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The May Number

Desserts—dyspepsia, that is the way we usually look at it. In the words of the immortal Post, "There is a reason." In fact, there are two reasons. One is because desserts are usually eaten after a full meal, the other is that the conglomerations usually known as desserts are in themselves harmful. So closely are the ideas of savory foods and indigestion associated, that we are prone sometimes to believe that the more tasteless a food is the more healthful it is. But we are learning both from experience and from experiment that the sense of taste was given to us for a purpose, and that a disregard of this fact is a mistake which is often followed by ill health. Mr. Cornforth's article on "Healthful Desserts"

will be appreciated by all who want to combine good living with healthful living.

✽

Do you eat rice? Have you ever thought that rice might be an adulterated food? See the article in the next number, "Rice, Its Value and Adulterations."

✽

Are you aware how much it may mean to be able to administer a few simple treatments in the home for oft-recurring disorders? Dr. George's article will explain the method of giving fomentations, and indicate conditions in which this treatment is useful.

✽

Do you or any of your friends partake largely of flesh meats? You should read the article by Dr. Kress, "Why Eat Meats?" It will surely interest you, and may astonish you.

✽

Bicycle? You have heard of them in your younger days. With the ox team and the carriage, they seem to have been replaced by the more modern motor-car. But no, the bicycle is again to have its day. Read the article on this subject by Mr. Eastman in the next number.

✽ ✽ ✽

Scientific Study of the Effects of Alcohol and Other Narcotics

THE American Society for the Study of Alcohol and Other Drug Narcotics, which holds a semiannual meeting in Washington, D. C., March 17-19, 1909, was organized in 1870, and was the first medical association in the world to take up a scientific investigation of alcohol and the diseases following its use.

This meeting has been called in response to an invitation from many leading men to present the latest conclusions concerning the alcohol problem. More about it in the next issue.

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A NATIVE SUGAR-MILL



"Something better is the law of all true living"

Vol. XXIV Takoma Park Station, Washington, D. C., April, 1909

No. 4

From My Case Book

J. R. Leadsworth, B. S., M. D.

Physician Loma Linda Sanitarium

MR. —, a merchant, aged fifty-eight years, had always been well and robust, capable of doing as much work as the next man. Being well and strong, with excellent appetite and good digestion, he exercised no particular care relative to his diet, a considerable portion of which was made up of flesh products. This manner of life continued until one night several years ago, when paralysis suddenly developed. For some days thereafter the patient was unconscious and helpless, unable to move any part of his body without assistance. Gradually the symptoms abated, leaving the right arm and leg completely paralyzed. At this juncture sanitarium treatment was begun, and the diet was restricted largely to grains, fruits, and nuts. The bowels were kept active, and as far as possible the intestinal canal was kept free from decomposing products. The excretions, which before gave evidence of containing toxic substances, soon appeared much more nearly normal.

Improvement began to be noticed, and it was not long before our patient was

using his arm, even to the extent of writing letters. The lower extremity also showed improvement; and by means of a crutch fair locomotion was had.

After several months of sanitarium treatment, with plain and simple dietary, the crutch was exchanged for a cane. The patient was restless to get into active life again, and to this end returned

home and took up work. The diet was restricted for some months; but after a while the appetite was catered to, and it was not long until flesh was again taken at frequent intervals. Shortly thereafter the patient had a second

A vigorous man with good appetite—a "good liver"—is attacked with sudden paralysis.

Treatment and restricted diet eventually give relief.

Indulgence in old bill of fare invariably brings back old symptoms.

Patient finally learns that he must forego all indulgence in certain foods.

paralytic stroke, this time becoming more helpless than after the first attack. In addition to the paralysis which followed the former stroke, the patient was afflicted with motor aphasia, being unable to express his thoughts in words. Frequently, upon being questioned relative to his condition, he would say "Yes" when "no" was meant, the gestures accompanying giving the real meaning. Instead of saying, "I feel good," he was just as apt to say, "You

feel bad," the after-confusion indicating that he was conscious of having said the wrong thing.

Vigorous treatment was again instituted, consisting of packs, fomentations, sweat baths, etc., the purpose being to accomplish a good job of house cleaning, both inside and out. The readers of *LIFE AND HEALTH* should bear in mind that the great majority of all deaths are violent, produced by the poisons generated within the body; that in a physical sense man is often a whited sepulcher, fair enough without, but inside filled with a mass of corruption; and that, if they themselves would escape premature old age and untimely death, they must keep the excretory organs working at high tide. After the alimentary tract is cleared out, nothing is better to deodorize and disinfect the canal than charcoal tablets, taken at the rate of a half dozen five-grain tablets daily.

Although it was predicted by friends that Mr. — would not improve from this attack, it was not long before the speech was restored to normal, the right arm and hand could again be used with considerable freedom, and by means of a cane, the patient was soon able to walk three or four miles daily. And so long as he could be kept on an antiputrefactive diet,—the hyponitrogenized régime,—excluding almost entirely flesh products, so long he kept well and active, often

remarking that his intellect had not been so clear for years. But when our patient went out for dinner,—as he did occasionally,—and indulged in even a small piece of meat, within twenty-four hours thereafter the speech would be somewhat incoherent, and the paralysis of the arm and leg would be much more noticeable. Not many experiments were necessary before this patient was fully satisfied that he must forego the use of all flesh products if he cared to hold on to life and retain the feeling of well-being.

Instead of tickling the palate with food of this kind, which is so readily decomposed in the system, and then thinking to escape the diseases produced by it,—such as arteriosclerosis, gout, rheumatism, periodical headache, apoplexy, etc.,—by an occasional dose of bromoseltzer, it were a thousand times better not to take poisonous products into the system. Many are suffering from chronic systemic poisoning by the use of flesh foods, and their only reason for persisting in the use of such foods is a perverted appetite. And they are willing to pay the price by calling a physician at frequent intervals, or even spending several months out of the year at some health institution where special attention is given to clearing the system of these poisons, which have accumulated as a result of dietetic indiscretions.

Loma Linda, Cal.



"As He Eateth, So Is He"

D. H. Kress, M. D.

Superintendent Washington (D. C.) Sanitarium



IN the minds of observing men and women there is little doubt that a very intimate relation exists between what man eats and drinks, and what he is physically and morally. I need not dwell upon the demoralizing influence of alcohol, for it is well understood by all. But from my own observations during the past twenty years, I have again and again been forced to the conclusion that there is truth in the old German adage, "As he eateth, so is he."

So thoroughly am I convinced of this, that in determining on short acquaintance what a man is morally, I rely more on his habits in eating and drinking than upon the way he speaks or deports himself while in my presence. It has been said, "To know a man, it is necessary to live with him." But by observing what a man eats, and what he drinks, it is possible, I believe, to know something at least of what his disposition is, *without* living with him.

A friend of mine in answer to the salutation, "How are you?" replied, "I am well. Don't you think so? Look at me!" Although he looked robust and the picture of health, I replied, "You may feel well and look well, but in order for me to say you *are* well, I would have to know something of what you eat and drink." The beer drinker, under the influence of his drink, may feel well and look well, but he is not well. Let him be stricken down with pneumonia or some other germ disease, and his case

is a hopeless one. He may have an abundance of flesh, but it is of inferior quality. He may be good-natured, but his good nature is not constant; his life is marked by extremes. Let some trying difficulty arise, and his face at once becomes red or white with anger. Such a man is not well either physically or morally, although he may appear so.

Food has as great an influence on the health and disposition of an individual as drink. No man can be in health who has a sour stomach, and no one can have a sour stomach and a sweet, amiable disposition at the same time.

Sydney Smith, many years ago in a letter to Arthur Kingslake, said: "Character, talents, and virtues are powerfully affected by beef, mutton, pie crust, and rich soup. I have often thought," he added, "I could feed or starve men into many virtues and vices, and affect them more powerfully with my instruments of cookery than Timotheus could do formerly with his lyre. Frequently it is," he continued, "that those persons whom God hath joined together in matrimony, ill cooked joints and badly boiled potatoes have put asunder."

The matter of diet in the treatment of diseases is receiving much more attention than formerly by the medical profession. Many obscure diseases of the past are recognized now to be due to auto-intoxication or intestinal infection resulting from dietetic errors. Dr. Andrew Blyth, in his "Manual on Health

and Diet," wrote prophetically when he said, "When by successive researches the science of diet has become better understood, without doubt a school of physicians will arise, discarding drugs and treating maladies by cutting off certain foods."

"There are diets," he said, "for every age, for every climate, for every species of work, physical or mental; there are diets by which diseases may be prevented and diseases cured; there are diets which make the skin glossy, the frame vigorous, and the spirits joyous; others which mar the face with wrinkles, speckle the body with eruptions, and make the form lean, hollow, and prematurely old."

Is it not time for those who are engaged in the work of moral reform to appreciate that the same intimate relation that exists between the diet and the health, also exists between the diet and the morals, and that if it is necessary to give attention to diet in order to promote health, it is equally important not to neglect the diet in making the attempt to elevate the morals of mankind?

When this is appreciated as it should be, and as it will be, much more will be said from the pulpits in regard to the need of eating and drinking to the glory of God.

Without doubt many a crime and many a sin has been committed simply because the person's mind was at the time under the influence of poisons generated in the stomach and intestines. Many a poor man is probably serving double sentence to-day, while others have not been sentenced who should have been, simply because of the quality and quantity of the food and drink taken by the judge. Serious mistakes in counsel are frequently traceable to the dinner table. A man whose brain is narcotized can not, or should not, believe his own senses. They do not give correct facts. His judgment is apt to be unfair, at the best.

The impatience of the mother, the unreasonable disposition of the father, and the rebellious nature of the children may, with but little difficulty, find an explanation in the food served them by a well-meaning but ignorant cook.

Dr. Wiley, our government chemist, evidently realizes that an important relation exists between diet and domestic happiness. In addressing the Bakers' Association, at Atlantic City recently, he said: "Good bread, in my opinion, would help solve the American evil of divorce. If bakers," he added, "make good bread, and then educate the people to buy it, the great destroyer of domestic happiness — dyspepsia — will be removed, and we shall hear no more of the divorce problem."

Good bread, well baked, is the staff of life, but when poorly baked, it becomes one of the great destroyers of health and domestic happiness. In order to have health and peace in our homes, the preparation of the food must receive our first consideration. So important a matter can not be entrusted to ignorant and illiterate cooks.

The time is not far distant when intelligent men and women will regard cooking as one of the greatest and most important sciences, worthy of the attention of our most highly educated young women. Men and women must learn how to combine wholesome foods when served at the table; for too great a variety of even wholesome food creates indigestion, the first symptoms of which are always impatience, an irritable temper, unreasonable disposition, and dependency, and with these, domestic happiness is impossible.

There are foods which are stimulating, and which tend to develop undesirable traits of character in man. Dr. Gauthier, after his prolonged research and study, concluded that "a flesh diet is a more important factor in determining a savage

or violent disposition in any individual, than the race to which he belongs." In conducting experiments in his laboratory on various creatures, he observed that animals, when fed upon grains, remained gentle, and when given flesh to eat, they became quarrelsome, unmanageable, and destructive,—the diet entirely changed their disposition.

Byron, the poet, in relating his own experience, said: "Flesh-eating makes me ferocious; the devil always comes with it until I starve him out." Canon Home Littleton, head of Hallyburg, one of the greatest British public schools, is quoted as saying: "It is well-nigh im-

possible for even the best-intentioned man to live pure if he eats meat in excess."

A noted preacher, some years ago in one of his sermons, said: "I have known men who prayed for the grace of good temper in vain, until their physicians told them to stop eating meat. So long as they ate animal food, they could not control themselves, they were so irritable; but as soon as they began living on a diet of grains and fruits, they were able to keep their temper. They were not unwise in praying; but they were wise when to prayer they added medical advice."



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PICKING ORANGES

This is a food that can not well be adulterated, though it may be "misbranded"

Care of the Mouth During Infancy and Childhood

William F. Lederer, D. D. S.

Lecturer at the New York College of Dental and Oral Surgery; Attending Dental Surgeon to the German Hospital Dispensary, New York

THE care of the mouth and the teeth has been a sadly neglected procedure. Only recently has the importance of a clean, healthy mouth begun to be realized. For the past year the New York medical school inspectors have examined not only the children's eyes, ears, throats, and noses, but also their teeth, reporting their findings to the health authorities, who notify the children's parents of defects, and, when conditions demand it, require a visit not only to the physician, but also to the dentist.

Such action has already borne good fruit, as the reports giving the results of the treatment of tuberculous glands in children show a better condition than obtained before dental inspection was practised.

Infancy and childhood can be divided into various periods according to tooth eruption; thus we get:—

1. The period beginning at birth and terminating with the eruption of the milk-teeth, about the sixth month.
2. The period of eruption of the milk-teeth, which begins about the sixth month and ends about the second year.
3. The interval between first and second dentition, from about the second to the sixth year.
4. The period of the eruption of the second and the shedding of the milk-

teeth, not including the eruption of the wisdom teeth (or third molars); this would end the last period at about twelve or thirteen years of age, when the second eye-teeth make their appearance.

From a dental point of view, these various periods are: (1) A toothless period; (2) a teething period; (3) a period of rest; (4) another teething period. The whole epoch, however,

from birth until the thirteenth year, and as a matter of fact, before and after that, is one of tooth formation and development; for the life history of teeth begins long before birth. The teeth are formed first as a soft tissue structure, into which lime salts, obtained from the blood, are deposited, and the soft, gelatinous matrix

is turned into a hard, bone-like structure. The soft tissue of the teeth begins to form about seven and three-fourths months before birth. On the other hand, when a tooth makes its appearance through the gum, and its crown is fully erupted, the root is not entirely hardened, and it requires some time for the whole tooth to be thoroughly hardened, or calcified. Thus the upper central incisor teeth (the two central teeth) erupt about the seventh year, but it requires fully three years thereafter for the root to be completely hardened.

Keep baby's mouth scrupulously clean.

Keep dirty fingers, nipples, pacifiers, and the like out of baby's mouth.

Temporary teeth, if decayed, should be filled."

Extracting temporary teeth may deform the mouth and cause more serious consequences.

Teeth retained beyond a certain time may cause deformity.

The thumb-, tongue-, and lip-sucking habits cause deformities.

Careful dental inspection at intervals is necessary to avoid deformity.

The proper care of the mouth during these periods will not only insure healthy teeth, gums, and mouth, but will remove many conditions which lay the foundation for various diseases of infancy and childhood, some of which may result in lifelong invalidism.

