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A Sixteen-page Weekly Journal for the Young, Which Enters Upon its Sixty-seventh Volume, January 1

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Elder George Teasdale, a missionary in the island of Java, has written an interesting series of articles on the Asiatic archipelago. Some of the topics considered are: "Malays," "Straits Settlements," "Borneo," "Sumatra." This series will be well illustrated with views of native scenes.

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There will be a series giving a comprehensive view of the belief of Christian Scientists, and revealing the fallacies of their doctrine. All young people will be interested in these carefully written articles.

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THE YOUTH'S INSTRUCTOR

Takoma Park Station *Washington, D. C.*

CONTENTS

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HEALTHFUL SPORT
Building a snow house

LIFE and HEALTH

"Something better is the law of all true living"

Vol. XXIV Takoma Park Station, Washington, D. C., January, 1909 No. 1

The Transmission of Tuberculosis Through Milk

D. H. Kress, M. D.

Superintendent Washington (D. C.) Sanitarium

PROFESSOR KOCH, the "grand old man of medicine," who was in attendance at the recent International Congress on Tuberculosis, opened a new era to medical science when, in 1882, he discovered that the cause of tuberculosis is the tubercle bacillus. For ages, though there were some who recognized the contagious character of the disease, tuberculosis was attributed to heredity, exposure, and other things, which act only indirectly in its causation.

We now know, thanks to Dr. Koch, that it is just as necessary to have the tubercle bacilli planted within the body in order to develop tuberculosis, as it is to plant wheat in the earth in order to have a crop of wheat. The farmer who does not wish to raise wheat must not sow wheat; so the man who wishes to escape tuberculosis will do so by preventing the entrance into his body of the tubercular seed, which alone can produce the disease. One who is successful in this will never die of tuberculosis.

Impure air, poor food, overexertion, exposure, all act injuriously upon the body; but of themselves, they can not produce tuberculosis. They may and do undermine the system, and lower the resisting power, or vitality, of the tissues, and thus prepare the soil for the cultivation of the tubercle bacillus; but separately or collectively, they can not cause one case of tuberculosis.

Because tuberculosis affects the lungs much more frequently than other tissues of the body, it has been thought that the tubercle bacilli gain entrance into the body through the air-passages; but it is now generally conceded that they may gain admission to the body, and even to the lungs, through the alimentary passage. Some even think the alimentary tract is the chief door by which the tubercle bacilli gain entrance into the body. It has been shown that three hours after tubercle bacilli have been fed to guinea-pigs, they may be detected in the lungs.

Tubercle bacilli thrive on tissues that have lost the power of self-protection. The barriers of defense must be broken down before the tubercle bacilli can injure any portion of the body. The breathing of impure air, the inhalation of tobacco smoke, the use of impure foods, underfeeding and overfeeding, sexual

excesses, sedentary habits, overexertion, and loss of sleep, all act as predisposing causes of tuberculosis.

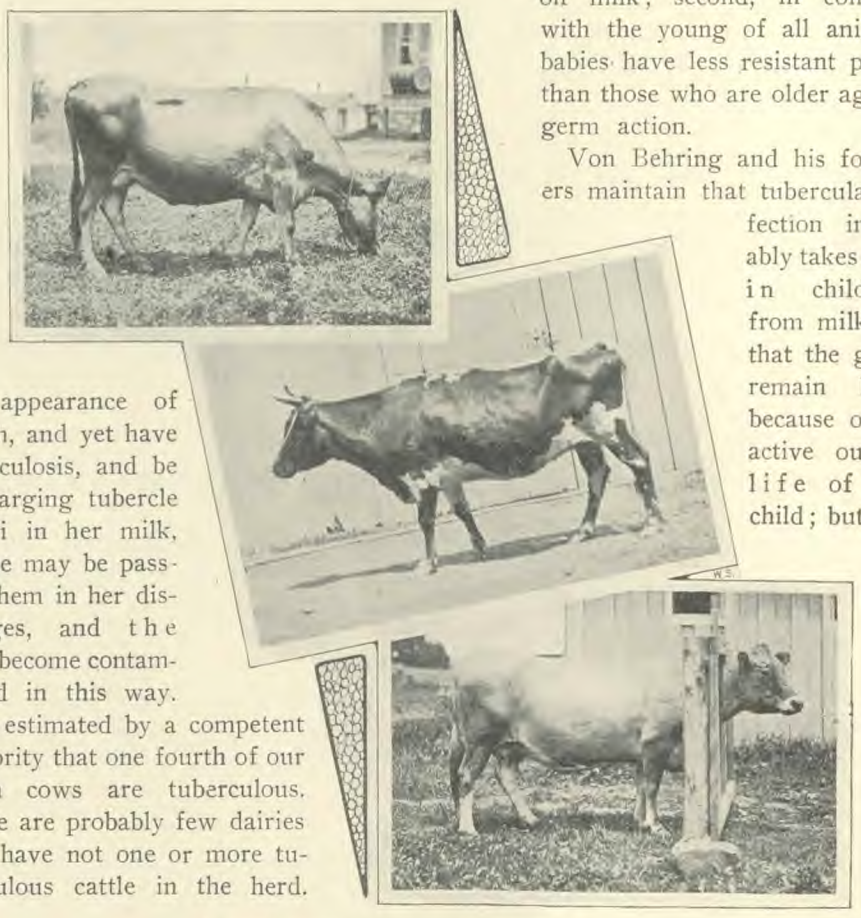
Much to prevent the dissemination of tubercle bacilli has been accomplished by segregating consumptives, by forbidding promiscuous spitting, and by similar measures; but while the human consumptive has acted an important part in disseminating the disease, the use as food of products from tubercular animals has not received the attention it demands.

A cow may be sleek and fat, and have the appearance of health, and yet have tuberculosis, and be discharging tubercle bacilli in her milk, or she may be passing them in her discharges, and the milk become contaminated in this way. It is estimated by a competent authority that one fourth of our milch cows are tuberculous. There are probably few dairies that have not one or more tuberculous cattle in the herd. The milk of the tubercular animals is mixed with that of the other animals, so all is contaminated. Practically the entire milk supply of our large cities is questionable on this score.

When hogs are fed with milk from infected cows, or when they are allowed to follow tubercular cattle in the field, they become tuberculous. What, then, is to prevent human beings, when fed the same milk, from becoming tubercular?

Children are in especial danger for two reasons: First, they are fed largely on milk; second, in common with the young of all animals, babies have less resistant power than those who are older against germ action.

Von Behring and his followers maintain that tubercular infection invariably takes place in childhood from milk, and that the germs remain latent because of the active outdoor life of the child; but dur-



DANGEROUSLY TUBERCULOUS COWS

The upper and lower are pictures of apparently healthy cows found in dairies supplying milk to Washington, D. C. The upper cow was "dangerously tuberculous;" the lower cow was too fat to make a good milker. Both were spreading tubercle bacilli in the barnyard in such a manner that it was sure to contaminate the milk. The cow in the center, though in apparently good health, has been known to be tuberculous for six years, and is scattering tubercle bacilli in the barnyard.

ing school-days, when the child is forced to remain much indoors and to breathe impure air, the lowered vitality of the tissues favors the growth of the germs and the development of tuberculosis. This would explain why so many deaths from this disease occur during the years of early childhood.

It has been shown that tubercle bacilli in butter may remain alive for several months, and retain their power of transmitting the disease. From the fact that the cream, in separating from the milk, carries with it ninety per cent of the tubercle bacilli, butter is likely to contain tubercle bacilli in greater proportion than the milk from which it is made. Cheese is another product that may contain active tubercle bacilli.

The danger of infection from milk may be avoided by boiling it, or by Pasteurizing it; that is, heating it to 140° F., and keeping it at that temperature for twenty minutes.

A TUBERCULOSIS SPREADER.

A healthy-appearing cow, in a herd supplying milk to Washington, D. C., found on examination to be dangerously tuberculous.

The Therapeutics of True Christianity[1]

W. B. Holden, M. D.

THE art and science of surgery and medicine rationally cure many physical ailments. One by one the problems of death-dealing scourges have been solved. By vaccination we are enabled largely to eliminate smallpox; antitoxin has robbed diphtheria of most of its terrors; hygiene and sanitary science have made typhoid, malaria, and yellow fever preventable diseases; bacteriology and anesthesia render surgery "safe and sane;" even the great white plague — tuberculosis — is receding before the onslaughts of science. Of the common infectious diseases only pneumonia and cancer have been able to hold their own, and any day may find a remedy for these.

The average length of life has been prolonged. Life is saved not only by curing disease, but, far better, by preventing it. In fact, practically all the organic diseases of mankind can be prevented, cured, or alleviated by physical means.

In contrast to this hopeful outlook, attention will now be directed to the so-called functional nervous diseases. Modern civilization, through its intensity, its selfishness, its unbelief in Christian principles, is creating an army of nervous defectives that fully offsets the benefits of the many lives modern science is enabled to save.

A man deprived of one foot may be a useful, happy citizen, a loved and loving member of the family. A blue, depressed, gloomy, cranky, chronic neurasthenic is by far a less useful citizen, and is probably neither loving nor loved. A physical cripple is of more value to the state, society, and his own family than a chronic nervous cripple.

