GOOD HEALTH

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WORK AND OLD AGE.

BY J. H. KELLOGG, M. D.

ALL persons of great age have been characterized by active physical habits. This is well shown in the case of Henry Jenkins, the Yorkshire Englishman, who died in 1670. When he was one hundred years old, he could swim the most rapid stream; he died at the age of one hundred and sixty-nine. He had always been a man of great physical activity, and it was by this means that he prolonged his life. "Old Parr" was a peasant, and gained his livelihood by the labor of his hands. The patriarchs were all men of active outdoor habits. The Creator ordained that man should earn his bread by the sweat of his brow. The sweat produced by exercise is necessary as a means of removing the waste products from the body, of burning up the rubbish which clogs the wheels of life, and is the most active cause of old age.

Pliny tells of a census taken among the peasantry of Italy in the time of Vespasian by which it was found that in the region of the Po, a very small section of Italy, one hundred and twenty-four persons more than one hundred years of age were at that time living, among whom was the mother of Vespasian; and of these, seven were one hundred and thirty-five years of age or older, two being one hundred and thirty-five years old, two one hundred and thirty-seven, and three one hundred and forty.

There are now living on the island of Sappho, in the Mediterranean, three men aged respectively one hundred and fifteen, one hundred and nineteen, and one hundred and twenty-six years; and the writer of the article in which appears this statement says, "Strange as it may seem, and it is very remarkable, these men are obliged to earn their bread by manual labor." Thus they have had abundant means of prolonging their lives. Dr. Edward Palmer, of the Smithsonian Institute, states that there is a woman in California one hundred and twenty-six years of age; and the doctor says that he has seen her carry six great watermelons on her shoulder at once. One California watermelon would be considered a good load by most people, but this old woman carried six of them, done up in a blanket, a distance of two miles. The Jesuit missionaries in California tell of an Indian one hundred and forty years old, who makes his living by gathering driftwood upon the seashore and carrying it home, a distance of a number of miles; also of another, aged one hundred and fifteen, who has for his regular task to travel fifty miles on foot into the mountains one day, and bring back on his shoulders the next day a great load of acorns, which constitute his daily bill of fare, as the Indians in that part of the country live largely upon a certain species of sweet acorn.

There is certainly great power in physical activity to keep off the effects of old age. Idleness brings on decrepitude far more often than overexertion. The most active men and the busiest live the longest. William Cullen Bryant, at the age of eighty, still practiced regular exercises, one of which consisted of a movement every morning up and down on his toes (heel-raising we might call it), repeated from three hundred to five hundred times. After some other exercises of a similar nature, he walked ten or twelve miles to his business. John Ericsson, the famous New Yorker, habitually worked from twelve to fifteen hours a day, and then walked the streets from 10 P. M. till midnight. No doubt he was getting ready for his work next day by doing some of his thinking beforehand.

Exercise delays the weaknesses of old age by preventing fatty changes, while idleness engenders in the body an excess of fat. Nature finding no use for this excess, deposits it in the blood-vessels, muscles, and other important tissues, and by this means they undergo what we call fatty degeneration. Activity uses up the waste matters, and thus prevents the advance of old age.

It is probable also that constant outdoor exercise atones for the use of tobacco and alcohol to some degree; for we find octogenarians and nonagenarians who have drunk and smoked all their lives; and this can be accounted for only by the fact that the oxygen which they inhale in their out-of-door life counteracts the poisonous influence of their bad habits.

The diseases which particularly afflict old age are rheumatism, diabetes, gout, and obesity, aside from the general weakness of all the organs resulting from the degeneration known as arteriosclerosis. All these diseases are directly antagonized by muscular work. Exercise involves the expenditure of energy, the consuming and burning up of materials stored in the form of fat and glycogen; but in so doing it only pushes out of the body the old effete materials and prepares the way for new, thus keeping the vital stream active. Man, like other animals, is simply a form through which a stream of matter flows. The sedentary man is like a stagnant pool. The man who engages daily in vigorous exercise is like a dashing mountain torrent. The excretions of the skin and other eliminative organs in the sedentary man are extremely offensive, as in the stable-imprisoned horse, while the man who engages daily in muscular exercise to the extent of producing free perspiration, has a sweet breath and clean tissues.

There is another degeneration peculiar to advancing years, which is an incorrigible encroachment upon the bodily strength; and that is the process by which the blood-vessels wither away, and thus cut off nutrition from the different organs and tissues of the body. This may be largely prevented by regular and persistent exercise, because when sufficient exercise is taken, the blood is poured into the blood-vessels in a torrent, and these capillaries and blood-vessels, instead of contracting, are stretched to their fullest capacity, and kept in constant activity. Idleness is the greatest of all foes of longevity. The evil effects of overwork may be partly overcome by maintaining activity of the excretory organs and by outdoor exercise, during which an extra quantity of oxygen is taken in. The effects of bad dietetic habits and even of poisons may be counteracted in this way to some extent. We see this illustrated by the woodchopper, who consumes a vast amount of bacon and fat pork. He is fond of fat pork because it "sticks by the ribs," as he says; and it does. It remains long in the stomach, and taxes the digestive organs to an extreme degree,

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and yet he usually enjoys good health, because of his outdoor life, vigorous exercise, and the great amount of oxygen he consumes. But the evil effects of idleness can not be counteracted while the idleness still exists.

Exercise carried to the extent of exhaustion, however, is damaging. Violent exercise consumes the resources of the body, and may injure some of its structures,— a heart valve may be ruptured, a joint or a tendon injured. Men who train incessantly for violent exercises are generally short lived. Dr. Winship and other gymnasts afford conspicuous examples of this fact. But this should not frighten us to the opposite extreme of injurious and even dangerous inactivity.

The tendency of modern life is to concentrate itself in the city, where electric cars, elevated railroads, cabs, automobiles, and other means of conveyance tempt one to use other means of locomotion than his legs, for the purpose of saving time; so that muscular activity comes to be almost wholly neglected. Many business men attempt to atone for this neglect by an annual trip for a few days to some hunting or fishing grounds, where a week's roughing it generally works marvelous results in clearing away the cobwebs from the brain, restoring appetite, and, for the time being, driving out of sight the specter of chronic disease which the overworked business man sees staring at him over the footboard each morning as he wakes. But nature's demands can not be met by this spasmodic method of complying with her requirements. One might as well undertake to do his eating or sleeping for a whole year in a week, as to do his yearly duty as regards exercise in the same time. Daily systematic exercise is as essential as is systematic eating. An hour or a half-hour each day will do much to hold old age at bay, but in addition to this the sedentary man ought to take half a day off each week for hard work of some kind, which will give him a good sweat and bring his lungs into active play, so that each air cell may be stretched to its fullest capacity, so that the cartilages of his limbs may be well flexed, so that his heart will be strengthened and his blood-vessels fully distended.

As regards the kind of exercise: first of all, we recommend walking, provided one walks in a proper manner. The body must be held erect, the chin drawn in, the hips back. This will bring the shoulders where they ought to be. Never try to hold the shoulders back; as this throws the hips forward and produces an incorrect attitude. Lift the chest forward, and push the hips back; draw in the chin, and stretch up to the fullest height, while reaching the arms down as far as possible. Let them incline a little backward while getting them into proper position. One must not hold himself stiff in the attitude described, but flexible, allowing the trunk to yield and sway a little as the limbs are put forward in alternation. Take care to avoid striking the heels too forcibly. The shoulders will take care of themselves if the chest is forward and the hips back. Do not walk stiffly, or with a swaying, teetering, or mincing gait. Let the arms hang freely by the side. When walking for exercise, stretch out, stepping a little farther and walking faster than usual. It is necessary to increase the rate of walking in order to secure more or less relaxation, as otherwise the act will be wholly automatic. In walking for exercise, one should put his mind as well as his muscles into it. He should put energy and snap into every step, taking care to breathe deeply, prolonging the respiratory movement slightly. Hill climbing, if not overdone, is capital exercise. If there are no hills accessible, stair climbing will answer fairly well;

but stairs are steeper than most hills, hence the rate of ascent must be considerably slower than when walking up an ordinarily steep grade.

In youth and middle age, easy running is fine exercise. Violent running must be avoided, also running long distances. The best plan is to alternate running and walking; that is, run ten rods, then walk the same distance, but do not try to run fast. The amount of work done in running may be increased by taking care to lift one's self well up from the ground at each step. If one is compelled to run, however, in order to catch a train, or if he wishes to increase his rate without adding much to the work done, the effect of the exercise may be diminished by taking care to lift himself as little as possible from the ground, only skimming the surface, and flexing the limbs to a greater extent than in ordinary running.

Rowing, bicycle riding, and skating are all exercises which, employed in moderation, are of the highest value as a means of maintaining the health of brain and muscle, and of postponing the years of decrepitude. But the best of all exercises we have yet to mention,— swimming. The only disadvantage is that for most people this admirable exercise is not readily accessible at all seasons of the year. Every person should learn to swim The art is easily acquired in childhood; and it is still possible at fifty years or more. A good swimming belt and a little patience under the tutorage of a good swimmer will conquer the difficulties in the course of a few weeks.

Swimming as a means of exercise has several advantages over all other forms of exercise. The contact of the cold water upon the skin produces a powerful tonic effect, which increases the inclination for exercise, and the capacity for muscular work. The position of the body in the water in swimming is one which can scarcely be assumed under any other conditions, and powerfully antagonizes the deforming effects produced by improper sitting, standing, and walking positions. Muscles are brought into play which are seldom used in ordinary exercises; and the association of movements is different from that involved in any other exercise. It is this, chiefly, that constitutes the difficulty in learning to swim. New combinations of the movements of the muscles must be made. Such combinations are more readily learned in childhood and youth than in advanced years; hence the importance of learning the art in early life. Every city should be supplied with capacious swimming pools, and swimming should be taught with other forms of corrective measures as a part of the regular curriculum of our public schools.

As this my carnal robe grows old,
Soil'd, rent, and worn, by length of years,
Let me on that by faith lay hold
Which man in life immortal wears:
So sanctify my days behind,
So let my manners be refined,
That when my soul and flesh must part,
There lurk no terrors in my heart.

— *Wither.*

THE NAVAL MUSEUM OF HYGIENE.

BY ETTA LEE HANGER.

AFTER a ten-minutes' walk from the car line through the very heart of "Foggy Bottom," a squalid district whose streets teem with grimy youngsters of the Hogan Alley type, one reaches that most historic spot in or about Washington City, the old Camp Hill, where General Braddock's troops landed and pitched camp previous to their long march through Maryland to Fort Duquesne.

Even before that time, however, Indian legend makes famous this eminence, from the summit of which may be seen for many miles the peaceful Potomac winding like a silver serpent between the green shores of Virginia and Maryland. From this vantage-ground the Powhatans, a tribe inhabiting the Maryland shore, watched the stealthy movements of their Virginia enemies, the Manachoacs and the Monacans, against whom they waged perpetual warfare, and, at fitting moment, sallied forth in swift-gliding and noiseless canoes to make attack. Many are the stories of love and war quaint with Indian imagery and grace that center about this point.

During the last century the mighty forces of wisdom and progress have held Camp Hill, and where once echoed the blood-curdling war-whoop, is now heard the gentle voice of science. Rearing its marble dome above the tree tops is a majestic white building of the colonial style,— erstwhile the Naval Observatory, where through a mammoth telescope, astronomers studied the heavenly bodies, and recorded the appearance of planets and comets,— now the Naval Museum of Hygiene, an institution devoted to sanitary science and the promotion of public health and comfort.

Nearly twenty years ago the American Public Health Association at its eighth annual meeting in New Orleans determined to establish at the capital city of the United States a national museum of hygiene, similar to the one in London, which is to-day the only other institution of the kind in the world. The museum was first opened to the public Aug. 2, 1882, in a building at the corner of Eighteenth and K Streets. It was afterward moved to 1707 New Avenue, and since Jan. 20, 1894, has occupied its present beautiful and spacious quarters.

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Although under the direction of the medical department of the navy, it does not confine its attention to maritime sanitation, but embraces in its scope the entire range of sanitary science, from the public hygiene of vessels, towns, and cities to the personal hygiene of the human body, clothing, and food. The collection, numbering two thousand exhibits, is composed of objects relating to anthropology, botany, bacteriology, biology, chemistry, demography, geology, industrial arts, medicine, meteorology, microscopy, physics, physiology, and zoology.

FOODS AND FILTER ROOM.

A more delightful and appropiate home for a museum of hygiene could not be imagined than this old Naval Observatory building, with its highly polished floors of inlaid wood, its large, well-lighted rooms, and its entire aspect of wholesome, bright, airy cleanliness.

To the left of the front door is the office of Dr. White, the surgeon in charge of the museum, a most eminent physician and scholar, who has spent the greater part of his life in medical research and study, and who has contributed to the museum many relics and specimens gathered in his extensive travels about the world. Among other things with which Dr. White is personally connected is a sledge-box designed by him for the use of Arctic explorers, and used by the members of the Greely expedition.

Passing back through a long corridor divided regularly into apartments by a series of white arches, one finds exhibits of widely varying nature. Under the head of architecture are models and plans of barrack wards, hospital ships, schools, colleges, reformatories, factories, and asylums, showing their proper ventilation, drainage, and illumination. There are also specimens galore of building material, such as roofing tiles, paving blocks, woods of various kinds, artistic flooring, and ceiling decorations for residences and public buildings.

The construction of ships is ably demonstrated by means of sectional models

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showing the different parts of vessels. There are also models of improved airports, wash-stands, staterooms, bunks, and entire hospital ships with living accommodations and quarters for the sick.

In the large circular room at the southern end of the corridor are placed exhibits of life-saving apparatus, rafts, preservers, buoys, sustaining pillows, cork jackets, oilskin coats, belts, and all the latest inventions pertaining to the life-saving science. Here, too, are shown methods of protection against lightning, inundations, explosions, accidents in submarine works, accidents in mines, and safety appliances for traveling on land.

The library in the right wing of the building contains four thousand standard sanitary works by English, French, and German authors, drawings, views and diagrams of hospitals, hospital ships, merchant vessels, men-of-war, yachts, lighthouses and light-ships, military and naval stations, yards, arsenals, docks, and powder-houses.

In the room next to the library is the collection of vaults, morgues, mortuaries, crematories, Alaskan Indian caskets, and metallic burial caskets like those sent to transport the bodies of the officers and crew of the United States Arctic steamer "Jeannette," who perished on the Lena Delta, October, 1881. The most interesting model of this section of the museum is one of the Parsee "Tower of Silence," outside the city of Bombay, where innumerable vultures flock daily to feast on the bodies of dead Parsees. The action of the vulture is believed to be an index to the future destiny of the soul of the deceased. If the right eye is the first one plucked out by the feathered oracle, the soul is to rest in the heaven of all good Parsees; but if the left is chosen first, there is no hope of salvation for the departed.

HOSPITALS AND BUILDING MATERIAL.

The plumbing and filter rooms are in the left wing of the building, and are of special value from a sanitary standpoint, showing defects and advantages in drain-

age, sewerage, and water-supplies. The purification of water, filtration, and distillation, supply of towns and cities, drinking-fountains, public baths, lavatories, and sinks,— all that relates to hygiene in this line is included in this department.

Clinical Room. Bacteria Cultivation.

In the next room there is a corner devoted to personal hygiene, in which bodily cleanliness — the care of the skin, hair, nails, teeth, and feet — receives attention. Hygienic clothing and food are not forgotten, and are exampled in great glass cases containing many "unmentionables" in undergarments, besides sample military, naval, and industrial costumes. The food exhibit is divided into several classes,— animal food; vegetable food; secreted, excreted, and extracted products; condiments and spices; narcotics and masticatories; beverages and drinks. On the second floor are the well-equipped chemical and bacteriological laboratories under the direction of Mr. Noyes.

There are two models in the Museum, which, since we have annexed a prolific home of the dreaded germ of yellow fever, and since that disease has so recently invaded one of our coast States, Virginia, should be worth a description. One of these is an apparatus for disinfecting clothes, bedding, etc; the other for purifying the holds of ships. The first represents steel cylinders, in the originals, eight feet in diameter, and fifty feet long; three being arranged side by side with their open ends facing the ship, from which articles to be treated are taken. Each of the cylinders is provided with one hundred and twenty interrupted coils of pipe, aggregating 155,520 square inches of heating surface, placed just inside the shell, and connected with a

Cots and Transportation of Wounded.

large steam-pipe running lengthwise along the bottom. A smaller pipe, perforated with numerous holes, also extends the length of the cylinder, and is provided with a valve, by means of which live steam can be admitted at will.

Articles to be disinfected are placed on racks suspended from a carriage which runs on an overhead railway within the cylinders. After the racks have been loaded and run in, the doors are shut and hermetically sealed; then steam is turned on, and the temperature soon rises to 190°. When this degree of heat is marked by the attached thermometer, live steam is allowed to enter through the perforated pipes, thus rapidly raising the temperature to 230° under pressure of seven pounds, at which point the safety-valve opens. Thirty minutes' time is required to complete the process of disinfecting.

In the process of germ killing on shipboard, the vessel is placed at the dock, on which is a sulphur furnace mounted upon a track running along the front of the wharf. Another furnace is carried by a small tugboat which takes its position alongside the infected vessel. Each furnace is provided with a rotary suction blower, driven by a steam-engine, by means of which the air from inside the vessel is drawn through a large galvanized jointed iron pipe, so placed as to reach the hatchways, and is then forced to pass over large pans of burning sulphur in the upper part of the furnaces, and thus purified by heat and direct admixture with the freshly generated sulphur dioxide, is taken through another pipe to the lower part of the hold. By this means the oxygen of the air is almost completely converted into sulphur dioxide.

Altogether, the Naval Museum of Hygiene is as full of information as any book that was ever written. Its pages glow with truths that give a clear and comprehensive insight into the study of hygiene, and the reader finishes his perusal realizing, as never before, that "eternal vigilance is the price of salvation" in all things sanitary.

THE CIGARETTE INDUSTRY.

BY DAVID PAULSON, M. D.

THE cigarette is a wonderful affair. In fact it has a sort of charitable side to it, for it furnishes employment for hundreds of boys in Chicago. Their work is to gather up the castaway stubs of cigarettes and cigars. These boys are known as "snipe shooters." It is their business to gather at least three pounds of stubs a day, for which they receive the magnificent remuneration of something to eat and a miserable and indecent quarter in which to sleep. It is estimated that there are picked up daily from the filthy streets of Chicago, by boys working under one man, twelve hundred pounds of cigar stubs to be remade into cigarettes. What a lesson in economy! Cigarette smokers should daily meditate upon it to serve in a certain way as compensation for the baneful physical effects of this terrible habit which they persist in indulging.

THE EFFECT OF ALCOHOL UPON THE FUNCTIONS AND STRUCTURES OF THE STOMACH.

BY W. H. RILEY, M. D.,

Superintendent of the Colorado Sanitarium, Boulder, Colo.

(Concluded.)

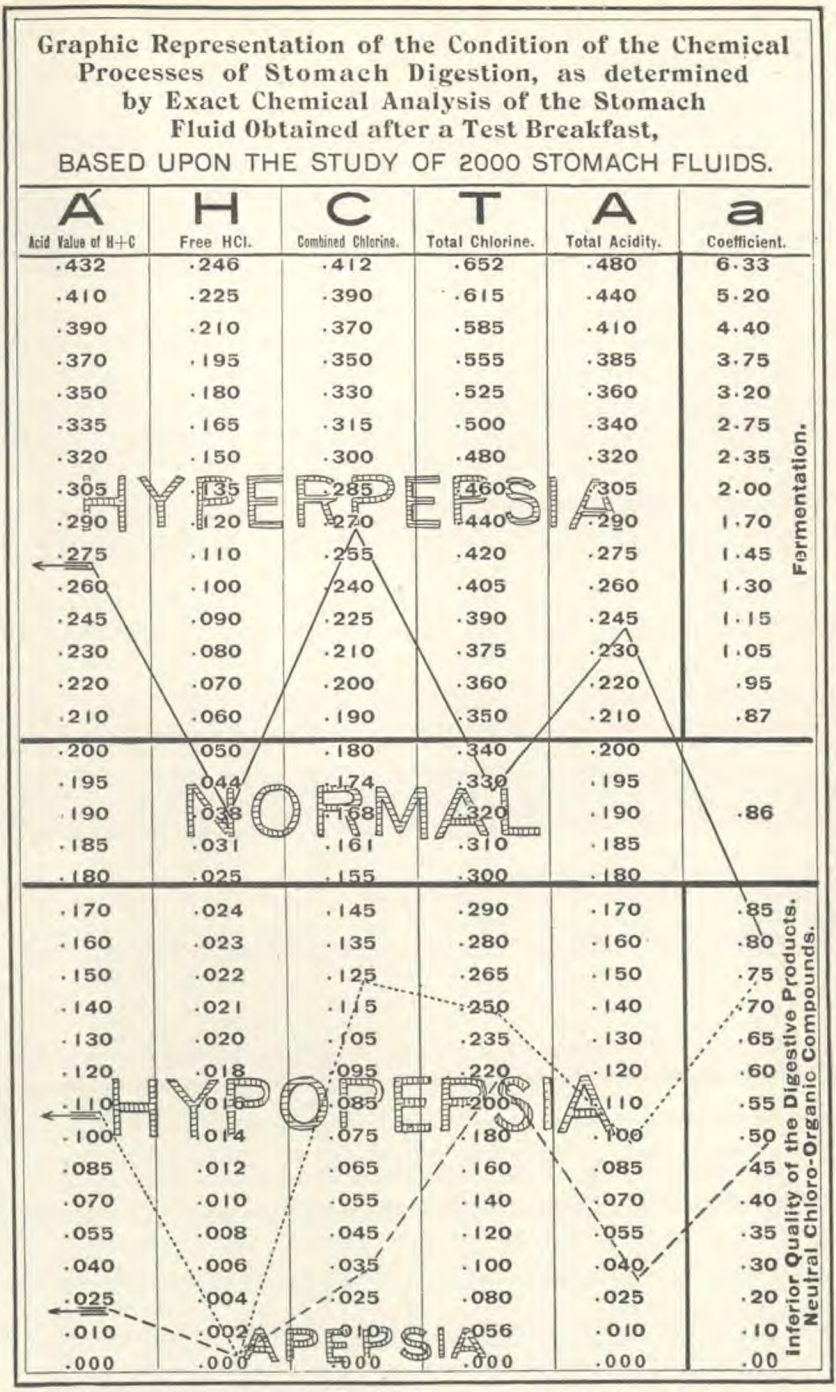
IN the third class of experiments,— those made upon man,— the results of various investigators, including my own observations, show that alcoholic liquors, even in small amounts, retard the digestion of food in a very marked degree. Kretsky, from his experiments upon a woman having a gastric fistula, found that alcohol noticeably retards the digestion of food. Buckner observed that alcohol, wine, and beer all retard the digestion of food. Ogata also observed that beer, wine, and brandy retard digestion. Blumenau found that from twenty-five to fifty per cent of alcohol causes a very decided decrease in digestion during the first two or three hours. Dr. Richardson says that "nothing more effectually hinders digestion than alcohol." Dr. Bunge, a distinguished physiologist of Basel, Switzerland, says that if much alcohol is taken into the system, the gastric juice is so changed in its action that digestion is arrested. Dr. C. H. Shepard states that the idea of alcohol's being in any form an aid to digestion is fallacious, and has brought disease and ruin to innumerable multitudes. Dr. T. D. Crothers says, "I have never seen a case in which spirits were used in any form where it did not produce derangements of digestion." Dr. Luzinski showed some ten years ago that alcohol interferes to a marked degree with the digestion of food in the stomach. Dr. Worth demonstrated that the habitual use of alcohol causes derangement of the stomach to such an extent as to render it incapable of responding to the normal excitation of food.