Many writers have expressed diverging views regarding the usefulness of cleansing the infantile mouth. The mouth, like the rest of the digestive tract at birth, or rather up to birth, is sterile, that is, free from bacteria; but with the drawing of the first breath and the utterance of the first cry, bacteria are introduced into the mouth.

Different authorities expressing varying views may have valid reasons for their individual practise, but summing up all, I am inclined to urge mouth cleansing, especially in children who are fed artificially. There is practically no danger of mouth infection in healthy, breast-fed infants, brought up in hygienic surroundings, if the mother washes the breast nipples before and after nursing. The artificially fed babe, however, is at a disadvantage, as its very food is but a substitute for mother's milk; and bottles, nipples, and pacifiers, unless scrupulously clean, may constitute a formidable danger.

The word *careful*, as applied to the washing of the infantile mouth, should be emphasized. It is better to leave the mouth alone than to introduce roughly a finger, which is never free from germs, and may wound the soft mucous membrane. In fact, a finger should never be introduced into the child's mouth; but a swab, consisting of absorbent cotton on a piece of wood [toothpick], used gently, will not hurt the mouth. It does not appeal to me that it can be of benefit to the child to permit remnants of starchy

and other foods to decompose in the mouth, and then be swallowed. The poisonous materials resulting from bacterial action upon foodstuffs and upon other things introduced into the infantile mouth, which have no place there, are swallowed, and may become the cause of digestive disturbances.

The mouth will not suffer unless wounded, but the digestive apparatus may. Therefore I believe careful washing of the mouth, in all artificially fed children at least, is a necessity, and if done carefully, will do no harm. I advocate an alkaline antiseptic tablet, dissolved in water, or a saline solution, as a mouth-wash for infants.

The use of pacifiers has been the subject of considerable discussion. Some claim that the so-called "fruitless sucking" is harmful to the child; others oppose this view. The fact remains that pacifiers are kept even less clean than nipples. I have seen a baby's pacifier on a dusty mantlepiece, in the bed wet with urine, on the floor, in brother's trousers' pockets, and in other places which were far from clean; for this reason a pacifier becomes dangerous. There are, however, other reasons which cause me to look with disfavor upon these "pipes of peace." I contend that the pacifier may become the first source of mouth breathing, and lay the foundation of the thumb-sucking habit.

A pernicious custom, one of grave danger to a child, is the nurse's habit of moistening the nipple or pacifier with her own lips before giving it to the child. Sometimes a stranger is asked to care for the child for a short time, and indulging in this common practise may cause syphilitic or other infection of the infant's mouth, if the child is wounded



FIG. 1
Eruption of bicuspid inside
of dental arch

about its mouth or lips. Too much stress can not be laid upon this point.

A great deal has been written about teething and some of its concomitant conditions. Older writers spoke about teething diarrhea, teething convulsions, teething coughs, and, in fact, there are



FIG. 2

Deformed by too early extraction of temporary eye-teeth. This patient could not shut her mouth, was a mouth breather, and had adenoids and hypertrophied tonsils

Some have advised to lance the gums freely, in order to help the teeth come through; others have advised the opposite.

Severe symptoms may sometimes be brought on by the eruption of the teeth, as the teething period is one of great physiological activity and growth; but this normal process only constitutes the last drop in the bucket, which causes the overflow, and the real cause is always some other underlying abnormal condition.

To aid the mother in the care of the mouth during dentition, I should like to frame a set of "Don't's":—

Don't rub the teeth through, as this will open an avenue of possible infection, particularly as the resistance of the little body is somewhat lowered during this state.

Don't lance the gums (as a rule), for the above-mentioned reason; if the erupting tooth is well covered, the incised wound will heal up very rapidly, and the operative procedure will have to be repeated.

Don't poke dirty fingers into the child's mouth to find out if the tooth is through; but keep the mouth clean. Most of the attending symptoms of difficult dentition can be avoided by carefully looking after

the condition of the digestive apparatus.

After the first teeth have made their appearance, a soft tooth-brush should be used, but particular care must be exercised to employ a brush which does not lose its bristles. The mouth should be washed after every feeding and before retiring. A mild antiseptic, to which a little bicarbonate of soda is added to make it alkaline, may be used, or an alkaline antiseptic tablet, dissolved in water. If a child is under medical care and takes medicine of any kind, the mouth should be washed, so as to neutralize any acid drug given, and to cultivate the habit for the future. Regular dental inspection should be instituted from the time that all temporary teeth are fully erupted.

The care of the mouth consists, first, in keeping it clean, removing, by means of a brush, floss silk, and toothpick, any particles of food. The mouth should be washed after every meal, and the teeth brushed. It is most important, however, to brush the teeth before retiring, for otherwise there remain in the mouth remnants of food, etc., overnight, a period of about ten hours, during which

saliva is secreted, and fermentation goes on without disturbance, which prepares the way for tooth decay.



FIG. 3

Upper arch too small for lower jaw, caused by too early extraction of a temporary tooth

If the teeth are decayed, early filling, to avoid untimely extraction, is important. However, the visit to the dentist should not be deferred until the teeth are decayed, but regular dental examination should be repeated whenever necessary.

The belief that the first, or milk-teeth, can be extracted at random, inasmuch as

they are replaced by the permanent teeth, is erroneous, as dental irregularities thus produced may alter the shape of the jaws, causing an unsightly appearance, and inducing abnormal breathing. It is fully as important to retain the temporary teeth until certain periods



FIG. 4

Deformity resulting from too early extraction of first incisors

as it is to retain the permanent teeth intact, as the latter can be replaced by artificial organs. The functions of the milk-teeth, or temporary teeth, are not only to assist in mouth digestion, but also to assist in the development and shaping of the jaws or dental arches proper. The permanent teeth are larger in size and number than the first, or temporary teeth, and, therefore, require more room, which is created by the enlargement of the dental arches. By the eruption of the permanent molars behind the temporary teeth, the latter are, so to speak, pushed forward, and the dental arches are enlarged.

If one of the temporary teeth is extracted prematurely, the permanent teeth have no means of pushing forward and enlarging the jaws, and moreover there is insufficient room for all the permanent teeth, and some must appear outside of the dental arch, thus producing a malformed jaw, with irregular teeth. This not only deforms the face, but it induces the disastrous effect of mouth breathing. (See Figs. 2, 3, 4.)

Although it is injurious to extract the temporary teeth too early, it will be an error to retain them beyond a certain period. Sometimes temporary teeth are retained longer than their normal period, because of the failure of root absorption, which is produced by a dead pulp or other abnormal conditions. In such cases the permanent tooth is deflected in its

course, and will erupt either inside or outside of the arch. (See Fig. 1.) The carefully trained dentist alone can decide whether a tooth should be extracted or not.

The thumb-, tongue-, or lip-sucking habits, frequently found among children, also deserve mentioning here, as these practises are the cause of malformations, which induce not only faulty articulation, with resulting inefficient mastication, but are often the cause of mouth breathing, with its evil consequences. (Figs. 5 and 6.)

Fortunately, thumb sucking is usually broken before much damage is done, as these habits seldom cause displacement of the temporary teeth. If, however, the practise is kept up, the upper front teeth (incisors and cuspids) are always pushed outward and to the right or left side, according as the thumb of the right or left hand is used. The lower teeth, however, from the pressure of the back of the thumb, are crowded back. The pernicious habit of biting the lower lip, or pressing the edges of the upper incisors against its outer surface, has a tendency to move the upper central incisor teeth forward, thus lessening their natural resistance to the narrowing of the arch. This is shown in Fig. 5.



FIG. 5

Deformity produced by biting lower lip and pressing edges of upper teeth against outer surface of lower lip

The habit of resting the tongue between the upper and lower teeth will produce the effect shown in Fig. 6.

Careful dental inspection and examination are necessary to avoid such irregularities. Irregularities produced by the untimely extraction of teeth take months of treatment for correction. A temporary tooth should never be extracted before the time for it to be shed nat-

urally, unless its presence in the mouth is harmful, and its diseased state can not be overcome.

No intelligent physician will tolerate a focus of infection anywhere. Tuberculous glands are excised most promptly. The mouth, however, which is a perfect breeding-ground for micro-organisms, offering heat and moisture and endless nutrient material for the development of bacteria in extraordinary number and variety,—the mouth, which is the most abused part of our anatomy, being constantly irritated, stabbed, cut, torn, and otherwise injured,—is almost, if not entirely ignored. The formation of pus is permitted to exist here for years without care, and micro-organisms are allowed to gain entrance to the system

by inhalation, swallowing, and through abrasions of the mouth, and through decayed tooth pulps.

Mouth breathing will also be produced a very potent and common contributory cause of pulmonary tuberculosis, and in many cases this pernicious habit is formed as the result of decayed teeth in early life. An exposed nerve or tender gum renders mastication painful, and the child is afraid to close its jaws, and not only acquires the habit of bolting its food, but also, to avoid painful contact of the teeth, keeps the jaws open sufficiently to part the lips, and begins to breathe through the aperture thus formed. Mouth-breathing will also be produced by dental irregularities, as previously

shown. Thumb sucking is also productive of this pernicious habit. It is hardly necessary to point out the deleterious results of mouth breathing; too much is not said, if it is stated that the upper half of the head does not develop properly in mouth breathers. The upper respiratory apparatus also becomes predisposed to disease, as well as the tonsils.

In view of all this, why is it that the mouth is not cared for in the manner necessary to reduce the opportunity for

germ infection and its consequences? The reasons are that the busy general practitioner does not realize the importance of mouth hygiene, and parents and guardians lack knowledge regarding these matters. The remedy which will overcome these conditions is co-

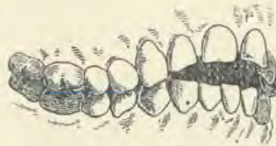


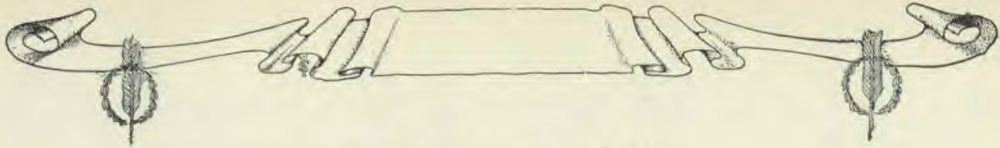
FIG. 6

Deformity caused by habit of thrusting tongue between teeth, also by the habit of thumb sucking

operation of the general practitioner, the specialist, and the parents. The first step, I think, has been taken in some cities, where the board of health has the mouths of children examined. Now let the family physician take up this work, and the results will be of inestimable value to humanity at large.

The care of the mouth can be outlined in one sentence, namely, "Keep the mouth clean," which means, first, to reduce germ growth in the mouth as much as possible; second, to reduce acid conditions of the mouth by the use of mild alkaline washes; third, to reduce tooth decay by frequent examinations of the teeth; fourth, to reduce all irritations by timely consultation of the specialist.





“Salt Is Good”

G. C. Emery, M. D.

THE above statement is Biblical; it is also physiological. Common salt plays an important part in the various processes of the body metabolism. The hydrochloric acid of the gastric juice depends largely upon sodium chlorid (salt) for the chlorin essential to its formation. Nor can the digestive fluids properly perform their functions without the normal amount of their inorganic constituents.

In many diseased conditions — notably that of pneumonia — the blood becomes less alkaline, or even acid in reaction, and there is a marked increase in the acidity of the urine and perspiration. The chlorides practically disappear from the urine. These changes are the result of nature's effort to rid the

system of poisonous products of the disease which are acid in reaction. The decrease in the proportion of salts in the excretions shows conclusively that nature is utilizing these elements in combating the disease. And the use of normal salt solution by injection into the bowel or under the skin, or even salt water to drink, aids materially in ridding the system of the toxins. It is almost universally recognized by the medical profession that in conditions of collapse, either from prolonged illness or sudden accident, there is no means at our command more effectual

for stimulating the system and re-establishing its functions than injections of hot saline solution. Even in cases of hemorrhage so severe that death is imminent, an intravenous saline solution will often cause almost immediate revival. There is scarcely a hospital where a supply of hot sterile saline solution is not considered a necessary part of the emergency equipment of the operating room.

Salt is *not* a poison. Hence any possible detrimental action it may have is not due to its toxic properties. What, then, are the charges brought against it by those who would banish salt from our tables and kitchens?

One of the most common, as well as most serious, if it be true, is that it injures the body by abstracting fluid from the tissues, and especially from the blood. It is true that salt is hygroscopic, but only mildly so. But the amount of salt consumed at any one meal requires so small an amount of water to satisfy its affinity that it is hardly worth considering, even granting that all the fluid comes from the tissues, not from the food. And further, this objection is valid only as it refers to salt taken in its dry crystalline form; as soon as it becomes dissolved, its hygroscopic action ceases. A far greater amount of fluid is taken from the system

Salt is utilized in the body. No injurious effect has been demonstrated in persons of ordinary health as the result of using a reasonable amount of salt. In certain cases of disease a salt-free diet may be beneficial. Common salt solution is one of our safest restoratives in grave emergencies.

by one granose biscuit than by all the salt which even the most "salt-depraved tongue" would tolerate at a single meal. Granose and salt are alike hygroscopic; and both abstract moisture from the body in the same way, namely, by absorbing fluids secreted along the digestive tract. Whatever validity this argument against salt may have, will hold equally well for granose, and all other foods capable of absorbing fluid during digestion.

In whatever degree salt may stimulate the desire for water, if this desire is satisfied, it is a blessing, not a curse; for very few persons keep their bodies supplied with a sufficient amount of good pure water.

The objection that it interferes with digestion by acting as a preservative, is not valid as applied to fresh foods, because neither the quantity nor the time of action is sufficient for it to cause any appreciable change in the food materials with which it is used. Nearly all the methods of preserving foods, aside from cooking, detract more or less from their value as reckoned by ease of digestion and assimilation. It is the price we pay for their preservation.

The argument that salt covers up, or changes, the "divinely imparted flavors" is equally true of nearly all our methods of food preparation, and, followed to its conclusion, would limit us to such articles of diet as can be utilized just as re-

ceived from the hand of nature. Other objections are offered, many of which have no foundation either in science or in fact, and need no further mention.

Certain individuals, as, for instance, those suffering with hyperchlorhydria, may perhaps be benefited by a salt-free diet. But even here it is a question yet to be determined whether the system has an *actual excess* of the offending element or elements, or whether the trouble is due to faulty distribution.

While it is true that, as far as our present knowledge goes, inorganic elements, as such, can not be utilized by the system [See foot-note.—Ed.], yet clinical evidence abundantly demonstrates that in many cases where there is a failure properly to assimilate these elements in their organic form, the administration of an excess of the inorganic will produce marked results.