A physical organic basis may be largely the causative factor in many cases of neurasthenia, psychasthenia, and hysteria. These causes can be corrected by surgical and medical treatment. There remains, however, a large class of sufferers from functional nervous disorders for which no adequate organic cause can be found. They are sick because of morbid ideas concerning themselves. Surgical, medical, and sanitarium treatments fail. The receiving physician of a large medical and surgical sanitarium recently said that sixty per cent of the patients were nervous cases.

Insanity in all forms is rapidly increasing. One authority estimates that at the present rate of increase, in two hundred years the entire population of the world will be insane.

But perhaps the most astonishing indication of the prevalence and seriousness of these non-organic ailments is found in the suicide statistics. In the United States during 1881 there were 605 suicides,— twelve to each million of the population. During 1907 there were 10,782 suicides, one hundred twenty-six to each million. In twenty-six years the suicide rate has increased tenfold, or one thou-

[1] A paper read at the nurses' graduating exercises at the Portland (Ore.) Sanitarium, Nov. 3, 1908.

sand per cent. Since 1890 one hundred twenty thousand persons have deliberately destroyed themselves.

The past quarter of a century has been noted for its unprecedented progress and prosperity in material advancement. Without fear of contradiction, we may assume that no nation in all history has ever enjoyed so bountiful blessings as we have since 1881. No nation was ever better fed, better clothed, better housed, or surrounded with greater opportunities. No great war, famine, or pestilence has afflicted us. The necessaries of life have been denied to practically none. The luxuries have been enjoyed by the many. Wealth and riches have increased by leaps and bounds. Yet in the midst of these years of peace and prosperity, men, women, and children seek death by their own hands ten times as often as they did twenty-six years ago. The highest suicide rate is in the temperate zone, where the climate is most delightful and least annoying. There are more suicides in June than in December, more on bright days than on cloudy days, more suicides during times of peace than war. The first three months after the San Francisco fire there were but three suicides in that city — a decrease of ninety-seven per cent. In times of deep distress and general calamity, suicides greatly diminish.

Is there any explanation of these facts? Self-preservation is the first law of life. Why, then, this alarming, unnatural attitude to one's own existence? What is the cause? what the remedy?

We are living in an age of competition. In our schools from the third grade up, every child is a competitor of every other child in that room. One hundred per cent is the goal. Habits of dishonesty and cheating are early acquired. Success is the nation's god. Win we must, by means fair or foul. In the mad rush for money, power, and position, the nobler virtues are ignored, then forgotten; self and selfishness rule. Love for our fellow is lost. Godliness is considered effeminate, honesty foolishness, Christianity nonsense.

Manifestly the remedy is neither surgical nor medical. Rarely indeed would a surgical operation prevent a suicide or deter him from his purpose. There is no tablet, tincture, or triturate that will cure these self-destroyers. A professor of history was taking a voyage across the Indian Ocean. He was disappointed, depressed, and despondent. Many times as he looked over the steamer's rail, he thought, "How easy to end it all, if one were only sure there was no God, no hereafter." Only a faith in a living God sustained him in that hour of darkness.

Men commit suicide because their selfish lives magnify their real troubles or create imaginary ones. A pleasant, cheerful day contrasts with their gloomy, miserable selfishness until they seek death. Instead of entering into the joys of their fellows, another's happiness makes them miserable because it is not their own. How quickly the Christian principle, "in honor preferring one another," would dissipate such clouds, and fill one with joy! The true Christian rejoices in the sunshine. The pleasant days, prosperous times, favorable circumstances, successful friends, kind neighbors, are causes for genuine thankfulness and gladness. We all despise the child who sulks because the game is not played his way. Then how much more despicable is the grown man or woman who violently ends his selfish existence because the winnings in the great game of life are not distributed to his liking. We feel pity and shame for the man who thinks his troubles greater than others, for the woman who worries herself into a chronic nervous condition because her hat is four inches too narrow, her sleeves a trifle long or a trifle too skimpy!

Quickly indeed would these petty troubles vanish were the admonition of Paul more generally exemplified in the life: "Having food and raiment let us be therewith content."

If the world believed the fundamental principles of Christianity,— that a great, eternal God, whose attributes of love, mercy, and goodness are infinite, rules over all; that he has promised to withhold no good thing from his children; that he sympathizes in all our sorrows and suffering; that he goes with us even though we "walk through the valley of the shadow of death;" that his goodness and mercy follow us not only all the days of our life, but that he has gone to prepare mansions for us, where the lame shall "leap as an hart," the blind see, the deaf hear, the desert "blossom as the rose," and where "the ransomed of the Lord shall return, and come to Zion with songs and everlasting joy upon their heads: . . . and sorrow and sighing shall flee away,"— if the world had a living, abiding faith in God, what a change would be wrought! Men would live and serve for others. Their lives would be full of good deeds instead of sharp bargains. Bonds of wickedness would be loosened, heavy burdens undone, the oppressed would go free, the hungry be fed, the poor relieved, the naked clothed. Then would their "light break forth as the morning," and their health "spring forth speedily."

Members of the graduating class, your training has prepared you to observe quickly the needs of your patients, and to render tactfully every medical service in your power; but your work means more than this. Unless your lives are permeated with the principles of love, hope, and Christian faith, you will fall short in the comfort you might bestow. Your work is pre-eminently one of unselfish devotion. Unselfishness can not be assumed. To conceal selfishness is impossible. The sweet spirit of quietness and assurance that comes as an "effect of righteousness," will not only enable you to be more faithful in your professional duties, but will be a source of help and encouragement to your patients.

In the enthusiasm of your new calling, you will have to be cautious lest your routine work causes you to neglect the development of a Christian character. Cultivate carefully the fruits of the Spirit —"love, joy, peace, long-suffering, gentleness, goodness, faith, meekness, temperance," and success will certainly attend your efforts.

Portland, Ore.

THE TREASURY BUILDING, WASHINGTON, D. C.

Uncle Sam's strong box

The Prevention of Tuberculosis

G. H. Heald, M. D.

Tuberculosis causes more deaths than any other disease.
Tuberculosis may be prevented by right measures, vigorously carried out.
Tuberculosis owes its prevalence partly to ignorance, partly to carelessness.

A REALIZATION of the significance of the fact that one seventh of all deaths are caused by a disease which, by the employment of right means, is wholly preventable, should lead us to sense the gravity of the tuberculosis problem and the importance of thorough preventive measures.

Tuberculosis is a transmissible disease. That is to say, every consumptive patient has received the infection from some other person or some animal which had the disease. It is caused by the presence in the tissues of a minute organism, the tubercle bacillus, which has come from a previous case of the disease. This comparatively slow-growing organism, coming in contact with tissues already weakened by unsanitary conditions, such as insufficient air and sunlight, improper food, intemperance, or exhausting excesses, finds a soil well adapted to its growth, and establishes itself, producing the various disease-processes collectively known as tuberculosis.

By many tuberculosis is known as a house disease, from the fact that one case of tuberculosis in a building is very likely to be followed by other cases. Formerly, this was attributed to hereditary transmission; but now it is known that this so-called hereditary transmission is very largely a matter of personal infection. Wherever the consumptive dwells,— unless he has been carefully instructed regarding the care of his sputum, and is

conscientious in following this instruction,— tubercle bacilli are present in the carpets, clothing, and bedding, and are raised into the air at every sweeping. Nearly always, when an older member of the family has tuberculosis in an advanced form,— and when a person can be recognized as a consumptive, the disease *is* in an advanced form,— one or more of the children, on careful examination, will be found to have contracted the disease.

Some physicians, indeed, believe that all tuberculosis is contracted during in-

fancy, and that it develops later in life when some circumstance has lessened the resistance of the tissues. There is considerable evidence to support this view; but it is not generally received.

Others believe tuberculosis to be entirely or largely an air-borne disease, the result of inhaling dried expectoration. Still others believe it to be largely a milk-borne disease, owing to the fact that a large proportion of dairy cattle are tuberculous, and tubercle bacilli are not infrequently found in a live state in milk and butter, which foods are largely used in an uncooked condition.

The evidence indicates that each of tent when he talks, minute droplets of saliva are dislodged from the mouth and float in the air, to be inhaled in their moist condition by others, or to fall to the floor, and be raised later on as dust when sweeping.

Prevention of Milk-Borne Tuberculosis

1. Be assured by means of a tuberculin test that your milch cow is free from tuberculosis; or —

2. Pasteurize all your milk; that is, bring it to a point just below boiling.

Prevention of Air-Borne Tuberculosis

If a consumptive lives in the house,

these are important means of transmission, and that in order to make successful warfare against tuberculosis, it will be necessary to avoid both house infection and milk infection.

Undoubtedly the dust from dried sputum in the streets is a source of danger, but not so much so as in buildings; for a few hours' exposure to sunlight is sufficient to destroy the tubercle bacilli. In order to avoid all danger from this source, it is important to avoid spitting in the streets, and especially on the sidewalks. Most important, however, is the caution against spitting in street-cars, public buildings, etc., except in the cuspidors placed for the purpose.

There is another source of danger in the home, even when one is comparatively careful with the sputum. When the consumptive coughs, and to a less extent when he talks, minute droplets of saliva are dislodged from the mouth and float in the air, to be inhaled in their moist condition by others, or to fall to the floor, and be raised later on as dust when sweeping.