Some interesting and valuable experiments have been made by Dr. J. H. Kellogg with reference to the effect of alcoholic liquors upon the digestion of food in the human stomach. These experiments were made upon a healthy young man. A test meal was first given, consisting of a certain amount of food and a certain amount of water, with eight grains of salt. When this had been digested for one hour in the stomach, it was removed, and put through a careful chemical analysis. After the stomach had had time to recuperate from this first test, a second test was made in which four ounces of claret were substituted for an equal amount of water, which was taken in the first experiment, the other conditions being the same. Analysis of the contents of the stomach showed a diminution in the amount of gastric juice secreted, a deficiency in the hydrochloric acid, and in the digestive work generally. Again, a third test was made in which the young man was given two ounces of whisky. In this case the free hydrochloric acid was reduced to such an extent that the stomach did almost no work whatever. We herewith give the results of the different analyses made by Dr. Kellogg, with figures, and also a chart which shows graphically the work done by the stomach in these three different experiments:—

	Usual test breakfast.	Usual test breakfast with 4 oz. of claret.	Usual test breakfast with 2 oz. of brandy.
Total acidity,	0.240 grms.	0.086 grms.	0.016 grms.
" chlorine,	0.328 "	0.236 "	0.206 "
Free HCl,	0.032 "	0.000 "	0.000 "
Combined chlorine,	0.268 "	0.120 "	0.034 "
Fixed chlorine,	0.098 "	0.116 "	0.172 "
Coefficient,	0.770 "	0.720 "	0.470 "

Graphic Representation of the Condition of the Chemical Processes of Stomach Digestion, as determined by Exact Chemical Analysis of the Stomach Fluid Obtained after a Test Breakfast,

BASED UPON THE STUDY OF 2000 STOMACH FLUIDS.



The figures in each of the above columns relate to a particular quantity or quality of stomach work. The last column relates exclusively to quality. The point at which the line starts, indicates the class to which the case belongs, and the degree of severity of the case; the point at which the line ends, indicates the quality of the work done, and the degree of fermentation or of deterioration in quality. The figures given represent the highest and the lowest quantities found in the quantitative analysis of more than 2,000 different stomach fluids, made in the Laboratory of Hygiene of the Battle Creek (Mich.) Sanitarium.

J. H. KELLOGG, M. D., Sup't.

(For explanation of method of investigation represented in this chart, see "Methods of Precision in the Investigation of Disorders of Digestion," by J. H. KELLOGG, M. D., Battle Creek, Mich.)

Our own conclusions have not been drawn merely from noticing the physical condition of the patient, but from careful chemical analysis of the contents of the stomach after a test meal which had remained in the stomach a certain length of time, usually an hour. In nearly every case of patients habitually addicted to the use of alcoholic liquors, there has been a deficiency in the amount of gastric juice and hydrochloric acid, and a diminution in the digestive processes generally, a condition known as hypopepsia. In other cases apepsia has been present, showing that the hydrochloric acid was entirely absent. Nothing is further from the truth than to suppose that alcoholic liquors are an aid to the digestion of food.

The Effect of Alcohol upon the Absorption of Food.— Since it is true that alcohol hinders the digestion of food in the stomach, it must of necessity hinder absorption, from the fact that food can not be absorbed from the stomach until it is digested, and changed from an insoluble to a soluble condition. The experiments of Professors Chittenden and Mendel showed that alcohol passes from the stomach very rapidly, more so than food.

Another point to be noticed in this connection is that as alcohol hinders the digestion of food, it is likely to be passed down through the pyloric orifice into the intestine undigested, and unprepared for reception by the intestine. It is very likely to undergo fermentation in the intestines, poisons being formed and carried by the blood to different parts of the body, and acting as irritants to the tissues generally.

The Effect of Alcohol upon Peristalsis.— The last point with reference to the effect of alcohol upon digestion in the stomach is its effect upon peristalsis, or the muscular movements of the stomach. Gluzincky noted that alcohol diminishes the mechanical movement of the stomach in a moderate degree. Alcohol, instead of increasing muscular strength, as is sometimes supposed, actually diminishes it. If it will diminish the strength of the muscles of the arm, it will certainly have the same effect upon the muscles of the stomach. Again, it has a poisonous effect upon the nerves and nerve centers. The nerves passing down to the muscular walls of the stomach are weakened, and consequently the muscular movements of the stomach are diminished in a marked manner. Further, in those addicted to the use of alcoholic liquors the muscular walls of the stomach are weakened, the stomach itself is distended, its walls are relaxed, and not infrequently the whole organ is prolapsed several inches below its normal position. This is another factor which diminishes the normal digestion of food in the stomach. The testimony of all who have given this subject careful study is that alcohol does not act as a stimulant or an aid to digestion, but hinders it, and diminishes all the functions of the stomach.

The Effect of Alcohol upon the Structures of the Stomach.— From what has preceded, we may dispose of this part of our subject briefly. Besides producing changes in the functions of the organ which we have considered, the internal use of alcoholic liquors produces certain well-marked changes in the structure of the organ.

Alcohol in the stomach acts as a poison and anesthetic to the vasomotor nerves having control of the blood-vessels of the stomach, and by paralyzing the fine nerve fibers, the muscles of the blood-vessels are allowed to dilate, become engorged with blood, and a condition of congestion develops. Along with this condition of passive congestion of the organ there is a lessened activity of the glands, and a tendency on their part to become smaller and smaller; and if its use is prolonged,

the gland completely wastes away and dies, so that there is nothing left to secrete the gastric juice of the stomach. This is a condition frequently recognized by physicians, and is known as atrophy of the glands of the stomach.

As time goes on, this passive congestion becomes more marked, and involves nearly every part of the mucous membrane of the stomach. With this congestion and atrophy of the glands, conditions are very favorable to a worse condition; namely, ulceration of the stomach, and this frequently follows in the wake of the intense congestion. Physicians in their practice often see cases in which the mucous membrane of the stomach is atrophied from the moderate use of alcohol for a number of years, while the blood-vessels are engorged with blood, and ulceration of the stomach is present.

In still other cases the habitual use of alcoholic liquors causes malignant diseases of the stomach, such as cancer. At different periods in the history of the use of alcohol one finds pathological conditions of all grades and shades of severity. Since alcohol destroys the functions of the stomach, and causes organic changes in the mucous membrane, it can readily be understood that from this other serious troubles may follow; death by starvation often ensues because the stomach is not able to digest properly In view of all these considerations, we can hardly see how alcohol can have any place in the treatment of disease.

THE HARVEST FESTIVALS OF SOME OF OUR SOUTHWESTERN ABORIGINES.

BY GEORGE WHARTON JAMES.

With Photographs by the Author.

THE major portion of our southwestern aborigines are perforce vegetarians. There is no sentiment, no principle, about the matter; it is obdurate necessity. Indians will eat meat when they get a chance, but chance does not often come their way. They live in barren, desolate regions, where no flowing rivers fructify the soil, and make all nature green and smiling. The predominating colors of their country are gray — that of the sand, scorching and pitiless during the hot summer — and red — that of the bare sandstone which absorbs and radiates the heat even worse than the sand. Springs are few and far between, and as a rule flow very sparingly with the precious life-giving fluid. When the United States government sent out its small exploring parties in the '40's and '50's, they could find scarcely enough water in this country to sustain life, and several times suffered terribly ere water was found. Hence one of the chief occupations of the southwestern aborigines is to pray for rain.

To these Indians a dance is a prescribed mode of prayer No Indian, in his native condition, ever dances for fun. All dances are sacred ceremonials, many of them being either prayers for rain or dances of thanksgiving, when "Those Above" are thanked, applauded, and praised for their kind attention to those below, in sending the rain, and making all needful things grow.

The snake dance is a prayer for rain. In the early morning, however, of the day of this famous dance another interesting ceremony takes place. This is the

WOMEN AWAITING THE ARRIVAL OF THE RACERS.

snake race. A number of contestants, thirty or forty, start from a spring several miles away in the valley. At a given signal, off they go, long before the rays of the morning sun have done more than tip the highest summits of the surrounding mountains. At the goal, on the head of the trail, one of the snake priests describes on the ground, with sacred meal, figures that represent the clouds and falling rain. At the foot of the trail stand a number of girls; with them naked little boys with small melons, corn-stalks, and flowers in their hands. On the mesa top two distinct crowds await the coming of the racers. The men of the Mokis and the white visitors stand near the trail, while nearer the village the women and children may be seen. From the edge of the mesa one can look down and see the cornfields in the valley beneath, the care of which is the cause of all these ceremonies. What a tribute to the patient, wise industry of the Mokis these thriving cornfields are. White men would never have had the faith and the dauntless courage to expect a crop in such a place; but the corn looks well, the ears are many, full, and large, and few pests seem to injure it.

ORAIBI CORN-STALK SCUFFLE.

At last some keen-eyed person discerns the coming line of racers. By and by it grows clearer — a long, sinuous snake of moving men. When they near the group of maidens, it is seen that they carry in their hands sunflowers and corn-stalks. Chattering and laughing, the girls prepare to catch the corn-stalks and flowers as the racers dash by. With brown bodies shining in the morning sun, bracelets of willow twigs on their arms, sunflowers fixed like stars on their foreheads, their long black hair flowing behind them, they dash along the narrow trail, dodging in every direction to avoid the merry and grasping maidens. Happy is that girl who is not avoided. That corn-stalk or flower means much to her. She is a chosen one! and the blessing of the corn-stalk brings pictures of a loving husband, a happy home, and best of all to a true Moki maiden's heart, a "quiverful" of healthy, loving children.

But now all the racers have passed. The moment the last one has gone, all the girls and boys follow up the trail. Then what a jolly scramble there is on the top of the mesa. Women and girls dash toward the racers, and the boys who have corn-stalks and flowers.

How perfect an exemplification this is of what we often see in daily life. A certain woman wishes to obtain a corn-stalk from a certain youth, but he has fixed his eyes upon another woman or maiden. So he dodges and avoids the first, only to find that his chosen one cares not for his favor, and rejects the green leaves he places so joyfully within her easy reach. But the "corn-scuffle" generally answers its purpose. Lovers have arranged signals and expedients for circumventing all outsiders, and a beautiful custom is taught to white men, of open, honest recognition of love, and the expectation that marriage will be fruitful in the glad bearing of many children.

The winner of the race advances to the Antelopekwia, and is there met by the chief priest, who gives to him certain *bahos* (prayer-sticks), corn-meal, and sacred water. These he takes and uses on his cornfield. They are gifts from "Those Above," and are supposed to ensure good crops.

MOOTCH-KA, THE LEADER OF THE DANCES.

Poor, ignorant, superstitious Moki, how strange thy superstitious faith seems to us. Yet, surely, while thou art still in thy heathen darkness, the great Father of us all will recognize and bless thy earnest endeavors to worship him "in spirit and in truth."

When the harvest is gathered, and the housetops are covered with the delicious

corn, both women and men have special thanksgiving dances, or those in which the thanksgiving idea is one of the most prominent and important features. The chief of these is the La-la-kon-ti, a woman's ceremonial, here photographed, in which, with baskets in their hands, they perform their solemn thanksgiving. Each woman brings a gift to "Those Above," and during the dance, certain priests throw these gifts among the spectators. The young unmarried men are the ones who strive to gain these presents. They struggle as in a football mêlée, and when one of them finally emerges victorious, it is generally without clothing Merely a few fragments remain. These struggles, however, are always conducted in the kindliest spirit.

At Tuba City, near which is the little Moki village of Molucopie, I was once present at the thanksgiving dance. Several dances were given, participated in by about one hundred Mokis. More than two thousand Navajos were present to witness it. These latter stood on the roof of the trader's house and store, and occupied every available inch of seeing space. The leader of the dances, Mootch-ka, was a fearful and wonderful specimen of Indian adornment. His face and body were beplastered with a creamy white mud; on his head was a "mop" of wool crowned with the seed pod of a weed, the name of which I do not know. Around his waist was a belt of silver dishes, made by the Navajos, and above and below this were strips of sheepskin to which the wool still adhered. He can also be seen in the circular dance, on a line with the right-hand corner of the house, the roof of which is crowded with interested Navajo spectators. With loud voices, serious faces, appropriate gestures, accompanied by the dull "thump" upon a native drum, the Mokis danced, and sang their thanks somewhat as follows:—

"To Those Above who move silently and unseen,
Who send the rain upon the dry and thirsty ground,
Who make the planted seed spring forth and produce,

Moki Thanksgiving Dance at Tuba, Ariz.

Who give lambs to the sheep, and add burros to the flock,
Who rejoice the heart of the Moki with good and healthy children,
With joyful step we hop about, with joyful voice we sing
Lolamai, lolamai, lolamai[1]!"

Then, that others might rejoice with them, they brought gifts of corn, melons, squashes, loaves and cakes of unleavened bread, and during certain dances threw them to the crowds of spectators. Those

1 Good.

THROWING THE THANKSGIVING OFFERING BASKET INTO THE AIR AT THE LA-LA-KON-TI CEREMONY.

KISI AT ACOMA, WHERE THE FIGURE OF ST. STEPHEN IS DEPOSITED, AND WHERE THE ACOMAS BRING THEIR THANK-OFFERINGS.

who had sold their crops or sheep, bought calico, sugar, coffee, to throw as gifts.

At Acoma, in New Mexico, which the readers of GOOD HEALTH have already visited with me, a similar ceremony is held on the feast-day of their patron saint, St. Stephen. Although it has a Christian name, the ceremony is pure heathenism, with a few interpolations of Catholic methods. After mass in the church and a procession through all the streets, in which the wooden figure of St. Stephen, brought from the altar of the church, occupies the honored position, the participants deposit the figure or image in the kisi. Here it is carefully guarded, the principals (leading men of the village) sitting on either side, and occasionally guards being mounted on the outside. All through the day the devout and simple-hearted Indians bring their offerings of corn, melons, bread, meal, etc., and leave them in the kisi.

During the afternoon the dances occur. Two of the secret societies of the village took part in these ceremonies, and as soon as one society tired, or had completed its portion of the dance, the other advanced. The dances took place in the main street in front of the kisi, the chorus standing opposite, so that the dancers paraded up and down between the singers and the sacred bower. Who can adequately describe such an Indian dance? The men wore a kilt, or apron, reaching from loin to knees, embroidered and fringed garters and moccasins. Dependant from the loins at the back was the skin of the silver gray fox, and around both arms above the elbow were tied twigs of juniper or pine. In the left hand more twigs were held, while in the right was the whitewashed gourd rattle used in all ceremonial dances. Around each forehead was the inevitable handkerchief, and nearly all wore a shell and turquoise necklace. Their bodies and legs were perfectly nude, painted as

CATCHING THE BREAD.

usual with an oxide of iron. The women, on the other hand, were bedecked with all the gorgeous finery they could muster. Jotsitz (robe), girdle, moccasins, leggings, necklaces, etc., that were too good for common use, or were especially made for this great occasion, were donned, and, in addition, a peculiar symbolic headdress made of board or rawhide, upon which figures representing the katchinas, or lesser divinities, were painted. To and fro they danced, the men two together, giving the singular hippety-hop movement peculiar to Indian dances, and shaking their rattles, the women, likewise in twos, following in alternate order, gently waving bunches of wild flowers, and shuffling forward with their feet as the men hopped.

On the other side of the street stood the drums and the chorus, the leader occasionally making gestures, all of which were imitated by the singers, expressive of their thankfulness to "Those Above."

When the dances were almost over, began the distribution of the offerings previously made at the shrine of the Saint. Visiting Indians generally comprise the crowd that scrambles for these gifts. One of the Caciques brings them out from the kisi, and throws them toward the crowd. Hands are outstretched, and frantic efforts made to obtain some of the bread, corn, or melons, for not only does the recipient enjoy that which he catches, but also the prayers or the blessings that come with it, the result of the prayers offered by those who made the gifts.

Surely it is a "good thing to give thanks," and while these poor benighted natives do not know our Lord, it is well that they have the thankful heart, the grateful spirit, and that, with the best light they have, they make their offerings to the Supreme Power whose goodness and love have been over them during the year just passed.

STREET SANITATION.

BY KATHERINE LOUISE SMITH.

SCIENCE has made wonderful strides during the last generation, but as yet these discoveries have done the world comparatively little good. Why? — Because they have not reached the people.

While a general knowledge of scientific things has permeated the masses, the people have not laid hold upon them as tools to be used. They have not applied them to the business of life. Nature is not to be trifled with; she has her own way of evening the score, and she does it by punishing the offender for every infringement of her laws. The fact that the infringement was not wilful does not lighten the penalty. A certain class of people believe blindly that things simply "happen." They disregard the law of cause and effect, and continue living in low-lying, unwholesome locations, and the family is sick with malaria. If death claims a victim, they cry, "A visitation of Providence." Blasphemy! Providence had nothing to do with it. It was non-hygienic conditions.

Every business is influenced by the progress of science, yet the most important of all, the business of living, has advanced but little, because we are content to do as our grandparents did. In matters that go to make comfort or discomfort, health or disease, people show a most amazing ignorance. This state of affairs can not long exist. The watchword of

the next age will be "Sanitation." Cleanliness is a feature of the next new science. Those who preach the laws of scrupulous hygienic conditions in all their application to life may be considered cranks today, but they are the pioneers of a new gospel.

Cleanliness is the basis of all right living, and is essential to life. Drainage, public baths, food inspection, sterilization, street cleaning,—all antiseptic measures are conservators of public comfort and health which can not be overestimated.

The time is not far distant when every property owner will be required to keep his house and premises absolutely clean and wholesome. Already philanthropists are making cleanliness the basis of their reforms, and they aim to develop a sense of right through an appreciation of the wholesome and beautiful. The needed change is coming slowly but surely, and all these modern movements have a common tendency, which may be summed up in the one word — hygiene.

One important aid to this is clean streets. Cleanliness is contagious, and clean streets are leading to clean hallways and house interiors. Few realize the work that the street-cleaning department does. It has decreased the annual death-rate from eye and throat diseases due to dust and putrid dirt; the injury to clothing, furniture, and goods in shops is much less, and mud is not tracked into houses. Skin diseases among horses are lessened, and the death-rate is diminished. The fact that streets are to be kept clean should be taken as a matter of course.

For years an unpleasant feature that has struck the foreigner traveling in our country has been the contrast offered by the streets of European cities and ours. The first thing that impresses the stranger in Paris and Berlin is the amount of street traffic and the cleanliness of the streets. Dust is unknown.

For several reasons, Berlin affords a good field for the study of street-cleaning methods. It is the only large place in Europe in which sweepers are uniformed beyond a cap and badge. The more frequented streets are swept every day, others twice a week, others only once a week. The department sprinkles the streets, and sweeps the sidewalks, but has nothing to do with waste of any kind, ashes, garbage, or refuse; it disposes only of the dirt swept up in the street. All that can be made liquid enough is allowed to run into the sewers. The sidewalks are swept early in the morning, but most of the street sweeping is done at night. As in all European cities, sand is used to prevent the slipping of horses on asphalt. The city furnishes uniforms and tools, and boys clean the streets of litter. All kinds of household waste are removed by private contractors, and ash-barrels are never seen on the street. Dumping-places are provided by those who haul the garbage. Experiments formerly carried on in the direction of cremation have been abandoned on account of the high price of coal.

Quite as interesting is the cleaning in Paris. It is all done by the city, and paid for by a special tax on the property; but in no case are the charges more than the actual cost. Property owners remove ice and snow from the sidewalk. Both men and women are employed to sweep the streets; both hand and sweeping machines are used. It is on the asphalt streets that the greatest interest centers. In the early morning the hydrants are opened, and the asphalt is flooded, not alone by filling the gutters, but by throwing water over the entire surface. Brooms are then brought into play, and the street is put into perfect cleanliness. This is the main work of the day. Sprinkling is done by carts. Gutters are washed twice a day. Gar-

bage, household refuse, and street sweepings are taken up by wagons early in the morning. Landlords are obliged to provide for their tenants one or more receptacles for household waste. The coming of the wagon to remove this is announced by the ringing of a bell. As the French are economical people, much that we waste is saved. Ragpickers are allowed to sort over the contents of the cans while they still stand on the sidewalk, and in 1892 the forty-one thousand ragpickers of Paris, who are an organized body, collected in this way matter to the value of five million dollars.

Both Berlin and Paris have a great deal of asphalt pavement. There is a close relation between the character of the road and the work of keeping it clean. The pavements easiest to keep clean are asphalt, wood, stone, and brick. Unless the surface is uniform, the sweeping machine is not thorough in its work. A little water on asphalt makes it so slippery that it is unsafe for bicycles and driving, hence every night the surface should be drenched, and every trace of organic matter washed off. One great advantage is that asphalt is non-absorbent, but street-car tracks of course increase the expense of cleaning.

