for a time in the treatment of various disorders supposed to be caused or aggravated by a deficiency of oxygen. I remember one case in which the uric acid of the urine stood at an unusually high level, which was not brought down even by an almost exclusive fruit diet and continued for some days. The uric acid fell rapidly to the

normal level under treatment by oxygen enemata.

I gave up the use of oxygen, however, because the physiologists demonstrated that the normal amount of oxygen in the blood could not be increased because the blood cells always carried a full load when ordinary air was breathed and an increase of oxygen in the respired air did not increase the amount of oxygen carried by the blood cells to the tissues.

At the close of the World War I, however, the soldiers returning from the battle field who were suffering from pneumonia as the result of being gassed or from over exposure were found to make rapid improvement under the inhalation of oxygen, and a new study of the effects of inhaling super-oxygenated air showed that when there was an oxygen need in the tissues the serum of the blood took up an increased quantity of oxygen from the superoxygenated air by which they were greatly benefited.

It occurred to me that superoxygenated air might also be found beneficial in many other classes of cases in which there was evidently a need for more oxygen than was being supplied by ordinary respiration and I suggested to our Board that an oxygen chamber should be prepared for the purpose. My suggestion met with approval and I selected a room in which the chamber should be installed, but while the question of the proper material for the walls, whether steel or reinforced

cement are being discussed, the idea occurred to me that a great economy might be achieved by using a small chamber in which the patient's head could be placed for the super-oxygenated air instead of a chamber large enough for the patient's bed and attendants as well as himself.

I had spent 10 hours in a small chamber in Benedict's laboratory, hermetically sealed, without suffering any inconvenience, because the oxygen content of the air and the CO_2 content were kept at normal levels by passing the air through a soda lime solution to take out the O_2 and supplying pure oxygen to take the place of that which was consumed.

It occurred to me that the same device might be used in connection with a tent placed over the patient's head so that instead of supplying the patient with a very large volume of oxygen it will only be necessary to supply a sufficient amount to take the place of what he consumed, with perhaps two or three additional volumes of equal amount to increase the proportion of oxygen sufficient to cause increased absorption of oxygen by the blood.

Dr. Roth in the course of a few months developed the oxygen tent idea with such success that it soon became widely known and now is found in use in every well equipped hospital in the country. The apparatus which the world owes to Dr. Roth's ingenuity and technical skill in matters of this sort was so practical that only comparatively unimportant improvements have since been made, although there are as usual numerous different models on the market to which other names are undeservedly attached.

The excessive use of sugar, or rather, cane sugar, technically known as sucrose, is coming to be recognized as one of the great causes of disease in America, at least in the United States.

Professor Bunting, of the Dental College of the University of Michigan, after an extended study of the teeth of children during many years, reached the conclusion that the free use of sugar is undoubtedly a cause of the great prevalence of dental decay in both children and adults.

The free use of sweets is a practice which has developed in comparatively recent times. Three hundred years ago, sugar constituted a very small part of the human dietary. Even a century ago, the average annual consumption of sugar was only a few pounds, whereas today it is, according to the International Institute of Agriculture, 103 pounds. In some other countries, as Australia, the British Isles, Switzerland, Sweden, and Denmark, the consumption of sugar is equal to or even greater than in the United States, whereas the per capita amount of sugar used in some other countries is very much less, for example, 23 pounds in Poland, 18 in Italy, 12 in Rumania, and 10 in Bulgaria. It is a notable fact that in the countries in which the use of sugar is highly limited, dental caries is very much less common than in this country.

country.

There are many other objections to the free use of sugar, some of which are of recent discovery, and not yet generally known to the public. For example, although sugar is a carbohydrate, a substance which holds a very important place in supporting the normal functions of nutrition, since it is the principal fuel of the body and is necessary for maintaining heat, and is the chief source of the energy required for supporting muscular work and the various forms of bodily activity, blood circulation, digestion, secretion and excretion, etc. The total daily energy output of the body is in the average person not less than three to five thousand foot tons of work, and so carbohydrates are necessary. It is impossible for life to be long maintained without them.

But there is a marked difference between the cane sugar and the carbohydrates found in natural foodstuffs, so the mischievous qualities which are charged to cane sugar must not be attributed to all other carbohydrates, some of which are known to be of very high value, particularly a carbohydrate known as lactose, found in the milk of animals, the one animal sugar known, the special virtues of which will be presented in another article.

McCollum, Johns Hopkins University professor of biochemistry, in his admirable work, Diet in Relation to the Teeth, calls attention to the fact that candy is particularly harmful to the teeth,

especially hard candies and chewing candies which subject the teeth to concentrated solutions of sugar. It has been clearly shown that ⁱⁿ persons who are addicted to the free use of candies of this sort, the enamel of the teeth is often rapidly dissolved, giving rise to extensive caries.

Cane sugar is particularly harmful to the stomach. Other carbohydrates, like dextrin, for example, cause an abundant outflow of gastric juice, as was shown by the late great physiologist, Pavlov, and thus prepares the way for the digestion of the protein which in cereals are associated with the carbohydrates. Cane sugar, however, according to Boldyreff, an associate of Pavlov, produces no effect upon the gastric glands, and Schule, a German physiologist, showed that when taken freely, cane sugar gives rise to a profuse flow of mucus, evidently a defensive effort of the body to protect itself against the irritating effects of cane sugar.