Prevention of Milk-Borne Tuberculosis

1. Be assured by means of a tuberculin test that your milch cow is free from tuberculosis; or —

2. Pasteurize all your milk; that is, bring it to a point just below boiling.

Prevention of Air-Borne Tuberculosis

If a consumptive lives in the house, have him take great care that none of his sputum contaminates in any way any floor, bedding, clothing, etc. The sputum should never be caught in a handkerchief, where it will dry and infect the air when the handkerchief is used later, but in paper napkins, which can be burned before they become dry, or in a vessel containing some disinfectant solution.

The patient should be careful not to talk directly into the face of any one; and while coughing, should hold a handkerchief before the mouth, and should never under any circumstances kiss any one on the mouth. In fact, the custom of kissing on the mouth is never free from the danger of transmitting disease germs, even when no disease is known to be present.

The patient should never use a drink-

ing-cup used by others; and his dishes, clothing, bedding, etc., should all be scalded after using.

One should never occupy the same room with a consumptive, nor one that has been used by a consumptive, until it has been thoroughly fumigated, according to directions which will be furnished by your State board of health, the carpets and bedding changed or disinfected, and the woodwork gone over with disinfectant (1-1000 bichlorid) solution.

Except in the few States where registry laws provide for oversight of consumptives by the health authorities, it is not safe to move into a vacant house without first giving it a fumigation and thorough cleansing.

In a house occupied by a consumptive, it is well occasionally to use disinfectant on the woodwork and floors, and to disinfect clothing and bedding — at least the sheets — by boiling water or steam heat. Articles that can not be subjected to moist heat may be disinfected by means of oven heat, 300° F., just short of the scorching temperature. The upper sheet should be long enough to permit of its being folded down for about two feet as a protection to the spread.

Carpets are an abomination in a consumptive's room, and should never be allowed. A clean, smooth wood floor is much to be preferred.

In the streets, ladies should avoid wearing dresses long enough to touch the sidewalks and streets, and thus avoid dragging into the home myriads of tubercle and other germs. The Oriental custom of leaving the street shoes at the door — using slippers or sandals in the house — would not be at all bad.

It is unwise to drink out of a public drinking-cup. If at any time it is necessary to do this, the lips should not touch the edge of the cup.

Always have an abundance of oxygen, summer and winter. It is hardly necessary to give this advice for the summer weather; but in winter there is strong temptation to economize by shutting out the pure air. This is expensive economy, if health is worth anything. As far as possible, avoid assembly rooms which are poorly ventilated; it is impossible to ventilate overcrowded rooms properly.

One measure of supreme importance is to keep the general health in prime condition. It is the run-down person that the tubercle germ seizes as its prey. By means of all rational hygienic measures maintain the bodily condition above the disease level.

These cuts are reproductions of photographs made from the large posters displayed by the New York State Department of Health at the International Congress on Tuberculosis held in Washington, and used by them in their State campaign against tuberculosis.

Colds and How to Catch Them

W. A. Colcord

IF the reader will stop sneezing long enough to read the following, he may save himself some discomfort, and possibly a few doctors' bills. To revel in colds, you have only to observe these few simple rules: —

Keep the windows of your sleeping-room shut.

Sleep in heated, stuffy rooms.

Take little or no exercise between meals.

Never take a cool bath.

Bathe seldom, and then always in hot water.

Do not take a warm bath oftener than once a month.

Wear heavy flannel underwear next to the skin.

Change from heavy woolen to light cotton or linen underwear frequently.

When warm or in a state of perspiration, sit in a draft, and with your back to the draft.

In cold weather live in rooms heated to a temperature of from eighty-five to ninety degrees Fahrenheit.

Never go outdoors when it is windy, or rainy, or wet underfoot, or cold, or hot, or when it looks as if it were going to be any of these. Keep yourself as nearly like a house plant as possible.

Wear tight-fitting and thin-soled shoes in cold weather, and never protect the feet from snow or cold by wearing rubbers or arctics.

If you should chance to go out when it is wet underfoot, wear thin-soled shoes and no rubbers.

If you should get your feet damp and cold, do not change your shoes and hosiery, and be sure not to take a hot drink or a hot foot-bath before retiring, to equalize the circulation.

If you are caught out in a rain without proper protection, and your clothing becomes damp or wet through, do not be in a hurry to change your clothes, but let the dampness soak in, and the surface of the body become thoroughly chilled. Take no such precaution as a dry rub, a warm bath, or an immediate change of garments.

In damp, chilly weather, do not build a little fire to make it comfortable in the house.

If you are going out, and it looks rainy, do not take an umbrella with you.

When walking, keep all your coats and wraps on; when you sit down, take them off, so as to "cool off" quickly.

When you lie down for a nap or a rest, do not put any cover over you.

Whenever possible, sleep in damp and unaired beds.

Keep out of the sunshine as much as possible, and live in basements, or dark, damp, chilly rooms.

Do not dress according to the weather, and never take a wrap or an overcoat along with you to protect yourself in case of a sudden change in the weather.

When outdoors, be careful not to breathe too deeply.

In cold weather, frequently walk around barefoot on linoleum or bare floors.

Do not imagine you can take cold through your hands, or feet, or head,

or the back of your neck; or that a cold can settle in your stomach, or bowels, or throat, or head, or lungs, or any other part that may be weak, or that has been previously exposed or affected.

If you are sneezing, do not take this as any indication that you are taking cold, or that some part of your body — your head, for instance — needs protection, or your feet need warming.

Be as intimate and affectionate as possible with every one you know who has a cold, especially that form of cold known as *la grippe*.

As far as you can do so, attend all the public meetings held in close, crowded rooms, when there is an epidemic of *la grippe* in the community.

If you have taken cold, do not bother to think when, or how, or where you took it, and do not make any effort to counteract it.

To be serious, colds are dangerous things. They are the precursors of the most serious maladies, and should be avoided as far as possible. George Washington, Lord Bacon, and John Bunyan all died from the effects of taking cold. Parents should be familiar with the most common ways in which colds may be taken, and should early instruct their children how to avoid them. If it is found that a cold has been taken, efforts should be made to counteract it; and the sooner this is done after the cold is taken, the better.

From stereograph, copyright by Underwood and Underwood, N. Y.

A CANADIAN SPORT
Tobogganing down the hill near Toronto

Inhalants for Colds

E. L. Paulding, M. D.

AS the season for winter coughs and *la grippe* is here, perhaps a review of some inhalants will be acceptable to the readers of LIFE AND HEALTH.

Menthol

I use menthol as an inhalant in a tin can. A can like a baking-powder can is the best. Put in a little water, and into this put a pinch of menthol. Heat over the fire or lamp to about one hundred twenty degrees or so, and the vapor will arise. Put your mouth down into the can, and your nose over the edge. Breathe in through the mouth, and breathe out through the nose. Have it hot enough to be pungent, but not so hot as to make it too strong, and waste your medicine by evaporating too quickly.

It can be kept for weeks by putting a lid on the can, and may be made ready in a few minutes by heating. It can be used at night, as a lamp will heat it sufficiently. When used in this way, it is strong enough to do some good, and will in a short time relieve a teasing cough.

Vinegar Inhalants

White wine vinegar heated till the yellowish fumes arise from the surface, if inhaled, will relieve a cough; turpentine floated on water, and heated, is another very good inhalant. If unable to procure the wine or grape vinegar, cider vinegar will answer, though it is much rougher and more disagreeable to use than wine vinegar.

While not strictly an inhalant, there is another medicine that I use, to be inhaled from an atomizer, that might be given in this connection, and that is nitrate of silver solution: —

℞ Argenti nitratis ..... grs. 15
Aqua distil ..... ozs. 2

M. sig. Put into a fine spray atomizer, and, holding the tongue out of the mouth with a napkin, gently inhale as bulb is pressed. Use every three hours.

This is a most excellent remedy for laryngitis, either acute or chronic, and will conquer coughs that no "medicine to drink" will touch.

The Insalivation of Liquid Food

G. D. Ballou

HYGIENISTS take us to task for our rapid eating, and call us to more moderate and temperate table manners. Some who have been reaping a harvest of dyspeptic troubles have been convinced that it is necessary to chew solid foods thoroughly in order to intermingle the saliva with the food before it leaves the mouth. It has been found that the act of chewing and the presence of insalivated food in the stomach favor the secretion of gastric juice, so that when the well-prepared mouthful enters the stomach, the process of digestion is not delayed.

By deliberate mastication, there is a distinct hastening of the process of starch digestion, not only in the mouth, but as long as the food remains in the stomach; and as a large proportion of dyspeptics have their principal trouble with those foods that are largely composed of starch, it may be readily understood that by this one precaution of careful chewing, many who have been accustomed to dread meal-time have found their troubles vanish when they prolonged the meal by more deliberate chewing.

This preparation of the food in the mouth is a matter of wonderful economy to the body. Less food is required, more nourishment is extracted from what is used, less work is imposed on the depurating organs, because there is less waste. The feet and hands are kept warmer, and the circulation is more evenly balanced. Hence the liability to take cold and contract catarrhal troubles is lessened. And the stomach very soon dismisses its symptoms of dyspepsia.