Briefly, then, the elements of sodium chlorid are utilized in the body metabolism; scientific research has not demonstrated any toxic or other injurious effects on healthy persons from the ingestion of reasonable quantities; in certain cases, to be determined by a physician, a salt-free diet may be beneficial; common salt is many times our most powerful and safest stimulant; and the use of an excess of the inorganic tends to assist the system in utilizing the organic forms.

EDITORIAL NOTE.—Until recently there has been a disposition to disregard inorganic foods as unessential for animals. Though it was known that the plant receives all its food in an inorganic form, it has been supposed that the salts, in order to be utilized by the animal, must first be brought into organic combination by the plant. This is now questioned, at least as regards common salt. There is probably considerable more inorganic matter, especially common salt, in the animal body than enters into any organic combination. Inorganic salts are indispensable for life. The exact way in which they act is still unknown. They evidently have to do with regulating concentration of fluids, osmotic pressure, and tension. It has been shown that carnivorous animals and races care little or nothing for salt, as the flesh contains an abundance of salt; but herbivorous animals and races, feeding on foods deficient in salt (vegetables, particularly the potato, are especially rich in potassium rather than sodium), crave salt. Experiment seems to show that the use of foods containing a large proportion of potassium, drives the sodium out of the body, and leaves it deficient, unless salt is used.



Graham, Whole-Wheat, and White Flours

G. H. Heald, M. D.

MUCH has been written, and is still being written, to the effect that white flour has been robbed of all its nutrition, and is therefore unfit for food. The statement is not infrequently made that the gluten is removed with the outer part of the wheat. But if one remembers that it is the gluten that holds the dough together, and makes light bread a possibility, the error of this statement will be apparent. As a matter of fact, white flour, at least as to its organic constituents, contains more available nutrition than a like quantity of either Graham or whole-wheat flour. Most of those who decry the use of white flour use a certain proportion of it in making the so-called whole-wheat and Graham breads.

Among other valuable services rendered the public by those engaged in nutrition investigations under direction of the United States Department of Agriculture, are the reports which they have submitted regarding the relative nutritive value of the various grades of flour. This work has been carefully done by different men, in different places, and on different kinds of wheat, with always the same results, which are stated in the quotations which follow. It is evident from these investigations that white flour, whole-wheat flour, and Graham flour, each occupies a valuable place in the nutrition of man. Individual experience may lead one to use largely of Graham, another, almost entirely of white, bread. Others will prefer a variety.

Harry Snyder, B. S., summarizing his "Studies on Bread and Bread-Making"

in the University of Minnesota in 1899 and 1900 (Bulletin 101, Office of Experiment Stations, United States Department of Agriculture), says:—

"According to the chemical analysis of Graham, entire-wheat, and standard patent flours milled from the same lot of hard Scotch Fife spring wheat, the Graham flour contained the highest, and the patent flour the lowest, percentage of total protein. But according to the results of digestion experiments with these flours, the proportions of digestible, or available, protein, and available energy in the patent flour were larger than in either the entire-wheat or the Graham flour. The lower digestibility of the protein of the latter is due to the fact that in both these flours a considerable portion of this constituent is contained in the coarser particles (bran), and so resists the action of the digestive juices and escapes digestion. Thus while there may be actually more protein in a given amount of Graham or entire-wheat flour than in the same weight of patent flour from the same wheat, the body obtains less of the protein and energy from the coarse flour than it does from the fine, because, although the including of the bran and germ increases the percentage of protein, it decreases its digestibility. By digestibility is meant the difference between the amounts of the several nutrients consumed, and the amount excreted."

"In eighteen digestion experiments with men it was found that white (straight grade) flour was more completely digested than either Graham or entire-wheat flour, and yielded a larger



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A PRIMITIVE KOREAN
FLOUR-MILL

amount of digestible nutrients and valuable energy. While Graham and entire-wheat flours contain more total protein and fat, and have a higher heat of combustion, they actually yield to the body, because of their lower digestibility, smaller percentages of digestible nutrients and available energy than the straight-grade flour.

"The same general differences in digestibility of the three grades of flour have been noted

in experiments with hard northwestern spring wheat grown in Minnesota and Dakota, hard winter wheat grown in Oklahoma, and soft winter wheats grown in Michigan, Indiana, and Oregon. In fifty-four digestion trials with both spring wheat and soft winter wheat, in which six separate samples of wheat have been milled so as to produce the three types of flour, — Graham, entire-wheat, and straight-grade, — uniform results have been secured, and in all the comparative trials the largest available nutrients and energy



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PRIMITIVE GRIST-MILL, NEAR PORT ARTHUR

have been secured from the white flour."

In a later bulletin, "Digestibility and Nutritive Value of Bread and Macaroni," 1903-1905 (Bulletin No. 156, Office Experiment Stations, United States Department of Agriculture), he says:—

"Thus while the addition of the bran to the flour increased the proportion of the nutrients but a trifling amount, it decreased the digestibility very decidedly, so that the digestible nutrients in the flour with bran were only 13.2 per cent of protein and 67.5 per cent of

In conclusion, Professor Snyder says: "While the coarser grades are not more nutritious than the finer flours, there are many cases in which they are especially desirable, as, for instance, for persons of sedentary habits and occupation, because their stimulating of the alimentary tract may help to produce a larger secretion of the digestive juices, and also to overcome a tendency to constipation. Finally it may be said that wheat flour of all the various grades is one of the cheapest, most digestible, and most nutritious of human foods, and

well worthy of the high estimation in which it is generally held. The use of different sorts of wheat flour is a convenient way of giving variety to the diet, a matter which is of no little importance.

Professor Snyder again says, in the "Year-Book of the Department of Agriculture for 1903," page 361:—

"Differences in digestibility of the flours containing branny portions of the wheat are sometimes attributed to the fineness with which the coarse materials are ground. This is doubtless true to some extent, and may in part explain why whole-wheat is more digestible than Graham, because the



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ON A NORWAY FARM

A farmer's water-power grindstone. To the left is a water-power grist-mill

carbohydrates; while in the same flour without the bran they were 13.8 per cent of protein and 71.1 per cent of carbohydrates. What little was gained in increase of nutrients was more than offset by the failure of the bran to be digested."

whole-wheat flour is more finely ground. But even when bran is reduced to a very fine powder, it is not so well digested as flour, and its presence in the flour decreases rather than increases its nutritive value because it decreases di-

gestibility. This was observed at the Minnesota station in some experiments with Oklahoma wheat. Bran removed in producing the patent flour was ground very fine, and was added to

as compared with 15.1 per cent in the flour without the bran. The digestibility of bread made from this mixture, as compared with that of bread made from the same flour without the bran, was as follows: Bread with bran, protein 85.9 per cent, and carbohydrates 93.3 per cent; bread without bran, protein 91.6 per cent, and carbohydrates 97.8 per cent."

Woods and Merrill, summing up the results of their "Studies on the Digestibility and Nutritive Value of Bread, 1899-1903," Bulletin 143, Office of Experiment Station, says:—

"In general, the digestibility of the ration, whether simply bread and milk with a little butter and sugar, or a more varied diet, was decreased when the change was made from white bread to entire-wheat bread, and still



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BREAD-MAKING IN MANILA

A Philippine woman preparing the family batch under primitive conditions

some of the flour, 14 per cent as much bran as flour, or about the proportion in which it was removed during the milling. This increased the protein content of the flour to 15.3 per cent

further decreased when either was replaced by Graham bread, the remainder of the diet being, of course, the same in three cases. The differences are sufficient to indicate that, though the



WIND POWER IS SOMETIMES USED IN FLOUR-MILLS

Graham flour contains the most, and the white flour the least, total protein of the three, the body would obtain more protein and energy from a pound of entire-wheat than from a pound of Graham flour, and still more from a pound of white flour than from either of the others."

However, this does not indicate that entire-wheat and Graham breads are not valuable and healthful sources of nutrition. Woods and Merrill conclude:—

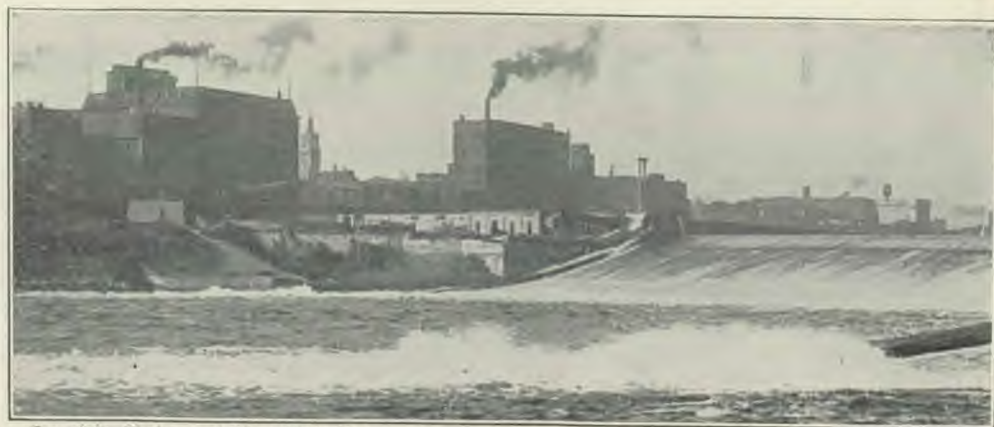
"From all data included in this bulletin, and others reporting previous work on the same subject, it is evident that all kinds of wheat bread are quite well digested, and worthy of the important place in the diet which they hold. In fact, there is no single food which is so indispensable as bread. It is a very eco-

nomical source of nutriment, and the different kinds are valuable as affording means of variety in diet."



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BREAD MAKING IN AMERICA



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ST. ANTHONY FALLS, MINNEAPOLIS

A view of some of the great modern flouring-mills which have made Minneapolis famous



A Movement for Pure Foods

Paul Pierce



THE recent convening of the American Association for the Promotion of Purity in Food Products, in New York City, is an epoch-making event in the history of pure food in this country. The sole aim of this association is the protection of the public by the abolition of chemical preservatives in food products.

The results of the meeting were momentous, and will be far-reaching in their effects. A platform was adopted, declaring that chemicals are absolutely unnecessary in the preparation of any food

products; that the only excuse for their use is to adulterate foods and conceal inferiority in raw products, and inadequacy of the process of manufacture; that chemically prepared foods are injurious to health, and that the legitimate element of the trade does not care to bear the stigma of putting out chemically treated foods, even though some of those men entrusted with the enforcement of the law should be able to so interpret the law as to allow the use of chemicals.

In addition, the following resolution was adopted and sent to the President:—

“Hon. Theodore Roosevelt, President United States,

Washington, D. C.

“Whereas, Opinion of leading scientists in both Europe and America is divided upon the subject of artificial preservatives in prepared foods, there being great weight of opinion on both sides of the controversy, thus leaving the question of their injuriousness or otherwise still in doubt, and,—

“Whereas, As practical manufacturers, we know that artificial preservatives of any kind are unnecessary to the successful commercial preparation of good, sound, raw materials, under proper sanitary conditions, thus making it both possible and reasonable to give the consuming public, rather than the reactionary manufacturing interests, the benefit of that doubt, and,—

“Whereas, The use of artificial preservatives makes possible and invites the employment of inferior and waste materials often unfit for human consumption, and careless methods and unsanitary conditions in food preparations; and,—

“Whereas, We believe that not only will the reputation and standing of the great American Food Producing Industry be jeopardized, but that the interest of all the people will be sacrificed by any action on the part of the government that permits the continued use of any artificial preservatives in any food product. Now therefore,—

“Be it resolved, That we are opposed to any ruling under the National Food and Drugs act of June, 1906, that permits the use of artificial preservatives in foods, or that in any way departs from either the letter or the spirit of that law.

“Be it further resolved, That these resolutions be transmitted by telegraph to the President of the United States as expressive of the sentiment of this association.”

Some day the people of this country will take hold of the food interests and compel the adulterating manufacturers and the politicians to cease juggling with the health and life of the community.

Now the question of benzoate of soda will not be settled finally until it is settled by the people. As long as there are any experts who claim that preservatives in food are injurious (and there are many in both America and Europe), we should be on the safe side and abolish them. Especially so, as there can be no argument adduced for their use, when so many manufacturers of food products carry on their great factories without them.

Why, then, all this struggle on the part of some food manufacturers for the legal privilege of using preservatives? The answer to this question is the whole point of the food fight, and leaves no doubt as to the motives and principles of the men who use preservatives. Without benzoate of soda and similar chemicals, their products would not keep sufficiently, for the reason that they are put up under unsanitary conditions, or are inferior cannery waste which would not be marketable but for artificial preservatives.

Those factories whose output is chemically preserved are at least open to suspicion, and it is positively known that inferior raw materials, often too offensive in character to even think about, are used by them. Expensive factories are built for the purpose of utilizing garbage carted away by the ton from the floors of canning factories, and marked, "For Use When Wanted." Such refuse consists of tomato skins, apple cores and parings, worm-eaten and decayed por-

tions cut from fruit, swept up and sold. Such filth, which in the individual house would be tossed into the swill-pail, is used to make catchup, soup, apple-butter, jam, and mince-meat. The adulterators who place this output on the market very naturally know that, were chemical preservatives forbidden, their business could not be maintained for twenty-four hours.

The factories where no chemical preservatives are used are the safe ones to patronize, not only because the consumer should not put poison into his system, but because the materials used — fruits, meats, poultry, and vegetables — are pure, whole, sweet, untainted, and wholesome. Nothing is more sanitary, beautiful, and clean than the factories which are putting up pure food, guiltless of preservatives.

Although the worst evil connected with the use of preservatives is the spoiled materials covered up by their use, the chemicals themselves are more than doubtful. It may be possible for robust young men, pre-examined and found sound, to absorb small quantities of this for a few months, without suffering serious injury (such constitutions might throw off disease in any form); but that delicate children and old people and those with stomach, liver, or kidney disorders, — persons weak and impoverished, — would be so fortunate, is extremely unlikely.

That the first-class food manufacturers are unanimous in their theory and practise of *not* using preservatives, and join hands in the fight against adulteration, notwithstanding this finding of the referee board, is an unanswerable argument.