The two cleanest cities on this continent are Toronto and New York. They are both cleaned by direct labor. Over against these brilliant examples stand the streets of some of our Western cities, where the contract system is use...

In the enterprising Canadian town, street cleaning has not only a distinct department, but workshops where sprinklers, sweepers, automatic loading carts, and snow-scrapers are built. Even the harnesses are made there, and horseshoeing is done. By maintaining its own shops, the street-cleaning department claims that it now accomplishes with four teams what formerly required nine.

Considerable labor is saved by an automatic machine which elevates the litter directly from the street into a dump-cart as rapidly as horses can walk.

The street department in New York is divided into five great divisions: (1) The sweepers under the care of the superintendent; (2) the stable and drivers; (3) final disposition; (4) the mechanics; (5) the clerical force. The city is divided into sections where the sweepers assemble, and where brooms, watering cans, etc., are kept. There the men leave their ordinary clothing, and don their uniforms.

The most important part of the work is the removal of the accumulation from the surface of the street. This is done by hand labor, and fifteen hundred broommen are employed on four hundred and thirty-three miles of paved streets. Eight hours a day is the working time, and positions are good for the active years of a man's life.

Each section is under the control of a foreman, who has assistants. The uniform of the foreman consists of a close-fitting gray coat and trousers, a white helmet, and a badge. The sweepers are dressed entirely in white duck. The coat is a sort of jacket with a leather belt; the trousers are loose, and the helmets are similar to those of the foremen. Each wears a metal badge bearing his number. He is obliged to appear in a tidy condition at morning roll-call, and as a rule the suit is changed Mondays and Thursdays, but if much soiled, it must be changed more frequently. The cost of the entire outfit is less than five dollars. The use of white was at first strenuously opposed, and all possible ridicule was used by the press, but now it is universally conceded that white uniforms are best.

Each sweeper is supplied with a two-wheeled bag carrier and jute bags, a broom with scraper at the back, a shovel,

a short broom, a watering can, and a key for opening hydrants. The men are worked in gangs early in the morning, after which each goes to his own route. As a rule, the route is not changed, and the sweeper becomes familiar with the people. The sprinkler is used in dry weather. Dirt on the streets is loosened with the scraper, and swept into little piles. With the aid of the broom and shovel, these are then transferred to the bag, which is placed on the edge of the sidewalk. Ordinary streets are swept twice a day, and others three or four times.

Next comes the removal of sweepings, ashes, garbage, and rubbish. It takes for this six hundred horses, carts, and drivers. There are no public stables better kept than those belonging to this street-cleaning department. All horses are shod by contract; there are veterinary surgeons on duty daily, and each stable has foreman, clerks, and hostlers. The driver is not required to do anything more than to hitch up his team, and unhitch it when he returns.

The carts start out at an early hour, and go to the sections to which they are assigned. Like the sweepers, these men frequently attend to one section. They first remove a load of ashes, after which they devote themselves to the cartage of garbage until all is removed. The rest of the day is occupied in removing the remaining dirt that may have accumulated. The garbage hauls to the dumps are long. These dumps are supplied with scows that are towed out to sea. From the scows the garbage is taken to the crematory, situated on an island, steam pressed, and the grease made ready for market, while the solid matter is prepared for fertilizing purposes. This is done by contract. Street sweepings and ashes are taken to other dumps. The bags are unloaded, cleaned, and dried for the next day's use. A low-hung box on wheels is used for paper and rubbish, which is called for when a card with the letters P. R. is placed in the house window. This card relates to paper, pasteboard boxes, bottles, rags, tin cans, old shoes, carpets, furniture, wood, and metals. This rubbish is transported to picking yards, where all of value is sold, and the refuse either burned or dumped on scows.

A "picking yard" consists of large sheds for storing the material, pens for bottles and tin cans, and a treasury for the safe keeping of metals and other trifles. A traveling belt loaded with the rubbish runs between two rows of workmen, each engaged in selecting the kind of paper, rags, or other materials to which he is assigned. One yard received fifty loads of refuse, and the average sales during two months were, paper, $128.40; rags, $89.37; other material, $43.47. Sweepings and ashes are towed to sea, and used in filling. About twenty Italians unload the cargo of a deck scow in two and a half hours.

Among the agencies by which cleanliness has been brought about in New York is the Juvenile League. In one parade there were five hundred boys and girls in white caps, representing many organizations. These are actively engaged in trying to keep the streets clean. The movement has been so useful that the Board of Education is interested. These boys and girls, with no conscious toil, report that in three weeks they picked out of the streets and put into receptacles provided for the purpose, 3,809 pieces of paper, 3,137 orange peels, 1,556 banana skins, 898 nut shells, 780 pieces of coal, and enough other things — bread, potatoes, rags, tin cans, old shoes — to bring the amount to over 17,000 pieces.

When the snow casts its white mantle over the metropolis, many thousands of homes rejoice at the sight. It means that men who have walked the streets in search

of work will now find it. When a heavy snowfall requires extra men outside of the street-cleaning department staff, they are usually supplied by different benevolent societies, and paid at the rate of forty-two cents a cubic yard. Often cartmen can make $7.50 per day. It cost New York $500,000 in one winter to remove the snow after storms.

The subject of the final disposition of garbage is a question of vital importance to every town. In a small community all table and kitchen wastes can be used for food for domestic animals, but in a large city this is impracticable. In seaport towns it has been usually cheaper to tow the wastes to sea. Inland towns have tried to sell their edible waste, but consumers of milk have protested, and many reasons have been urged why the practice should be discontinued. In the smaller cities whose outskirts are easily reached, cremation has been tried.

In Lowell, Mass., Richmond, and Savannah, the Engle crematory is in use; in Atlantic City and Philadelphia, the Smith-Siemens; in Atlanta, Fort Wayne, and Salt Lake City, the Dixon. Among the larger cities, Buffalo pays $35,000 for the disposal of its garbage by a reduction system; Detroit pays annually $63,000 for collection and disposal by the same process; Milwaukee pays $24,000; Boston tows the waste to the sea. Chicago has tried every known method, and is still experimenting; and Pittsburg has a reduction plant with which the dry garbage matter is turned into a complete fertilizer.

Undoubtedly one of the best methods of keeping the streets clean is that of frequent flushing with water when the sewer viaducts are so placed as to permit all the solid refuse to be washed through them. Some of the German cities provide an independent water-supply for the special purpose of keeping the streets washed, this being a sanitary improvement resulting from a cholera epidemic.

In reviewing the whole subject of street cleaning, the most important consideration is that which concerns the relation of the people to the work. No policeman abroad would think of letting a person deliberately throw littering matter into the street. Here lies one great difference between European and our ways. As to the different methods of street cleaning, America is willing and anxious to test them all.

In Church.

JUST in front of my pew sits a maiden —
A little brown wing on her hat,
With its touches of tropical azure,
And the sheen of the sun upon that;
Through the bloom-colored pane shines a glory
By which the vast shadows are stirred,
But I pine for the spirit and splendor
That painted the wing of the bird.

The organ rolls down its great anthem;
With the soul of a song it is blent;
But for me, I am sick for the singing
Of one little song that is spent.
The voice of the curate is gentle;
"No sparrow shall fall to the ground;"
But the poor broken wing on the bonnet
Is mocking the merciful sound.

— *Young Peoples' Paper.*

EXERCISE FOR RHEUMATISM.

BY J. H. KELLOGG, M. D.

THE muscles as well as the joints are usually more or less affected in rheumatism, thus rendering exercise difficult and painful.

The condition of the system in gout and rheumatism is that of chronic poisoning by the accumulation within the body of an excessive amount of tissue poisons which normally are destroyed and eliminated by the liver and kidneys nearly as fast as formed. Through the deficient destruction or elimination of these poisons, the blood becomes saturated with them, and some, particularly uric acid, are deposited in the tissues. Owing to the peculiar structure of the tissues in the vicinity of the joints, the deposits are most likely to occur in these regions, giving rise to inflammations, swelling, and almost intolerable pain.

In speaking of rheumatism, we refer to chronic rheumatism, as acute rheumatism is a malady often due to infection of the body by germs and not to systemic or constitutional changes. Chronic rheumatism and gout are diseases resulting from constitutional conditions and not from infection, although not infrequently chronic rheumatism is aggravated by a condition of the body arising from the acute disease.

It is not always, however, that the systemic condition which precedes the development of chronic rheumatism or gout is manifested by pain or swelling in the region of the joints. The saturation of the system with tissue poisons, which are in general represented by uric acid, may give rise to nervous headaches affecting one or both sides of the head, the back, the top, the frontal region, or the entire head. Attacks of facial neuralgia or other forms of neuralgia and other muscular pains are also due to the same cause.

Bouchard has shown that in most cases of chronic rheumatism there is always to be found a dilated state of the stomach, which may cause the condition of general poisoning of the body. Our own observations have confirmed those of Bouchard. In dilatation of the stomach, of course, there is absorbed into the blood a large quantity of the products of decomposition through the too long retention of food in the stomach, it having been proved by Bouchard and others that when food is retained more than an hour or two beyond the usual time it should leave the stomach, which is about three hours after a meal, decomposition begins.

Exercise is of great importance to the rheumatic, because it tends to promote purity of blood and tissue regeneration. By means of exercise the rate of breathing is increased, the amount of oxygen received from the lungs is more than proportionately increased, the heart beats with greater vigor, thus pumping a larger amount of blood through the tissues, cleansing them more perfectly; the activity of the liver, kidneys, and skin is also increased, and thus the cause of the disease is removed.

In rheumatism there is what Bouchard has very aptly described as a condition of slowed nutrition. Exercise is one of the most excellent means of blowing the vital fires, relieving the condition by introducing a larger quantity of oxygen into the system and also promoting tissue processes by which oxygen combines with the poisons in the tissues, so facilitating their removal.

It is difficult to induce the rheumatic to exercise, however, because his experience

convinces him that every attempt at exercise makes him worse than before. The movement of affected joints is perhaps attended by severe pain, and the greater the movement, the greater the pain and reaction.

In acute rheumatism almost complete quiet is essential; but in the chronic disorder the opposite is true. In the former case recovery is likely to occur within a few days or weeks at the most; consequently it is only necessary to secure movement enough to prevent consolidation of the joints. In chronic rheumatism the diseased process will necessarily be very long continued, even under the most favorable conditions; hence, it is important that daily, systematic exercise should be taken to prevent the stiffening of the joints, and the consequent crippling of the patient, which are the almost certain results of long-continued inactivity. The kind and amount of exercise must depend upon the strength of the patient, the condition of the affected joint, and the degree of pain occasioned by movement. The greatest care should be taken to avoid overexercise. The rheumatic, like the obese person, is particularly likely to suffer from secondary, or consecutive fatigue. His system being already filled with poisons, it requires only a very small amount of the fatigue poisons resulting from exercise to saturate the system, and thus aggravate the morbid processes.

Great discretion must therefore be exercised in relation to the kind, vigor, and amount of domestic or other exercise prescribed for the rheumatic patient. In many cases it is important to begin with simple manual Swedish movements. Even these should be very gentle at first, so that no acute inflammatory action may be set up. Without this precaution the patient may become discouraged so that he will not be willing again to undertake a treatment which has resulted so disastrously. The liver and kidneys of the rheumatic person are always overworked, and are doubtless in most cases more or less diseased, so that the ability of the liver to destroy poisons, and of the kidneys to eliminate them is very much diminished; consequently they are not prepared rapidly to remove from the system the large amount of poison resulting from vigorous or too long continued exercise of any sort.

Proper exercise, judiciously administered, diminishes the amount of uric acid in the blood and tissues, and hence lessens the danger of injury from a slight excess of exercise and of disorder of the kidneys resulting therefrom. It frequently happens that though exercise produces decidedly unpleasant symptoms at first, if persevered in, it results in great benefit by producing a greater tissue purity.

Exercise should never be prescribed for rheumatics whose joints are inflamed, swollen, or tender. Enlarged joints, without the presence of acute swelling and inflammation, are not a contraindication for exercise. In the majority of severe cases of rheumatism, begin with massage, and then proceed gradually to such exercises as the patient can himself take, as horseback or bicycle riding.

Not the least advantage of exercise for rheumatism is the fact that it affords one of the best means of preventing the deformities which often result from this malady, by maintaining mobility of the joints, and preventing shortening of the muscles. There is in this disease a waste of contiguous muscles; for example, in cases of rheumatism of the knee-joint, there is a waste of muscles in the front of the thigh. The weakening of these muscles naturally gives rise to flexion of the leg upon the thigh by reason of the greater strength of the flexor muscles. Permanent deformity is sometimes produced in

this way, from the long-continued pressure of the articular surfaces of the joint upon the same point, causing erosion, while other portions of the joint undergo changes that unfit them to perform their natural functions as articulated surfaces.

Notwithstanding the fact that exercise generally gives rise to pain in the muscles and joints of the affected parts, it is, nevertheless, the very best means of curing these pains. It is only necessary to begin gradually, increasing the vigor of the exercise from day to day, until it can be carried to such an extent as to produce vigorous perspiration. As the patient becomes warmed up by the work, the stiffness of the joints will disappear. An illustration of this fact is frequently to be noted in driving stiffened horses. Such an animal, although limping severely when coming from the barn, may, after the first few miles, travel as easily and rapidly as a well horse. So the rheumatic patient must persevere with his exercise even though at first it may cause him great effort and a considerable amount of pain.

Rheumatism is frequently associated with obesity, a disease with which it is closely allied. The obese rheumatic labors under a double disadvantage; first, that his diseased joints are burdened with a surplus of flesh, and secondly, that the amount of exercise required of him, notwithstanding his hampered condition, is doubled by the association of the two maladies.

THE BAKERSVILLE SCHOOL OF HEALTH.

BY MARY HENRY ROSSITER.

MRS. TED SMITH was the autocrat of Bakersville. Her husband was a ranchman with plenty of money and a disposition to spend it promptly. Mrs. Smith was fond of display, and posed as a woman of public spirit and enterprise. She was egotistical, coarse, and domineering; but as she made it a point to patronize home merchants, and did it liberally, her townspeople overlooked her vulgarities, and accepted her dictates usually with enthusiasm.

Mrs. Smith took particular pride in knowing and doing "the latest thing." She bought all the new novels, which she never read. She was the first woman in town to have a lady's bicycle, which she never rode. Her latest fad had been golf, which she never played. She now proposed to have a school of health.

"'Tain't that I'm not healthy myself, and don't know everything necessary to keep so," she explained to the ladies before whom she divulged her plan, "but this health business is getting to be mighty important all over the country. People are dying everywhere at a fearful rate, and I mean to give the women of Bakersville a chance to protect themselves."

"What kind of a thing is it, anyway, this school of health?" asked Martha Keyes. "Do they think they can teach health like algebra?"

"My goodness, Martha, I would n't tell that I'd never heard of one," said Mrs. Smith. "Of course I don't suppose any of you know much about them yet, they're so new in small places. But you 'll never forget one after you 've been to it. They teach you all about cooking, and dressing, and exercise, and baths, and I don't know what all."

"Oh, won't it be lovely to learn how to cook," exclaimed Josie Anderson. "Jennie Chase has just come home from that elegant cooking-school in Boston, and she can make just the dearest things, — all sorts of salads and entrées, and the

most irresistible desserts. Oh, I'll be on hand for the cooking lessons if nothing else."

"I don't care so much about the cooking," said Katharine Worth, "but I would like to know something about hygienic dress. It will drive me to drink, I fear, this trying to make my clothes both comfortable and stylish. How to do it with corsets on is more than I can imagine."

"Perhaps they'll want you to take your corsets off," suggested Josie.

"Oh, no, they won't," said Mrs. Smith, who wore hers notoriously tight, "they're not cranks at all, at least Dr. Grant ain't. From all I've heard about him, he's got lots of sense, and likes to have folks look nice himself. He has some ridiculous ideas, of course, the same as all reformers, but you ain't obliged to agree with 'em if you don't want to. Anyhow, no gentleman 'll find fault with a lady's clothes. I don't allow no man, not even Ted Smith, to dictate to me what I'm goin' to wear. 'Tain't none of their business.

"Well, I'm glad you like the idea of havin' a school of health. I thought you'd appreciate it, and I made up my mind to give you this treat if it cost me five hundred dollars. Of course, I can't really expect to learn anything new myself, for I live very hygeenically now, but the rest of you have n't had so many advantages, and I want you to get all there is in it."

"Which won't be very much, after all, I guess you'll find," said Martha. "I admit that I never heard of a school of health before, or of Dr. Grant, but I have heard of and investigated all sorts of physical culture and health-producing schemes, and in my opinion they're generally fizzles. They give you a lot of charming theories, and some nice young man will lecture to the long-suffering public on 'The Dress and Diet of the Ancient Assyrians' or an equally timely topic; but so far as telling Martha Keyes what to wear and eat and drink that she 'may live long in the land and prosper,' I'd be most awfully surprised if they even touched upon such a common subject."

But she was surprised; in fact, the small company of ladies who formed the élite of Bakersville were very generally surprised that June afternoon when they met in the lodge-rooms for the opening session of the school of health.

"And is that Dr. Grant?" exclaimed Katharine in a whisper to her companion, as a slender, sweet-faced woman appeared upon the platform.

"A woman, for all the world," cried Josie. "What a joke on Mrs. Smith! Why, she called her *him* all the time."

"Yes," said Katie, "and by the way she talked you'd have thought she had called him 'Grantie' a thousand years. My, but does n't she look mad, though!"

Mrs. Smith, who occupied a conspicuous seat in the front of the hall, did indeed look disturbed, if not angry. With a very red face and a conscious air she gazed straight before her as the doctor began speaking.

"Hush," said Katharine, "she's begun. What an awful little thing she is, and how pale to show off health reform."

"I guess she thinks so herself," said Josie. "Listen."

Dr. Grant was, in fact, explaining that she always hesitated to come before an audience to speak on such a subject. But it was her misfortune, not her fault, that her mother and grandmother, yea, and her father and grandfather as well, had never heard of such a thing as health reform, else perhaps she might herself be a better representative of the faith she advocated. She was very glad, she said, to see that most of her audience were young. "You can make your children

all that you yourselves might have been, and more, while at the same time adding many years and much happiness to your own lives," she declared. Then she said, "Now, ladies, before we enter upon our more serious business, let us clear our brains and refresh our bodies by a few physical exercises. The hall being large and the assembly small, you will each have plenty of room," and she asked the company to stand, and to follow her lead in some simple Swedish movements.

"Merciful goodness, Katie," cried Josie, as Dr. Grant lifted her arms above her head and commanded "stretch," "I can't do that. Why, I always have to pin my hat on first if I 'm going to wear this waist, the sleeves are so tight. I could n't begin to get my arms up over my head in that style, to say nothing of 'stretching.'"

"I left off my corset on purpose to-day," whispered Katharine, "but I don't fare much better. That doctor up there does n't seem to remember that we have clothes on."

"Just look at Mrs. Smith," said Josie, "is n't she a sight? She 'll certainly burst something if she does n't look out."

"Mrs. Wayne has given up the struggle," answered Katie. "I 'm sure that 's no wonder, for she can hardly breathe ordinarily, standing still, and I guess she laced herself extra tight to-day, to make an impression upon the great Dr. Grant. How funny!"

"There, it 's over, thank goodness. Let 's hurry up and sit down," said Josie. "I feel like a fool standing here so togged out that I can't move. To-morrow I 'll wear a Mother Hubbard."

"Ladies, I made a mistake," said the doctor, when they were seated again. "I said you would have plenty of room. I find, however, that while there is plenty of room in the hall, there is by no means enough in your clothes. Now confess to me, is n't it really absurd to dress in such a way that you can not move your arms and legs, to say nothing of your waist and chest, freely and strongly, as nature intended? I thought as I stood here watching the heroic efforts so many of you were making, 'If these ladies could only see themselves just as they look, trying to make natural and even necessary movements in a most unnatural and unnecessary dress, and if they could see themselves as they might be, graceful, supple, strong, dressed in such a way that their wills and not their waists would govern the action of their bodies, they would certainly make haste to reform. Why, there are positively women here who could not raise their arms above the horizontal, or bend their bodies six inches to the right or left. Just imagine what such bodies must look like without their clothes.

"Ladies, you are really thieves. You are stealing from yourselves every day — stealing the pure air from your lungs, the richness from your blood, the vigor from

your muscles, the light from your eyes, the thoughts from your brains. Let me show you how this can be," and the speaker unrolled some charts that hung beside her. "Now, this is the way the modern society woman looks undressed. You see how her chest has fallen in. Her bust hangs down in a most ungraceful manner. Her abdomen protrudes; she is round shouldered; her muscles are flabby; she is altogether an unwholesome looking object."

But Mrs. Smith could stand it no longer. Her face was on fire, and the feathers in her bonnet bobbed back and forth in the most agitated manner as she rose to her feet and began to march down the main aisle, as if to leave the room. But whether it was the mortification caused by her mistake about the speaker or the consciousness that by her present action she was making herself a conspicuous object-lesson to all her acquaintances, suddenly she wheeled about and burst forth to the astonished doctor, "I'm sure you did n't have no call to come here and insult honest people. There ain't a woman in this house whose figure would look like that if she had the indecency to let it be copied. It 's a miserable, mean caricature, and I 'm surprised that any respectable lady will stay here and listen to such outrageousness. My corsets ain't tight, and never was. I did n't go through them exercises, because I think it 's foolish for an old married woman with a grown-up family to be waving her arms above her head, and trying to turn herself inside out. And my figure, undressed, don't look no more like that thing you've got up there than yours does, nor so much, I 'll bet you most anything," and Mrs. Smith flounced boisterously toward the door, in the midst of great excitement on the part of the audience.

"Mollie Smith has extinguished herself at last," whispered Martha Keyes to her mother. "I 'm sure the women of this town 'll never stand it to be so disgraced."

"Shoe pinched pretty hard, I reckon," responded the old lady. "Folks did n't wear corsets no tighter when I was a girl."

"Well, Dr. Grant told the straight truth and no less, and I 'm glad of it. Amen," said her daughter.

"Hush, she 's at it again," said Mrs. Keyes.

Sure enough. Mrs. Smith had stopped once more, and was now addressing her remarks to the company of ladies.