PEACE MONUMENT AND CAPITOL

But what shall be done with liquid food? How can it be insalivated?

Does it really need insalivation? An experienced dairyman, who for many years had the care of four hundred milch cows, a few days ago said: "At various times I have had occasion to raise calves till they were a few weeks old, sometimes by allowing the calves to run with the mother, and sometimes by milking the cow and letting the calves drink the fresh milk. On killing the calves which were suckled, shortly after taking their meal, I always found the curds in the stomach in the form of a soft, coarse string. In calves which drank milk warm from the cow, the curds were found to be a solid mass." This statement struck me as being worth volumes of theory on the question.

Milk is more digestible when fully insalivated; and many who have difficulty from drinking milk may sip it slowly with impunity.

Liquids, such as grain gruels, should be insalivated by the best process that the eater can invent, either by thoroughly chewing some very dry substance with them or by working them in the mouth for some seconds before swallowing. Thorough insalivation does not detract from the pleasures of appetite when once the habit is acquired, but gives opportunity to extract the entire flavor of the food. He who has time to live will find it worth while to acquire this habit.

In closing, let me suggest that infantile dyspepsia, when the child is on a bottle, may be very much lessened by using a nipple which does not render the milk too easily. A small opening will compel a little more effort on the part of the child, and thus draw on the salivary glands, making thorough insalivation of the milk a certainty.

[An amusing account is given by a physician in a recent medical journal of his difficulties with the nourishment of a young infant. The mother had milk to spare; and usually when one breast was being used, the other had to be wiped of its moisture. The baby would thrive on nearly everything but the mother's milk. That it regularly and promptly rejected. Analysis showed that there was nothing the matter with the milk. Finally it occurred to the doctor to have the mother lie so that the baby had to drink *upward*. She lay on her back, with the breast that was being nursed lower than the other. The baby lay face down, over the mother in such a way that its stomach was higher than its head. The child retained the milk perfectly. The mother afterward adopted the expedient of throwing the child over her shoulder, and bringing it head downward to the breast, "like a squirrel coming down a tree," as the doctor expressed it, and its digestive troubles were at an end. It should be remembered that for calf or person, for adult or infant, it is not best that the milk be taken too rapidly.— ED.]

Etching by J. Hallu

A FROSTY MORNING

A Job-Lot of Cures—Make Your Own Selection

G. H. Heald, M. D.

IF you are suffering the pangs of ill health—whether as the result of known indiscretions, or "just because it is your luck," you may take courage; for there are thousands who—for a consideration—are ready to tell you precisely how to regain your lost health. There are, in fact, so many "sure cures" that it is surprising that any one can escape them all and remain ill. Curiously, every one of these cures is, in the mind of its advocate, *the only true way to health.* The others are all frauds, or at least, inferior. Following are a few typical healing methods:—

There was Dr. Dewey, who believed people eat too much. His favorite treatment was to slip one cog a day,—it was the breakfast cog, always,—or if that did not prove effectual, he did not hesitate to knock out all the cogs by a prolonged fast of several days, or even weeks. He had remarkable success, according to the many testimonials—undoubtedly genuine—to the efficacy of his method.

Some specialists who believe that the body can be nourished only by living food, advocate a raw diet. No doubt these men cure some people who have wandered too far from the dietetic habits of the monkey.

Some there are who count starch an enemy to the human race, and go so far as to say that bread is the "staff of death." At one time they had a comparatively large following, and threatened our grain industry—but that has blown over.

A successful physician of the "old school," who feeds his patients largely on bread and butter, and "lots of it," claims to have marvelous success with his patients as a result of this dietetic change.

One physician, having soured on the starches, used to feed his patients almost entirely on chopped meat—"the Salisbury diet;"—and the practise seems to be gaining favor.

There are those who believe it makes little difference what one eats so long as it is chewed long enough; and there are others, who do not care what is eaten, or how long it is chewed, so long as the intestine, as well as the skin, receives its daily bath. It is a gospel of internal and external cleanliness. The fountain of youth is a fountain syringe.

Still others attribute man's woes to the germs he harbors in his mouth, and have found the secret of youth to consist in constant and repeated mouth toilet—tooth-brush, powder, floss silk, mouth-wash, and what not. If one spends several hours a day dislodging the germs in his mouth, thus preventing their entrance into the intestinal canal, he succeeds in keeping at bay his worst enemy. The elixir of life is Rubidont or Sozofoam.

Other men there are, whose attention

has not been focused on the stomach and its appendages. These see in the muscles and their care the secret of health. If they can build knots on their arms like croquet balls, as one has described it,

they believe they have achieved physical righteousness. The enthusiastic do not hesitate to declare that muscular inefficiency is an offense against the government — a felony. ("Weakness is a crime!") I believe they have never gone so far as to recommend a sentence of hard labor for life for the weaklings.

And we might go on with our enumeration, but this will suffice to indicate that the methods of cure and prevention of disease, even restricting ourselves to those which might be classed under the head of hygienic measures, are numerous. And doubtless all these methods have produced good results.

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There is another class of healers who smile at these methods, and cure their patients — the same kinds of cases, mind you, that are treated by all the other men mentioned above — by telling them the plain truth about their condition, and persuading them to see that it is very largely of mental origin; and when the patients fully grasp the thought, and believe it, they are cured.

How, then, are we to account for the other numerous cures? Are there many ways of curing the same disorder? or do these cases come under the same *one law?* The latter position seems the more reasonable; and that one law is this, *The mind is a potent factor in the causation, and also in the prevention and cure, of disease.* Any physician of strong belief and commanding personality, having perfect faith in his method,— no matter what that method may be,— will "cure" a certain class of disorders which constitutes, perhaps, the most of the cases he will have to handle.

This will explain why it is that a man strongly imbued with a certain theory obtains results in accordance with that theory.

There is another explanation of many apparent successes; namely, that the gathering of statistics is very apt to be a selective process; for it is human nature to ignore in such a compilation all facts that might bear discordant testimony. But, taking this into consideration, there is every reason to believe that people are being cured daily of the same disorders by methods apparently the most diverse. The cure often lies in the enthusiasm, the hope, the optimism, which the physician succeeds in implanting in the patient.

❦

Even in the regular profession, where one might expect uniformity, every man seems to be a law unto himself in the matter of treatment.

A few years ago an investigator went to a number of the ablest regular physicians in New York, complaining of some trifling symptoms that almost anybody in health might have had. These men gave different diagnoses, one charging it to the liver, another to the stomach, another to the nerves, etc.; and what is more significant, they all gave different prescriptions. These were successful men, who no doubt relieved the greater proportion of the patients who came to them. But note it, each one had his own way of treating the disorder. There is practically no uniformity, even among the members of the regular profession, as to the remedies to be applied in any given case.

When one steps aside from the regular profession, cures are about as much in evidence. There are eclectics who cure, homeopaths who cure, osteopaths who cure; and going still further, there are electric belts, "oxydonors," "bottled electricity," and other things too numer-

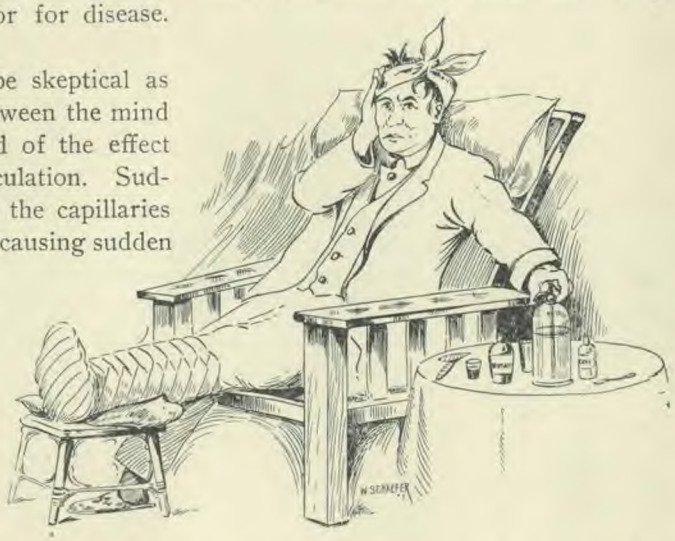
ous to mention, including the long list of patent medicines, which cure by the wording of the advertisement and label. (The pick-me-ups, consisting largely of fourth-grade whisky, such as Peruna, stomach bitters, etc., simply make the patient feel good for the time by the alcoholic stimulation.)

Cure, then, in many cases, is simply the working out of the law stated above, — that the mind has a powerful effect on the body for health or for disease.

The reader who may be skeptical as to the close connection between the mind and the body is reminded of the effect of an emotion on the circulation. Sudden fear may contract all the capillaries of the surface of the body, causing sudden blanching, may increase the force of the heart-beat until it can be heard, may cause the heart to double in rapidity of beat, may cause temporary heart failure, as manifested in fainting, or may cause even fatal shock. The effect of the emotions on the muscles is as marked as on the circulation. It is easy to walk a six-inch plank lying on the ground. Let it be securely fastened sixty feet in the air, and one not accustomed to heights will be almost paralyzed with fear if he attempts to cross it, and will find that he can not trust his muscles to do what they would easily do on the ground.