Clean Milk

A. F. Hughes

[We publish this article on the handling of milk, intended primarily for farmers, because it contains a lesson for the consumers, which they should take to heart. The farmer has not been slow to adopt improvements which are an advantage to him. Every bit of machinery that renders his work lighter and more profitable has been adopted with avidity. The proposed improvements in the handling of milk hold out nothing to the farmer but additional work and increased expense, without any prospect of added compensation; for it is a notorious fact that people will pay seven cents for dirty milk, rather than pay eight cents for clean milk. The writer has seen a dairyman who attempted to furnish clean milk almost deserted because a neighbor undersold him one cent. Not one of the customers made the first attempt to learn whether the new man's milk was as clean. THAT WAS A SECONDARY CONSIDERATION as compared with the expense. As long as the public take this attitude,—one of indifference to dairy conditions,—can we blame the dairymen for not doing better? When the public realize the importance of it, and DEMAND clean milk, they will get it—not before.—Ed.]

OUR fathers tilled the soil with wooden plows, and reaped their grain by hand. Are we content to continue doing as they did? Yet with all our knowledge of hygiene, and of bacteria and their results, we continue to handle milk after the style of our ancestors.

It is not the wish of the writer to cast ridicule on these ancient methods, which were probably excusable in an age when it was not known that dirt means disease and death, but to state the facts in plain language as he has seen them, and allow the reader to draw his own conclusions as to whether they are excusable in this age.

Mr. B kept three cows and two horses in a tumble-down barn, just large enough to accommodate them. Part of the milk was sold to the neighbors. The fact that part was used to feed a baby, makes the investigation all the more interesting. The floor of the barn—if there was one

—was covered with a foot of manure. The cows were plastered over with a coat of mail three quarters of an inch thick, from their hind to their fore quarters. To the udders were attached various-sized stalactites of rich garden dressing.

The writer describes—

Conditions found in a very dirty dairy, and unfortunately not at all uncommon.

Conditions in a little better grade of dairy, not ideal, but still much better than many.

Conditions in a dairy where cleanliness is the rule.

Four rules necessary in order to insure clean milk.

An appeal to dairymen.

Additional incentives to cleanliness.

In milking, the man gave no heed to his person. After grooming his horses, the milking began. Without washing

his hands or changing his apparel, he picked up a box for a milk-stool, sat down, and leaning his head against the cow, he simply brushed off the udders with his hands, moistened his hands with milk, repeating the latter compounding process until the milking was finished.

The milk was carried to the house, where it was strained by the neat housewife; and, after separating the portion for the neighbors, it was carefully covered, lest a particle of dust might get into it.

Another act of barbarism may be mentioned,—the habit of expectorating into the hands before milking. Surprising as it may seem, such barbaric acts are repeated in every community. Filth is not tolerated in other foods; fruit and vegetables are always washed before cooking, to remove the mineral dirt that may cling to them. But in the case of milk, which is seldom sterilized, no amount of organic filth causes the average person to regard it as unfit for food. If the black sediment, which is no uncommon sight in the bottom of the glass of milk, be associated in the mind of the consumer with the conditions already mentioned, it would be an object of disgust.

A visit to Mr. C's farm revealed a marked improvement over Mr. B's. His stable was in a much better condition, though it lacked two essentials,—light and air. Following in the direction of a foul smell, I observed a heap of decayed turnips in the corner of the barn; and as the milker crowded his way between the cows, he caused a cloud of dust to arise, part of which would necessarily get into the milk.

However, the floor was kept comparatively clean by means of shovel; and with plenty of clean straw for bedding, his cows were kept practically free from the common coating of stable filth. His hands, when he began milking, were as clean as could be expected after having

handled the various barn tools. On the whole, there was a commendable improvement over B's methods.

D had made a complete renovation of his premises. His stable was light and well ventilated. His floor was kept clean, not only with the shovel, but was flushed with water. The whole inside was white-washed every three months. A weak solution of carbolic acid was sprinkled over the floor every other day. After his cows were groomed, their udders were washed with warm water, and carefully dried with a towel; and the cows were led, one by one, into a separate room to be milked. The milker washed his hands, changed his apparel, and milked into sterile pails. Not a trace of dirt, not even a hair, was seen on the strainer after milking six cows.

Unfortunately, dairies of the latter type are few, but they are coming, slowly but surely.

It is not the intention of the writer to argue that milk is not fit for human beings to eat, for he himself keeps a cow. But he maintains that milk, as it is usually handled, is not even fit for calves to drink.

In order to have clean milk, four rules must be followed: (1) The milker must be clean; (2) the cow must be clean; (3) the milking utensils must be clean; (4) the milking must be done in a clean place.

In most farm operations, anything which aids to improvement is eagerly received by those of active minds, while those who give little heed to the new ideas sleep on. An improvement on the hay-rake, a lighter running mower, some new attachment to the twine binder, etc., are all tried and carefully scrutinized.

Any suggestions that will aid us to get cleaner milk should be hailed with delight, whether they can or can not be put to immediate use. It is fitting for man to learn all he can, use all he can, and

reserve for future use what he can not utilize now.

Mr. D's dairy presents a rather high ideal [None too high.—Ed.]. Not every person has the conveniences that D has, but every man can groom his cow, and be more careful in the manner of handling the milk.

The purity of milk depends upon the observance of the four rules previously mentioned; and if obtained pure, it will keep pure for a much longer time than if allowed to become permeated with bacteria.

Professor Marshall found that milk exposed in the air of the stable for five minutes, while the milking is in progress, contains from one hundred forty-four thousand to two hundred thousand micro-organisms. The exposure was made in the ordinary milking pail, the milking being done as usual. Had the estimation been made immediately after grooming, cleaning the stable, or feeding dusty foods, it would doubtless have gone into the millions.

Each cow's hair has its bacteria attached. Estimations made upon hairs showed them to have from six to seven hundred micro-organisms each.

If one fancies that by straining the

milk through three or four thicknesses of cheese-cloth, he has removed all the filth, he is mistaken. The hairs are on the cheese-cloth, that is true, but they have been washed from all their filth. Many are sickened by the sight of a hair in the milk, but the filth in the bottom does not bother them. As a matter of fact, the hair is not so objectionable after it has been thoroughly washed in the milk.

Sufficient has been said to demonstrate the necessity of grooming, milking in a clean place, and keeping the udders damp while milking.

Renk, who, in his investigations of milk delivered to cities, learned that most of the dirt in milk is composed of dung, found as many as six grains of dry dirt in each quart. Picture, if you can, the number of germs in such milk.

Another feature may be mentioned. Persons who have infectious diseases sometimes handle milk. Great caution should be observed in this regard. If a person has even been exposed to a contagious disease, he should not be allowed to milk. Many deaths, due to tuberculosis, typhoid fever, cholera infantum, gastro-enteritis, and other intestinal disorders, may be traced to filth in milk.



A TUBERCULOSIS SPREADER

A healthy-appearing cow, in a herd supplying milk to Washington, D. C., found on examination to be scattering tuberculosis germs in great numbers in the barnyard.

HEALTH CATECHISM

L. G. Wagner

No. 7—Rest

WHY do we grow old?

Science has never answered this question. All about us we observe one universal fact, namely, that living organisms, animal and vegetable, grow old, and eventually die.

Is old age, then, a normal condition?

All we can answer in this regard is that, from the birth of the infant, or even before, there is a process of progressive hardening of tissues, which proceeds until death. In normal old age, where what we call disease has not taken part in the process, we see simply the advanced stage of the hardening process that begins with the inception of life. To a certain extent,—that is, in the early stage,—this hardening, as in the filling out of the bones, is necessary. The ability of the babe to put its toe in its mouth is not desirable in adults. But the hardening goes on in many tissues. Conspicuous is the hardening of the eye tissues, which renders glasses necessary in the fifth decade; but this hardening of the eye has been going on since infancy. No known system of diet or exercise will prevent it.

Is the rate at which these hardening, or aging, processes come on influenced by habits or heredity?

Heredity may determine to some extent the rapidity of these processes. Certain families seem to be notably long-lived. Habits undoubtedly influence the aging process. Almost invariably centenarians are those who have been simple and temperate in their habits (using the word temperate in its true sense). The *Baltimore American* says that while centenarians give various reasons to which they ascribe their longevity, "they all agree on the advantages of having plenty of work, eating when hungry, sleeping when sleepy, keeping cheerful and avoiding worry."

What are some of the results of worry and anxiety?

Worry corrodes intellectual powers, and sooner or later results in chronic invalidism. It never accomplishes any good. It always unnerves and unfits one for work.

How may one avoid worry?

First come into right relation with the Creator. Realize, and *repeat*, that he does all things well. Leave your case to him. If, as a prodigal, you have wandered, and are feeding on husks, come back and be received as a son, to feed in the Father's house. If you have troubles, tell them to him, and let him take care of them. Become better acquainted with your Bible. It contains many an excellent antidote for worry.

What effect has exercise on longevity?

As a rule, centenarians have been persons who have freely exercised, but who have *not* indulged in violent and straining exercise. Temperance in exercise, as in eating, is the golden rule of health.

May the ambitious, who feel that every hour of time is precious, safely take up another employment when exhausted at one employment, on the principle that "a change of occupation is rest"?

Change of occupation is not always rest or recreation. To pack too many strenuous hours into one year may shorten the number of years.

How much sleep does one require?

The amount of sleep necessary for health depends on the age, employment, physical condition, and the climate. The young, especially, are robbing themselves of future years when they lessen the amount of sleep. The infant should sleep most of the time. Youths should sleep ten hours a day. Those who retire early, and form the habit of sound sleep, have much better nerves, and live a more rational and healthful life than those who rob themselves of sleep. Students who attempt to carry studies at the expense of their sleep seldom accomplish anything permanent. In the later life they are apt to be outstripped by those whom they considered drones in school. Children should not be aroused in the

morning. Rather, they should be encouraged to retire early, so that they may awaken naturally. They should, however, be trained to arise immediately on awaking.

What is accomplished during rest or sleep?

Certain repair processes evidently take place much better during sleep than during the waking period. As a battery cell restores itself and greatly lengthens its life by periods of rest, so does the human body. Even a twenty-minute nap in the afternoon proves to be a wonderful restorative.

What are some results of loss of sleep?

Loss of sleep may result in loss of appetite, poor digestion, irritability of temper, loss of mental vigor, and, if continued, premature nervous breakdown.

What are some of the conditions that favor sleep?

A good conscience, a sound organism, moderate fatigue from healthful occupation, a comfortable sleeping-room and bed.

What are some of the conditions that hinder sleep?

Overwork, especially excessive mental work, accompanied by worry; ill health, especially disorders of digestion; pain, from any cause; a smiting conscience; a noisy or unhealthful location. Frequently sleeplessness is the result of fear that the night will be wakeful. Nothing is more sure to destroy sleep than worry about not being able to sleep.

What are some good rules for light sleepers?

Be sure that the stomach and intestines do not have extra night work, to keep the controlling centers active. Have your room well aired and comfortable, and your bed, the most comfortable your means will permit. Remember you spend one third of your time in bed — or ought to. If possible, take a warm (94°) bath before retiring, drying with as little friction as possible. Banish every thought of business and the like, — whatever your mind tends to run on at night, — and think of *something else*, — your last vacation, flowers, birds, — anything to get your mind out of its rut. Some induce sleep by reading a dry book. Above all, cease to dread the loss of sleep. You probably get more sleep than you think you do, and at any rate, you are resting even if you do not fully sleep. Sometimes a person will be willing to testify that he did not sleep a wink, and yet when questioned closely, it will be found he missed hearing the clock strike during the greater part of the night. Remember that sleep is more apt to be won when the wooer is not too anxious.



RATIONAL TREATMENT IN THE HOME

Home Treatments for Common Diseases—No. 2

W. A. George, M. D.

Superintendent Nashville (Tenn.) Sanitarium

EVERY family should be supplied with the necessary appliances for giving simple home treatments. A few dollars spent in this way may save manyfold in doctors' bills, and still better, may relieve much pain and suffering. Among the articles most useful are the following: One rubber stomach bag or hot-water bottle holding two or three quarts, one rubber spine bag twenty inches long, one rubber ice-bag holding about one quart, and a set of three or four fomentation cloths. The latter are best made of a half-wool and half-cotton blanket, cut into pieces about one yard square.

All who have anything to do with the sick should learn to count the pulse and the respiration. They should also learn to take the temperature. To do this a fever thermometer is necessary. One of these little instruments should be found in every home. It is well also to

have an ordinary water thermometer registering up to boiling-point, by which to regulate the temperature of baths of any kind.

The great value of water as a remedial agent is due largely to its wonderful power of absorbing and retaining heat, and to the different forms in which it may be used.

Water may be used as a solid (ice), as a liquid at any temperature from freezing to boiling, and as a vapor (steam).

Ice, in melting, absorbs so much heat that if a pound of ice were placed in an ice-bag and applied to an inflamed part, the amount of heat taken up by

the ice-water would be enough to raise the temperature of a pound of water from 70° to 212°, and still the water in the ice-bag would remain at 32°, the same as the ice before melting. Thus ice is very valuable in reducing inflammation in the early stages, but should not be applied for too long a time without being removed for a short

FAMILY TREATMENT OUTFIT

One fever thermometer.
One 3-qt. hot-water bottle.
One 20-inch rubber spine bag.
One 1-qt. ice-bag.
Four fomentation cloths.

TREATMENTS SUGGESTED FOR—

Boils.
Internal Bleeding.
Appendicitis.
Rapid and weak heart.
Pain.
Nervousness and sleeplessness.

time, as it may injure the skin if applied for several hours at a stretch. The formation of a boil or other localized inflammation may often be stopped entirely by holding a piece of ice over the affected part for an hour or more at the very beginning of the signs of inflammation.

The ice-bag placed over the appendix will give great relief, and will often cut short a case of appendicitis (better call a good surgeon, however, in such a case). In case of hemorrhage from the bowels in typhoid fever, or hemorrhage from the stomach, nothing is of greater value than the application of one or more ice-bags to the abdomen. The bags should be refilled as soon as the ice melts, and should be used until danger of further hemorrhage has passed. The cold applied in this way causes the blood-vessels to contract, and has a sedative effect upon the nerves, keeping the stomach and intestines quiet. When cold is applied in this way, hot-water bottles should always be applied to the feet and legs. It is also well to keep a spine bag filled with quite warm water to the spine. This will prevent chilling.

A rapid and weak heart may be greatly strengthened, and the rate decreased, by the application of an ice-bag over the heart for ten or fifteen minutes at a time, but not oftener than once an hour. This will, of course, not cure organic disease of the heart, but will be a great help in weak nervous heart.

Cold will often relieve pain as effectually as will hot applications, and in some conditions it is more effectual, as, for example, the ice-bag placed to the back of the neck in nervous or congestive headache.

In most cases where pain is present, the application of heat in some form gives the greatest and quickest relief. Water will absorb more heat than any other substance. So it is the best substance for applying heat to the body.