"You ain't got much spunk, you women of Bakersville," she was saying, "to sit there like sticks and hear yourselves abused. The next thing you know that spindle-shanked young woman who pretends to be a doctor, though what women have got to do with doctoring stumps me, — that woman, I tell you, 'll be wanting you to take off your corsets."

At this a murmur of horror went round the room.

"Yes, you will, won't you?" demanded Mrs. Smith, turning once more to the speaker. "I defy you to deny it."

"I should n't think of denying it," said Dr. Grant, greatly amused. "I certainly believe that every woman would be better off if she discarded corsets."

"Oh, I just could n't do that," exclaimed Josie, involuntarily and loud enough to be heard by the speaker, as the two girls sat near the platform.

"Now, tell me why, my dear," said the doctor, turning to Josie with a smile. The latter, confused at being addressed in public, stammered rather incoherently, "Oh, I don't know— I — we — you would look so perfectly awful, you know. Why, I would n't have a *man* see me without my corset, for anything."

"But, my dear child, consider it just a moment," rejoined the doctor. "Don't you really think yourself that you would look more modest and womanly dressed in such a way as to attract no special attention to any particular part of your body? Would you rather have 'a man' see you with the stiff, ugly edge of a corset showing through your dress and marking you off into sections, or wearing a gown so fashioned that your figure seems one beautiful whole, not divided into parts?"

"That's just splendid," cried Martha Keyes. "It's just what I've always thought."

"But when you leave off your corsets," said Katharine, "you feel as if you were all falling to pieces. I left off mine today, and was horribly uncomfortable, and yet I could n't do the exercises any better than Miss Anderson."

"That is because your waist is made to fit your corset and not your form," said Dr. Grant. "Did your dressmaker take pains to have you raise your arms and move them in all directions when you were having your sleeves fitted?"

A general smile greeted this question.

"No," admitted Katharine. "She wanted to make the sleeves just as small as possible. In fact, I could n't get them over my hand the first time I tried them on."

"Katharine Worth, you 'd ought 'er be ashamed of yourself," cried Mrs. Smith, who had retreated to the end of the room, and was lingering there with a belligerent countenance. "The very idea of slandering Miss Jones in that style. You 've always had your clothes made just as you wanted 'em."

"Yes, but I want them different now," said Katharine. "The sight of those exercises was enough for me. That 's all the lecture on dress reform that I need. I 'm going to get fixed so that I can swing clubs and be comfortable, and do up my hair in every dress I own."

"So am I," said Martha Keyes. "I intend to adopt the latest in health reform, if I have n't had many advantages."

"Well," ejaculated Mrs. Smith, as a parting shot, "*I* think it was a mighty mean trick to get us all up there in the most conspicuous position possible, and then make fun of us like that. If that 's the sort of lessons they teach, I don't want anything more to do with a school of health," and her corpulent form disappeared through the door.

"It is very evident," said Dr. Grant, "that it would be highly superfluous for me to make any more remarks to-day on the subject of dress. Sometimes a text alone is better than many sermons. You have the text and an illustration. Perhaps you will each prepare a sermon."

"Well," said Josie to Katharine, as the girls were leaving the hall, "that 's the funniest lecture I ever went to. Who would have supposed Mrs. Smith would go off like that!"

"It 's my opinion," said Katharine, that Mrs. Smith was not only laced for

the occasion, but that she had corns and tight shoes in the bargain."

"Well, if the cooking-school turns out in the same way," said Josie, "we shall have to look out for flying saucepans."

"Mrs. Smith will probably bring her pockets full of old doughnuts ready to shy at the doctor," said Katie. "But does n't she keep her temper splendid! I suppose that 's because she 's a vegetarian."

THE MOTES IN THE AIR.

BY MRS. E. E. KELLOGG.

WHO that has watched the strong sunlight streaming through the half-closed shutters of a darkened room with the myriads of tiny atoms dancing in the bright beam has not wondered where the dust comes from, and if the air is all thus full of it?

Dust is such a common thing, one is apt to give it little consideration save when it accumulates enough to be conspicuous within doors or becomes a source of annoyance out of doors; yet often the things that are accounted most trivial are of greatest importance in the hygienic welfare of the household. Scientific research has made it plain that so commonplace a thing as dust is frequently instrumental in causing serious disease. Ever since creation, when the earth was formed of dust, various natural forces have been at work wearing its substance away and mingling the atoms with those of the vegetable and animal waste everywhere present upon its surface. These dust atoms, wafted by the breezes or borne by the stronger winds, find their way into our dwellings, the bane of the tidy housekeeper, filling the air indoors and out to a greater or less degree, dependent upon varying conditions of soil, climate, and the occupations of mankind. Besides the inert particles which constitute the larger proportion of ordinary dust, there are living elements,— tiny organisms so minute that even millions massed together would not cover the head of a pin. Of these micro-organisms, there are three common kinds found in dust-molds, yeast, and bacteria. These last are the most minute, simple, and numerous of all forms of life, and while most of them are harmless to man, serving nature as aids in her vast laboratory, a few species are the active cause of some of the most contagious and wide-spread diseases.

The special soil in which these forms of life thrive best is the moist surface of all decaying matter, both animal and vegetable,— garbage, sewerage, human sputum. Having become rooted, so to speak, in any soil, they do not, with the exception of certain molds, become detached, even when the soil in which they are grown becomes dried, pulverized, and is swept along as part of the dust in the air. Clinging thus to other dust particles which are heavier than air, they are continually settling upon the lowest available resting-place, some of them to be whirled about again by the next air current; others, having fallen upon some moist substance, like seed upon good ground, begin at once to germinate and multiply. These living atoms of dust require warmth and moisture for their growth, and if they find their proper soil, whether it be on the foods exposed for sale along the dusty streets, in the refuse pail at the back door, or the air inhaled in the lungs, they readily take root, and propagate their kind.

The atmosphere, except upon high mountains or over large bodies of water,

is seldom free from these germ-laden dust particles, although they are fewer just after a rainfall or snow-storm or strong wind. The number is also greatly modified by conditions of cleanliness. Once inside our dwellings, dust has "come to stay," unless removed by painstaking labor. A system of ventilation of efficiency sufficient to keep the indoor air pure is of little value in ridding it of dust.

Experiments carried on in the wards of the Boston city hospital to ascertain the number of micro-organisms in a given volume of air showed that during the day, while people were moving to and fro, the air contained large numbers of bacteria and molds. At midnight, when for several hours the ward had been quiet, the air of the room was practically free from dust and its micro-organisms, they having settled upon the floor, furniture, and other surfaces. This affords a suggestion of practical value to the housewife, demonstrating how by taking advantage of this tendency of dust and dust-germs to settle in still air, it is possible for her, under proper conditions and care, to keep the air of her living-rooms largely dust free.

We are accustomed to consider the appearance to the eye as the test of the cleanliness of our living-room, and make vigorous efforts to remove the larger dirt particles. It is, however, the less visible dust — the "motes in the air" to be inhaled with every breath — which is the real menace to life and health.

Since the lowest and broadest level surface in a room is the floor, it is evident that the greatest quantity of dust will settle upon it. If the floor is a smooth surface of hardwood, or of stone, tile, or one covered with linoleum, or wood carpeting, the dust may easily be wiped up, and carried away. If, however, as is too generally the case, a carpet covers the floor, it not only presents the disadvantage of hiding the dust in its meshes, but also of holding it there. Dust clings tenaciously to wool fabrics, particularly to such as have a thick nap or a rough surface, as do carpets and portières. Experiments carried on for the purpose of cleansing the indoor air of dust particles, by allowing strong currents of fresh air to sweep through the room, resulted in removing only such particles as were suspended in the air, having but little effect upon those which had become attached to carpets and hangings.

The usual procedure for the removal of dust, that of sweeping and dusting as it is generally accomplished, is more a dust-spreading and dust-stirring-up process than anything else. Sweeping removes little dust save that which clings to the larger particles of household dirt or to the nap which the broom wears from the carpet. The experiments before referred to showed that the ordinary routine work of sweeping and putting to rights the ward of the hospital, which presumably was an uncarpeted apartment, increased the number of bacteria in the air of the room about seventy times. What, then, must be the condition of the air of a room, after sweeping, the carpet upon the floor of which is not taken up oftener than during the semiannual house cleaning? The frequent sweeping of carpeted floors is not only a dust scattering process, but the vigorous strokes of the broom drive the dust particles through the meshes of the carpet, forming an accumulation underneath it from which some dust atoms must rise again with every movement upon the floor. Of course, something depends upon the manner in which the carpet is cleaned and cared for. The custom of some housekeepers of sprinkling moist tea leaves, coarse salt, or dampened corn-meal upon the carpet before sweeping aids in keeping down the invisible "cloud of dust" from the air, and in re-

moving more of it from the floor than a dry sweeping. The use of a good carpet-sweeper is also effective in gathering the dust without diffusing it through the air.

The chief source of the introduction of dust into the house is the mud and filth on the shoes and garments of those who walk upon the carpet. At best, a carpet is a veritable dust collector, which, when we take into consideration the significance of dust in its relation to health, is better dispensed with.

A hardwood floor, painted, stained, varnished, or waxed, with removable rugs which may be carried out of doors to be freed from dust, makes possible a state of cleanliness unobtainable when a carpet is used.

Sweeping is looked upon as a necessary operation for cleanliness, and it may be required for the removal of large dirt particles; but as a sanitary measure, dusting is far more important, and floor dusting the most essential. If the floor is a painted one, this may easily be accomplished by wiping it over with lightly dampened clean cheese-cloth. This can be most thoroughly done by hand, but a cloth fastened over a clean broom may be used. For a varnished, waxed, or otherwise polished floor, a broom covered with heavy cotton flannel serves the purpose very well. Even a carpeted floor may be rendered much more sanitary by being wiped daily with a moist, not wet, cloth. When the dusting is completed, the cloths should be well washed with soap, boiled, and dried before being used again. When sweeping precedes the dusting, everything likely to retain dust should either be taken out of the room, or covered with sheets or other large cloths.

When the sweeping is completed, a strong current of air allowed to blow through the room from opened doors and windows, to drive out some of the floating dust atoms, is desirable, after which the room should be closed for an hour or two, to allow the dust to settle.

It is an excellent plan to sweep overnight such rooms as are not occupied during the evening, since there is no time when the dust can so well settle as during the night. An early morning dusting can then take the place of the usual morning sweeping, which, instead of making the room more sanitary, starts the dust in motion to continue thus till quiet comes again. Particularly is this overnight sweeping and early morning removal of dust an important factor in the care of dining-room, kitchen, and other food rooms.

The dusting of surfaces and furniture should be done with slightly moistened cloths, preferably cheese-cloth or gauze. A brush or feather duster is of no service whatever in ridding a room of dust. Anything requiring brushing or beating should be taken into the open air; or, if this is not practicable, it should be brushed before the dust is settled in the room.

The labor of keeping a room dust-free is greatly lessened and the sanitary conditions are equally increased by simple furnishings and finish. Intricately molded or carved woodwork upon walls or furniture, upholstered furniture, tasseled and tufted, heavy curtains, portières, and other hangings, while giving to a room an air of ease and elegance, are veritable dust repositories. To forego these luxurious appointments does not necessitate the sacrifice of either comfort or beauty. There are possibilities of rare beauty in an unornamented, natural-wood finish. Hangings of silk, linen, or muslin, furniture covered with leather, linen, or other smooth-surfaced fabrics, with polished, hardwood floors, and rugs, make possible a rich and dainty room both esthetic and sanitary.

EARLY CHILDHOOD.

BY KATE LINDSAY, M. D.

CHILDHOOD may be said to begin with the completion of the first dentition, at the end of about two or two and a half years. This period of early childhood lasts from the end of the first dentition to six or seven years of age, or to the beginning of the second dentition. It is a period of rapid physical development and of great mental activity.

During the first year of life the head gains five or six inches in circumference, and at the end of this period the head, chest, and waist measure very nearly the same — between eighteen and twenty inches in the well-developed baby. In this second period all the vital organs grow rapidly, and the trunk and head are much larger in proportion to the limbs than at maturity, or even at ten or twelve years of age. At this time the glandular system is also very active, and nerve disorders and catarrhs are very easily excited. This is due to the fact that the organs in the growing period are unstable in structure, and therefore easily damaged. Familiar examples of this may be seen in the vegetable world: every year the vigorous young oak sends forth new branches, which, when full of sap and rapidly increasing in size, are soft and easily broken; but in a few months, after active development ceases, they show the density of structure of the bark and wood of the oak. By the second year they are veritable tough oak branches, strong and elastic, and able to bear great strain without injury to their structures.

During childhood the senses and the emotions predominate over the intellect and the reason. The child's mind is like wax, taking lasting impressions from what it sees, hears, and comes in contact with in its daily life. It is the period of experiment, when it has not yet learned life's limitations, and when it does not see why it can not have the moon simply by asking for it. It is the selfish period of life, when desires and impulses are the only guide to its wants. It pulls the hot-water can down on its head, and scalds itself trying to see what is inside of the vessel. Failure has not yet discouraged its self-confidence, and the little three-year-old boldly seizes the lines and tries to drive his father's spirited thoroughbreds with full confidence that he can manage them as well as papa, if he can only have the lines all to himself. Whatever older people do he is eager to try. This is the time when a character is either made or marred. The little one soon becomes a reflection of the words and actions of the older people about him. Two mistakes are often made at this period of life by well-meaning parents; one is that of trying to prevent disastrous experiments simply by forbidding them, and at every point checking and restraining; the other, no less fatal, is to take no care of the child, now grown to be in a measure self-dependent. Mother is tired and nervous, so she feels distracted by the chatter and noise of three-year-old Willie. His endless questions are wearing out her last bit of patience and self-control. She says to him in an angry, fretful tone, "Oh, do go away and get out of my sight, and don't let me either hear or see you again until night" or dinner-time, as the case may be. Thus left to his own resources, Willie, still struggling with some, to him, important problem of life, goes out to find companionship, and propounds his questions to whomever he may find ready to answer him. It may be ignorant Bridget in the kitchen, the outside stable boy, or some street arab a few years older than himself. He may stand

at the street corner and listen to all the profanity and foulness of the street loafer, and when he comes home at night he startles his mother with some oath or foul expression of which he, poor little injured baby, does not understand the meaning. The mother, shocked to hear such language from her little boy, makes another fatal mistake. Instead of trying to learn how the germs of profanity and impurity were sown in the plastic brain, and wisely shaping the child's every-day life and surroundings so as to make him forget them as soon as possible, she sternly reproves him and forbids his using such language, hanging over his head a threat of severe punishment should he ever mention such words in her presence again. Short-sighted mother, to drive her little boy into temptation, and then punish, or at least threaten to punish, him for getting ideas and hearing words which he could not avoid. Then she forbids his telling what he hears outside, and so shuts herself off from all chance of knowing what further moral dangers threaten her darling boy. A new question and a fresh suggestion can not help coming into the little mind: "Why does mother forbid my using such words where she can hear them? I must find some one who can tell me why such words are naughty for little boys to use, and why big men may use them without being naughty." Poor, perplexed mortal! He thinks at once of the stable boy or some older person who will be likely to know about the matter, and runs to them for information, and without any fear of either rebuke or punishment, repeats the forbidden phrases, being rewarded for his supposed smartness and forwardness by a hearty laugh, and the expression, "My, but you are a forward little chap. How ever did you get your small tongue around them big swear words? Better not let papa or mama hear you." The little fellow has already learned that lesson, so he forgets his desire for information in the thought that he has done something clever, and is now quite a man.

The lesson of deception is taught by the unwise course of his mother, and not only will the child learn bad words, but also bad habits, which will destroy his future life and impair his future usefulness. The writer has listened to confessions, pitiful in the extreme, of many who admitted that they had the habit of solitary vice fixed on them before they were five years of age, and long before they knew what was right or wrong in the matter. It is sad, indeed, to see a mere child a moral and physical wreck from solitary vice; yet it is at this very age that the habit is formed in the majority of cases. The child was eager for information; when it came to its parents they refused to give it what it craved, and forbade its questions, but it could not possibly forget what it had seen and heard. The forbidden words kept forming themselves into inaudible speech, or, bursting all bonds, were spoken aloud in the presence of those before whom he dare repeat them. The subjects forbidden discussion in the parent's presence kept forcing themselves to the front, and it became the one aim and desire of the little one to get into the company of those who would willingly discuss the matter with him. And alas! it was not difficult to find teachers who without money and without price, save that which comes from the satisfaction of seeing wreck and ruin wrought in a fellow mortal, would spend time and take special pains to impart to him all their store of vile words, thoughts, and actions. Mother and father had no time to fill the youthful mind with virtuous thoughts, which would lead to virtuous words and actions, but away in some corner, in some out-of-the-way place, the little one is taken, and made to drink in moral contagion.

Infectious diseases are the result of taking into the body some disease-producing virus, which, feeding on the materials of the bodily structures, soon overpowers all the natural functions of the organs, and even destroys life itself. So does this moral contagion increase, and destroys all good impressions that may have been made on the plastic mental and moral nature of the child. It is a fearful truth for parents, guardians, teachers, and all who have the care of children to contemplate, that if they lose the confidence of the little one, no rule, law, reproof, punishment, exhortation, or any other form of moral medication will destroy this ever-active moral virus. It will not, like physical disease, run some regular course and then subside, but will grow stronger as the mind of the child develops strength and stability.

At birth the mind of the child is like a sheet of white paper. No ideas have yet been printed on the immature brain cells. There are, it is true, many strong tendencies toward either a good or an evil course, but they are yet latent. The education which arouses and keeps active the good, and holds in check the evil tendencies is what will shape the character of the future life. Mere negation will not shape a character, nor will it either suppress evil or stimulate to good thoughts and action. Teaching must meet the demands of the growing intellect, or it will fail of its purpose, which should be to prepare the young mentally, morally, and physically for both time and eternity. While the infant is still in arms, the mother can do much to mold character, and if she do her work well, will have but few rivals to hinder; for even in early childhood the little one will learn to criticize her words and actions, and to compare them with others. Happy are the parents to whom a child can come with all its hopes, fears, doubts, and discouragements.

We hear often about the potency of the traditional ounce of prevention over the pound of cure, speaking from a medical standpoint. To-day physicians are painfully aware that what are termed specific medicines or cures are very scarce, and that for the treatment of physical disease, prevention alone is potent. This is quite as true of the moral disorders of life. Take the alcohol habit, which has cursed mankind for centuries, and for the cure of which the ingenuity of man has long been exercised. Yet to-day thousands fall victims to it yearly without any hope of ever being free men again. Keeley-cures and all other medical measures, both regular and irregular, have been tried; still many struggle unsuccessfully to extricate themselves from the bondage of this awful appetite; still legions of alcohol victims yearly go down to unhonored graves. It is the want of using prevention in the early days of youth which makes all these wrecks of life.

Never, when aware that a bad habit is forming, make the fatal mistake of thinking that it can be corrected more easily when the little one is older. This is usually a confession on the part of the one whose duty it is to correct these bad habits, that he does not know how to do this work successfully. Remember that it is an easy matter to pull up an oak shoot of a year's growth, but it is much harder to pull it up when it is grown into a healthy sapling with roots extending far down into the earth, and branches spread out into the air. Land, to be productive, must be sown as well as have the weeds uprooted. What seed to sow in the form of thoughts, words, or deeds, every one who cares for the young should make it his business to learn. It is not enough to know that a bad habit is forming, and to know how to check it; the most important thing is to keep sowing and cultivating all good habits. To know

how to make the good interesting to the young mind, and to lead it to seek information about righteous things is the most potent measure for keeping out evil. Even the child of a few months must be willing to learn, or it will not take in knowledge. It is because the teachers of evil exert themselves to wake up the childish desires for a knowledge of wrongs that the way which leads to death seems so desirable to the little ones. Christ, our Lord and Master, who is our example in all things, always adapted his methods of teaching to the mental capacity of his hearers. The common people he taught by parables founded on the every-day affairs of life. He used those subjects which they could understand, to illustrate the deeper truths of man's future life. Every child is interested in a story, and often when it has been listening to what it should not hear, the bad impression made on the young mind can be lessened very much, and perhaps obliterated, if, instead of a reprimand for its evident interest in evil communications, some parable or story is told it, which would arrest its attention and lead it to forget the evil thoughts by substituting something noble, good, and pure. It is too often the case that mere corporal punishment, by association, helps to fix the harmful ideas more firmly on the brain.

Most children are busy experimenters, trying to do whatever they see others do, and nothing gives them more pleasure than for father, mother, an elder brother or sister, or a teacher to take an interest in their work, not only wisely to commend but also to help about the matter. If Willie wants to play with some other child who will injure him by bad actions or words, how much better to spend a little time playing with him than for the parent simply to forbid his going outside for amusement. He will soon forget about wanting to go away, in the interest awakened by helping mother to make a snow man or a snow fort. Little children like to think that they are a help to father or mother. Often the restless desire to seek evil company can be met and overcome by suggesting to the little one that mother is very busy baking or washing, and will he please help her. The willing helper may be much of a hindrance for that time, but in the interest taken in thus helping mama he will often forget all about wishing to be in other company. Many other methods of supplanting evil with good will suggest themselves to the watchful parent.

Pray More and Whip Less.

The venerable R. L. Dabney, D. D., is well known in this country and abroad. Upward of twenty years ago, his youngest son, Lewis, was a sharp-witted lad, who promised to become a respected "chip of the old block." The lad was whipped one day for an act of disobedience, and then had to undergo the more trying ordeal of sitting quietly on the sofa. He became deeply absorbed in thought, and presently asked, "Ma, why did you whip me?"

"So as to make you a better boy," was the response.

Lewis again became lost in thoughtful reflection. Presently he blurted out: "Ma, do you believe in prayer?"

"Yes, my son."

"If you were to ask God to make me a better boy, do you think he would grant your prayer?"

"I think he would, son."

"Well, then, ma, I wish you would pray a little more, and whip a little less." — *Ex.*

THE BLACK PLAGUE.

BY MRS. S M. I. HENRY.

(Concluded.)

MRS. HANNA'S experience on that memorable day is best told in a letter which she had occasion to write to Mr. Featherby. It was written after the excitement had subsided, and she was alone for the night. It read :—

Mr. John Featherby.