These few familiar physiological facts (and more might be enumerated) show that (whether "consciously" or "unconsciously") *the mind plays an important part in the control of the functioning of the different organs, and consequently, of the nutrition of the tissues.* This bears out the truth of the conclusion arrived at from a consideration of the great multiplicity of healing methods; namely, that *the mind is a potent factor in the causation and in the cure of disease.*

But — and this is most important — the *mind does not cure everything.* There is no mental healer living who cures all his patients. The most skilful healer is the one who knows how to apply the right preventive and curative methods, both physical and mental; who, out of a wide range of methods, is able to select the most adaptable to the individual case. The best physicians have only a part knowledge, and that often closely hedged in by the traditions of some particular school, and must confess themselves perfectly helpless in the presence of certain diseases. Sometimes it even happens that a patient is given up by skilful physicians, to be cured later by quacks. It seems a scandal, but it means that the quack has blundered on to something which the physician — perhaps in his prejudice — has scorned to use.



"IF YOU ARE SUFFERING THE PANGS OF ILL HEALTH"

HEALTH CATECHISM

L. G. Wagner

No. 5 — Air

WHAT is the composition of air?

Oxygen about one fifth, nitrogen about four fifths, carbon dioxid less than one per cent, and a variable proportion of watery vapor.

Oxygen supports animal life. Carbon dioxid supports plant life. Nitrogen acts as a dilutent. Watery vapor aids in the exchange of gases in the lungs.

In what way does the body utilize air?

By the act of respiration. Air entering the lungs has about twenty-one per cent of oxygen. When it leaves the lungs, it has about sixteen per cent of oxygen and four per cent of carbon dioxid. The nitrogen remains practically the same.

What causes this difference in composition between inspired and expired air?

There is an interchange in the lungs, oxygen passing from the air-cells into the blood-vessels, and carbon dioxid passing from the blood-vessels into the air-cells. That is, the air gives up part of its oxygen, and takes up carbon dioxid from the blood. Respiration is the process by which the blood gets rid of carbon dioxid and takes up more oxygen.

Why does the blood require this exchange?

The blood going to the various tissues gives up oxygen, which there, in combination with other constituents in the tissues, furnishes the energy which is manifested in the various life processes. As a final result of the union of oxygen with the carbon in the tissues, carbon dioxid is given off as a waste product, much the same as it is given off in the smoke of a stove or a lamp. The blood returning from the various tissues to the lungs contains a diminished supply of oxygen and an increased supply of carbon dioxid. This dark blood, generally known as *venous* blood, is carried to the lungs, where, by means of interchange of gases, it gives up carbon dioxid, and becomes bright red as it takes up oxygen. The oxygenated blood is generally known as arterial blood.

What circumstances may influence the rapidity of gaseous interchange between the blood and the air?

This interchange is hastened by exercise, by digestion, by cold weather, and it is at its height during the rapid growth of youth. It is retarded by rest, and especially by sleep, by fasting, and during old age.

What is inspiration?

It is a muscular act in which the chest walls expand in all directions, increasing the capacity of the chest. The lungs enlarge at the same time, being expanded by the pressure of the air. The muscles of the chest, acting upon the ribs as levers, extend the chest sidewise, forward, and upward. The diaphragm, lying, something like an umbrella, between the chest and the abdomen, flattens by contraction, and enlarges the chest by pushing the abdominal organs downward. This is known as abdominal breathing. Restriction about the body by clothing prevents proper expansion of the lower part of the lungs.

What is expiration?

It is largely an act of muscular relaxation; gravity, and the elasticity of the abdominal walls of the lungs, acting together to expel the air from the lungs. The ribs are lowered, and the diaphragm pressed upward, contracting the lungs, and forcing part of the air out. The lungs are never emptied during life, and rarely are they completely filled. In ordinary respiration only a small part of the lung capacity is utilized.

How should a person breathe?

Every one would probably be benefited by fuller inspirations. It is true, the blood can not be made to take up more than a certain proportion of oxygen, but muscular exercises, by calling for an increased amount of oxygen in the tissues, will stimulate to increased respiration, and increased interchange of gases. Such increased respiration, in response to an increased air-hunger, is doubtless far more valuable than a mere forced inspiration, though even the latter is an advantage; for continuous shallow breathing leaves parts of the lungs unused, and less resistant to germ action. Tuberculosis is apt to develop in the unused portions of the lungs.

Describe a simple breathing exercise, to be used before breakfast.

Inhale slowly in the open air, rising on toes, and raising hands above the head while

taking six steps. Exhale while taking four steps, lowering on heels, and bringing hands down to position at sides. Repeat six times.

How should one dress in order to favor the function of respiration?

There should be no constriction at the waist, nor of the neck; and no garments should be hung upon the waist or hips. Garments should preserve the natural graces of the body, and should never distort the body into unnatural shapes.

What is meant by the diffusion of gases?

If a bottle of perfumery is opened in one corner of a room, the odor is quickly perceived in all parts of the room. If there is a little smoke in a room, it does not remain in one place, but spreads itself equally through the room. As a drop of ink in a glass of water mixes equally with all the water until it is a uniform shade, so any gas in the air tends to mix with all the rest until the mixture is uniform. In this way what is breathed out from the lungs does not remain in one place, but mixes with all the air of the room. At the same time, if there are openings, there is the same process of diffusion taking place between the air in the room and the air outside.

How rapidly is the air of a room contaminated?

At each ordinary breath about one inch of carbon dioxid is exhaled. This, according to Parks, is sufficient to contaminate three cubic feet of air. As one takes about one thousand breaths an hour, this would represent the spoiling every hour of three thousand cubic feet of air — an amount contained in a room fifteen by twenty feet, and ten feet high. The air of the ordinary sleeping-room would be rendered unfit for breathing in about half an hour. A burning gas-jet consumes oxygen much more rapidly than does a person.

In arranging for a fresh-air supply, how much should be provided for?

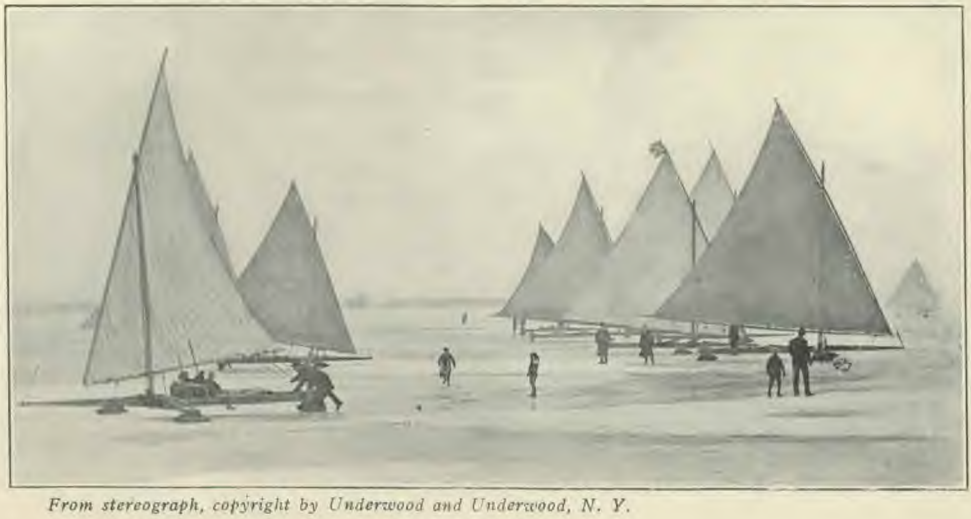
The openings should be sufficient to cause the renewal of three thousand feet of air an hour for each person in the room, without producing drafts. This is a practical impossibility in a crowded assembly room. If air moves at the rate of five feet a second, this amount can be secured by having an opening of one inch at both top and bottom of window for each person in a room. However this may be theoretically, it is far from an ideal amount in treating tuberculosis. It should, at any rate, be considered a minimum allowance for ventilation.

What are the effects of breathing impure air?

Insufficient oxygenation of the blood, improper tissue changes, lowered vitality, increased liability to infection. Bad air is one of the strongest allies of consumption. The most potent factor in the cure and in the prevention of tuberculosis is pure air.

Do drafts cause colds?

One may ride for many miles in a cold wind, and not take cold. When moving air chills one part of the body while the remainder of the body is warm,— especially if it be in an overheated or ill-ventilated room,— it may help to bring on a cold. In a properly ventilated room, with a temperature of 65° or not more than 70°, one seldom feels a draft or takes cold.



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ICE-BOATING
Toronto Bay, Canada

Lessons in Healthful Cookery

George C. Cornforth

No. 2 — Fats

HE who eats for health will be careful to supply a sufficient amount of fat in the diet. While the amount required by the body is small, the health will be impaired if this needed quantity is not eaten. Persons who adopt a vegetarian diet are likely to make the mistake, if they discard animal fat, of supplying too small an amount of fat to maintain a perfectly balanced diet. Again, since fat is among the more expensive articles of diet, the poor sometimes supply themselves with too little of it.