Brandl, another eminent German investigator, in experimenting upon dogs found that a 6% solution of cane sugar caused congestion and reddening of the mucous membrane. A 10% solution produced very intense congestion and a dark red color, evidently due to pronounced irritation. When the strength of the solution was increased to 20%, the irritation produced was so great that it caused the animal such extreme distress that the experiment was terminated.

Experiments on dogs by Ogata demonstrated that a third of an ounce of cane sugar added to a meal lessened the rate of digestion by one-fourth.

In experiments made by the Germans before the World War I in feeding sugar to horses and to men for the purpose of increasing energy and endurance, it was impracticable because of the extreme irritation of the stomach produced.

Some years ago, a physician in studying the effects of sugar upon the stomach, introduced a 20% solution of sugar into the stomach of a patient suffering from a chronic gastric ailment. The patient almost immediately suffered from nausea and later from "heartburn and flatulence," with severe epigastric pain and vomited. Fruit sugar such as is found in sweet apples, figs, raisins, and honey was afterward introduced and was found to produce no unpleasant effects whatever.

Some years ago, the writer was consulted by a lady who was suffering from chronic gastritis, or catarrh of the stomach, with the many distressing symptoms which accompany this condition. Being called to the room of the patient a few days after arrival, she was found suffering with severe pain of the stomach. Noting upon a stand near her bed a box of peppermint candies, the lady was questioned with reference to her use of sweets and confessed that she had sent to her regularly a five-pound box

of double-strength peppermint lozenges. The suppression of the consumption of double-strength lozenges, with proper diet and indicated treatment, gave the stomach an opportunity for recovery and the chronic pain from which the lady had suffered severely for a year or two quickly disappeared.

At this point the question naturally arises, Must sweets be wholly discarded? Fortunately this question may be answered in the negative. The sweet tooth seems to be natural. Sweetness is a common characteristic of wholesome food while bitter, burning, smarting, rancid and other unpleasant flavors are characteristic of harmful and even poisonous substances. Most animals are also fond of natural sweets.

While the terms sugar and sweetness are usually understood as referring to cane sugar in some form, this is by no means correct. A chemist is acquainted with many sugars. Cane sugar has become popular because of its presence in great quantities in the juices of many trees, vegetables and fruits. In the case of fruits, however, cane sugar is only present in the green fruit and is changed into levulose and glucose by a process of digestion similar to that to which cane sugar is subjected in the human intestine before it can be absorbed. These sugars, one of which, levulose, is even sweeter than cane sugar, and gives to honey its intense sweetness, differ from cane sugar in

the fact that they do not produce the irritation or other unpleasant symptoms caused by cane sugar and are beside ready for immediate absorption and use by the body as sources of heat and other forms of energy.

The chemical composition of cane sugar very closely resembles that of other sugars and of starch. Subtle differences, the mystery of which science has not yet explained, make one sugar harmful while another is not only wholly free from harmful properties but possessed of healing virtue as has already been intimated. Many persons have found from experience that sweet fruits and fruit juices may be eaten freely while cane sugar produces unpleasant effects.

Another sugar of still higher value as food is lactose, commonly known as milk sugar. This is known to be highly valuable as a means of developing protective bacteria in the intestine, which defend the body against the parasitic colon germ, a potent cause of a great number of human ills, the result of constipation and putrefaction of food remnants in the intestines, attributable to the mischievous B.coli.

The objection to the use of milk sugar is insufficiency of sweetness and marked insolubility which produces in the mouth a sensation like that of powdered chalk. By means of a recent discovery the sweetness of milk sugar may be increased severalfold

and may be used as a table sugar in place of so-called cane sugar derived from the sugar cane, sorghum, beet root, and other sources.

Next month we will give very interesting particulars regarding this new sugar known as beta lactose or B.Lac.

THE WAR SPIRIT

There can be no doubt that the rapidly progressing physical degeneration that is taking place at the present time among all the white nations of the world will be very greatly accelerated by the World War II. War is indeed one of the most active of all factors in causing degeneracy and depopulation, but the chief of all the many evils which result from war is not the material injury produced by the "war spirit," a term which comprehends not only the fighting disposition, but the change in spiritual standards, especially the lowering of respect for human life and changed ideals respecting human relations.

We are quite in accord with the thought expressed by Professor Carlson of the University of Chicago who calls war "a supreme folly" and holds that "the serious consequences of a so-called world war are not the destruction of property or the destruction or maiming of human beings but rather the brutalizing of the people who are left to carry on when the war is ended. In other words, the most serious setback to our civilization by war is in the realm of the spirit, our conception of liberty, justice, and fair play."

7-10-39

A SUMMER MESSAGE FROM BATTLE CREEK

You will be glad to know that the Battle Creek Sanitarium, notwithstanding the depression, is as usual making progress and has recently made advances which are likely to be the most important in its entire history, especially in methods of dealing with such baffling maladies as diseases of the heart, bloodvessels and kidneys, rheumatism, gastric ulcer, colitis, constipation and other intestinal troubles, insomnia and other disorders which require institutional care with special health training, a skillfully balanced regimen and the aid of special methods and carefully trained technicians.