HONORED SIR: Your good wife, who is my dear friend and well-wisher I am sure, in spite of the way things have turned out, put me up to some proceedings in reference to the child Nannie, which I have been nurse to, through the goodness of yourself and Mrs. F., since she was first born, for which I am humbly thankful. All of which was right and needful for her life, liberty, and pursuit of happiness, but which I am greatly perplexed to know how to bring about since the powers that be have interfered, and come and took everything out of my hands. I will proceed to explain, though it should be seen and felt to be understood.

I begun the day with the door from my room into hers open, and the southeast corner in full blast, — sunshine to let, so to speak, — and it happened just as Mrs. F. said it would, — the poor child slid into it as natural as a duck into water, which is a very good comparison indeed, considering the story about the old hen with a brood of ducklings, only in this case the old hen was Dr. Graham himself. Though that part of it didn't come first, but the dress and Mrs. Haverly did.

Nannie was so happy lying with Rover on the rug in that sun bath, never blinking an eyelid, which proves to me that the eye scare was a scare, and nothing else, that I did not bother her with dressing, seeing I was busy redding up some drawers and the closets, till at last Mrs. Haverly takes a notion to go out in the carriage, which, since it is the first time, struck me as a very sensible thing to do, and she proposed to take Nannie with her, which I thought sensibler, and I rushed around to get her ready. But when it came to the dress, what does the child do but up and insist that she must have on the red or the pearly one, that was new just before poor Gordie died ; and if you will believe it, she had got strength enough from breathin' the good air I gave her all night, and drinkin' the sunshine, as she called it, all the mornin', to stand out for what she wanted, in the good, old-fashioned way that I never expected to see her strong enough for again, from all that Dr. Graham had said about her hopeless condition.

She would not have her black dress on, and I dared not take her down in any other, so I just went and told Mrs. Haverly how the case stood ; and she came up, as cold, and set, and hard as a stone, and told Miss Nannie that she could take her choice — to be dressed suitable to go out of a house that was full of mournin' and sorrow, or stay at home. And she chose to stay at home, and lie in the sun in her white bedgown ; and she said right up and down that she would n't ever have on any dress again but her red, or blue, or pearly, or white ones; so she did n't have any yet.

When I knew it was coming time for the doctor to make his morning call, I tried my best to get her back into her room, for I had a premonition of what was coming if I did n't, but she had n't the least little pinch of mercy to season my soup with. She would not leave that corner; and for me or any one to try to take her up and carry her, you know how *that* always works. A mad cat, all legs and claws, is nowhere compared to her.

Well, there we were when I heard that doctor's soft tiptoeing coming into the room where she was not. He seemed to smell the rat, for he comes right straight on to my door, and then his alarm for the safety of that child, and his self-condemnation at allowing his good, trusty Nurse Mason to be sent away, and leaving the poor sick baby to meet her death at the hands of an ignorant, irresponsible creature like your humble servant, can't be put down on paper by me.

He was in such a hurry to save her that he never stopped to think that she might have a way of her own about things; and I suppose the man had really made himself believe she was the weak thing he had been trying to make her, but he found out something he won't forget in a hurry.

"What do you mean by this exposure?" he said to me; then, "You poor child," to her, "with this glare of light in your sick eyes!" She lay there looking at him as he was coming toward her, talking all the time in a way that she knew as well as he did was one big falsehood.

"Pull down that shade instantly," he said to me, "till you can get her up out of this; then lift her at once and take her back to her bed."

"I beg to be excused," I said very imprudently, I confess. "If she wants to go, she can walk." Then I thought I had done a very foolish thing, so I said, as coaxingly as I could, "Come, darling, let me carry you to bed for the doctor, won't you?"

"No, I won't!" she said, like biting a nail in two. "I won't go back into that dark hole, and I won't go to bed!"

Just then the doctor pulled down the dark shade to my wide south window, and you ought to have seen how like a little demon she was. She sprang up with a strength that I wouldn't have believed she had, and sent that shade up with a vim that took it to the top, and wound it tight to the roller.

Then the doctor was mad. He lost control of himself, I guess, and forgot that he was a doctor. He said, "You little vixen; you need a good spanking;" and then he remembered, I suppose, for he changed his tone and the color of his face, and said, "No, no, you poor child; you are very ill, indeed! I — you don't know what you are doing. Such excitement is very alarming." He went out, and came back after a few moments, and came straight up to Nannie, and began to try to take her up carefully; but he had to either let go or handle her just anyhow, and he is not the sort to let go, I guess. The result was that when he dropped her on her bed, and tried to straighten up, he left a handful of his beard in her clutches.

Then he told me to leave the room until I heard from Mrs. Haverly, and I didn't know any other way to do but to obey. "Close your door," he ordered, and I minded. Then he locked it, and about an hour later I got a note from Mrs. Haverly with an order for all my back wages and a month's in advance, with the word that I would not be needed any longer, but with permission to stay with the servants until I could get ready to go away. So here I am, thrown out on the world, with Nannie cryin' for me until the medicine put her to sleep, and Nurse Mason in charge; and if you can't do something, we're lost.

Yours in great tribulation, which is not with robes washed white just yet.

PATIENCE HANNA.

Mrs. Hanna intended to send the letter by Hans the next morning, but he was off very early, while she, after a wakeful night, fell asleep at the usual hour for rising, and so was late in coming down. She was thinking that she would go with her trouble in person to Mr. Featherby, when she saw Ted, his driver, whirl his gig around the driveway. She ran out, and as he stopped, handed him the envelope, and was asking him to deliver it at once, when he said in his blunt way,—

"I'll wait, though, 'til he comes out."

"Out? Is he in the house?"

"He is. Just brought him over to see the Missus."

"Well!"

She stood thinking, then added,—

"Yes, I'll let you keep it. Hand it to him when he comes out. And say, while you're waiting, won't you just drive me over to Rocky Cove? I'll get my hat in a minute."

"All right; jump in."

She ran for her hat, jumped into the gig, and Ted dashed off with her to her bit of the wilderness where she hoped to find comfort in the roar of the sea.

Meanwhile Mr. John Featherby had taken up his cross, and was sitting in the study, face to face with an angry woman.

The white suit which he always wore,—duck for summer, and flannel for winter,—and his benevolent face with its snowy hair and beard were the only relief from the prevailing gloom.

As Mrs. Featherby had stated to Mrs. Hanna, Mrs. Haverly was a lady, and had the most profound respect for the man who had been manager of the Haverly estates ever since before her husband was born. She had never forgotten the courtesy which was his due; but this morning she came very near doing so.

"I know what you have come for, Mr. Featherby," she said. "Mrs. Hanna has been to you with her story, and you feel that I must be called to account."

Mr. Featherby laughed. He was not prodigal of laughter, yet he always had it ready when it was needed.

"Now you have me at a disadvantage, indeed," he said, "for I have had no word from Mrs. Hanna, spoken or written. Is there a story that I ought to hear? and ought you to be called to account?"

Mrs. Haverly's anger could not stand out against Mr. Featherby, and she replied graciously,—

"Well, I don't know. There is a story,—and—perhaps I ought to be disciplined for haste. I have thought two or three times that I have been hasty, but Mrs. Hanna has come into collision with Dr. Graham, and one or the other will have to go. I can not dismiss the doctor, with my only child—all I have left in the world—hanging on the very verge of the grave. I feel very bad to have Mrs. Hanna go; she has been a faithful nurse; but I have concluded that it will be better, for several reasons. Nannie has probably outgrown her. Don't you think it may be so?"

"If you will pardon me, Mrs. Haverly, I would prefer to leave you to settle that question. It is beyond me. I had one special errand this morning, which I would like to discharge first, if you will allow me, especially as it is of the very first importance!"

"Certainly; and I beg your pardon for the reception which I have given you."

"Don't mention it."

"You must remember, Mr. Featherby, that you are my only counselor; that must be my excuse for speaking to you of these personal matters."

"Speak to me of any matters, freely; but when it comes to decisions, every one must stand alone. I have come on a very personal errand. You know that your husband left a very grave charge upon me with the guardianship of the children. This must account for my anxiety that you, the natural guardian, should be kept in health. It is with reference to your health and Nannie's that I have come."

"Thank you, Mr. Featherby. You have always been very thoughtful, and we do need some one to look after us. I know that I am very poorly, and as for Nannie—O, I shall be left childless, I fear. My sorrow is greater than I can bear."

"And yet it need not be. It is a very simple matter to carry any load if you only have strength enough. The fact is you are dying for lack of a little gladness."

"Very true."

"Well, then, why not cultivate gladness instead of sorrow?"

"Cultivate gladness?"

"Certainly."

"O, I wish it could come by culture, and that I could have just a little garden-place in which to sow the seed of it, to water, and tend it, and reap it."

"You can have just such a garden-place. You have it already."

"O, help me to find it, and I will thank you with all my heart. I am dying for one little bit of gladness."

"My dear child," and the old gentleman's voice was thrilling in its sympathetic power, "that garden-place is right here in your own home. The seed of gladness has already been sown, the tender plant already rooted; all that you need to assure a harvest is to supply the proper conditions of growth.

"Pardon me," rising and going toward the window. "Allow me; no need to call James." He parted the heavy drapery, opened the blinds, lifted the shade, threw open the window, and the sunlight and fresh air darted in as if a barrier against which they had been crowding with might and main were suddenly removed.

"The conditions of growth," he said, "are just about the same everywhere; but,—my dear Mrs. Haverly,—you used to have a great many plants in this window. What has become of them?"

"Oh, Peterson took them out long ago. He—he said they—they could not live in—in the dark."

"Oh, indeed, and you let them go?"

"Oh, yes; I knew he was right."

"Right? how was that?"

She did not reply.

"You knew he was right? and you cared about the plants so much as to allow them to be taken out of the dark into the light that they might live? What would you do, then, if the heavenly Husbandman should say that the tender plant which he gave you to train in this home-garden must be taken out of your care for the same reason? Would you not consent to anything that would rescue her from the darkness and gloom which is just as deadly to the life of a child as to the bloom of a geranium? You have the conditions in your own hands. Come, let Peterson stock up with flowers; let them come back, and stand in the old places, here, and here, and here, as in the old days. Allow the sun and air to supply the proper elements for their growth, and life and strength will have a chance to come to you, and joy will not lag far behind. Treat Nannie as you would some costly plant. Let her have a chance to live instead of die. Do right by yourself and the child, and believe me, you will find that 'light is sown for the righteous, and gladness for the upright in heart.' Let faith spring up once more. You had faith once?"

"Yes, once, long ago; but O——"

"Faith also will die in the dark. It does not thrive in crape. It likes fresh air, open windows, white garments. What do you say?"

She had turned her sad, withered face toward the light at the opening of the window as instinctively as Nannie would have done.

"What do I say? I have nothing to say. I feel too much for speech. I need—I think I need some one to speak and act for me."

"No, you mistake. No provision has been made for such a need. No one can speak and act for you. If you wait for that, you will wait forever. The responsibility is all yours. You must yourself speak and act in view of this great trust of wealth, culture, social position, motherhood, and service. You are responsible for much that concerns even me and my wife. Suppose you extinguish your life in this gloom, and that the care of your child should come, as it would, wholly upon me, an old man, very near the end of his natural term of life, who may die before she could be fully grown; what then? I would do the best I could if you should reduce me to this necessity, but do you think it quite right to lay such a charge upon me? Have I not filled up the measure of my days in service to your house, that you should think I owed you this?"

She looked up at him as he stood in the light before her.

"O, but," she said, "what a gain it would be to her!"

"Yes, as matters stand to-day, it would. I know that if you are to remain just as you are, and should step out forever, and my wife and I should move into this place and take its responsibilities, it would be better for the child. But is that the very best that you can see among the possibilities? I can see something vastly better. Let me tell you what I see. I see a woman who by submission to the truth, as embodied in the Man of Galilee, has arisen out of the black cloud of mourning in the white garments of praise, in perfect womanly strength; who by the divine touch of love has made a home in this grand old house, a home set in sunshine as that jewel is set in gold; a woman with a faith so sublime that no darkness or gloom can live in its presence any more than midnight can live in the glory of noonday; and I can see with her a little child growing up in the light that shines from her face, as the lily grows in the sun, beautiful with the grace and fragrance of nature, to adorn the doctrine of gladness. I see — O, I see more than I can tell; for while I have the eye of a seer, I have not the tongue of a prophet. But what do you say?"

"O, help me!"

"No; it is not for me even to help you. Help has not been laid upon me, but upon One who is mighty, One who has said once, 'Let there be light.' But even he, the light-bringer, expects you, now, since light is made, to arise, and open the way for it to come in. Pardon me for disturbing your arrangements even for a moment," and before she could realize what he was doing, he had closed the window and the blinds, drawn the drapery, and was taking his leave.

"W — w — hat! Are you going?" she gasped.

"I must go now; but I leave God with you, and you with him. Settle it between you," and he was gone.

What transpired in that room no one ever knew, but when Mr. Featherby entered his home that evening, he said,—

"Mrs. Featherby, the black plague is stayed."

"The black plague?" she gasped, "why? where?"

"Haverly Hall is all open from basement to turret. Mrs. Haverly, Mrs. Hanna, and Nannie are out in the carriage. Mrs. Haverly has on her old white India shawl that her husband brought her so long ago; Nannie is in the pearly dress surrounded with bright cushions, with Rover beside her, and she is looking as happy as a princess. Mrs. Hanna — well, here is a letter that will give you the first chapter of the story as she tells it."

Mrs. Featherby took the letter, sat down and read without a word until she had finished; then she ejaculated,—

"The rest! Mr. Featherby, you know more about this than you intend to tell; but I 'll get it out of you just the same;" and she did.

COME, Sleep! O Sleep, the certain knot of peace,
The baiting-place of wit, the balm of woe,
The poor man's wealth, the prisoner's release,
Th' indifferent judge between the high and low,
With shield of proof shield me from out the press
Of those fierce darts Despair doth at me throw;
O make in me those civil wars to cease:
I will good tribute pay, if thou do so.

— *Sidney.*

Seasonable Bills of Fare.

By Mrs. E. E. Kellogg.

BREAKFAST NO. 1.

Grapes
Boiled Hominy with Cream or Nut Cream
Corn Dodgers with Nuttolene
Granose Flakes with Apple Sauce
Toasted Whole-Wheat Wafers

BREAKFAST NO. 2.

Apples
Grains of Gold
Baked Sweet Apples with Nut Sticks
Whole-Wheat Bread
Tomato Toast Fruit-Coco

DINNER NO. 1.

Potato and Rice Soup
Stewed Nuttose with Baked Sweet Potato
Beaten Biscuit
Bean Pudding with Tomato Sauce
Stewed Grapes
Browned Granose Biscuit
Baked Sweet Apple Dessert

DINNER NO. 2.

Celery Soup
Potatoes Boiled in Jackets with Gluten Dressing
Fresh Lima Beans
Boiled Wheat with Raisins
Graham Bread Stewed Apples
Fresh Fruit

RECIPES.

Potato and Rice Soup.— Cook a quart of sliced potatoes in as little water as possible. When done, rub through a colander. Add salt, a quart of rich milk, and reheat. If desired, season with a slice of onion, a stalk of celery, or a little parsley. Just before serving, add a half cup of cream, and a cup and a half of well-cooked rice with unbroken grains. Stir gently, and serve at once.

Bean Pudding with Tomato Sauce. — Put one tablespoonful of nut butter or its equivalent, rubbed smooth, into a little cold water, and add boiling water to make one pint. With this moisten well eight pieces of zwieback. Have ready four cups of bean pulp to which salt, if desired, has been added. Other seasoning, such as a very small quantity of thyme or sage, may be liked by some. Put a few spoonfuls of the bean pulp, which should be moist enough to spread easily on the bottom of a baking dish, over this; add one half the moistened zwieback, then another portion of the bean pulp, next the remaining zwieback, and finish with the beans on top. Bake for half an hour or longer. Serve hot with a tomato sauce.

Gluten Gravy.— To one pint of good milk add one tablespoonful of gluten meal. Leave it in a double boiler to cook fifteen or twenty minutes. Salt to taste, and thicken with flour to the desired consistency. Serve as a dressing for baked potatoes.

Stewed Nuttose.— Cut the nuttose into pieces not over half an inch square; cover with about equal parts of boiling water, and cook in a double boiler for two hours or longer. The longer and more slowly it is stewed, the more rich is the flavor. A small onion, a sprig of parsley, or a few bits of celery may be added just long enough before the completion of the cooking to impart their flavor to the stew, if desired. Season with salt, and serve hot.

Baked Sweet Apple Dessert.— Wash, and remove the cores from a dozen medium-sized sweet apples, and one third as many sour ones, and bake until well done. Mash through a colander to make smooth, and remove the skins. Put into a granite-ware dish, smooth the top with a knife, return to the oven, and bake very slowly until dry enough to keep its shape when cut.

Add, if desired, a meringue made by beating the white of one egg with a tablespoonful of sugar. Cut in squares, and serve in individual dishes. The meringue may be flavored with lemon or dotted with bits of colored sugar.

EARTH EATING.

NO collector of national dishes includes earth or clay among them, but this is a favorite "plate" with a good many millions of people up and down. Even in Europe they are not difficult to find, or were not fifty years ago. Tastes have changed a good deal since then, no doubt. But human beings do not readily give up a favorite dish, especially when it is cheap. If superior persons denounce it, they enjoy the treat on the sly. Probably the quarrymen of Kiffhausen no longer breakfast in public upon slices of bread "buttered" with fine clay, as Humboldt saw them; but we should be rather surprised to learn that thrifty souls among them do not follow the custom of their ancestors in private. Humboldt was reminded of that early experience upon the banks of the Amoor, where he saw Russian soldiers eating what they called "rock-butter," a similar clay.

Mr. Laing had the good fortune to observe the first, or almost the first, appreciation of the delicacy, in one district of Sweden. Only five years before he made the "tour" so famous in our grandsires' time, there was a dearth in the country. The people had already begun to eat "bark bread," when a very poor woodman noticed some white stuff among the roots of a tree he had felled. It looked so clean and nice that he carried home a basketful, mixed it with rye and bark, and baked it. The loaf proved to be excellent, and no disagreeable consequences followed. So the woodman told his neighbors, and a rush set in. When the magistrates heard of this abnormal provender, they forbade the use of it, of course; that would be the natural impulse of the superior person. But the peasantry were not to be persuaded or coerced into rejecting food which they knew by experience to be wholesome and nourishing. When Mr. Laing visited the district,— it is called Dengenfors,— they were using the stuff both for soup and bread. Samples despatched to Stockholm for analysis gave "finely pulverized flint and feldspar, lime, clay, oxide of iron, and a residuum of some organic matter similar to animal, which yielded ammonia and an oil."

It is organic matter which contains the nourishment everywhere, no doubt, if nourishment there be. But that is not always the case, and earth eating seems to deserve more attention than has yet been paid to it, so far as our reading goes. Commonly, it is dismissed as a degrading practice of savages; but German quarrymen, Swedes, even Russian soldiers, are not to be classed with savages, nor are the potters of Scinde. Their work is fashionable at present, and they make money; that is, by the Indian standard. But among their weekly expenses an allowance must be made for the quantity of "chaniah" (a white unctuous earth), which their wives and children consume.

As a rule, of course, it is savages who affect this diet, alike useful and agreeable to their taste. Few understand, perhaps, how common it is. Instances might be found in every continent and every zone by any one who looked into the matter. We give a few which recur to mind.

The Ainos are enthusiastic earth eaters. In the north of their island is a valley where alone the material can be dug, but it is carried to all parts. They boil it with the root of the wild lily; when a certain proportion of the clay has settled, the remainder is poured off, and eaten like cream. Sir Spencer St. John reports that the sea Dyaks always took a supply of red ochre on their piratical expeditions as a reserve in case stores should run short; "and we once found in some deserted *Seribas praus* many packets of a white oleaginous clay used for the same purpose." In Java little cakes of earth are sold in the market; women buy and eat them to preserve a slender shape. The treatment succeeds, for they lose all appetite. Humboldt asserts that the Indians of Quito put earth and quartz sand into their drinking water; but this is not unusual, so far as the earth goes, at least. We have heard a Boer family complain that they could nowhere get good water when absent from their home on the banks of the Orange. The water of the Orange is a purée of mud; hence its name. The peoples of New Caledonia eat pieces of a friable stone, *lapis ollaris*. Messrs. Cloquet and Brischet, traveling in those islands, could get no food for several days, but coming upon some green laminate talc, they ate five ounces each; their strength returned, and they never felt any inconvenience. The Ottomac Indians of South America live exclusively on fish when they can get it, but during the season of floods when there is no fishing, they manage very comfortably with earth. Moreover, they find the diet so agreeable that during the rest of the year they eat a ball of clay for dessert. Evidently it agrees with them, for the Ottomacs are very tall and robust.—*Pall Mall Gazette, quoted in Current Literature.*

TOPSY-TURVY FABLES.

THE *Vegetarian* of London recently began the publication of a series of "Topsy-Turvy Fables," by "Æsop Junior," of which the following, entitled "The Trial of Man," was the first: —

"The Trial of Man was to take place at last. For a long time, in fact almost since the creation of the world, complaints had been rife as to the enormity of his offenses against the commonweal, but it was hoped that education would have improved Man, and made him refrain from his misdeeds. At length, however, the outcry against him became so strong that it was impossible to ignore it, and on the eventful day the miserable creature stood in the dock looking thoroughly abject and quite cowed with fear and apprehension.

"On the bench sat Mr. Justice Bull, while the case for the prosecution was opened in a very able manner by Mr. Pig, Q. C., the defense being left to Mr. Dog.

"In opening his case, Mr. Pig said that he would be in a position to show the court that, so far from the prisoner's being entitled to the name he had impudently adopted, 'The Lord of Creation,' he was the great disturbing element in nature, and was a continual menace to the peace of the community. As in his own case, Man had originally been created to feed upon the products of the

vegetable kingdom, having neither the claws nor the teeth to rend and tear other creatures for food. Not satisfied, however, in obeying his natural instincts, he had set his cunning brain to work, and invented instruments to take the place of talons and teeth, and with insatiable appetite he had laid under contribution almost every bird, beast, and fish, in order to replenish his larder and fill his greedy paunch. Day by day, countless myriads of helpless creatures who had never harmed the prisoner had been cruelly done to death in order to supply his table. To make matters worse, the prisoner had not hesitated to apply the term 'brute' to the crueler individuals of his own race, and to refer haughtily to other and more innocent creatures as 'the *lower* animals,' as if anything could possibly be lower or more despicable than man's treatment of his companions.