For short very hot applications the fomentation is the ideal treatment, and its uses are almost unlimited. Where prolonged or continuous applications of heat are desired, the stomach or spine bag is most convenient. Distress in the stomach, bowels, or pelvis is often greatly relieved by placing a stomach bag over the region of the pain. The bag may be filled or partly filled with water of any temperature from warm to boiling, as the patient may desire. This treatment gives relief to a great extent from the severe pain in the chest in pleurisy, and may be applied very hot to the affected side for hours at a time.

Heat, applied by means of the spine bag to the spine, is valuable in nervousness and sleeplessness and in pain in the back. It may be applied with good results to the back of the thigh in cases of sciatica.

The more one tries these simple treatments, the more uses he will find for them.



THE HOME ACRE

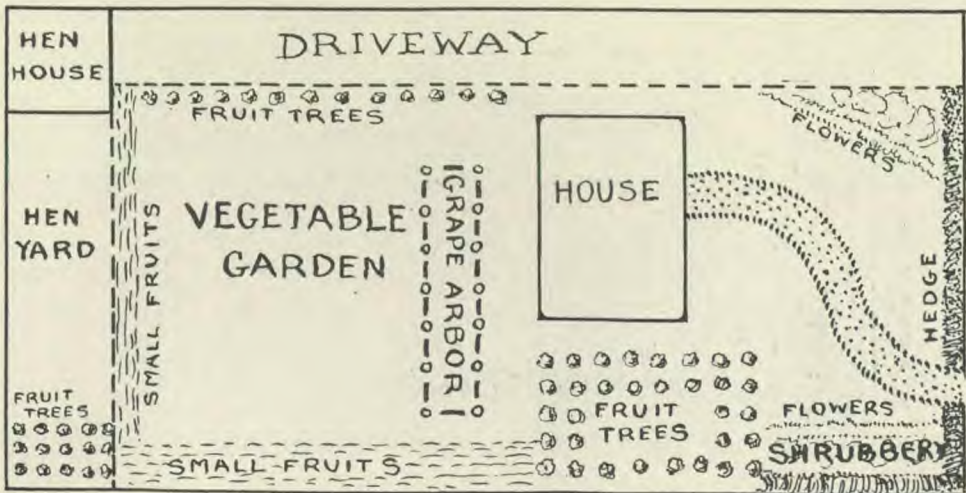
Locating a Home in the Suburbs

Mrs. Stella Ridgway

HOW may one acquire a home in the country, with no bank account, and with only the weekly wage coming in? This is the question that confronts us. The output of city living has been equal to the income, and there is nothing for a rainy day. But home, home, home,—how it rings in our ears! How it stirs our hearts! The children need it; they need to know the birds, the flowers, the song of the brook; to become acquainted with the domestic animals, to learn the haunts and habits of the untamed ones. Where in books can there be found an education equal to this? The mother needs it, needs the pure air and the sunshine to bring the roses to her cheeks. The father needs the relaxation after a strenuous day of busi-

ness in the city, needs to smell the new-mown hay, needs the nerve stimulant that comes by contact with the earth; for there is healing in the soil.

We have found a most desirable half-acre lot facing the east, and with a gentle slope toward the street, which will give a good drainage. We prefer a lot on the west side of the street, because in our section of the country the prevailing wind is from the west, and will carry the dust of the street away from us. We plan to have the house, when built, face the east, so that we may get the morning sun, and the rear of the house, during the warm summer mornings, will be shaded and comfortable while the morning work is being done, and our front porch will be free from the sun in the



SUGGESTIVE PLAN FOR HALF-ACRE PLOT

afternoon, and suitable for the family sitting-room.

The owners of this lot have consented to our putting up a "shack," or using a portable house to live in while we pay, in monthly instalments, what would be equal to our rent in the city. Thus we get our start in ownership.

Our half acre has a frontage of eighty-five feet, and runs back approximately two hundred fifty-six feet, and is laid out according to the following plan: On the north side there is a driveway twelve feet broad, running to within sixteen feet of the rear of the lot; here will be a hen-house sixteen by sixteen feet, with windows and door opening into a yard, sixteen by sixty-nine feet. The dwelling-house will be located seventy feet from the street, and six feet from the driveway, with a winding gravel path.

This half-acre plot is to be the recrea-

tion ground of the whole family. We believe in culture and agriculture, and that the two combined make a better preparation for right living than when divorced from each other. On this plot the children will be trained in the care



A SUBURBAN HOUSE

of poultry, in gardening, fruit raising, and flower culture. Here father and mother will unite with the children in working out the problem of how to get practical results from the soil. This is the "community work" we believe in. This is the "co-operative plan" for us.



A SUBURBAN COTTAGE



Dr. Wiley and Benzoate of Soda

THE referee board appointed by President Roosevelt to review some of the decisions made by the Bureau of Chemistry, according to press reports, has reversed the findings of Dr. Harvey W. Wiley regarding the harmfulness of benzoate of soda as a food preservative. The first question to engage the attention of this board was that dealing with the influence of sodium benzoate on the nutrition and health of man; the larger — and to the public, the more important — question as to the fraud which the use of this chemical permits manufacturers to impose on the consumer, has not yet been dealt with. Briefly stated, the referee board — the scientific attainments and unimpeachable reputation of whose personnel requires that its decisions be given the most thoughtful consideration — has, in a series of experiments on “poison squads” extending over a period of four months, reached results diametrically opposite to those arrived at by Dr. Wiley in a similar series of experiments which he conducted for nearly a year.

This decision of the board leaves the question of the physiologic action of sodium benzoate on the community practically as it was before; that is, that while the substance is known to be a bacterial poison, its deleterious action on the human organism is, in the words of the Scotch verdict, “not proven.”

It is greatly to be regretted that the public announcement of the decision of the referee board should not have been so worded as to make clear to the public mind the limitations of the question

under consideration. There is some danger that to the public the decision will mean that Dr. Wiley's work is discredited, when, as a matter of fact, it means nothing of the sort. The point that the board's report emphasizes is that, under the conditions of the experiments, — which consisted in giving healthy young men certain definite quantities of sodium benzoate for a period not exceeding four months, — the preservative is without deleterious action, and is not injurious to health. To assume from these findings that the use of benzoate of soda in foodstuffs is therefore beyond criticism is absolutely unwarranted, and there is little doubt but that the board itself would be the last body to sanction such an assumption. Neither is there the slightest ground for assuming from the experiments that benzoate of soda in milk used by infants and invalids is not deleterious or injurious.

Benzoate of soda is incorporated in foods for one — or both — of two reasons: to take the place of cleanliness and care in preparing, or to permit the use of inferior products. The use of sodium benzoate is unnecessary; this has been proved for years by some of the higher-grade manufacturers of preserves and catchups, and for centuries by the housewife. But when the chemical preservative is not used, careful attention must be given to cleanliness, and wholesome raw products must be selected. Those manufacturers, therefore, who would market stale meat for fresh, who would substitute canners' waste for fresh whole fruit, who look on clean factories

and careful methods as a needless expense, are the ones to whom the use of benzoate of soda appeals.

Of course the findings of the board have been received with rejoicings by those who have wanted to "get Wiley's scalp." "Now Wiley will have to resign;" "This ends Wiley's drastic rulings," are samples of expressions that are coming from press agents of manufacturers of inferior foodstuffs and of preservatives. The fact is, the fight on Dr. Wiley, and the powerful efforts that have been made to discredit his work and to have him officially destroyed, are solely on account of the "interests" he has offended. This he has done by opposing the "bleaching" of flour, by which inferior grades would be "doctored" so as to be sold as fine grade; by objecting to the artificial "greening" of canned vegetables by means of copper salts; by insisting that alcohol mixed with burnt sugar and prune juice shall not be sold as whisky; by requiring that the "patent-medicine" manufacturers shall tell the truth on the labels; in fact, he has offended in that he has brought the people of this country to a full realization of the amount of sophistication and adulteration that exists in the food product industries of the country.

Possibly Dr. Wiley may have overstated or overemphasized the toxicity of some of the preservatives that have been used in foods; but if he erred, he did so in the interest of the public health, instead of to the benefit of the dishonest manufacturer's pocket-book. While this may be a heinous offense in the eyes of the "interests" affected, the American people will entertain another opinion. As one paper, in speaking of the canners who are anxious to have the ban removed from benzoate of soda, says: "They would like to market stale meat, decayed fruit, and half-cooked provender.

And if they can turn the public off the scent of these by keeping our thoughts on the preservative instead of on the stuff preserved, they will soon be paying high dividends."

It is to be hoped that Dr. Wiley will be in no way discouraged, but will remain at his post and continue to hew to the line. He is a government official of a type that happily is becoming more common — one of those men who appreciate that they represent the public, and not the interests of any class. He has exposed fraud connected with "patent medicines" and with the pharmaceutical business; with fruit and food-canning interests; and to him more than to any other individual or body must the credit be given for the national Food and Drugs act. No wonder he is so cordially hated by those who heretofore fattened at the expense of public health and well-being. But the American people are with Dr. Wiley, and emphatically approve of his work.

The case against benzoate of soda, from the standpoint of the man in the street, has been well summed up by Federal Judge Anderson in a suit brought by some manufacturers to enjoin the Indiana State Board of Health from enforcing that portion of the pure food law relating to the use of this chemical: "I am impressed with the proposition that this stuff, benzoate of soda, is put in there for reasons that make its prohibition reasonable and proper — to cover up careless methods of manufacture. Dirt and unsanitary conditions can be concealed by putting this stuff in. It is not necessary to put it in if the materials are properly handled. If its use conceals the fact that proper methods have not been used, a rule of the State board of health prohibiting its use is reasonable."— *Editorial, Journal of the American Medical Association.*

Cautions for Those Growing Old

OLD age is hastened by strenuous life. Intestinal putrefaction may have aided, but buttermilk will not take the place of rest. Buttermilk is good enough for the young. Rest, body and mind, is of prime importance for the aged. Calculate how many heart-beats are saved in twenty-four hours by physiological rest. [If the heart is slowed five beats a minute, it will save over seven thousand beats a day.] It is not rest to have the body in bed, and the mind in rebellion. The patient must understand the need of rest, and acquiesce gracefully. The second important measure, if not the first, is diet reform. Read Chittenden's "The Nutrition of Man," and Thompson's "Food and Its Relation to Age and Activity," and diminish the overgenerous diet. Meat soups and extracts and teas and broths should be forbidden. A bowl of meat extracts, containing animal waste products, introduces just what you have

difficulty in eliminating. Certain fruits are beneficial. Alcoholic drinks should be entirely omitted. Coffee and tea can not be taken strong or in large quantities without increasing blood pressure, and producing wakefulness. Be cautious about the use of tobacco in the latter part of the day; it is apt to make the heart pump with unnecessary force, to become irregular, and disturb sleep. [Fortunate the old man who is not bound by any such habit!] Do not take too much fluid. Some old people take too much, some too little. Moderation in diet and exercise are the essentials. Avoid chill: it is dangerous for the old man with weak arteries. Clothe amply. Never take a cold bath. Take a hot bath at bedtime. Sleep in pure air, but not too cool. Retire early, and remain in bed until a late breakfast hour.—*John L. Heffron, M. D., in New York State Journal of Medicine.*

Effect of Tobacco Smoke on Animals

INNUMERABLE experiments have been performed by injecting nicotin into animals, in order to demonstrate its poisonous nature. Dr. Jebrovsky has recently perfected an apparatus for observing the effect of tobacco smoke upon animals. The animals were placed in a specially constructed chamber, and kept from six to eight hours a day in an atmosphere of tobacco smoke. The first week the animals showed greater rapidity of respiration, restlessness, great increase of tears and saliva. After "smoking" they appeared weak and apathetic, and

dragged their legs somewhat in walking. With the continuation of the experiment, these symptoms gradually disappeared, and were followed by marked loss of appetite and emaciation. Two animals died within two months, and showed interesting microscopic changes in the heart. Other animals, at the end of five months, showed great loss of flesh, reaching in some cases half the original weight. The pathological changes bore out the observation that the heart may be early affected by smoking.—*Medical Record.*



Abstracts



IN this department, articles written for the profession, which contain matter of interest to LIFE AND HEALTH readers, are given in abbreviated form. Where practicable, the words of the author are given, but often the passage is abbreviated, or else paraphrased in popular language. Technical matters and portions of articles having no popular interest are omitted.

Blood Corpuscles Versus Tubercle Bacilli

IT is my pleasure to call your attention to a new method of treating consumption, originated by Dr. Ernest Kuhn, of Berlin, following the hyperemic method of Bier, who has revolutionized the treatment of joint tuberculosis.

Kuhn argued that in all tubercular involvements there was a deficient blood supply; that the blood is probably the greatest physiological antagonist to the tubercle bacillus; and he proved that tubercle bacilli, when introduced into the blood, even in [comparatively] large numbers, rapidly disappear without causing any general symptoms.

Experimenting for two and one-half years, he demonstrated, to his own satisfaction, that the reason why tuberculosis, in ninety-five per cent of the cases, involves the apices of the lungs, is that the apices, as a rule, are not sufficiently supplied with blood. The cause he found to be in the prevalent habit of diaphragm breathing. The greatest suction is nearest the force that produces that suction. In breathing almost exclusively with the diaphragm the greatest suction occurs in the lower portion of the lungs. Suction causes hyperemia, or increase of blood, as may be demonstrated by suction on the back of the hand, which will produce a red spot.

Kuhn further showed that there is actually less blood in the upper than in the lower parts of the lungs. Though gravi-

tation may play a part in this, it must be a minor part, else gravitation would often play sad havoc with our brain processes.

Dr. Kuhn, in order to increase the blood supply in the upper lungs, devised a mask, which, by hindering inspiration, throws the muscles of inspiration into active service, and causes in the upper portion of the lungs a suction.

The mask is a simple device, fitting closely over the nose and throat, so arranged that by a sliding valve inspiration can be gradually restricted, while expiration is free.

Dr. Kuhn has the patient lie flat on his back, with clothing loosened, and wear the mask ten minutes forenoon and afternoon, with, at first, only a slight hindrance to inspiration. Gradually the time and the amount of inspiratory hindrance are increased, until the patient receives eight or ten hours' treatment a day, with inspiration so restricted that all the accessory muscles are brought into play.

I had placed at my disposal, by Dr. Kuhn, some four hundred consumptives in all stages, having no treatment except the mask, and only the ordinary hospital diet, and I can say unqualifiedly that in every case, even the most advanced, there was an amelioration of symptoms. Especially were cough and fever relieved, and patients gained in weight, strength, and ambition.

Even patients with active hemorrhage

were improved by the treatment. And a little thought will convince one that the hindered obstructed inspiration actually rests the lungs, and in case of hemorrhage, favors clotting.