Patients suffering from these rebellious ailments and who are not making satisfactory progress toward recovery under the treatment they are receiving, and especially those who are getting worse or have been pronounced incurable, have a right to know that the Battle Creek Sanitarium, whose world wide reputation brings thousands of sufferers to its doors every year, offers help and relief even in very advanced cases which have been pronounced incorrigible and early cases a complete cure or such control as to insure a comfortable and useful life.

Patients suffering from grave chronic maladies often experience many years of suffering while drifting from one resort or medical center to another who might be promptly relieved by the intensive and thoroughgoing measures available in an institution thoroughly equipped for the successful care of such cases.

Among your personal friends and acquaintances there are doubtless many persons suffering from chronic ailments from which they should be relieved who will be glad to avail themselves of the advantages which your own experience have proven to be effective. We will be glad to assist you in putting in the hands of your suffering friends information which might be the means of setting them free from bondage to some crippling malady. In every community there are scores of such persons. If you would like to aid us in opening a door of deliverance for these sufferers, won't you send us the names and addresses of those you think might be substantially benefited by the methods your own experience has shown to be successful when other measures have failed.

For your convenience we are enclosing a blank on which the names and addresses may be written and also a form of letter ready for signature, extra copies of which we will be glad to send you together with literature

to enclose and stamped envelopes to be used in mailing. Your assistance in opening a door of hope for a large class of discouraged sufferers will be greatly appreciated.

JHKb

July 16, 1939

Dear Doctor:

This note is to call your attention to the fact that on Wednesdays and Saturdays at two P. M. talks are being given by Dr. Leffler, Dr. Martin and others for the special benefit of patients who are inclined to worry. I am sure you will be glad to encourage your patients to avail themselves of the help that these meetings may give them. No doubt the meetings would be helpful to any of your patients who care to attend.

John Harvey Kellogg

b

July 16, 1939

Dear Doctor:

This note is to call your attention to the fact that Dr. Martin has been appointed to a new and very important position recently created by the Board of Directors. He is to serve as a general consultant and to have a variety of duties of which of leading importance are the following:

1. To see, if possible, every new patient immediately or soon after his arrival and also to see each patient before he leaves.

2. To see every patient who seems not to be improving and who is discouraged. As soon as a patient begins to intimate his intention of discontinuing or of going home, an appointment should be arranged with Dr. Martin at once.

3. To see patients who are dissatisfied and complain of unsatisfactory service from any department or are dissatisfied because of any cause. The Doctor will make an earnest effort to find out and remove the cause of the patient's discontent.

4. In cases in which patients are dissatisfied with the diagnosis or indicate lack of confidence or hesitate to accept the doctor's advice or to co-operate in thorough carrying out of their program for treatment, Dr. Martin should be called in as consultant or to arrange for such consultation as may be indicated.

5. It is of the highest importance that the ideals, principles and methods of the institution should be sold to every patient and that each one should be thoroughly converted to the practice of biologic living and if possible should not leave until he has become well established in correct living habits.

Doctor Martin will for the present devote his afternoons to this work. His consultation office will be the east room connected with the medical office.

The chief object of this activity is to sell the institution to a greater per cent of our patients, making it manifest that it is our ambition and earnest desire to render every possible service and to cure them of their illness; to make their stay so pleasant and profitable that they will want to remain a sufficient length of time to receive the care and treatment essential to their cure. All suggestions and efforts will be made with the object of helping, not to criticise or find fault. We hope they will be received in the same spirit. Any suggestions which may help us to help you will be gratefully received, or any criticisms of our plan or method of procedure are solicited.

List physicians are requested to be alert in detecting evidence of any dissatisfaction on the part of the patient and refer all such cases for consultation. The earlier this is done the easier it will be to eliminate the cause of the displeasure and the possibility of maintaining the patient's confidence in his physician will be more certain.

Nurses and bath attendants will be requested to report any evidence of dissatisfaction and this information will be given to the patient's physician, so the trouble can be corrected before the effects culminate.

The entire Board of Directors attach great importance to this appointment.

The average length of time that patients remain has been steadily shrinking for several years and is now only 21 days, the shortest in the whole history of the institution. It is scarcely one-third of the average stay several years ago.

It is the intention of the Board that not one patient should leave

this institution with cause for dissatisfaction. If every patient leaves satisfied with what has been done for him and full of enthusiasm for the principles and grateful for the treatment he has received, he will become a recruiting agent who will send us many sufferers whom we shall be able to help and thus become an active helper in our work. A single dissatisfied patient may do us an incalculable amount of injury.

The Board feels assured that Dr. Martin's long professional experience, covering a broader and more extensive field than that of any other member of our faculty, and his high standing in the profession and the high esteem with which he is universally held will command your full and earnest co-operation in this effort to promote the interest of our patients and to promote the great work of this institution and its allied enterprises.

By order of the Board of Directors

John Harvey Kellogg, Chairman

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