"Mr. Pig then called upon his first witness, Master Calf, who explained to the court that the prisoner had not even the mercy to despatch his victims quickly, but, in his own case and others, invented painfully slow processes, such as gradually bleeding his victims to death in order to whiten their flesh.

"Mrs. Goose followed, and horrified the court by her vivid description of the prisoner's callousness in nailing the feet of geese to a board, and slowly roasting them to death in order to induce enlargement of their livers for a preparation known as *pâté de foies gras*.

"Mr. Horse said he was supposed to be the friend of Man, but he could honestly say that the prisoner was no friend of his. He had been underfed and overworked continually, and when worn out by years of toil in the prisoner's service, had been sold for a miserly pittance in order that his flesh might be made into a substance known as 'beef extract.'

"Mr. Cod supported the evidence as to wanton cruelty. It was, he said, the prisoner's custom to gash the flesh of codfish whilst they were alive in order to improve its appearance.

"Mr. Eel followed with similar evidence, stating that his tribe had often been skinned alive by Man.

"Mrs. Crab described the manner in which crabs, lobsters, shrimps, etc., were deliberately boiled to death by the prisoner, and a number of other witnesses followed on the same side.

"Mr. Dog, in stating the case for the defense, admitted that the prosecution had made out a strong case against the prisoner. He did not, however, propose to dispute the facts or to call any witnesses, but would base the defense upon the ignorance of the prisoner and the extent to which he had become the slave of custom. On this point he (the sagacious counsel) could speak with authority, for he had lived in the society of the prisoner for a long period. As a matter of fact, Man really occupied a comparatively low place in the scale of creation. [Applause, which was immediately suppressed.] No other animal, so far as he knew, behaved so stupidly. Man turned night into day, lived in boxes from which fresh air and daylight were largely excluded, drank continually of fiery and poisonous fluids, and, generally speaking, acted like the idiotic creature he in reality was. The prisoner's adoption of the habits of the carnivora had undoubtedly caused untold suffering to myriads of other animals, but it had also had a most injurious effect upon Man himself, than whom there was no more diseased and suffering creature to be found. He was certain that if the court could see Man's condition as he had had an opportunity of doing, it would temper justice with mercy, feeling that the prisoner's misdeeds had brought their own punishment with them.

"After a brief reply from Mr. Pig, the

docile judge summed up the case to the jury who, without leaving the box, returned a verdict of 'Guilty.' The judge then addressed a few well-chosen words to the prisoner, who had turned livid with fear, and finally said that he had decided to act upon the suggestion of the learned counsel for the defense, believing that the heaviest punishment he could inflict would not equal the nemesis of suffering and disease which the prisoner was certain to reap from his unnatural and revolting habits of diet. The prisoner would be bound over to come up for judgment when called upon."

The Golden Rule.

A recent story in the *Youth's Companion* contained the following suggestive incident: —

"But more than all, there was the memorable time, soon after Lindy's arrival, when Mrs. Jennings directed her to catch the white pullet with the topknot, and wring her neck. Lindy went out, and there was a flutter among the fowls, followed by a vigorous squawking; but presently Lindy came in, chickenless.

"'Why, where's the chicken?' demanded Mrs. Jennings.

"'The chicken don't want her neck wrang,' replied Lindy with conviction.

"'Well, of all things!' cried the exasperated lady. 'What do you mean, Lindy? Here I've got water ready to scald that chicken, and it not caught yet! Go this minute and kill that chicken.'

"'But the chicken don't want its neck wrang,' repeated Lindy, pale, but firm. 'I wrang it ever so little, to try, an' she fought like a tiger. She'd lots ruther live; and anyway, wringing necks ain't such fun. I tried it just a little on my own neck, and it ain't come untwisted yet?'"

Lady Paget's Vegetarianism.

Lady Paget is a distinguished German woman whose life has been spent chiefly in court circles, but who has lately dispensed with most of the artificial conventionalities, and adopted a quiet country life in harmony with nature. Sarah A. Tooley, in the *Vegetarian*, tells why Lady Paget gave up flesh eating. She says: —

"But to come to the question of vegetarianism. 'What led you,' I asked Lady Paget, 'to adopt that form of diet?'

"'It was a German professor who first interested me in the question,' she replied, 'and it has been chiefly in German books that I have studied the subject. My country people have taken up vegetarianism very much during recent years, on the ground of health. The German vegetarian books contain excellent recipes for dishes suited to all seasons and different countries, which is *the* important thing, for the newly fledged vegetarian always thinks he is going to die of hunger. Besides, the books are most refreshing to read. They are full of cold water, open windows, sun baths, air baths, swimming, and gymnastics, and advocate not only vegetarian diet, but those things which will bring us back to a simpler, more healthful, and more economical way of living, and there is nothing which this age needs more. I was also greatly influenced in my decision to become a vegetarian by reading that remarkable book of Dr. Anna Kingsford's, "The Perfect Way." In it she gives a thrilling chapter on "The Sufferings of Cattle," describing the horrors attending transport. I think the cruelties inflicted on animals designed for food is in itself a sufficient reason, apart from the healthfulness of the diet, for inducing humane people to adopt vegetarianism.'"

Old Truths Win.

A prize was offered in Paris a few years ago for the best code of rules of hygiene, not to exceed ten in number, for the preservation of mental and bodily health. The London *Lancet* publishes the winning set, which are rather "a laconic statement of wholesome truths known and practiced ever since Moses' time," than a rigid decalogue. The trouble is that they are not practiced generally enough. The prize rules are as follows:—

"1. General Hygiene: Rise early, go to bed early, and in the meantime keep yourself occupied.

"2. Respiratory Hygiene: Water and bread sustain life, but pure air and sunlight are indispensable for health.

"3. Gastrointestinal Hygiene: Frugality and sobriety are the best elixir for a long life.

"4. Epidermal Hygiene: Cleanliness preserves from rust; the best-kept machines last longest.

"5. Sleep Hygiene: A sufficiency of rest repairs and strengthens; too much rest weakens, and makes soft.

"6. Clothes Hygiene: He is well clothed who keeps his body sufficiently warm, safeguarding it from all abrupt changes of temperature, while at the same time maintaining perfect freedom of motion.

"7. House Hygiene: A house that is clean and cheerful makes a happy home.

"8. Moral Hygiene: The mind reposes and resumes its edge by means of relaxation and amusement, but excess opens the door to the passions, and these attract the vices.

"9. Intellectual Hygiene: Gaiety Conduces to love of life, and love of life is the half of health; on the other hand, sadness and gloom help on old age.

"10. Professional Hygiene: Is it your brain that feeds you? Don't allow your arms and your legs to become ankylosed. Dig for a livelihood, but don't omit to burnish your intellect, and elevate your thoughts."

The Decline of Babies.

The *Scientific American* has been investigating the birth-rate in different countries. It is found that France is not the only nation going down the scale. In all except five of twenty-one countries examined, the movement of natality is on a decrease more or less rapid. Of these, Russia has the largest percentage of births, and France and Ireland the smallest. The most striking decrease is found in England.

Refuse to Drink Milk.

According to a French journal the authorities of Bonn have investigated the question of alcoholism among the pupils of primary schools. The results are far from satisfactory. Sixteen children out of one hundred absolutely refused to drink milk, because they said this beverage lacks flavor. Out of two hundred and forty-seven pupils between the ages of seven and eight years, they did not find one who had not already drunk wine, beer, or spirituous liquors. Twenty-five per cent had not tasted distilled liquors, but habitually drank beer or wine. Eight per cent received daily from the hands of their parents a glass of spirituous liquor to "make them grow strong." Some were habituated to the use of cognac. It was shown that children accustomed to alcohol were intellectually inactive. Those who had for breakfast a glass of liquor or cognac betrayed the fact by their inattention during the first part of the morning. The singular fact was revealed that more young girls drank cognac or liquor than boys.

It is highly probable that an investigation of this question in the city of Paris would reveal even a worse state of affairs there than in Bonn.

EDITORIAL.

THE FUNCTIONS OF THE SENSE OF TASTE.

THE function of the taste doubtless sustains a much more important relation to digestion than has been generally accorded to it. Food, to be well digested, must be appetizing. Food which nauseates does not stimulate the secretion of the fluid necessary to digest it either in the mouth or the stomach. The sense of taste may be regarded as a sort of regulator of digestion, and perhaps, also, of nutrition. Hence it is an important property of food that the sense of taste may be stimulated, and that it may have opportunity to exercise its selective and controlling functions.

When one has eaten a sufficient amount of simple, wholesome food, the sense of taste informs him of the fact by declining to receive more. A perfect rule for mastication would be to chew each morsel of food until there is left only a tasteless remnant. It is useless to swallow such a residue, as it can have no nutritive value. When food is taken in this way, the sense of taste has an opportunity to say, "Enough," before too much has been swallowed, and thus affords a perfect means of adapting the amount of food taken to the needs of the body.

A careful study of this suggestion will also show that the sense of taste, if allowed to act in a normal way, will select those substances of which the body is in great need; for example, if the blood is impoverished, and needs an extra supply of nitrogenous food, there will be a craving for such food as nuts, legumes, and possibly eggs and milk, or some other substance containing nitrogen.

A curious analogy to this function is found in some insectivorous plants, which, as has been shown by recent experiments, refuse to capture insects or pay attention to fragments of meat placed within their grasp, except when the soil upon which they grow is lacking in nitrogenous elements. By supplying a fertilizer rich in nitrogen, these so-called carnivorous plants cease to be carnivorous, and behave wholly like other plants. The same principle applies to the use of fat-making substances, such as starchy and oleaginous foods, as nuts and cereals. The writer has frequently observed in thin patients a craving for fats, which disappeared entirely after the patient had made a gain of twenty or thirty pounds.

The taste was no doubt intended by the Creator to be a perfect guide to the quantity and quality of food to be taken, and not simply a means of gustatory pleasure. Unfortunately, it has been terribly debauched and perverted from its normal function. Men and women treat the palate as the pianist treats his instrument, touching it in various ways simply for the purpose of provoking pleasurable sensations, with no regard whatever for the possible needs of the body, or the possible damage which may be caused. The sense of taste, thus wrongly educated, becomes perverted, and its indications become confused. Abnormal cravings are developed, which demand satisfaction in the use of tea, coffee, wine, and other intoxicants, mustard, pepper, and other condiments, large quantities of salt, pickles, and rich and savory dishes of various sorts, together with sweets, ices, and tidbits of all kinds. The sense of taste has been dethroned from its high position as governor of nutrition, and has come to be merely the servant of a capricious and insatiable desire for an illegitimate sensation, a purely selfish animal pleasure. This is gluttony, pure and simple, and is the apt tutor and hale companion of alcoholic intemperance.

The free use of common salt must likewise be placed among serious dietetic errors. Professor Bunge, of Basel, the leading physiological chemist of the world, with many others, has shown that the so-called necessity for the alimentary use of salt rests upon

a very uncertain and equivocal, if not erroneous, basis, and that, at most, salt can be used without injury only in very minute quantities. The quantity designated by Professor Bunge as within the limits of possible harmlessness is about fifteen grains a day, or probably less than one fourth of the amount usually consumed. The free use of salt leads to thirst and copious drinking in connection with meals.

Gum chewing, tobacco chewing, the use of tobacco in any form, must be condemned as harmful to the digestion through exhausting the function of the salivary glands, so that when required to maintain constant activity, the saliva secreted by the glands has very little value as a digestive agent. The glands, as well as the muscles and other parts of the body, require rest in which to store up the elements necessary for their proper function.

FLIES AND GNATS AS CONVEYERS OF DISEASE-GERMS.

At the Ottawa meeting of the American Public Health Association, Dr. Veeder read a paper presenting the results of numerous experiments which he had made in cultivating bacteria from the excrement of flies. He found germs of various kinds, and concludes that flies and other insects are probably more active than is generally supposed in conveying such disorders as typhoid fever and dysentery, the germs of which are discharged from the body in the excrement. He called attention to the fact that typhoid fever is most common in the suburbs of the large cities where closets are shallow, and frequented by flies in great numbers. It is but a short journey from these vaults to the pantry or the dinner-table. Food in kitchens, pantries, and dining-rooms, or the ordinary home cupboard, may often be seen nearly black with flies, which are thus allowed to inoculate with most virulent germs wholesome food materials which have been thoroughly sterilized by cooking. Dr. Veeder remarks as follows in relation to the great prevalence of typhoid fever and bowel disorders among soldiers:—

"There is no doubt whatever that camp fevers and dysentery become most deadly in this very way. Water from swamps or shallow wells in alluvial soil may originate diseases of a malarial type, but these, as a rule, are not very fatal. On the other hand, the sickness that kills, comes from the trenches behind the camp, reeking with filth borne on insect wings. It requires but little commingling of typhoid or dysenteric material to produce an epidemic under such conditions. Soldiers selected for their physical hardihood, living in the open air and having plenty to eat, and even the very best of water, develop diseases of this type out of all proportion to their prevalence in the rest of the community, and that, too, in localities previously free from anything of the sort. This is commonly ascribed to the hardships they endure; whereas, those same men in an isolated lumber-camp, for example, would endure tenfold the privations and exposure to cold and wet, and not only would not be sick, but would become more hearty and rugged every day. Nor can the sickness among soldiers be accounted for by dissipation, for they are under greater restraints in this regard than are possible in civilized life, and yet they, the flower and pick of the country, sicken and die, far more being killed by disease, as a rule, than by the bullets of the enemy. With practically unlimited resources of men and means such as are to be had in armies, there is no reason why such material as that on which flies fatten should not be so thoroughly disposed of as to be made innocuous as well as inaccessible. It is only a question of a few gallons more or less of disinfectants daily, and a little extra care in the disposal of excreta."

OBEY AND LIVE.

A RECENT medical report in relation to the cause of neurasthenia pointed out that forty-four per cent of cases of this disease are hereditary in character. Not a few invalids nowadays are quite ready to excuse themselves for their physical infirmities on the ground that they are inherited; but, with the exception of some of the more formidable forms of morbid inheritance, it may be confidently asserted that the law of heredity may be set aside by the law of obedience. The divine word is, "Obey and live," not "Obey and die." Through the operation of the law of obedience it is possible for the law of heredity to be made non-effective.

There is marvelous power in obedience. With a perfect knowledge of the way of life and a disposition and power to render perfect obedience to every law of being, man may find a way of emancipation from the consequences of disobedience; in other words, he may rise above the power of disease, and dwell once more upon that high pinnacle where God placed him when he made him in his own image, and gave him dominion over all the earth.

Man was never made to be subject to the dominion of microscopical parasites called germs, or to any other earthly force or power. He was made to be the supreme ruler in the earth, the "monarch of all he surveyed,"—the king of the world. To-day we see him jostled and bustled about, driven from pillar to post, and trampled underfoot of beasts both big and little. We see him turning pale at the mere sight and sound of microscopic specks; we see him trembling in the presence of motes which dance in the sunbeam. Disobedience has made him an easy prey to a multitude of maladies and countless ills from which God made him free, and the knowledge of his inability to cope with the dangers about him has made him a coward and a weakling. But in obedience there is health, and there is healing power even for those hereditary predispositions which often, like an incubus, overshadow man from his very birth, and consign him to an early grave.

Let Us Pause a Moment.

It is time to stop a moment for sober thought about where we are and toward what we are drifting. In 1890 a statistician pointed out the fact that in Germany, a pork-eating country of 55,000,000 inhabitants, there were to be found fewer than one hundred persons more than one hundred years old; only seventy-eight, in fact, enjoyed this distinction for longevity. Half a century ago, with a smaller population, the number was six times as great. In Bulgaria, a country of only 4,000,000 people, practically vegetarians, the number of persons more than one hundred years of age was 3,883, or nearly one to the thousand, against one to 700,000 in Germany. In other words, there are in Bulgaria seven hundred times as many centenarians in proportion to the population as in Germany.

In Servia there were 290 persons between the ages of 106 and 115 years, 125 persons between the ages of 115 and 125 years, eighteen persons between the ages of 125 and 135 years, and three persons more than 135 years old.

The lesson is that the more civilized a country, and the larger the consumption of flesh-food, the shorter the length of life.

Why not take a square look at the fact, and think about reforming? It is well known that the longest-lived and the most enduring animals are of vegetarian habits. The dog becomes enduring only by the adoption of a non-flesh diet, a fact well known to hunters, who carefully exclude meat from the diet of their hunting dogs.

The study of the habits of centenarians, begun long ago by Hufeland, has always revealed the fact that long-lived men and women are invariably small flesh-eaters, if not exclusively vegetarian in their habits. The Pampas Indians of South America, who

subsist almost wholly on flesh-food, are, perhaps, the shortest-lived race in existence.

To live long and well one must eat the original meat, described in Gen. 1 : 29. Fruits, grains, and nuts are man's meat, designed for his sustenance by the Creator, and not to be improved upon. A flesh diet breeds disease and premature decay.

The Increase of Consumption or Pulmonary Tuberculosis.

Dr. Blake, medical inspector of the Alabama penitentiary, recently called attention to the rapid increase of pulmonary tuberculosis in Southern prisons. He pointed out the fact that within a few years the percentage of deaths from consumption among the convicts of Alabama has risen from thirteen to thirty-seven; that is, it has more than doubled. In one year, 1895–96, more than fifty per cent of deaths in the penitentiary were due to this disease, while in the year 1896, in Texas, two thirds of the total number of deaths among the convicts were due to pulmonary tuberculosis. These statistics show that the prisons of the South are not only infected with tubercle germs, but that the same must also be true of the prisons of the North, and that susceptibility to this disease is rapidly growing in civilized countries.

In this connection it is interesting to note that the United States government has taken pains to organize at Fort Stanton, N. M., a reservation for consumptives. The reservation will be under the charge of the Marine Hospital Service, and will be at first devoted exclusively to the care and treatment of soldiers, sailors, and marines affected with pulmonary tuberculosis. The reservation is located on the Santa Fé Railroad, near Laguna, and comprises ten thousand acres. The proper buildings will be erected, and the establishment fitted out with all the facilities necessary for the treatment of this class of cases. It is to be hoped that this action on the part of the government will lead State authorities to organize similar enterprises at various points in the dry Rocky Mountain regions, which afford favorable climatic conditions for this class of patients.

Leprosy in America.

From recent articles in medical journals we learn that there are several quite populous communities of lepers in the United States, some in the extreme North, others in the extreme South. In Louisiana, leprosy has existed since the year 1756, when it was introduced from Nova Scotia. At the present time at least one hundred and thirty-one lepers are known to be in the State of Louisiana. Some of them are gathered into a colony located in Ibberville Parish; but a considerable number are at large in the State, many being located in the vicinity of the old leper hospital on Metairie Ridge, a spot which has long been called "Lepers' Land."

The State Board of Health of Minnesota reports a record of fifty-one lepers. It is found that there are many lepers, mostly of Scandinavian origin, in Wisconsin, Iowa, and in North and South Dakota,— probably as many as there are in Minnesota. It is apparent that the leper question is a subject not confined to the extreme East or to the South Sea Islands. It is a problem with which we must grapple here in this country, and it is likely to become a more and more serious difficulty as the evil habits of life prevalent everywhere render the American constitution more and more susceptible to germ-diseases of all sorts.

Sorry He Did It.

Patent-medicine venders have no difficulty in persuading people in different parts of the United States to certify to the value of their worthless wares — for a consideration. But in one case at least, a man who thus sold his influence has occasion deeply to regret his action. The man in question was a soldier in the Civil War, and has for many years been drawing a handsome pension. The War Department recently discovered that a certain patent-medicine firm was publishing a testimonial from this man to the effect that the medicine exploited by them had restored him to perfect health. The pension office now proposes to strike his name from the rolls, which certainly would be a consistent thing to do.

To Prevent Fires.

As it is very unhealthful to be turned out of doors on a cold winter's night, without having time to make one's toilet, considerable hygienic value may be attached to the following rules, formulated by the State Fire Marshal of Maryland, for the prevention of fires:—

"Be satisfied that water is passing freely through all pipes in the kitchen before kindling the fire in the range.

"Build no hearth fires before assuring yourself of the insulation of hearths from rafters or other woodwork.

"Watch carefully the joints in furnace flues, and protect all woodwork in the cellar from furnace heat.

"Pass no stovepipe through partitions or ceilings without having a nonconductor of heat around it.

"Clean chimneys and flues once a year wherever wood is burned in hearths or stoves.

"Keep matches in a metal case and out of reach of children.

"Never replenish a lamp or oil stove while it is burning.

"Do not hang curtains or other drapery near a gas jet.

"Never use kerosene in kindling fires in stoves.

"Do not use sawdust in spittoons.

"Avoid carrying a lighted lamp."

Japanese Public Health Administration.

In this country it is not often that one sees anything like the practical good sense displayed in dealing with health questions that is applied to the solution of financial and social problems; but the Japanese governor of the island of Formosa has set us an example of good sanitary sense. Finding one of the large cities of the island, called Teukcham, located in a swamp with a high death-rate, he proceeded to move the whole city to a hilltop, and forty thousand people were obliged to pull up stakes and move to the new town several miles away, where each one was located in the same relation to his neighbors and to the town as before. The new town was supplied with sewers, water, and lights, at public cost, with wide streets and all necessary arrangements for the public health.

Remarkable Old Age.

The centenarians are not all dead, but they are dying off very fast, and where are the men and women who are to take their places? The wonderful vitality of the human race is well illustrated in the cases of Michael Shea, who recently died in Indianapolis, Ind., at the age of one hundred and nineteen years, and Catherine Strain, who died at Syracuse, N. Y., April 7, at the age of one hundred and seven years. But these persons were children compared with Peter Zartan, who died a century or two ago, at the age of one hundred and eighty-seven years. Let us all try to live a hundred years at least.

Race Deterioration in Switzerland.

The little republic of Switzerland has a population of about three million. The census taken at the close of the year 1897 showed that there were 6,164 insane persons in the twenty lunatic asylums of the republic. According to these statistics, the proportion of the insane to the total population is a little more than two thousand to the million, or more than two hundred more than in this country; from which it appears that the older republic of Switzerland is a little farther down the hill of race extinction than the United States.