Among the interesting laboratory findings in these cases were, rapid decrease in tubercle bacilli (greater persistence of pus germs in case of mixed infections), rapid increase in red cells, and decrease in white cells.

This treatment, which is attracting a great deal of attention throughout Europe (flattering reports appearing in various journals, is simply an application of the principle enunciated by Bier, that the blood is the great physiological antagonist to the tubercle bacillus. The method is yet experimental, as it has not been in use long enough for final conclusions.—*Fred. E. Beal, M. D., in New York State Journal of Medicine.*

Diphtheria Carriers

THE part played by sanitarians in the control of contagious diseases is a difficult one, for the reason that the public and many physicians resent what seems to be an infringement of personal liberty, and, on the other hand, the public rely on the precautions adopted by the health authorities as sufficient.

Of no disease is this truer than of diphtheria. When the sanitary officials have removed the placard, all danger of infection is believed to be ended.

Terminal disinfection of the sick-room and its contents is universally employed, but seldom is an effort made to discover and disinfect living carriers of contagion.

Yet it has been repeatedly shown that diphtheria germs may be transferred from patients to those coming in contact with them, and that the throats thus infected may retain the organisms for weeks.

During the last four years, I have discovered diphtheria germs in the throats of many healthy persons who had been in contact with diphtheria patients. These so-called infected "contacts," or diphtheria "carriers," were found in orphanages and homes, in public schools and private dwellings. Of two hundred sixty-nine healthy persons so examined in several homes for children, thirty-

five, or more than one-eighth, harbored diphtheria germs.

In eleven private dwellings where one of the family was ill with diphtheria, forty healthy persons were examined, and of these, twenty-two were found to be infected with the diphtheria germ.

An infected "contact," whether he contract the disease or remain healthy, is capable of transmitting the disease to others, who may develop the disease in a mild or severe form. For this reason, an infected "contact" is as dangerous as a patient convalescent from diphtheria; is more dangerous, in fact, because he goes around unrestrained, while the convalescent is usually isolated until the bacilli disappear from the throat.

I believe it is these "carrier" cases that are mainly responsible for the spread of the disease in cities where the usual precautions are taken with regard to cases of the disease. Not until these hitherto unrecognized "carriers" are discovered, and removed as sources of contagion, will much headway be made in checking the spread of diphtheria.

In a large proportion of diphtheria cases the source of the infection is unknown, the patient never having been in contact with the disease; and yet in every instance, there must have been a contact

with a carrier — animate or inanimate — of the diphtheria bacillus. Is it not fair to assume that the sick one, in car, shop, factory, class-room, or office, came in

contact with a diphtheria "contact"? — *Myer Solis-Cohen, A. B., M. D., in Journal of the American Medical Association.*

Discharged Typhoid Fever Patients as Typhoid Carriers

IT is known that two or three per cent of typhoid patients harbor typhoid germs for months or years. In order to determine the proportion of discharged typhoid patients from the Boston City Hospital, who are capable of spreading infection, cultures were made on special colored media (Endo's and Malachite green agar), from the discharges of patients who had been proved to have typical typhoid, and who had the normal temperature of convalescence.

Twenty-three per cent (that is fifteen persons) of a series of sixty-five typhoid fever patients were found to harbor the typhoid germ in their discharges

at the time of leaving the institution.

In order better to protect the public, the discharges of all typhoid fever patients should be examined for typhoid bacilli during the ten days previous to their being relieved from medical supervision.

Those with typhoid germs in their discharges should not be released from supervision until they cease to be carriers. During the time that they are capable of infecting others, they should not be allowed to follow any occupation in which they would be likely to endanger others. — *Boston Medical and Surgical Journal.*

Clothing — A Hygienic Heresy

IT is the duty of every man to dress in accordance with accepted, reasonable standards. Many a man fails to occupy the position that he might, in general society, or even to exert his proper influence in his family, simply because of slovenliness in dress.

A hygienic discussion of clothing, therefore, to be of practical value, must take the ordinary fashion as it is, though not necessarily in its extreme manifestations, and so far as possible, modify it without conspicuous changes, so as to avoid infraction of hygienic principles.

The outer clothing of men is both hygienic and convenient, providing that it is made with due reference to season and is properly fitted. The modern use

of shoes, and, in summer, low shoes, instead of boots, is a decided advantage in allowing better local ventilation and freedom of movement. The more general use of rubbers or of heavy overshoes is advisable, because it allows the use of lighter and cooler shoes; because it prevents serious inflammatory diseases of various kinds, especially of the respiratory tract and the kidneys; and because it minimizes the introduction into houses of dirt containing bacteria.

The most objectionable visible article of men's wear is the collar. This often interferes seriously with the venous circulation from the head and neck. However, if properly fitted, it may be fairly comfortable, and the standing collar is not necessarily more of an impediment

to freedom of muscular action and circulation than the turn-down collar. Still, it would be an advantage if the soft, rolling collar could be uniformly substituted.

A very important auxiliary article of clothing is the suspender. The belt has a tendency to impede the external abdominal circulation, and even to produce visceral prolapse [falling of the abdominal organs]. The writer found, in his own case, that the gastric area [lower border of the stomach] was nearly half an inch lower with a belted outing costume than with suspenders. In blacksmiths and others wearing belts and working hard, the abdominal veins are often prominent.

The great hygienic difficulties of the conventional modern dress are connected with the support of the stockings and the skirts. The old-fashioned circular garters, about which so much was said in their relation to varicose veins, have almost disappeared, in favor of a waist or a hip suspensory. Unfashionable women tend to the use of a multitude of skirts held in place by bands and safety-pins about the waist. Obviously, the pull

of a vertical elastic intended to keep the stockings taut, plus the weight of several skirts transmitted through narrow bands or strings, will have a greater tendency to cause visceral ptosis [prolapse of the abdominal organs] than the firm, unintermittent pressure of a corset.

Between waistbands and a corset, the former are more harmful unless the corset is excessively tight; but it often happens that women, overlooking the only possible hygienic usefulness of the corset, first wrap themselves with bands, and then constrict their waist with a corset. Shoulder straps to hold skirts, stockings, etc., are frequently advocated by reformers, but they are uncomfortable and inefficient, owing to the natural slope of the feminine shoulder girdle and to the sinuosity of the normal trunk. Some corset waists are worse than the ordinary corsets. A fairly satisfactory solution of the problem, for women not too stout, consists in the use of a guaze vest reinforced by strips of linen or cotton, and provided with buttonholes or hooks to which the skirts, etc., are attached.—*A. L. Benedict, A. M., M. D., in the Medical Times.*



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SOME "MAPLE SIRUP" FORMERLY CAME FROM THIS SOURCE
(Accompanying article, page 245)

THE MEDICAL FORUM



The Early Diagnosis of Tuberculosis

THE early diagnosis of tuberculosis is a most important, and at the same time a most difficult, procedure. If the disease is detected in the early stages, a large proportion of cases can be saved. In more advanced stages the prospect is less hopeful. The experience of expert tuberculosis workers is that the ordinary practitioner rarely recognizes tuberculosis until it is far past the incipient hopeful stage.

Even where tuberculosis is suspected, a physician often hesitates to advise a radical change in habits of sleeping, breathing, diet, and the like, on the basis of one or two very obscure signs, or symptoms, and he "watches the case," meantime cautioning the patient that he must be careful in certain respects, because his "lungs are weak, and show a tendency toward tuberculosis."

Physicians have long looked for tests which would absolutely detect the disease in the early stages. Naturally, the tuberculin test, which has been used with such astonishing effects among herds of cattle, has had a large amount of investigation. Tuberculin, consisting of the poisons of the dead tubercle bacilli, has been used in testing for tuberculosis in three principal ways: (1) By hypodermic injection; (2) by installation in the eye, after the manner of "eye-drops;" (3) by rubbing into the skin after the manner of vaccination. These are known, respectively, as the subcutaneous, the ophthalmic (or conjunctival), and the cutaneous reactions. The first causes a

general rise in temperature in tubercular patients; the second causes a soreness and reddening of the eye membrane—the "white of the eye" and the lining of the lid; the third causes the development of a pimple at the point of inoculation.

There has been much said and written pro and con regarding the value of these reactions. Some prefer one, some another, and some consider all of them worthless, or, perhaps, harmful.

At the Chicago session of the American Medical Association, a number of papers were read, giving the views of the authors regarding the value of these reactions. It was generally admitted that, at best, the tests afford only confirmatory evidence regarding the presence of tuberculosis.

Dr. Evans, health officer of Chicago, is quite sanguine as to the value of the tests. Concerning the necessity for such tests in the early diagnosis of tuberculosis, he says, speaking of the experience in institutions in Chicago which receive tubercular patients:—

"The experiences of these institutions was that consumption was not being diagnosed early enough for successful handling. Occasionally a diagnosis was made when an arrest could be accomplished in less than five months. Rarely one was determined when an arrest in two or three months was possible. The usual favorable case, according to the opinion of the diagnostician, required from one to three years of expensive maintenance without any earning power during the interim."

He is doubtful whether much is gained, from an economic standpoint, by the

cure of these two- or three-year cases; for as a rule their capacity for work is greatly diminished, and they are subject to constant recurrences of the disease.

Regarding the difficulty of making an early diagnosis, Dr. Evans says:—

“Consideration of the history in febrile cases is of little value in the hands of the inexperienced. Physical examination requires too much technical skill in the earlier cases for the average practitioner. Sputum examination does not reveal the disease when it is curable without great drain on the resources. Fever, rapid pulse, emaciation, sweats, are, of course, not to be considered in discussing early cases.”

Yet the average person never suspects tuberculosis until one or more of these signs have become conspicuous.

“There is urgent need of a test easy of application, requiring no technical skill and not requiring much experience to evaluate. With present methods for the next quarter of a century, the average diagnosis will mean death after a prolonged illness.”

Dr. Evans is confident that tuberculin offers the most satisfactory method of detecting tuberculosis in its curable stage, notwithstanding there may be a certain danger connected with its administration.

“Weighing all the factors, valuing the incidence of danger on the one hand, and the increased curability and the decreased length of illness on the other, . . . it is my judgment that no health officer with a conscience can fail to advocate the diagnostic use of tuberculin in the human subject.”

Dr. Evans, in an experience of about ten years, has personally used, or has sent out to others to use, nearly a thousand doses of tuberculin for diagnostic purposes, and he has failed to see any special danger arise therefrom.

In the discussion that followed his paper, Dr. Knopf referred to the danger of using the ophthalmic test, especially in scrofulous children, and in case of inflammatory eye disease.

Dr. Vaughan, of Ann Arbor, who has done much work in the laboratory with tuberculin, was rather averse to its use in the human subject.

Dr. Sachs, of Chicago, raised the question whether the proper use of the tuberculin test does not require as much skill as the older methods of examination.

Dr. Shankland, of St. Louis, who has himself conducted extensive investigations into the merits of the tuberculin tests, expressed considerable doubt as to the utility of the tests.

“The results of the various men working with tuberculin vary so greatly . . . that at times their reports are precisely opposite, thus destroying confidence in both the conjunctival and the cutaneous reaction. I think that a great deal of work must yet be done before we can come to a definite conclusion as to its diagnostic value.”

He says that he and his coworkers have inoculated a large number of perfectly healthy individuals, including athletes in the pink of condition, and have obtained “positive cutaneous reactions in fifty per cent, and positive conjunctival reactions in twenty-five per cent” of the cases.

“We have simultaneously inoculated patients on the skin and in the eye, and would get a positive conjunctival reaction in a given case, with a negative cutaneous reaction, and in another case the result would be the reverse.”



Typhoid Spreaders

ABOUT a year ago Robert Stow Bradley, Jr., was cut off from a career of unusual promise by typhoid fever. His aunt, in order to establish a memorial to his memory, furnished funds to defray the expenses of an investigation to determine the proportion of typhoid bacillus carriers in the patients discharged from the Boston City Hospital. The work was very carefully performed in the hospital laboratory, and was reported in the *Boston Medical and Surgical Journal*, Jan. 14, 1909. An abstract of the report appears in another portion of this issue.

The editor of the *Journal*, comment-

ing on the preceding report, says:—

"Patients with diphtheria are no longer set free with Klebs Löffler bacilli in their throats. For some years in Germany, patients with typhoid fever have been similarly investigated before they were discharged. Until typhoid fever is as uncommon with us as with the Germans, would it not be advisable for us to adopt means analogous to those which they have found useful, even though somewhat modified?"

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Cancer Predisposition

THE *Medical Record*, Oct. 10, 1908, calls attention to the fact that there is not a single authenticated case of the transfer of cancer from one person to another, though the opportunities for such transfer are frequent. Surgeons have even attempted to inoculate themselves with cancer, and have failed. On the other hand, autoinoculation with cancer is comparatively common.

"It seems plain that human beings are naturally resistant to any infection with cancer by direct transmission; cancer patients, on the other hand, seem to have lost the power of opposing the invasion of the disease."

This leads us to the conclusion that—

"the appearance of cancer coincides with, or is followed by, some specific changes in the organism."

The nature and cause of such changes,

it would seem, is the great and important topic for study in connection with cancer. If cancer attacks only individuals whose resistance has been lowered, what is the cause of the lowered resistance, and how may it be prevented? Pending the reply to this question, it would seem the part of wisdom to avoid those things which clinical observation has pointed out as possible causes of the disease. Among these are the free use of flesh-meats, especially pork, the use of unwashed vegetables, and, perhaps, of water from a suspicious source, overeating, etc.

A number of investigators are experimenting with ferments, especially with trypsin, as a cure for cancer. This supposed cure has been widely exploited by Saleeby, but, notwithstanding some apparent successes, it is not well received by the medical profession.

The *Medical Record* believes that there is some reason to hope that a digestive ferment may be administered in such a manner as to exert a deterrant effect on the progress of malignant growths. On the other hand, it would be very unwise to assert that trypsin is a cure for cancer.

"Experiments up to the present time may not have been altogether negative, but they have not been conclusive."



THE MEDICAL MISSIONARY AT WORK



East Central Africa

S. M. Konigmacher

[We all enjoy getting letters. Here is one from one of our missionaries in Central Africa, to the doctor and fellow workers in the sanitarium in California, from which he left. We give it in the familiar spirit in which it was written.—Ed.]

THIS is a beautiful afternoon between the rains. I am teaching on the porch; and while my boy is doing his problems, I will answer your good letter. We shall always be glad to hear from you.