While three fourths of our food should be carbohydrates, only one eighth, or even a little less, should be fat. This means water-free food — not that three fourths of the bulk of our food will be carbohydrates and one eighth fat; for the bulk of the carbohydrates will in reality be more than three fourths of the total amount eaten, and the bulk of the fat less than one eighth.

As stated in the first lesson, the object of cooking is to render the food more soluble; certainly it should not render it less soluble. Fats do not dissolve in water, and no amount of cooking will dissolve them; in fact, the more they are cooked, the more indigestible they become. A high degree of heat may partially decompose them, producing various poisonous substances. The less, therefore, that fats are cooked, the better for the digestion of those who eat them. And we might add, here, that the more we use those foods which, in their natural state, require no cooking, the better.

Fats are not digested by the saliva, and only partially by the stomach fluid; therefore those foods which are digested by these fluids should not be cooked or fried in fats; nor should a large amount of unemulsified fats be added to such food, or cooked into them. When food is cooked in fats, a coat is formed over it, through which the digestive fluids can not penetrate. The gastric juice rolls from it, as water rolls from a greased boot; and the foods remain in the stomach for a long time, fermenting instead of digesting.

Fats are of two kinds: (1) unemulsified fats, such as butter and olive oil; and (2) emulsified fats, such as the fat in cream. The fat of butter and the fat of cream, while the same in composition, are in different form; the one will mix readily with water, while the other floats upon it. The emulsified fat does not interfere with the digestive process. Fat is emulsified in the process of digestion.

We emulsify fat in the making of —

Mayonnaise Salad Dressing

Yolks of two eggs
1 pint salad oil
1 teaspoonful salt
5 or 6 tablespoonfuls lemon-juice

Have all the ingredients as cold as possible. Put the yolks of the eggs into a mixing-bowl, stir them till they begin to thicken, then add the oil drop by drop, stirring continuously. When it becomes too thick to stir, thin with the lemon-juice. Thicken again with the oil, and thin with lemon-juice. Continue until all the oil and lemon-juice are used. Then stir in the salt.

Success in making this dressing depends upon having the ingredients cold

and adding the oil slowly, being sure that the oil emulsifies as fast as it is added. If it should separate, it will be necessary to take some more egg yolks and begin over, using the oil-and-egg mixture in the same manner that you used the oil alone at first. In this way the oil may be made to unite again with the egg. Lemon-juice, it will be noted, is used instead of vinegar.

This dressing may be used in making a large variety of salads and other appetizing and wholesome dishes, which may supply in palatable form some of the fat which our systems require; the vegetables also supply us with mineral elements, which are an important part of our food.

Chopped nuts and sliced olives make a palatable addition to some salads. We will give a few recipes as illustrations, including some which do not come under the head of salads supplying fat: —

Potato Salad

Boil one pint of potatoes. Mash one third of them, and mix with the mashed potato a little beaten egg and enough beet juice or fruit coloring to give it a pink color. When the rest of the potatoes are cold, slice them, add one hard-boiled egg, chopped, one-fourth teaspoonful of grated onion, and two-thirds cup of mayonnaise dressing. Put a spoonful of the salad on a lettuce leaf on an individual salad plate. Put the mashed potato into a pastry bag with a scalloped tube, and make a fancy border around the salad; or put the salad on a lettuce leaf on one side of the plate, and make two or three stars with the tube on the other side of the plate. [Explanation of pastry tube will be given in the lesson on desserts.]

Tomato Salad

Slice one pint of little yellow egg tomatoes. Add one-fourth cup of sliced olives, and one-fourth cup of sliced pecan or walnut meats, and two-thirds cup of mayonnaise dressing. Serve on lettuce or garnish with parsley.

Tomato Mayonnaise

Peel a smooth tomato, and place it, stem end down, on a lettuce leaf. Dip a sharp knife in mayonnaise dressing, and cut across the top of the tomato. Dip the knife again in the mayonnaise, and cut again across the top at right angles to the first cut. Little yellow egg tomatoes or ripe olives may be placed around the tomato as a garnish.

Sweet Potato Salad

Cut one pint of sweet potato balls with a potato-ball cutter, and cook them in the following: —

⅛ cup sugar
1 cup water
1-6 of a lemon, sliced
1 teaspoonful of lemon-juice
¼ teaspoonful coriander seed tied in a cloth

When the potatoes are tender, drain them; and when they are cool, mix with them the following dressing: —

½ cup pineapple juice, apple juice, or orange juice
Juice of one large lemon
⅛ cup sugar
Whites of two eggs (unbeaten)
1 even tablespoonful corn-starch

Mix the ingredients in a double boiler and heat gradually, stirring constantly until it thickens.

Apple and Wintergreen Salad

Use the following dressing with one pint of diced apple: —

1 cup water
2 tablespoonfuls lemon-juice
⅛ cup sugar
1 level tablespoonful corn-starch

Steep some wintergreen leaves in the water, then strain them out. Add the lemon-juice and sugar, heat to boiling, and thicken with the corn-starch stirred with a little cold water. Sprinkle wintergreen berries over the salad.

Sliced olives may be added to gravies, and chopped nuts may be added to gravies and pudding sauces.

Olive Sauce

1 pint water
½ cup tomatoes
1 tablespoonful cooking-oil
1 bay leaf
1 small onion, sliced
1 tablespoonful browned flour
½ teaspoonful salt
1½ tablespoonfuls white flour
½ cup sliced olives

Cook together all the ingredients except the white flour and the olives, for half an hour, then thicken the mixture with the white flour stirred smooth in a little cold

water. Rub through a fine colander, add the olives, and reheat.

Brazil-Nut Gravy

1 cup milk
1 cup water
1½ tablespoonfuls flour
½ cup finely chopped Brazil-nuts

Put the water, milk, and nuts into a double boiler, and when heated to boiling, thicken with the flour, stirred smooth with a little cold water. Add one-half teaspoonful of salt.

Chocolate Walnut Sauce

1 pint of milk
¼ cup health cocoa
½ cup sugar
1 tablespoonful corn-starch
⅛ teaspoonful vanilla
⅛ teaspoonful salt
½ cup chopped walnuts

Put the milk in a double boiler. Mix the cocoa and the sugar, and add to the milk. Allow the mixture to cook, stirring frequently, for fifteen minutes, then thicken with the corn-starch stirred up in a little cold milk. When cool, add the vanilla, salt, and walnuts.

Since grains are deficient in fats, a fat, such as cream, may properly be eaten with them, and this we have instinctively learned to do. Chopped nuts also may be sprinkled on grains. A dish of well-cooked rolled oats or farina or rice, sprinkled with nuts, and eaten with cream, makes a palatable and well-balanced breakfast dish. No sugar should be eaten on the grains.

Croquettes and cutlets, which are usually fried, are more wholesome when baked a few minutes in a hot oven. Potatoes, instead of being fried, may be sliced into an oiled pan, brushed with cream, and placed in the oven and browned. Raw potatoes are nice sliced in one-fourth-inch slices, placed on an oiled pan, brushed with cream, sprinkled with salt, covered closely, and baked in the oven till tender. The cover may be removed toward the last to brown them.

Thus we see that there is a right and a wrong way of using fat in cooking. We should not entertain the idea that fat is unwholesome and should be avoided. The right kind of fat, properly used, is wholesome, and a very important part of the diet.

MAYONNAISE SALAD DRESSING

Materials and process

Opinions here quoted are not necessarily all approved by the publishers of LIFE AND HEALTH.

The Importance of Breathing Fresh Air

ON October 26 last, the New York newspapers gravely announced that the most prominent financier of the day was suffering from "a slight cold resulting from exposure to the night air."

From this announcement we are compelled to assume that some persons who are "educated" in the ordinary sense of the term seriously believe that there is something injurious in the character of night air, and that it is likely to produce "cold" in the bodies of those unwise individuals who breathe it.

Although physicians know that night air is likely to be better than day air, because it contains fewer impurities, the community does not seem to have grasped this elementary fact. "As night air is sometimes damp, do not allow it to enter your house. Do not go out at night unless you want to take cold," says materfamilias, and the whole family accepts her opinion. To make matters worse, while most doctors of medicine realize the danger of unventilated houses, few of us make a point of protesting against "stuffy" rooms, unless we are in attendance professionally. There are exceptions, of course, in the persons of some hygienic enthusiasts, who, in season and out of season, preach the blessed gospel of abundant fresh air for everybody, whether well or ill.

Nobody doubts that drafts occasionally cause "colds," but the average "cold" is of micro-organic origin, and is communicated by one sufferer to others whose resisting power has been in some way lowered — often by continually breathing impure air; for a vitiated atmosphere and an impoverished physical condition are very closely connected.

In the warm, balmy days, when windows and doors are usually open, and outdoor recreation is sought, there is comparatively little sickness as the direct result of insufficient ventilation of houses, offices, etc. But as soon as cold weather arrives, the consequences of air-starvation are seen every day, in the form of coughs, colds, sore throats, and more serious disorders. This is not surprising when we remember that every large city contains a host of men and women who have become specially susceptible to microbic attack by wearing too heavy clothes, by unsuitable diet, by lack of sufficient outdoor exercise, or by living in poorly ventilated houses. If these conditions existed exclusively among poverty-stricken immigrants, nobody would be surprised, because everything would be explained by the one word "ignorance." But it is undeniable that a considerable part of the ill health so prevalent among the wealthy and the well-to-do in cold weather is to a great extent a direct consequence of want of fresh air — the air that causes neither sickness nor disease, unless improperly used.