Do we not eat too often? Among most civilized people it is the usual custom to eat three, four, or five times a day, while in England one occasionally meets people who regularly eat six times a day. The ancient Greeks, according to Pythagoras, ate but once a day. But his recommendation of the plan of eating twice a day was adopted, and on a diet of simple foods consisting chiefly of wheat, figs, and a few vegetables, that country produced the finest race of men the world has ever seen.

ANSWERS TO CORRESPONDENTS.

Prolapsed Stomach and Colon.— Mrs. J., Indiana, aged forty-six, has prolapsed stomach and colon, with catarrh of the stomach. 1. Can she be cured? 2. What diet shall she use?

Ans.— 1. Yes.

2. A properly prepared diet of fruits, grains, and suitable nut preparations. We would recommend a careful study of the little work entitled "The Stomach."

Coated Tongue — Sediment in the Urine.— Mrs. T. I. B., West Virginia, asks what will cure one of coated tongue; also the cause of a red sediment in the urine. If fruits, grains, and nuts would be beneficial, what amount of each should be used?

Ans.— Live on fruits exclusively for a few days, then take nothing for breakfast but fruit for two or three weeks, making grains and nuts the principal diet. Live outdoors as much as possible; wear a moist abdominal bandage at night. Get a copy of "The Stomach," from the Good Health Pub. Co.

Intercostal Neuralgia — Gaping — Wrinkles — Hours of Sleep — Sore Throat — Bath — Water — Flesh — Recipe for Nut Cake — Weak Feeling in Spine.— An Iowa subscriber questions: "1. What will cure intercostal neuralgia? 2. How may wrinkles be removed from the forehead? 3. How many hours' sleep are necessary for one in moderate health? 4. What is a good remedy for sore throat? 5. Is one apt to take cold on going from a warm bath to a bed in a room whose temperature is zero? 6. How much water should one drink daily? 7. How can a person increase his weight and still keep healthy? 8. What is the recipe for nut cake? 9. What causes a weak feeling in the spine?"

Ans.— 1. Fomentations or dry hot applications will usually give relief. The cause is generally found in an irritated condition of the stomach, giving rise to irritation of the sympathetic nerves, generally the solar plexus. This must be cured.

2. Perhaps a gain of flesh is needed. Facial massage is helpful.

3. Eight hours.

4. If acute, inhalations of steam; if chronic, the Magic Pocket Vaporizer.

5. Yes. Not because of the low temperature, however, but because of the probable dampness of the room.

6. That depends upon the kind of food eaten. If the food consists largely of fruit, it may not be necessary to drink at all. If the food is dry in character, three pints.

7. By eating proper amounts of fattening foods. Send to the Sanitas Nut Food Co. for a little paper entitled "How Not to Be Thin."

8. The following excellent recipe for nut cake is taken from "Science in the Kitchen," by Mrs. E. E. Kellogg: Take five large fresh eggs, one cup of granulated sugar (sifted), one half cup of gluten meal (prepared by the Battle Creek Sanitarium Health Food Co.) No. 3, one tablespoonful of lemon-juice, one cup of finely chopped nut meats or nut meal, and a pinch of salt. English walnuts, pecans, or hickory-nuts are the best in flavor for this cake; baked almonds may be used. Have the material, pans, and oven all in readiness. Put the whites into a large bowl or a round-bottomed crock. With a Dover egg beater beat the yolks rapidly until thick and creamy. Next add the sugar which has been flavored with the oil of the lemon, and beat again very thoroughly, using the Dover beater in the form of a whip, not turning the crank, as it will make it too stiff. It should be very stiff when done. Set this to one side, add the salt to the whites, and with the wire-spoon egg beater whip until light and frothy, but not stiff. Add the lemon-juice and beat until very stiff, so that it has a cooked appearance.

Next pour slowly into the whites the yolk and sugar mixture, stirring with the beater constantly, until thoroughly mixed. The stirring should be a sort of dipping down into the mixture at the side of the bowl, coming up through the center, then lifting the beater up, and repeating, dipping in first on one side then on the other.

Lastly add the flour very carefully, first sprinkling one half the flour evenly over the top, and when that is partly mixed in, sprinkle the remainder on and mix until no dry flour can be seen. The mixing should be done with the same movement used in mixing in the sugar and yolks. If it is stirred much after adding the flour, it becomes tough.

This can be baked as a layer cake or as a loaf; if as a layer cake, bake in two layers for thirty-five minutes. It should not brown for the first twenty minutes, but should be getting light, and must be left in the pans until cold. If baked as a loaf, it should be baked about forty minutes, and should not brown for the first thirty or thirty-five minutes.

The "Misses Lisk Improved Cake Tins" are the best for all sponge cakes. Turn the pans upside down as soon as taken from the oven, and leave thus until cold.

9. The most common cause is a prolapsed condition of the stomach and bowels.

Heart Trouble.— A subscriber in Illinois has heart difficulty, due to dilatation of the great aorta, and wishes an explanation of hot and cold applications to the spine for weak heart.

Ans.— Hot and cold applications to the spine might not be a proper application to suit this condition.

Change of Body in Discarding Meat — Prolapsed Womb. — An anxious subscriber asks: "1. How long does it take the body to change entirely after one adopts vegetarianism? 2. Can a prolapsed womb be permanently replaced? 3. Are there any exercises for this trouble? Would riding a bicycle help or injure?"

Ans.— 1. The soft parts of the body change every few weeks or months. The blood changes every six weeks.

2. If the condition is chronic, not except by undergoing a surgical operation.

3. Yes. See "Ladies' Guide." Bicycle riding is as likely to be injurious as helpful.

Colds — Peritonitis.— A subscriber asks: "1. How can one who is susceptible to colds avoid them? 2. What is good for peritonitis, or inflammation of the membrane of the stomach?"

Ans — 1. Take a cold bath every morning, followed by vigorous rubbing and exercise for one-half hour.

2. Fomentations at night followed by the moist abdominal bandage; an unirritating diet, as fruit, grains, and nuts. Avoid coarse vegetables and half-cooked grains. Granose, granola, and such preparations are especially recommended.

Eczema. — E. F. asks: "1. Is eczema contagious? 2. What can one do for eczema in the head? 3. How many kinds of eczema are there? 4. Are salves, soaps, and ointments of any use in this disease?"

Ans.— 1. Probably to some degree.

2. Improve the general health, and make local applications. The kind required depends upon the stage of the disease.

3. There are several forms, but the disease is one.

4. Yes, all the remedies named are beneficial in certain cases. The advice of an experienced physician is necessary for the adaptation of the remedy to the individual case.

Flatfoot.— F. Y. K., New York: "1. What causes flatfoot? 2. When one must stand continually, what will relieve the difficulty? 3. Can it be cured? 4. Is an operation needful? 5. Is massage beneficial?"

Ans.— 1. Weakness of the ligaments which support the arch of the foot. It is sometimes caused by long standing or taking a long walk.

2. Exercise by walking on the toes with the heels turned inward and the shoes and stockings removed. In chronic cases it is necessary to use a plate inside the shoe to support the arch of the foot. This can be obtained from any surgical instrument maker.

3. In some cases. The difficulty can be greatly relieved in a majority of cases.

4. Rarely, if ever.

5. Yes.

Asthma.— Mrs. L. S. W., Indiana, asks what diet one should follow who has frequent attacks of nervous asthma?

Ans.— A dry diet consisting of fruits, grains, and nuts, avoiding coarse vegetables. Eat twice a day. Wear the moist abdominal bandage at night.

Vapor Bath for Rheumatism.— A correspondent asks if vapor or Turkish baths are beneficial for rheumatism.

Ans.— Yes; twice a week, at night just before retiring. Drink freely in connection with the bath.

Colds — Lime-Water — Pocket Vaporizer — Book on Bacteriology — Family Doctor's Book — Eating Vegetables for Their Salts — Heart Trouble — Stomach-Tube — Dates. — Mrs. W. C. W., Rhode Island: "1. What is better for bathing the throat and chest to prevent colds than alcohol and cold water? 2. Will lime-water taken after meals for sour stomach do harm? 3. Would the Pocket Vaporizer be good for bronchial trouble in a child of three and a half years? 4. Is there a book on bacteriology? If so, what is the price? 5. Will you recommend a family doctor book? 6. Is it necessary to eat spinach, celery, or other green food daily for their salts? 7. Is irritation of the heart caused by indigestion? 8. If the stomach trouble were cured, would the other disappear? 9. What treatment will relieve indigestion. I can not eat acid fruits. 10. What is the price of the stomach-tube? 11. Can any one use it? 12. GOOD HEALTH seems inconsistent in regard to the value of dates; please explain."

Ans.— 1. Cold water without alcohol.

2. Yes, if its use is long continued.

3. If the child can be taught to use it habitually. It should be used almost constantly for several weeks.

4. Yes, many excellent works, ranging in price from $2 to $10 and upwards.

5. Address Good Health Pub. Co. for circulars of "Home Hand-Book of Rational Medicine."

6. No. There is an abundance of salts in whole-grain preparations, as graham flour, granose, etc.; also in peas, beans, and lentils.

7. Yes, in the great majority of cases.

8. Yes.

9. This depends upon the form of indigestion. There are many kinds. The inability to eat acid

fruits suggests the existence of gastritis, for the relief of which thoroughgoing and skilfully conducted treatment is required. Obtain a copy of "The Stomach," from the Good Health Pub. Co.

10. $1.50.

11. Not without instruction. The habitual use of the stomach-tube is often detrimental, and it should be used only under the direction of a physician.

12. Dates are a wholesome food if they can be obtained in their natural condition. They constitute the staple article of diet for many thousands of people in tropical countries. Objection has arisen to the use of dates in this and other countries to which they are foreign, in consequence of the fact that they are said to be preserved in molasses and cheap sugar. We have recently made very thorough investigations, however, and find that the best quality of dates are preserved in their natural sugar, and are therefore not open to the above objection.

Rice. — Mrs. S. C., Texas, asks if rice should be browned before or after it is cooked.

Ans. — It should be browned before cooking.

Poultry and Fish. — C. H. S. asks if poultry and fish have the same effect that meat does.

Ans. — Yes. In addition it may be remembered that most fouls are scavengers, and that many fish used as food are carnivorous. Flesh of this kind decomposes in the stomach more readily than most any other form of flesh-food.

Hyperpepsia — Catarrh — Nervousness — "Stitch in the Back" — Aching Hip-Joints — Insomnia. — W. Z. F., Missouri, asks: "1. Is drinking from one half to one and a half pints of warm water before breakfast harmful? 2. Please name a remedy for catarrh of the head. 3. What is a remedy for nervous 'trembles'? 4. What will relieve a chronic stitch in the back? 5. What can be done for aching hip-joints? 6. Can you suggest a remedy for insomnia?"

Ans. — 1. The practice should not be followed unless necessary in case of gastritis. The water should not be taken within forty minutes before eating.

2. A correct dietary, consisting of fruits, grains, and nuts, a cold sponge bath every morning, and the Magic Pocket Vaporizer.

3. A more accurate description of the disease is necessary.

4. Fomentations applied at bedtime, followed by rubbing, will afford relief.

5. Fomentations or a hot foot bath.

6. Take a neutral bath at bedtime, temperature from 92° to 95°, for thirty minutes. A moist abdominal bandage worn at night is also an excellent measure.

Distilled Water — Ralston Still — Cistern Water — Well Water — Nut Oil vs. Olive-Oil — Perfect Diet. — Mrs. F. T. S., Indiana, asks: "1. What is your opinion of distilled water? 2. Do you think it the most healthful drinking water? 3. Do you know anything about the Ralston Still? 4. Would cistern water pumped into lead-lined tanks, and coming through lead pipes, be poisoned from the lead? 5. If so, would distilling remove the poison? 6. Would well water be better after distilling than soft water coming through lead pipes? 7. Why do you think oil made from nuts is more healthful than olive-oil? 8. What is a perfect diet?"

Ans. — 1. It is wholesome.

2. It is no better than other pure water.

3. No.

4. Yes, most certainly.

5. Yes.

6. Yes.

7. Most of the oil sold as olive-oil is not olive-oil, but peanut-oil which is not fresh. Olive-oil generally has a rancid taste. Nut oil, if fresh, is better than any rancid oil, but probably no better than fresh olive-oil.

8. A diet of thoroughly cooked grains with properly prepared nuts and an abundance of wholesome fruits.

Juniper Berry — Unleavened Bread. — E. B., Iowa, asks (1) if Juniper berries are fit for tea; (2) how to make bread without yeast?

Ans. — 1. No.

2. See "Every-day Dishes" for recipe for making the best bread without yeast.

Food Question. — G. C. M., Pennsylvania: "1. What proof have we that fruits, grains, and nuts should be man's only food? 2. How did nature teach him that? 3. What are cattle for? 4. If man and horses get muscle from grains, what about the lion? 5. Why did not God intend vegetables for man?"

Ans. — 1. See a little work recently published by the Good Health Pub. Co., entitled "Shall We Slay to Eat?" in which the arguments are fully presented.

2. Man's natural instincts are against the use of flesh, just as are those of the gorilla and chimpanzee.

3. To live in the world and have a good time, the same as man and other animals do.

4. The quality of the lion's muscle is inferior to that of the horse and ox, and capable of less endurance. When wounded, the lion nearly always dies, even though the wound be small, as was

shown by Captain Henderson. The bison, though terribly lacerated, makes a rapid and good recovery.

5. Because his alimentary canal is not adapted to the digestion of vegetables in a raw state.

Neurasthenia.— T. W. D., South Carolina, wants advice as to the treatment of neurasthenia.

Ans.— Neurasthenia is too complicated a malady for a home prescription. Cases of this sort require careful examination by a skilled physician.

Phosphate of Soda — Soda and Salt in Bath.— Mrs. I. M. F. asks (1) if phosphate of soda will eliminate uric acid from the system; (2) if soda and salt are good to use in bathing.

Ans.— 1. No.

2. They do no harm, and in some cases may be beneficial.

Bananas.— Mrs. S., Illinois: "1. Are bananas healthful? 2. Are foods rich in phosphates essential to keep a person from showing age?"

Ans.— 1. Yes, if thoroughly ripe.

2. Acid fruits contain all the phosphates required. A diet of fruits, grains, and nuts will furnish the body with everything needed for its nutriment.

Milk — Water — Seeds in Raisins — Buckwheat Cakes — Sugar — Nuts — Malted Nuts — Butter.— H. W. B., Ohio: "1. Is it better for adults to discard milk altogether? 2. The vegetarian club of Chicago use or recommend very highly the use of cotton oil as a substitute for lard in culinary purposes. What do you use at the Sanitarium, and how do the two compare? 3. Should any drink be used at meals? 4. Should any one drink anything but water? 5. Is it harmful to swallow the seeds in raisins? 6. Are fruits more wholesome cooked than raw? 7. Are buckwheat cakes wholesome? 8. Is sugar wholesome? 9. Are walnuts, peanuts, and hickory-nuts as valuable for food as almonds, pecans, and filberts? 10. What are malted nuts, and where can they be purchased? 11. Is butter unwholesome?"

Ans.— 1. Yes.

2. Nuts and cream are the only materials used for shortening at the Battle Creek Sanitarium. Oil, grease, and fats of all kinds are discarded.

3. Ordinarily, no. If great difficulty is experienced in eating dry substances, a small amount of fluid may be used to advantage.

4. Water is the only drink.

5. The practice is probably not dangerous, but the seeds are innutritious, and it is better to discard them.

6. Fruits of a firm, hard flesh are more digestible when cooked till soft. Mellow, ripe fruits are no more digestible when cooked.

7. In small quantities they are digestible, but on the whole it is better to avoid them.

8. The sweets found in fruits are ready for immediate absorption, whereas cane-sugar requires digestion. When used in considerable quantities, cane-sugar interferes with digestion, giving rise to fermentation.

9. Their food value is about the same.

10. Address the Sanitas Nut Food Co., Battle Creek, Mich., for a descriptive circular.

11. Butter swarms with germs capable of producing putrefaction. It is better to discard its use.

Redness of Nose — Vaseline Spray.— C. E. S., Nebraska: "1. What treatment do you recommend for redness of the nose? The questioner has not been addicted to the use of alcoholic beverages, but is very susceptible to cold. 2. What should be done to relieve frequent running at the nose? 3. Is vaseline spray good to use?"

Ans.— 1. Correct the diet, if it is wrong and giving rise to indigestion. Bathe the eyes and nose in hot water for fifteen minutes three times a day.

2. Employ the cold bath every morning, and use the Pocket Vaporizer.

3. It may be.

How to Live Two Hundred Years.— Mrs. E. J. S., California: "How can we eat, drink, and act so that our arteries will be soft and elastic for two hundred years?"

Ans.— It is doubtless possible for the human race to live one hundred years; and that a longer period is possible is shown by the fact that there were living in Hungary in 1890 eighteen persons over one hundred and twenty-five years of age. We have in preparation a little work in which we shall undertake to show how to live well one hundred years. By a scrupulous observance of the principles laid down there, it is doubtless possible to live considerably beyond this time.

Poor Circulation.— Mrs. F. A. E., Vermont, asks what to do for one whose blood is thick and whose circulation is so sluggish in the head as to cause dizziness, and numbness of the hands and limbs. What should be the diet?

Ans.— A fruit diet for two or three days, followed by a diet of fruits, grains, and nuts, taking only fruit for breakfast for two or three weeks. Eat but two meals a day, and drink two or three pints of water daily. Take open-air exercise. Send for a copy of "The New Dietary," price, 5 cents.

Weak Eyes.— M. B., Canada, is a stenographer troubled with astigmatism, though not severe. He is a health reformer, and in fairly good health. Is his occupation the cause of the trouble, or is it nervousness? What will cure it?

Ans. — The difficulty is congenital. Proper glasses should be obtained. Consult a good oculist.

Voice.— C. H. F., New York, loses his voice every time he takes cold, which is very frequent. What will cure him?

Ans.— Avoid taking cold. For method of doing this, see answer to a subscriber in regard to colds, on page 625.

Cold Feet — Catarrh.— Mrs. G. W., Vermont, is troubled with cold feet and limbs, her feet feeling lifeless. 1. What will remedy this? 2. What is the name and price of a good inhaler for catarrh?

Ans. — 1. The difficulty is probably due to a disturbance of the abdominal sympathetic. This is most likely due to disturbance of the stomach and bowels. Fomentations at night, a moist bandage worn about the abdomen at night, cold sponge baths in the morning, and a pure diet are the measures to be recommended.

2. Address the Modern Medicine Co., Battle Creek, Mich.

Disordered Stomach.— Mrs. O. P. B., Colorado: "1. I have eczema on different parts of my body as the result of indigestion. What diet shall I follow to correct the stomach trouble? 2. Do you sell the pamphlets referred to in the January number as premiums for subscribers, and at what price?"

Ans.— 1. A diet of fruits, grains, and nuts. Avoid meats, pastry, and all sorts of indigestible things. Take a warm bath at night. Live out of doors as much as possible.

2. Yes. Address the publishers for a circular.

Dyspepsia.— W. S. L., Michigan: "How do you harmonize the statement, 'People have been cured of persistent dyspepsia by eating raw wheat,' with your teaching that Americans are fast becoming dyspeptics by eating half-cooked cereals?"

Ans. — Half-cooked cereals are much more irritating to the stomach than those not cooked at all. Raw wheat neither ferments nor digests in the stomach, but passes along; half-cooked grains remain a long time in the stomach, and ferment, thus producing disturbance.

Stomach — Urine.— Mrs. C. E. H., Connecticut: "My stomach rebels against fruits in any form, and also against butter. Grape-nuts, shredded wheat biscuit, zwieback, a small piece of beefsteak, baked potatoes, caramel-cereal coffee,— this diet causes no trouble. I am also troubled with excess of phosphates in the urine. What diet and treatment will cure both?"

Ans.— The difficulty is probably with the combinations. Try prunes purée, browned rice, granose biscuit, toast, nuttose, etc. Fruit and vegetables do not agree well. You can gradually accustom yourself to the use of fruit but avoid acid fruit, and take only dry foods.

Stomach-Tube.— J. A. E. R., Canada, asks if it would injure the stomach of one suffering with nervous prostration and occasional attacks of biliousness to use the stomach-tube; also if it is beneficial for a healthy person.

Ans.— The stomach-tube would probably be very beneficial, but it should be properly employed by a competent physician. A healthy person has no necessity for using a stomach-tube. In most cases of biliousness the disorder may be relieved by adopting a fruit diet for a few days; then only fruit for breakfast for a time.

Stomach — Nasal Catarrh.— Mrs. H. E. T., Illinois, is sixty-three years old, and has the foregoing troubles. "1. Does not nasal catarrh cause or aggravate catarrh of the stomach? 2. How should the former be treated? 3. How often and for how long a time should electricity be used for disordered stomach? 4. Have I symptoms of nervous prostration? 5. At my age is a tepid bath every other morning too much? 6. Would a flaxseed or mustard poultice over the stomach be beneficial? 7. Should I drink something in place of water?"

Ans.— 1. Possibly.

2. By the morning sponge bath, outdoor exercise, and the Magic Pocket Vaporizer.

3. It depends upon the nature of the disorder, the kind of electricity, and the mode of application.

4. It would be well for you to spend a few weeks at a properly conducted sanitarium.

5. No. But the baths should be short and followed by exercise. A temperature of from 75° to 80° is better than higher.

6. Fomentations are better.

7. No. There is nothing better than water.

Ants.— J. B., New York, asks for something to destroy red ants.

Ans.— Put sugar or some other food which they like in a bottle in a place readily accessible to them. When they collect in the bottle in large numbers, remove them. This method, if persistently followed up, will soon relieve the premises of these troublesome guests.

Vapor Bath.— W. W. J., Maryland, asks how often one should take a hot-air or vapor bath.

Ans.— The vapor bath is not necessary for health. The hot-water bath is equally beneficial. A warm bath once or twice a week is sufficient. Long hot baths should not be taken; and a hot bath should always be followed by a cool bath or spray.