We are located about sixty miles from Blantyre, among the mountains. We have to send sixteen miles for our mail, and to Blantyre for our provisions. We are about one hundred miles from our mission at Cholo, at an out-station. This place, for a while, has been cared for by a native teacher. We have a school of about forty-five. Some of the younger boys come to school wearing only a small loin-cloth. The men in the villages, and those working in the fields for me, wear the same. The natives are anxious to learn English. Our boy and the teachers understand quite a little, and we use them as interpreters.

On Sabbath we have Sabbath-school and a teachers' meeting, and I talk to them at the preaching service. Then we go to the villages two or three miles distant, and talk to those who do not come to the church. When we find any sick persons, we take care of them. Many have wounds on the feet; and as we have not many foot tubs, we use dish pans for hot and cold water. At first, it was very hard to treat the natives, as we were unaccustomed to the color of the skin. It is almost impossible to see how far

the inflammation extends, except by the swelling. Twice when visiting the villages, I found leprosy. Smallpox is also very common. Many of the natives are not acquainted with water, and do not go to the stream to bathe. There is a woman just passing, carrying a pot of water on her head, and a baby is strapped to her back. Many times the natives carry water without spilling a drop, and without touching the pot.

It is wonderful to me to see the strength of these people, who live almost exclusively on a little corn-meal mush, not thoroughly cooked either, and unsalted. They use a little greens for relish, and eat only one meal a day. Many times a man will journey forty or fifty miles, with only a handful of parched corn and a few sweet potatoes. They are not wholly vegetarians, but largely so. Four boys will carry me in a machilla ten miles without a rest. Eight or ten boys, changing, will carry a man forty miles in about ten hours. Now if anybody ever tells me that one has to eat flesh to have strength, I, at least, will know better.

The food we have to eat ourselves is mostly rice, tomatoes, eggs, flour, and sugar, which we send to Blantyre for, potatoes and a little other food. At present we have no stove. We cook our food on bricks in a fireplace; sometimes we bake in a Dutch oven. There are some

mangoes and guavas on the place, which will be ripe in January.

I am just finishing planting corn, and will soon plant peanuts, also sweet potatoes and other vegetables. There are a few pineapple plants and lemon trees, but they are not bearing well yet. We have to build a fence all around the garden, to keep the wild pigs and deer from eating the corn. The fence is built of reeds and bamboo. Then we build little watch houses, in which boys sleep to keep the swine from breaking down the fence.

Two lions crossed the mission grounds the week before we came here. We have heard the cries of hyenas and baboons, and yesterday we saw the tracks of a wild cow in the garden; but unless very hungry, no wild animal that has never tasted human blood will attack a man.

We have a good brick house in which to live; but the floors are of earth. The man who built the place had a nice brick house for his swine. This I converted

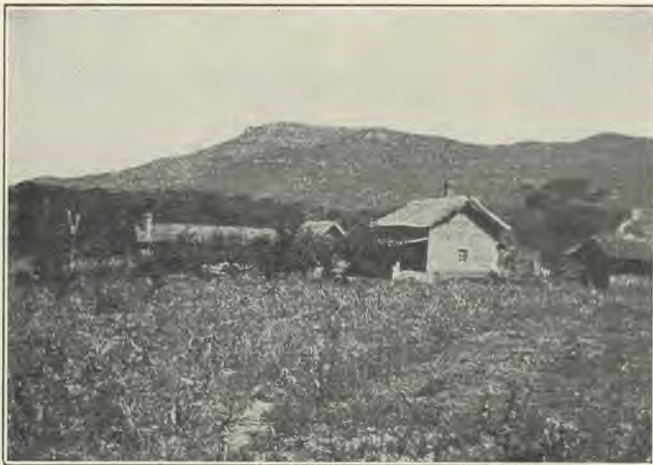
an outbuilding. We have to do a little of everything. I built four small bridges, so when Mrs. Konigmacher came from Blantyre, the boys could carry her easily all the way to the mission. I also made a crib for my little son, out of small trees and bamboo. [Word came later that this little son was buried December 17.—*ED.*]

We are getting along nicely with the language, but can not do without an interpreter yet. I have thirteen boys working for me. All the work is done by hand. It is surprising to see the ground they can clean for planting with only a hoe.

We pray the Lord to bless us, that we may be able to fulfil our mission here. We can see signs, even in this far-away place, of the near approach of our Saviour. News travels very quickly from mouth to mouth with the natives, and when the Holy Spirit is poured out, it will not take long for every one to hear of Christ's coming. As soon as possible, I wish to visit some of the large villages on the mountains a half-day's journey from here.

We are thankful for a place in the Lord's work; and if a man born and raised in the city can be used of the Lord on a farm in British Central Africa, he can use many of my friends there, who have more ability than I.

The climate is very good here; there is practically no fever. We have, however, a great pest in the white ants, which eat anything. That is why we have to have brick floors. At Cholo, they made more than enough bricks out of an ant-hill to build a large church.



MALANDANE OUT-STATION, NYASSALAND,
SOUTH AFRICA

into a house for my teachers, and took the brick partitions from the inside and laid a floor in my bedroom, using mud for mortar. I have made two tables from a box in which our goods came from Cape Town, and have also repaired



Mussoorie Sanitarium, India

H. C. Menkel, M. D.

THE first season's work of the Mussoorie Sanitarium has closed. The results have been much better than we had expected. The institution has been full most of the time since opening its doors, and some months we have been

compelled to turn away a number of patients who applied for admission. The results of our treatments, both medical and surgical, have demonstrated that the hill stations are by far the most preferable location for sanitarium work in India. Our great need is for increased facilities and more workers to meet the great demand. We must be prepared to care for a great variety of patients. We have the Europeans, the wealthy Indians, and the

great mass of poor people to deal with. One of the accompanying illustrations shows a group of free patients who are waiting their turn for treatment. Among these people there is a great variety of conditions to deal with.

The other illustration shows a nurse

giving a medicated douche to a patient's face. Many of our treatments must be given outdoors, as the conditions are such that it is unsafe to treat the patient indoors, where other persons would be contaminated. This man had a skin

trouble. Some one pretending to know how to treat diseases mixed a solution of carbolic acid and strong lye soap, directing the man to rub this on his face. He did so, and came to us a few days afterward in a most pitiable condition. Gangrene had set in, and the flesh was eaten away in several places. It looked much as if the man's life was in danger; but under faithful and heroic treatment we were happy to see him restored to health.

You can imagine his gratitude and our joy at the outcome.

We are in need of facilities that will enable us to reach a much larger number of people than we are at present able to minister to. We hope that the Lord will lead some to assist us with their means.

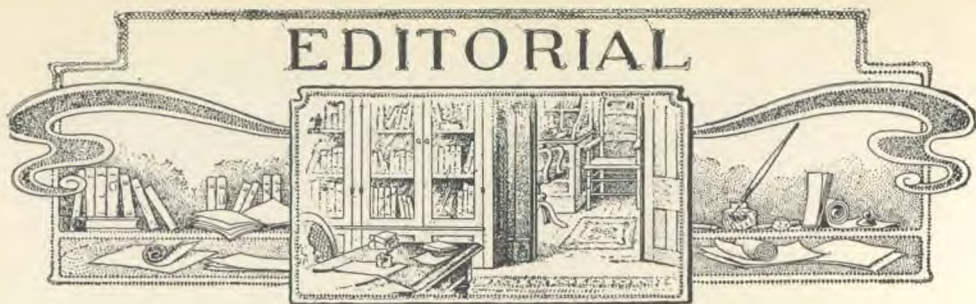


MUSSOORIE SANITARIUM

Treating a patient for gangrene of the face



Group of poor patients waiting their turn for treatment



Unsigned articles are by the editor

Movements

WHEN an idea assumes the form of a "movement," it usually loses in quality more than it gains in quantity. Most movements originate in the brain of one man or of a few men, perhaps far in advance of their time. Enthusiasts, cranks they may be, but usually they are men of stern, unswerving principle. William Lloyd Garrison, Martin Luther, — they might be named by scores.

They are magnetized by an idea, and, being magnetic, they attract the crowd. The crowd, however, is seldom or never lifted above the mediocrity of a crowd, even by a pure and good idea. This is one reason why movements are usually hysterical, and, I may add, hypocritical.

Much as one may feel that slavery is wrong, he can not help realizing that the anti-slavery movement, when it had attained full momentum, was guilty of excesses and injustices, which the coun-

try has attempted since, in a feeble way, to undo; and the end is not yet.

Much as we may deplore the evil of the liquor traffic, much as we may admire the men and women who, amid strong opposition, have fought, single-handed and almost alone, this gigantic curse, we may easily predict, — now that it has become a movement, — that excesses will follow in its wake.

A successful majority carries with it — possibly in a modified form — the elements of the mob spirit; and though it may not use crude mob methods, it is very apt to, and nearly always does, go to inexcusable and unwarranted extremes.

The crusades of the Middle Ages (the recital of which is too sickening for comfortable reading) were only this same mob spirit — this crowd mental contagion gone mad. The frenzy of the witch-burning period in European and American history is another exam-

"Society has at all times the same want, namely, of one sane man with adequate powers of expression to hold up each object of monomania in its right relations. The ambitious and mercenary bring their last numbo-jumbo, whether tariff, Texas, railroad, Romanism, mesmerism, or California; and by detaching the object from its relations, easily succeed in making it seem in a glare; and a multitude go mad about it, and they are not to be reproved or cured by the opposite multitude, who are kept from this particular insanity by an equal frenzy on another crochet. But let one man have the comprehensive eye that can replace this isolated prodigy in its right neighborhood and bearings,—the illusion vanishes, and the returning reason of the community thanks the reason of the monitor."

ple of what the human mind is capable of accepting under the influence of the crowd spirit.

Two movements which have been fermenting for years are now gaining momentum. I refer to the antivaccination and the antivivisection movements, which just now are very much in evidence.

Granting that these movements have in view reforms which are needed, they may still be dangerous—owing to the fact that they have attained the proportion of movements. If in addition they are based on mistaken premises, on a false judgment, they are the more dangerous.

The Attitude of Trust

A SOVEREIGN antidote for the worry habit is one of trust. To the Christian, this should be most easy; but unfortunately many accept theoretically the sayings of the divine Teacher without making them a part of the life. This is not true Christianity; at least, it is not complete Christianity. But whether one be a believer in the Bible or not, the old Book contains a message which ought to be a comfort to the weary soul. Whatever one's attitude toward the Bible may be, he can hardly persist in reading, carefully and thoughtfully, such passages as the one hundred third psalm without being thereby measurably comforted and uplifted.

To one who does not have a personal knowledge, or at least a firm conviction of the existence of an all-wise and all-loving Heavenly Father, this world and this life must present more or less of an enigma, and raise the unanswered question, "What use?" He who has learned to trust, has come to understand that the Designer plans more deeply and more broadly than can be fathomed or discerned by any of the creatures embraced in his design, and can preserve this attitude of trust under circumstances apparently the most forbidding.

No one has so beautifully exemplified this life of trust as has Jesus, who seemed always to have a consciousness of his

Father's presence and of his Father's love.

Even in his childhood he accepted his mission as a matter of course, and was surprised that his parents had not discerned it. "Knew ye not that I must be about my Father's business?"

His prayers indicate an intimate fellowship between himself and the Father, whom he recognizes not only as *my* Father, but as *the* Father, and *our* Father. Some of his disciples said, "Show us the Father, and it sufficeth us;" and yet this was his mission, and the work he was trying to do by precept, by parable, by his own perfection. In fact, he was surprised that, having seen him, his disciples should ask to be shown the Father.

This life of trust is taught beautifully in many of his lessons. "Your Heavenly Father feedeth them;" and "ye are of more value than many sparrows." "Consider the lilies." "If God so clothe the grass, . . . shall he not much more clothe you?"

He admonishes his disciples that they be not overcareful or anxious; for "your Heavenly Father *knoweth* that *ye* have need of all these things." His great confidence in the loving oversight of the Father is here shown; for he takes it for granted that inasmuch as the Father knows the needs of his creatures, all will

be well, and every real want supplied.

Let any one keep in mind these teachings of Jesus, let him read and reread them, and yield his mind to an attitude of trust,— for one can do it if he will,— and gradually the great perplexing questions, the doubts, the worries, will vanish. Worry, doubt, anxiety,— these all spell unbelief, and unbelief tends not toward a happy, peaceful life.

The scoffer, who referred in derision to the Christian religion as an anesthetic for the cares of this life, spoke, perhaps, better than he knew; for there is no balm like a firm belief in Christ as a personal Saviour, for the soul-and-body-racking disorders, half mental and half nervous,

that afflict so large a proportion of our population, including such features as jealousy, evil-surmising, and suspicion, dread of some impending evil, financial worries, disappointed ambition, and a whole host of others that help to render life not worth living.

The remedy: Get down the dusty Bible, and read it carefully, yielding the mind to the persuasive influence of its lessons of trust; then definitely yield yourself once and forever to the care of One who careth for you. Then, instead of worrying over your perplexities, take them to your Heavenly Father, and when you have talked to him, *leave them in his hands.*

“We Never Miss the Water Till the Well Runs Dry”

OF course not! Why should we? While there is any water remaining, we certainly can not “discover the absence or omission of” it, we can not “feel the want of” it, we can not “mourn the loss of” it. It was probably not the intention of the author of the proverb to state such a silly commonplace. He meant to say that so long as the water lasts, we are not apt to make any provision for future shortage; and he seems to imply that this prevalent want of foresight is anything but commendable. Nowhere is this characteristic of humanity more in evidence than in the matter of conservation of health.

Metchinkoff, eminent as a zoologist, has devoted the latter years of his life to the study of the causation of disease by micro-organisms, and the natural resistance of the body to its microscopic enemies. He, as a result of his studies, believes that science will eventually enable man to prolong his life indefinitely.

In the preface of his work, he expresses his hope that prolongation of life will come through the education of the younger generation. “If the ideas which have come out of my work bring about some modification in the onset of old age, the advantage can be gained only by those who are still young, and who will be at the pains to follow the new knowledge.”

Dr. John L. Heffron, who seems to have a more accurate knowledge of the disposition of young people than has Professor Metchinkoff, says, commenting on this passage: “But youth has no interest in old age. In youth the present is all-absorbing, and is either so satisfying as to suggest no future need or so cruel as to deaden the possibility of long years to come. Those who have passed through the period of youth, and have learned valuable lessons by hard experience, may shout their warnings to the youth of their time until they are hoarse, and all to little effect.” It was,

in fact, because Metchinkoff noticed in himself "the phenomena of precocious old age," that he became interested in the problem of prolonging human life. With the exception of hypochondriacs, who are unduly concerned about their health, it is unusual to find among those of younger years, a disposition to husband, by a careful life, the vital forces.