Hackneyed as the subject of fresh air in relation to health undoubtedly is, there are physicians, more than a few, who ap-

pear to have forgotten well-known and undisputed facts that have been in print many times. Perhaps we may be pardoned if we repeat these facts once more in a slightly different form.

Careful attention should always be given to ventilation, so that every hall and stairway, as well as every room, will always have a " fresh " odor, which really means no odor whatever. Whenever an apartment has any smell, however slight, the time for opening at least one window has arrived. The houses of laymen, as well as those of medical men, should be thoroughly " aired " every day, however arctic the weather may be, and the windows of all sleeping-rooms should be opened as wide as possible every morning. The danger of habitually sleeping in an insufficiently ventilated apartment can not easily be exaggerated; for breathing the same air more than once poisons the whole system, as every physician is well aware.

Although headaches — and various other aches — are not infrequently due to lack of fresh air, yet an insignificant proportion of our patients who seek advice on account of pains in the head, " neuralgia " and " nervousness," receive the instruction, " Never sleep with your window closed; I mean *'never.'* " It is unreasonable to expect to rise in the morning feeling strong and refreshed if a poisoned atmosphere has been breathed most of the night. It is true that, for a limited time, some persons who sleep with closed windows may feel fairly well, but this merely indicates a vigorous system, probably possessing an unusual amount of vitality. In course of time the excess of carbon dioxid in the air will show its ill-effects, for the obvious reason that the comparatively pure air breathed during the day will not always be sufficient to remove the injury done during the night.

Phthisis is greatly indebted to impure air for its existence. The medical profession in the United States contains hardly a man who will deny this. But have the people been sufficiently instructed upon this point by their physicians, and do they pay attention to it? The answer to the latter part of the question must be " no; " otherwise the death-rate from pulmonary tuberculosis would be decreasing to a marked extent, which is not the case. In truth, however conditions may be in Germany, in our country the campaign in favor of hygienic education has only just begun, and preventive medicine, as a science, is almost on a par with a newborn babe.

Pure air in unlimited quantity is the only known cure for phthisis; it is nature's cure. Sickness and premature death, even from phthisis, are, only too often, the result of violations of nature's laws.

Pure air is a great tonic; there is nothing that will drive away the trivial nervous troubles so common among women as speedily as brisk morning walks in the country, where the air is not seriously contaminated. The patient must, of course, be induced to take a long breath every few seconds.

Fresh air will sometimes cure digestive disturbances, and it will generally benefit the cases of dyspepsia that it will not cure, because it quickens the circulation, and invigorates the entire body. Nobody can pass a whole day out-of-doors in the country without observing some improvement in general health on the following morning.

Many persons who have convinced themselves that they are sick, and have taken quantities of patent medicines — and perhaps some physicians' prescriptions in addition — might be well and strong if they would partake of more fresh air plus outdoor exercise.

Let us of the medical profession persistently practise and advocate deep

breathing in order to empty the lungs thoroughly as well as to strengthen them, and increase their capacity.

Let us do our utmost to persuade our friends and patients to walk some part of the way to their work in the mornings, thus avoiding, as far as possible, the foul air of the street-cars.

In connection with fresh air, the sun naturally comes to one's mind. The sun is the friend of man, and a part of his life. It is, as all physicians realize, the great enemy of microbic disease. We need the sun nearly as much as we need fresh air, and the common plan of excluding it from our homes for fear that it may injure the carpets or the chairs is a hygienic crime. While this exclusion may save the cost of new furniture, it will surely increase the number of professional visits made by the colleague who kindly attends to our family — and it may hasten the advent of the undertaker.—*The Lancet-Clinic.*

Lessons of the Tuberculosis Congress

UNDOUBTEDLY the most interesting phase of thought presented at the recent International Congress on Tuberculosis was the thoroughgoing optimism of all the world authorities as to the possibility of the complete eradication of the disease. In spite of the fact that at present tuberculosis carries off such a large number annually,—one in eight of our population, it is stated, — the men who know most about the disease are practically a unit in declaring that it is only a question of time, of education, and of the enforcement of definite preventive regulations, till the disease shall not only cease to be the scourge it is, but be under absolute control. This conclusion is reached, notwithstanding the fact that it is now more than ever acknowledged that practically every member of the human race who has reached the age of thirty has or has had tubercle bacilli somewhere in his body, and presents definite tissue signs of that invasion. This point was forcibly insisted on by the surgeon-general of the Russian army, but his opinion is only an emphatic expression of what has come to be generally realized.

It is not the tubercle bacillus that counts for so much in the fatality of the disease as the condition of the patient in whose tissues it finds lodgment. Seven eighths of us are capable of resisting the invasion of the bacillus, not only before, but even after, it has gained some foothold in our tissues. We now know that the most efficient aid in the increase of resistive vitality is fresh air. Even when the bacillus is rapidly making headway in a reasonably strong patient, life in the open air will enable that individual to resist it successfully. It is because people live in confined quarters, rebreathe air, submit to having their lungs irritated by dust of all kinds, and put up with other similar conditions connected with our present mode of life, that pulmonary tuberculosis is making such great ravages. Tuberculosis is principally an urban disease; and as in modern times the modern city is becoming more and more the home of the majority of the population, it is evident that the conquest of tuberculosis depends on the enforcement of sanitary principles in large cities, especially in the matter of provision of air in dwellings and the regulation of ventilation in factories and workshops of all kinds.

This is as important as the prevention

of the distribution of the bacillus from person to person. In spite of the fact that an individual may harbor the tubercle bacillus in his tissues, it is not dangerous as a rule, if he has air and food enough, unless he has been seriously weakened by disease. Factory inspection, ventilation laws, tenement-house reforms — these are the problems which, according to the recent international congress, mean as much for the crusade against tuberculosis as the sanitary regulation of the disposal of sputum, the prevention of public spitting, and the cleansing of dwellings after tuberculous patients have lived and died in them. These latter are valuable measures; but they represent only a few of the factors in the prevention of the spread of tuberculosis, the most important of which involve the ventilation problems of our crowded populations whether in the city or the country. — *Editorial, Journal of the American Medical Association, Oct. 31, 1908.*

* * *

Breakfastless Schoolchildren

LOOKING at the subject from a purely medical point of view, poverty is not the cause in more than an extremely small minority of the cases of those who go breakfastless. Every physician is aware of the capricious morning appetites of children who are physically below grade from any one of numerous causes, and this is especially likely to be the case with those living in the urban slums and crowded tenement districts. Any dispensary physician or visiting nurse will testify to this fact. In a recently issued edition of a work on the British poor, the author says that a large proportion of the children, if asked why they had no breakfast, would say it was because they did not want it, or, often, in case of the younger children, because their mothers could not make them take any. The cause in many cases lies farther back than the mere lack of food, which is often plentiful enough; it is generally the unhygienic customs and conditions of the poorer classes that are the real cause. It is not in the poor alone, moreover, that we observe these irregular appetites; they are common enough in the children of the comparatively well-to-do, but the condition appears in a more aggravated form in a bad hygienic environment. The practise of giving children stimulants, such as strong coffee and tea, the heavy evening meals and meals at irregular hours, sleeping in crowded, ill-ventilated rooms, etc., are all active factors in producing capricious appetites, and they should all be taken into account when seeking a remedy.— *Editorial, Journal of the American Medical Association, Nov. 7, 1908.*

Etching by C. Rich

TOWARD EVENING

THE MEDICAL FORVM

The Transmission of Tuberculosis Through Milk

THE chairman of the Wisconsin Committee of the International Congress on Tuberculosis, Dr. Myzac P. Ravenal, read a paper with the above title at the second annual conference of the American Association of Medical Milk Commissioners, held in Chicago, June 1, 1908, in which he protests against several articles which recently appeared in the *Journal of the American Medical Association,* which, he says, "are so misleading and so injurious that it has seemed necessary to me to again bring forward some of the facts in evidence." The articles referred to take the ground that there is little or no danger of transmitting tuberculosis from milk. Dr. Ravenal proceeds: —

"Scientifically, the danger of bovine tuberculosis to mankind, and the production of the disease in mankind by the bovine germ, were absolutely demonstrated at the laboratory of the State Live Stock Sanitary Board of Pennsylvania, in 1901, by finding in the tissues of a child which had died of tuberculosis the bovine tubercle bacillus of a highly virulent type. This experience has been repeated three times in the same laboratory."

Dr. Ravenal then cites the work of a number of other investigators who have found the bovine bacillus in humans. The German commission found as high as ten per cent of the cases examined by them to be due to the bovine bacillus.

The milk of cows in which no tuberculous disease of the udder could be found, was found by Dr. Ravenal to produce tubercular infection in nearly one sixth of the animals into which it was injected, and other observers obtained even higher percentages of infection, showing that tuberculous cows are dangerous even when the udder is not implicated. He concludes: —

"I believe thoroughly that the unsuspected tuberculous cow may be exceedingly dangerous to public health. . . . We can not afford to trifle with this question. Our statements must be definite and strong. We have the most abundant scientific evidence on which to take our stand."