Rheumatism.— A. F., Illinois: "1. I am troubled with lameness and stiffness all over my body, sometimes one side aching painfully and the other side being comparatively comfortable. Could overeating induce the trouble? 2. Is the following list too much for one meal when one observes the two-meal system: Bowl of granose flakes, two slices of graham bread, four or six crackers or sticks, three baked apples, nut butter, and four bromose caramels?"

Ans.— 1. The cause is very likely rheumatism. The cause may be an excessive accumulation of uric acid through deficient exercise or errors in diet. A long time is sometimes required for the removal of the uric acid. The pain may be a sympathetic disturbance from prolapse of some internal viscus.

2. No.

Deafness.— E. B., Vermont, is deaf from the discharge of a sore in the inner ear. The trouble was induced by a cold. What can be done for her?

Ans.— A good physician should be consulted. The ears should be cleansed daily and treated with boracic acid.

Squash — Beets — Turnips — Carrots.—Mrs. E. B. R., Minnesota, asks if squash, beets, turnips, and carrots are healthful; also if they are classed as vegetables.

Ans.— The articles mentioned are vegetables. They are wholesome, but by no means the best food for persons suffering from dilatation of the stomach, slow digestion, or other cases which should avoid coarse vegetables.

Pipe-Stem Arteries — Constipation. — H. H., Pennsylvania: "1. Are pipe-stem arteries due to an exclusive vegetable diet? 2. What will remedy this condition? 3. What will cure constipation in a baby fifteen months old, otherwise well, except slow teething?"

Ans.— 1. No.

2. Frequent warm, not hot baths, an abundance of daily outdoor exercise moderate in character; a simple non-meat diet, abundance of fruit, and free water drinking.

3. Rub the child with the hands dipped in cold water every morning, and apply the moist abdominal bandage about the bowels at night; feed the child with malted nuts, granose, and fruit-coco. For circulars, address Sanitarium Health Food Co., Battle Creek, Mich.

Food for Elderly Person.— T. C. J., Ohio: "1. Should a person seventy-five years old have his food seasoned? 2. Are nuts admissible? 3. If so, what kind? 4. When should they and fruit be eaten? 5. Are acids bad for one with rheumatism? 6. Are liniments good for it? 7. Are peach jelly and apple butter objectionable? 8. What do you think of pills for a weak stomach? 9. Which is best for a sour stomach — soda, magnesia, chalk, soda mint, or what? 10. Which does better for weak digestion,— cream or good butter? 11. Is a little sherry wine objectionable?"

Ans.— 1. The only seasoning really required for food at any age is such as consists in the admixture of wholesome foods so as to give the proper proportions of nutritive value by a proper combination of fruits, grains, and nuts, as these foods can be made competent to satisfy all gustatory demands. A little salt may be added, but is not necessary.

2. Yes.

3. Nearly all kinds, if properly eaten, which means thoroughly masticated.

4. At any time when food is required.

5. The natural fruit acids are wholesome for all persons.

6. No.

7. Rather difficult of digestion.

8. Very harmful.

9. When due to fermentation, wash the stomach when necessary, and correct the diet. When due to hyperpepsia, or excessive formation of hydrochloric acid, regulation of the diet is also essential, but a little carbonate of soda may be advantageously used.

10. Avoid both. Use nuts as a source of fats.

11. Most decidedly.

Peanuts — Liver.— D. D. W., New Jersey: "1. I have it from good authority that peanuts are highly injurious to the stomach and liver. Why is this? 2. Why should nuttose cans be dark in the bottom? 3. What will cure liver complaint, and remove web spots before the eyes?"

Ans.— 1. The authority can not be good, as the statement is not true.

2. Probably the result of the soldering process

3. Remove the cause, and nature will effect a cure.

Sand for Disordered Stomach.— J. M. L., Oregon: "A lady uses clean, fine sand as a remedy for disordered stomach, taking it in teaspoonful doses. Is it harmful, or helpful? In either case, how?"

Ans.— We have had no experience with this extraordinary remedy. We would certainly hesitate to recommend it. Several years ago we received a letter from a Minnesota lady saying she had cured her husband of dyspepsia by feeding him small gravel in teaspoonful doses after each meal. These are the only cases we have known of this sort. We would be pleased to know if other of our readers have heard of similar cases. Persons suffering from dyspepsia have occasionally an abnormal appetite for such things. The Indians of the Orinoco River in South America often acquire the habit of eating clay in considerable quantities, but there is no evidence that they are in any way benefited thereby.

La Grippe.— H. S., Nebraska, asks if it is true that "la grippe" results from gorging the stomach.

Ans.— Doubtless yes, in many cases. It is not the man that gets the grippe, but the grippe that gets the man; and the reason why the grippe seizes the man is because he has somehow lost his vital resistance. Overeating, loss of sleep, etc., are common causes which render a person defenseless against the grippe, as well as other maladies.

Diet in Dyspepsia.— E. L., Indiana: "1. Are fresh or dried fruits better for one whose prominent symptom is an almost continuous eructating, the fluid being tasteless and colorless? 2. Are the legumes without skins harmful? 3. Are fresh fruits better raw than cooked? 4. Should I eat peanut butter or nut preparations of any kind? 5. Are there any particular fruits I should eat to the exclusion of others?"

Ans.— 1. Fresh, thoroughly ripe fruits, if taken by themselves and well masticated, will probably be found the most wholesome.

2. No.

3. Yes, as a rule.

4. Avoid nut butter made of roasted peanuts. Nuttolene, nutta, malted nuts, protose, and fruit-coco would be wholesome for you.

5. Peaches, grapes, and strawberries are the best fruit.

Stomach Trouble — Diet.— Mrs. E.: "1. Is one pound of nuttolene right for one meal when the diet is fruit, grains, and nuttolene? The person in question is annoyed by clear mucus in the stomach and with ulcerated bowels. 2. When lavage has been used for nine months, every day at first, then less often, should one continue it as long as the mucus still remains? 3. How is good flesh distinguished from dropsical? 4. Is a small bit of salt in a cup of hot water before breakfast good when lemon-juice proves too strong? 5. How long does it take nuttolene to digest? 6. Is zwieback constipating? 7. Why does nuttolene spoil in Mason fruit jars, after having been cooked ten hours? 8. What is the price of analyzing the stomach fluid after a test meal, when the same is sent by express?"

Ans.— 1. The quantity is too great. Send 15 cents to the Good Health Pub. Co. for a copy of "Balanced Bills of Fare," "How to Live on a Dime a Day," and "Daily Rations."

2. The use of the stomach-tube may be required for some time longer, but a rubber tube alone can not cure the gastritis.

3. When dropsy is present and pressure is made on the swollen part for a few seconds with the tip of the finger, the pit remains for some time after the finger is removed. The pitting does not remain in normal tissue.

4. No.

5. The same length of time as ordinary food — three or four hours, according to the activity of the digestion.

6. No.

7. For the reason that boiling at a high temperature is required for thorough sterilization after exposure to the air.

8. $3.

Diet for Infant.— Mrs. H. H. L., Indiana: "Are from ten to twelve ounces of thin oatmeal mixed with two teaspoonfuls of cream fed to a nine months-old baby three times a day too much, the child being troubled with cold sweating of the head?"

Ans.— No; the diet is insufficient. The child is probably starving. We would recommend the use of malted nuts.

Deafness.— Mrs. C. S. T., Colorado: "Our boy, seven years old, seems to be losing his hearing. He has never been robust. 1. Do you think it is the climate? 2. Can you advise any treatment to check it, without our consulting a specialist?"

Ans.— 1. The cause is probably nasal catarrh, which is more likely to be the result of a disordered state of the body, bad digestion, etc., than of unwholesome climate. Send to the Good Health Pub. Co. for a little book entitled "Nasal Catarrh." It contains what we would advise you. 2. We would also advise you to visit the Boulder Sanitarium for a thorough examination, instruction in diet, exercise, etc.

Stomach Trouble.— T. A., Connecticut: "My wife, sixty-six years old, has been a semi-invalid for twenty years, and has had chronic diarrhea for the same length of time, not long ago taking the form of cholera. She suffers much pain in the region of the liver, and her face and the back of the neck are a dark brown color. Fer-

mentation of the stomach and eructation are present, bowels painful. Quick movements cause palpitation of the heart and numbness of the hands. She is careful as to diet. Please give suggestions as to diet, and any other advice regarding treatment."

Ans.—The patient doubtless has dilatation of the stomach, and should have a careful examination of the stomach fluid, and a thorough investigation of the case. The case is too serious for treatment at home. She ought to visit a sanitarium. An institution similar to the one at Battle Creek has been opened at South Lancaster, Mass., known as the New England Sanitarium. Address postal card to that institution for a circular.

Nut Products.—W. P., California, asks which of the nut products may be eaten without irritating the throat.

Ans.—All of them. Nuttena and protose are especially recommended.

Whitening a Dark Neck — Flesh.—E. M. P., Missouri, asks: "1. What is the best means of whitening a brown neck? 2. Is lemon-juice effective? 3. What will make a bony neck and shoulders plump? 4. Would rubbing with olive-oil be effective?"

Ans.—1. Get a healthy skin by a pure diet, outdoor exercise, a bath at from 92° to 95° at bedtime, and a cool sponge bath on rising in the morning.

2. Perhaps temporarily, but not much.

3. Become well by a proper cultivation of health.

4. It may be slightly beneficial.

Ruptures.—J. L. F., Connecticut, desires information as to the treatment and cure of ruptures, and as to whether they are cured by surgical operations.

Ans.—A surgical operation is necessary for a radical cure.

Paralysis — Diet for Soldier in the Philippines.—J. W. H., Kentucky, asks (1) why a man sixty-one years old should have paralysis of the hands; (2) what should be the diet of a soldier in the Philippines.

Ans.—1. The cause may be lead poisoning.

2. Fruits, grains, and nuts.

Rheumatism.—F. A., Pennsylvania: "Can you advise treatment for rheumatism of four years' standing, chiefly across the shoulders and at the lower end of the spine?"

Ans.—Adopt a pure dietary of grains, fruits, and nuts; take a bath at from 92° to 95° at bedtime every night; take a tepid bath on rising, followed by vigorous rubbing; and enough outdoor exercise every day to produce perspiration. If the pain in the shoulder is severe, apply fomentations at night just before retiring for ten minutes. and bathe the parts for ten seconds with cold water.

Castor-Oil and Ammonia.—A Kentucky subscriber asks how to use castor-oil and ammonia for falling hair.

Ans.—We have had no experience with this remedy.

LITERARY NOTICES.

MR. WALTER H. PAGE has resigned the editorship of the **Atlantic Monthly,** and has accepted an invitation to take a prominent post in the direction of the literary work of the allied houses of Harper & Brothers and the Doubleday & McClure Co. His successor in the editorship of the *Atlantic* is Mr. Bliss Perry, known in literature as the author of two novels and a number of essays and stories. Since his graduation from Williams College in 1881, Mr. Perry has been in the department of English, first at Williams, and afterward at Princeton University, where he was lately appointed to the Holmes Professorship of English Literature.

Current Literature is a mine of golden nuggets, in which one may delve and always bring away his bagful. It is above all others a satisfying magazine. Price, $3 a year.

Harper's Magazine has made the first break in the wall of the eminently first-class magazines, in reducing its price from $4 to $3 per annum. The fact is creating quite a stir in the literary world, and now we are wondering if the **Century,** the **Atlantic,** and other high-priced periodicals will follow its lead. *Harper's* is one of the very few magazines in this country which are above criticism, and if the new price shall aid in introducing it into homes where heretofore it has not come, the change will certainly be a benefit to the people.

The **Forum** is giving its readers a large variety of excellent articles on the most vital questions of the day The September number contains "The Conference at The Hague," "Washington's Farewell Address and Its Application," "The People of the Philippines," "Progress of Philosophy in the

Nineteenth Century," "Criminal Legislation by Proxy," "Cotton-Spinning at Shanghai," "A Word to the Next Speaker," by a friend of General Henderson, "The Teacher and His Duties," "Indian Famines," "The Problem of an American Marine," "Voting-machines vs. the Paper Ballot," "Agricultural Progress and the Wheat Problem," "Recent Events in the Transvaal," "The Philadelphia Commercial Museum," and "The Younger Russian Writers,"—a list of subjects that command attention.

Those who have followed the scenes of the tragedy whose final act is now being played at Rennes, France, will be interested in the new book just published by Harper & Brothers, giving the letters of Dreyfus to his wife while a prisoner on Devil's Island, from 1894 to 1899. The price of the book is $1. The fourth edition is now in press.

A copy of **The Gulistan of Sa'di** by Sir William Arnold, has come to our table from Harper & Bros. This volume contains a translation from the Persian, in prose and verse, of the first four babs, or gateways, of the Rose Garden of the famous Persian poet, philosopher, and traveler, Shaikh Sa'di. It is beautifully bound in cloth, with aluminum and gold stamp, on good book paper, printed in plain type; price, $1.

Who but can remember the time when his appetite has been stimulated by the odor of aromatic herbs! While reading "A Talk about Herbs," in the September issue of **Table Talk,** all manner of good things crowd the memory, and we immediately decide that thyme, sage, sweet marjoram, and a host of others shall be in more common use in the kitchens of to-day. Other articles in this issue are: "The Evolution of a Single Sauce;" "The School Lunch Basket;" "Friends in Need," or easy and satisfactory cake baking; "Household Methods;" "The Early Training of Children;" etc. A sample copy of the magazine free to any of our readers who send name and address to Table Talk Publishing Co., Philadelphia.

With the June issue the **Housekeeper** (Minneapolis, Minn.) joined the small army of monthly periodicals. The later numbers show that its new uniform is certainly in keeping with its new aspirations. It has doubled in size, giving as much reading-matter as it did for twenty-two years as a semi-monthly, while better paper, more numerous and better illustrations, better topography and press-work, and several new departments make it more attractive than ever. It has not lost any of the homelike qualities that have made it a favorite with ladies. With all its improvements, its subscription price has not been raised. A prominent feature is a new serial story entitled "The Rescue of Brother Bendyk," the scene of which is laid in Japan. It is of special interest because it deals with the customs, austere religion, and ancient temples of the Japanese, being illustrated with original photographs. The *Housekeeper*, including opening chapters of the new story, may be had, four months on trial, for fifteen cents.

A recent **McClure's** contains a notable article by Wm. T. Stead on the new railway project of Cecil Rhodes,—a through line from Cape Colony to Cairo, Egypt. This huge undertaking is already partly accomplished, and it is expected that ten years more will see it completed.

A new figure in American literature is Cyrus Townsend Brady. He was born in Allegheny City, Pa., in 1861. His ancestors fought in the army and the navy during the Revolution and the succeeding wars, two of them being officers of the Continental line. Young Brady thus inherited from his Scotch-Irish stock the sturdiest courage and patriotism. At seventeen he entered the United States Naval Academy, and graduated in the class of 1883. Ten years ago he entered the ministry of the Protestant Episcopal Church. In the recent war he went to the front as chaplain of the First Pennsylvania Regiment. Doctor Brady has written a new romance of the War of 1812, following the fortunes of "Old Ironsides," and in it his brilliant genius has produced the most thrilling novel of sea life in American literature. It is called "For the Freedom of the Sea," and its serial publication begins in **The Saturday Evening Post,** of Philadelphia, in September.

The Harper-McClure Encyclopedia.—Messrs. Harper and Brothers have settled the preliminary plans for their new encyclopedia, which is to be considerably larger than any similar publication in this country or England. It is to be called "The Harper-McClure Encyclopedia."

The Teaching of Physiology in Medical Schools, by W. T. Porter, M. D., associate professor of physiology in Harvard University.

PUBLISHERS' DEPARTMENT.

AT a meeting held by the Michigan Press Association on Aug. 12, 1899, the following resolutions were presented and adopted:—

Whereas, The annual excursion of the Michigan Press Association has been a most decided success, inasmuch as the trip was the means of furnishing the participants a most enjoyable outing through a beautiful region; and—

Whereas, The several transportation companies over whose lines the trip was taken were kind and considerate in the arrangement of the many details attending the trip; and—

Whereas, The managers of these several companies took great pains to make the trip enjoyable and one to be long remembered. Therefore be it—

Resolved, That we, the Michigan Press Association, tender to the officers of the following companies, through whom the different courtesies to us were extended, our sincere thanks and appreciation: To the Northwest Transportation Co. on the trip from Windsor to Sault Ste. Marie; to the Northern Navigation Co. of Ontario on the trip from Sault Ste. Marie through Georgian Bay, via Mackinac Island, to Collingwood; to the Grand Trunk Railway Co. on the trip from Collingwood to Toronto and from Niagara Falls to Detroit and Port Huron; to the Niagara Navigation Co. on the trip from Toronto to Lewiston and by electric cars up to the gorge route to Niagara Falls; to the Cleveland and Buffalo Steamship Navigation Co. on the trip from Buffalo to Cleveland; and especially to the Detroit and Cleveland Steamship Navigation Co. on the trip from Cleveland to Detroit for special courtesies that were extended to the members on the trip. Be it further—

Resolved, That these resolutions be placed on the records of the Michigan Press Association, and that a copy be sent by the secretary to the managers of these several companies.

J. D. S. HANSON,
B. J. LOWREY,
NEWMAN MILLER,
Committee on Resolutions.

THE twenty-sixth annual convention of the National Woman's Christian Temperance Union will meet in the First Presbyterian church in Seattle, Wash., Oct. 20–25, 1899.

UNCLE EPHRAIM'S CONVERSION.

BY M. B. DUFFY.

ONCE I thought a fat ol' 'possum
  Wuz a thing 't wuz hard to beat ;
An' a li'l ol' juicy chickin'
  Wuz a temptin' thing to eat ;
But since I 'ze been a readin',
  An' reflectin' big an' strong,
I 'ze found I wuz mistakin,
  An' my kalkerlashun's wrong.

Once I yuster go out huntin'
  Foh de 'possum an' de coon ;
Go a pokin' roun' folks' hen roos'
  In de darkenin' uv de moon !
But since I 'ze been ruminatin',
  An' hez found out what is right,
I 'ze no call to go prospectin',
  Ner a ramblin' roun' at night.

Now de docter ain't a comin'
  Foh to git me on my feet,
'Kaze I knows de kombernashuns
  Dat a pusson oughter eat !
'Tween de pepper-sass 'n mustard
  I wuz cross enough to fight,
For de 'spepsy what dun cotch me
  Stayed on duty day an' night.

When de spar rib cussed de sassidge,
  An' de hed cheese sasst de tripe,
Den the debbil held a morgidge
  Dat he foreclosed every night !
Sister Chow-Chow got to scoldin'
  Wid ol' Missis Chilly-Sass ;
An' de lobster got to scrappin'
  Wid de oyster an' de bass.

When de pepper an' hoss-radish
  'Gun to skold an' fret an' tease,
An' the pickles 'gun to argue
  Wid de ketchup an' de cheese,
Den I felt so mighty triflin',
  Dat like Job I 'd 'gin to pray
Foh de mawnin' when 't wuz evenin',
  An' foh night when it wuz day.

Den a stranger white man tol' me,
  My ! it made me feel right skeery,
Dat de kaze uv all my troubles
  Wuz a *vicious* dieteery,
Dat I oughter eat GRANOLA,
  An' to do it dreffful quick,
So I sent a sample order
  Foh dat food to Battle Creek.

I hez 'joyed de taste uv bacon,
  An' a good fat turkey roas',
But dey all kain't hol' a candle
  To dat food dey call BROMOSE !
To de woodchuck I 'ze been parshul ;
  But of dat no longer boas',
Ef you wants a food dat 's fillin',
  Pass your plate foh dat PROTOSE.

Ef your needin' suffin' bildin',
  My advise wud be uv koase
Dat you set yer jaw a workin'
  On a slice uv fat GRANOSE.
Ef I keeps right on a mendin'
  From now on till by an' by,
Mebby I kin live forebber,—
  Bress de Lor',— and nebber die!

OTITIS.

THE more I see of chronic suppurative inflammation of the ear, the more convinced do I become that the element or chronicity is due to lack of thoroughness in treatment. The method of procedure mapped out below will not succeed in cases where necrosis has occurred, but in all others it will reduce the duration of treatment from months and weeks to days.

The patient is placed upon the side with the affected ear up. The concha is filled with Marchand's Hydrozone, which is allowed to remain until it becomes heated by contact with the skin, when, by tilting the auricle, the fluid is poured gently into the external canal. The froth resulting from the effervescence is removed with absorbent cotton from time to time, and more Hydrozone added. This is kept up until *all* bubbling ceases. The patient will hear the noise even after the effervescence ceases to be visible to the eye.

Closing the external canal by gentle pressure upon the tragus forces the fluid well into the middle ear, and in some instances will carry it through the Eustachian tube into the throat. When effervescence has ceased, the canal should be dried with absorbent cotton twisted on a probe, and a small amount of pulverized boracic acid insufflated.

The time necessary for the thorough cleansing of a suppurating ear will vary from a few minutes to above an hour, but if done with proper care, it does not have to be repeated in many cases. However, the patient should be seen daily, and the Hydrozone used until the desired result is obtained.

Care is necessary in opening the bottle for the first time, as bits of glass may fly. Wrap a cloth about the cork, and twist it out by pulling on each side successively.

In children and some adults the Hydrozone causes pain, which can be obviated by previously instilling a few drops of a warm solution of cocain hydrochloride. In this note it has been the intention to treat suppuration of the ear rather as a symptom and from the standpoint of the general practitioner.— *Dr. Hugh Blake Williams, in the Alkaloidal Clinic, January, 1899.*

Aug. 10, 1899.

GOOD HEALTH PUB. CO.: Accept my sincere thanks for the Magic Pocket Vaporizer. I consider it a great favor. I intend to show it to my friends. I have used it three or four times, and it leaves a warm, comfortable feeling in my nose and throat. URSULA HARTSOUGH.

Plymouth, Wayne Co., Mich.

"ENCLOSED please find $1.00 for one year's subscription to GOOD HEALTH. It gives me much pleasure to be able to add to GOOD HEALTH readers. I deem it my duty to make my friends acquainted with the principles taught by that valuable magazine. Accept my thanks for the dinner you so kindly sent me. It was an excellent treat."

LADY AGENTS wanted to sell flavoring extracts and perfumes. It will pay you to write me. R. W. Snyder, 150 E. Canal St., Battle Creek, Mich.