"The investigation into the influence of heredity upon the physical make-up of man," says Dr. Heffron, "have demonstrated to us that the degree of resistance of the tissues is determined at birth, and is his endowment from a long line of ancestors. This degree of natural resistance may be somewhat increased or greatly diminished by the individual." And it is much more likely to be diminished than to be increased.

The individual who is in the greatest danger of an early death, that is, a death at or shortly after "the prime of life," is the one who has excellent digestion and strong vitality, who naturally feels no ill from what he eats, and who persuades himself that no matter what he eats nor how much, it can not hurt him. The dyspeptic early learns to be careful of his diet, and to conserve his vitality. It is forced home to him by lessons he can not disregard; but the red-blooded, vigorous athletic subject, unless under training, is likely to feel that he can with impunity load his system with excess of foods, indigestible mixtures, intoxicating drinks, and the like. He lives a strenuous and a short life. When damaged kidneys, a failing heart, a rebellious liver, or brittle blood-vessels give him a sudden reminder that he is going too fast, it is usually too late to put on the brakes. In fact, he is so under the sway of habit that he would almost rather give up life than to forego his cultivated but unnatural pleasures. He dies when he should

be getting ready for his best work.

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Speaking of Metchinkoff, whom we must recognize as a profound student and a brilliant writer, we can but wonder at the limitations of the human mind. We who are unlearned get side-tracked by some one idea that grows so large to us that we lose all proper sense of perspective. No less the student of many-sided nature may himself become one-sided, or, I may better say, man is not usually broad enough, no matter how extensively he studies, to become any more than one-sided.

Professor Metchinkoff is a case in point. To him the large intestine in man is the useless appendage that causes old age, and if it could be entirely eliminated, we might live a millennium or longer, instead of a century or less; but while, by a slow process, this is being gradually eliminated, we may do much toward the prolonging of life by using cultures of lactic-acid germs to antagonize the germs of the large intestine, which are producing the poisons that cause old age. Had Professor Metchinkoff looked away for a time from the large intestine and its bacilli, he might have noticed that everywhere in the plant and animal kingdoms, organisms grow old and die. It is a universal *fact* to which there are no exceptions; and yet only a minute proportion of these organisms have large intestines.

Undoubtedly kumyss, or sour milk, properly prepared, is valuable in certain intestinal troubles; but that it is a specific for old age remains to be proved. Unquestionably many troubles that shorten man's life originate in the large intestine; but that life in general can be lengthened by abbreviating or eliminating this portion of the alimentary tube is doubtful.

Those who have exceeded the ordinary limits of life — except where it has

been a matter of heredity — have almost invariably been persons of extremely simple dietetic habits, who, by a habitually spare (but not an impoverished) diet, have discouraged the abundant growth of toxic organisms in the large intestine.

After all, it is largely a matter of *habit*. One eats little or much, slowly or rapidly. If one has formed habits of eating, drinking, etc., that are not antagonistic to the body, he has the better chance to live efficiently his full allotment of years.

Rabies Not So Rare

IT is a matter of regret when an otherwise excellent journal lends itself to the propagation of a dangerous fallacy.

Dog fanciers seem to think that loyalty to the dog demands that they discountenance the idea that there is any particular danger from rabies. What the method of reasoning is, we can not conceive. The greatest friend to the dwellers in Panama was not the man who ignored the presence of yellow fever, but the one who recognized it and its danger, and who took energetic measures for its eradication.

The real friend of the dog is the man who recognizes rabies as a dangerous disease, which should be reckoned with.

Scientific men have repeatedly demonstrated that there is a disease — rabies — which affects dogs, and other animals, and humans; that it is as recognizable in its symptoms and in the post-mortem findings, as other diseases; that it is transmissible from one animal to another, or to man, through the infected saliva.

Compared with tuberculosis and some other diseases, rabies may be said to be rare; but it should be known that there are actually "mad dogs," and that they sometimes "run amuck," snapping at everything within range, and occasionally transmitting the disease to another animal or to a child, or perhaps to an older person.

Very fortunately, these animals during

the later stages of the disease lose the power to bite, and some animals are, through the severity of their attack, rendered harmless from the first; still, a sufficient number of rabid animals succeed in getting around to perpetuate the disease.

Only recently there was an increase in the number of rabid animals in the District of Columbia, as shown by the findings of the laboratory of the Bureau of Animal Industry; and as a result it was ordered that all dogs in the District be muzzled.

That is where the shoe pinches. The owner of a fine dog considers this a personal insult. But if all dogs were kept muzzled for a time, especially during the prevalence of rabies, and if all ownerless dogs were asphyxiated, it would be a long step toward stamping out the disease.

In Prussia, in 1907, two hundred seventy-four persons were bitten by animals which were afterward proved to be rabid. Of two hundred sixty-six who received Pasteur treatment, two — less than three fourths of one per cent — died. Of the six who did not receive treatment, two — or thirty-three one-third per cent — died. Three of the four who died were bitten on the face. Most of the rabid animals were dogs, but there were twelve cases of cat-bite, and one case of hog-bite.



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A MAPLE SUGAR CAMP

This is where pure maple sirup comes from

Pure Food and Preservatives

WE formerly bought "pure maple sirup" with a suspicion that we were being defrauded and could not help it. Thanks to the national and State pure food laws, we can be fairly certain that when we buy a can labeled "maple sirup," it is from the maple trees, and not from the canebrake or the corn field.

The sirup from the cane or the corn may be as wholesome as that from the maple, but of that the consumer should have a right to judge; the sirup should pass for what it is. Those who are willing to pay the price of pure maple, should have it.

✻

UNDoubtedly certain manufacturing interests will endeavor in every possible way to nullify the pure

food laws by throwing up a cloud of dust. Just at present there is an effort in some quarters to cast suspicion on the pure food campaign, by making use of an apparent disagreement regarding the harmfulness of preservatives. The effort to discredit Dr. Wiley's work on preservatives, if successful, might do much to render inefficient the law. At least, that seems to be the hope of some of the manufacturers.

No reproach can be cast on the referee board whose decision seems to be at such variance with that of Dr. Wiley. These men have done their work carefully and conscientiously, and have made their report impartially.

It should not be forgotten, however, that Dr. Wiley's experiments covered a much longer period, and that he did find



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A LOAD OF CANE ON A CUBAN PLANTATION

Some "pure maple sirup," so-called may have come from such plantations

bad results from the continued use of small doses of sodium benzoate when continued over a long time.

Granting that there is still a question as to the harmfulness of small amounts of benzoate on strong, healthy young men, is it safe to give it to the aged, or to the very young, whose resistive powers are not so strong as those of vigorous young men? Is that not giving the manufacturer the benefit of the doubt, to the possible danger of the feeble?

Dr. Wiley's policy has been to give the consumer, rather than the manufacturer, the benefit of the doubt; and now that prominent manufacturers make the assertion that preservatives are not

needed, provided the food is sound and packed with due regard to cleanliness (as housewives have known for many years), we may be sure that no honest manufacturer need object to a restriction of the use of preservatives.

If the evidence is not sufficient to justify the prohibition of sodium benzoate and similar preservatives in food, there is no reason why consumers should not know what foods contain it, and all manufacturers should at least be compelled to state conspicuously on the label the presence of sodium benzoate or other preservative; and the consumers who read understandingly should know that the preservative is there as a substitute for cleanliness.



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MAKING MAPLE SIRUP IN THE GOOD OLD-FASHIONED WAY

Chats with our Readers

Wants "Life and Health" Indexed

Editor of "Life and Health," Washington, D. C.

DEAR SIR: For the last three years we have looked forward each month with great pleasure to the arrival of LIFE AND HEALTH. We keep each copy arranged in order, for future reference. It is to aid in such reference that I make the following suggestion: It would certainly be greatly appreciated by many subscribers if you would inclose in the last number of each volume a complete index for that volume. As for myself, I often wish to refer to some article in a back number of the magazine, and am always at a loss to know where to find the desired article. I am sure that I am not the only subscriber who has this experience.

A grateful reader of LIFE AND HEALTH, * * *

WE have considered the question of an index for LIFE AND HEALTH, but supposed that too few readers would keep files to make it worth while. If there are others who would like to have an index with each

volume, a letter or card to the editor acquainting him of this fact will place him in a position to decide whether the demand is sufficient to warrant the additional outlay.

Against Vaccination

THOSE who are "halting between two opinions" regarding the efficacy of vaccination, will probably be brought to an emphatic decision by the following letter, recently received from a dyed-in-the-wool anti-vaccinationist:--

"I Berleav that Vackernation onley Makes worke for the Quack Docters and they wante to keep thair Business Good. Fill People with umer for Rumitiseum and all Bad umers handed doan fer 5 generation acorden to the Bible 2 men in Fitchburg Loste theaire Lives from a Pit horse one Man here Lost his arme to save his Life from a horses Sore foot Vackernation is onley a Graften a umer into a Person That does know good They have the Vereloid which is the same as

the Small Pox Small Pox is onley a Fever Thrown the umer and Bilishness of a Person out I have Ben in Several times Whaire they had the Verey o loide and Washed in the same Troth with a man Broken out with it he was rite nfrunt of Me and Said he hoped he was not Comen out with umers like Some others The next morning the Docter was Called to the Boarden house and Tolde him what he had Got My Trubble is Rumitiasum on the Left side The left arm is whaire I was vacnated Left shoulder and Hip is the Location Nothing Does me eney Good but Lemanade To Distroy the uritace Assed I have Ben to the State hospital theaire medison Was Good for Nothing."





Beer Yeast in Burns.—Beer yeast, disinfected, and reduced with water to the consistency of plaster of Paris, used in bandaging, is spread on strips of gauze, applied lengthwise of the limb, and held in place with a roller bandage. Almost immediately there is relief from pain comparable to that produced by an injection of morphin. The dressing is repeated as often as necessary until healing is complete.

Diphtheria Carriers.—An outbreak of diphtheria in the Connecticut Hospital for the Insane, involving fifty-seven employees and thirty-five insane patients, was traced chiefly to "latent cases" (persons harboring diphtheria germs, but not manifesting diphtheria symptoms), rats and cats. The physicians who made the investigation strongly urge repeated bacteriological examinations of the throat, and isolation of all persons found harboring the diphtheria germ, whether ill or not.

Food Producers as Food Reformers.—The work of education carried on by the American Association for the Promotion of Purity in Food Products, will soon have the effect of causing people to understand that when a can states that it contains benzoate of soda, the preservative is there for a purpose. Clean, wholesome goods, put up in a clean, wholesome factory, require no preservative. If Dr. Wiley were given his way, benzoate of soda would be banished entirely from food products.

Osteopaths Are Physicians in New York.—The supreme court of New York has handed down a decision to the effect that "osteopaths are physicians and practise medicine, and, except for the restrictions put upon them, prohibiting them from administering drugs, and performing surgery with the use of instruments, they are entitled to all the rights, and subject to all the penalties, of other physicians and medical practitioners. The fact that their degree is D. O., instead of M. D., makes no difference so far as their right to register and grant death certificates is concerned." It looks as if they had scored a point.

Doctor Not a Dentist.—The supreme court of Minnesota has handed down the opinion that a physician, unless he has a dental license, has no right to practise dentistry.

New Treatment for "Bleeders."—A successful method of treating hemophilia is to inject a small amount of blood serum into a vein, or even under the skin. If there is bleeding from a surface wound, the application of serum to the wound proves efficacious. For some reason it is dangerous to use ox serum. If fresh rabbit, human, or horse serum can not be obtained, ordinary antidiphtheritic serum gives excellent results, such treatment of course should never be attempted by one not thoroughly familiar with the technique.

Tuberculosis Apparently Cured by Inhalation of Lime Dust.—A Pennsylvania physician records the case of a negro who was in an advanced condition of tuberculosis, and was considered hopeless. He was advised to go to the country. He did; got a job hauling lime, and in a few days began to feel better, and in six months cough and hemorrhages had completely disappeared, and he was gaining weight. He seems well at present. While working with the lime, his mouth, nostrils, etc., were constantly full of lime dust.

Salt, Use and Abuse.—A physician, in a recent medical journal, denies that salt is an aid to digestion, and asserts that its universal use is no argument that it is necessary. He believes that in excess it interferes with digestion and glandular action, prepares the way for infection, and taxes the excretory organs. By cutting off all supplementary salt, he obtained relief within a week for a fermentative dyspepsia and intestinal digestion of ten years' standing. His conclusion is that the claim that salt is an aid to digestion is not founded on experiment and observation, but on perverted taste. He asserts that infants get little salt, and that wild animals never use it with food, while only those that use vegetable foods ever use it.

Increase of Hydrophobia.—That human rabies is rapidly increasing in New York City is apparent from the statistics of the city health board. Before 1906 the average annual mortality from this disease was four, in 1906 it was twelve, and in 1907 it was twenty-eight. The prevalence of rabies among animals has also increased, which, of course, is the direct cause of the increased human mortality. More than two persons die every month in New York City because mad dogs are not properly cared for.

A New Way to Aid Tubercular Patients.—The New York State Charities Aid Association keeps, for the benefit of tubercular patients who are unable to go to a sanatorium, a list of boarding-houses where they can live in comfort at a moderate price, with reasonable expectation of an early cure. This information is of great value, for often the person with a cough will find himself unable to obtain lodging, because of the unreasonable fear of the disease that has taken hold of large sections of people.

A Typhoid Carrier.—In a certain Swedish family, from 1854 to 1908, twenty-two persons, mostly servants, were attacked

with typhoid fever, as would appear, from a recent careful investigation. The infection was confined strictly to this household, and could not be traced to the use of water or milk, as other families using from the same sources did not have the disease. There was such an interval between one patient and the next that direct transmission could not be suspected. It was finally discovered that the grandmother was a persistent distributor of typhoid germs in her excreta. It is supposed that the other members of the family must have had light, unrecognized attacks of typhoid, which rendered them immune.

The Opium Habit in the Philippines.—The passage of the law against opium in the islands brought numbers of victims to the hospitals—mostly Chinese—for cure of the habit. Though most of the habitués obtained their first experience with the pipe, a large proportion, finding the syringe more rapid and convenient, have adopted it. It was found comparatively easy to effect cures of opium-smokers, but much more difficult, in the case of users of morphin hypodermically. Opium-smokers as a rule showed a good physical condition; hypodermic users, on the other hand, were emaciated, sunken-eyed, and haggard.

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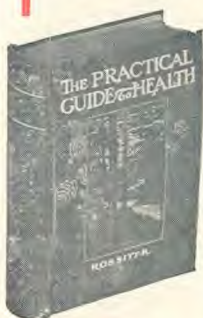
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