Bovine-Human Tuberculosis

THE reverberations of the most important discussion of the recent International Congress on Tuberculosis — that of the transmissibility of tuberculosis from cattle to man through the food — are still echoing among the medical journals. In England, where abdominal tuberculosis is much more common than here, the opinion is probably more pronounced, if anything, that the use of tuberculous milk is a most important source of tuberculosis in man. Says the *London Lancet* in a recent editorial article: —

"The discussion which took place recently at the International Congress on Tuberculosis in Washington, D. C., when Professor Koch endeavored to justify, with some modification, the remarkable pronouncement which he made in London in 1901, should have the effect of entirely dispelling the misconception that the risk of contracting tuberculosis from the consumption of the milk of tuberculous bovine ani-

mals, is a negligible quantity. The balance of evidence was overwhelmingly against the great German pathologist, and although we are not yet in a position to estimate the amount of tuberculosis in human beings which is attributable to the ingestion of tuberculous milk, it must be accepted that the danger, especially for infants, is a very great one.

"The risk would also appear to be emphasized from much recent work with regard to the portals of the human body through which the tubercle bacillus, whether of human or bovine origin, obtains an entrance. Certainly the inference to be drawn from the experimental work of the last few years is that the intestinal tract is a far more frequent channel of entry than was formerly supposed; and without going so far as Professor von Behring, it is clear that if the intestinal tract is a highly important, if not the main, channel of entrance, the risk from the consumption of tuberculous milk becomes correspondingly enhanced."

American Medicine, which nearly always enjoys the distinction — and perhaps merit — of being on the "off side" in the discussion of any question of popular interest, has this to say regarding the bovine-human tuberculosis controversy: —

"The interchangeability of bovine and human tuberculosis, as was to be expected, gave rise to the most extensive discussion, and the strenuous efforts of certain members to force Koch to renounce his views bade fair to amount almost to a scandal. But calmer and wiser heads prevailed, and Koch was neither annihilated nor subjected in any way to the treatment that some of his opponents would willingly have meted out to him. After the smoke of linguistic battle had cleared away, no honest, broad-minded man could fail to admire the strong German scholar who fought so well for his belief. . . . The great majority of scientific students of tuberculosis firmly believe that bovine and human types of the disease are interchangeable, and there are good grounds for this opinion. But history is studded with beliefs, apparently well founded, that have proved fallacious, and it is neither immoral nor criminal to question any opinion, however settled and established it may seem to be. Experience is constantly showing that the last word has not been said on any subject, and the certainties of yesterday have the embarrassing habit of turning up as the uncertainties of to-day. . . . Not even Dr. Koch has suggested the slightest relaxation, in any protective measure, and every instinct of cleanliness, esthetic as well as dietetic, urges the most stringent enforcement of pure-food laws in this direction. Koch has raised an academic question, one that calls for calm, considerate discussion and systematic research. . . . Differ as we may, therefore, with Dr. Koch, wrong as we may believe him to be, we must, nevertheless, esteem him for his convictions, and the steadfast courage which has led him to defend them."

"Koch's premises, as a matter of fact, do not in any way change the situation as regards modern precautions against infected milk or meat.

"It is not the probability, but the possibility, of infection from bovine sources that warrants the protective measures that have been evolved. Granting that there are only a small number of cases,— four or five out of each hundred,— who wants to be one of them?"

As the editor says, "Any faltering in the vigilance of food inspection and restriction against bovine tuberculosis would be criminal." There is the point. A few physicians, realizing the danger, are working earnestly for protective laws. Dairymen and cattlemen, and others whose interests are involved, knowing that a question has been raised as to the possibility of the transmission of tuberculosis from cattle to man, are emboldened to fight all protective measures vigorously on the ground that the laws are being called for on a mere assumption; and undoubtedly the fact that eminent authority still remains in doubt as to the infectiousness of the milk of tubercular cattle has done much to block the progress of medical legislation. This is why these men have so vigorously assailed Professor Koch's position. It is because it is a question of life and death to a certain proportion of babies, and perhaps of older persons.

According to the editor of the *Cleveland Medical Journal* —

"Robert Koch stood firm in his contention that as yet no case of pulmonary consumption, from which the bovine tubercle

bacillus could be isolated, had been reported which could withstand criticism. Eleven twelfths of all deaths caused by the tubercle bacillus were of the type of pulmonary consumption, and of the remainder only a part could be due to the infection of the bovine tubercle bacillus. Therefore he maintained that the greatest attention must be given to the cases of pulmonary consumption, which were the greatest source of infection. . . . Koch admitted that bovine tubercle bacilli had been found in the cervical glands and the intestinal tract, but expressed his belief that they remained localized. Although practically everybody else opposed Koch to a more or less degree, he stood firm in his conviction based upon scientific facts. He stood for cold science, and it is only upon such a firm basis that a positive, clear understanding of the entire question will be attained. For his stand he is to be admired, and will be constantly more admired, the more we consider the facts as they are. The net result of these discussions will be to continue the fight against both human and bovine tuberculosis."

The Journal of the American Medical Association, shortly after the congress, made this editorial comment on the conference of scientific men who attempted to arrive at some agreement on the transmissibility of tuberculosis from cattle to man, in which "Professor Koch and his supporters, who were decidedly in the minority, still insisted that bovine is so different from human tuberculosis that infection of man by tuberculous cattle is reduced to a minimum: —

"Professor Koch, in the eyes of the public, stands as the great authority on tuberculosis, and his views, therefore, carry enormous weight with the ordinary layman. However tenable, therefore, Professor Koch's position may be, however reasonable his doubt from a purely technical standpoint, it is to be deplored that on the practical points at issue, the humanitarian side of the appeal, he should not be found willing, and even anxious, to lend the authority of his great name to aid in a movement that can only be productive of immeasurable good.

"Even if continued researches should ultimately show that the more common pulmonary tuberculosis in adults is caused solely by bacilli of the human type, they can hardly disprove that a certain proportion of the other forms of tuberculosis, especially in children, is of bovine origin. Children no doubt succumb to bovine tuberculosis; there may be only a few, relatively, but there may be a great many more than we are at present inclined to believe. There is certainly sufficient evidence to warrant energetic and carefully directed warfare against tuberculosis in animals used for human food, and especially in dairy cows."

The *Medical Record* in an editorial article comments at some length on the work of the congress on tuberculosis. Regarding the question of bovine-human tuberculosis, it is emphatic: —

"One result of the recent International Congress on Tuberculosis at Washington has been to show conclusively that the views of Dr. Koch as to the innocuousness of milk containing germs of tuberculosis, are not those of the majority of the medical profession in all parts of the world. True, Dr. Koch presented his opinions at Washington in a considerably modified form, and stated that he now believed it to be possible to contract tuberculosis from tuberculous milk, but that such an occurrence was so rare as to be almost a negligible quantity. However, the concensus of opinion seemed to be that a large proportion of sufferers from tuberculosis contracted the disease by the agency of contaminated milk. Thus it may now be regarded as more or less definitely proved that milk infected with the germs of tuberculosis is a prominent factor in the spread of the disease. This, of course, is especially the case with infants, and it may, perhaps, be taken as demonstrated that the channel of infection is quite frequently the intestinal tract."

Object-Lesson on Bovine Tuberculosis

AN announcement appeared in the daily newspapers of Marshalltown, Iowa, stating that the following day, at the opera-house, there would be a demonstration of the effects of bovine tuberculosis in a cow which had been regularly furnishing milk for the city. The cow selected for demonstration was sleek and apparently in the best of health, but she had reacted to the tuberculin test. If the crowds who assembled at the opera-

house expected to see the veterinarians discomfited, they were disappointed; for on performing the autopsy in the presence of the large audience, the diseased lungs and other tissues were plainly in evidence. No microscope was needed to see the abscesses and tubercular nodules. After the demonstration the lecturer gave a very effective talk on bovine tuberculosis, and impressed upon his hearers the danger of using infected milk. The dairymen present, who had previously fought any attempt to control the sale of milk from tubercular cattle, seemed convinced that public sentiment was too much against them, and they became anxious to have all cattle tested. Instead of being in a state of antagonism, the dairymen are now working with the board of health. *Charities and the Commons*, from which this account is abstracted, continues: —

"Prior to the dramatic demonstration which scored such a victory for the health authorities, there had been the usual exasperating and dubious controversy between the few who were aroused to the danger of the public health, and the few whose commercial interests were threatened by the sanitary measures. The milkmen had formed an organization and employed counsel. They held that the tuberculin test was not reliable, that cows were liable to be injured by it, that the very appearance of the veterinarian in the herd caused the animals to become excited and their temperature to rise, and the whole movement was an interference with their rights and property. The city council, however, had taken a firm stand and moved slowly forward. . . . One dairyman, recognizing the justice of the ordinance [providing that all dairymen must be licensed, and to be licensed must have their herds tested], had asked for an inspection of his herd, and in spite of threatenings and grumblings, the inspection continued until the opening of the lecture course gave opportunity for the decisive and overwhelming demonstration of the wisdom of their action."

Little by little, as public opinion is formed through witnessing such demonstrations as those recounted here, power will be granted to health boards which will enable them to give efficient protection to the public.

The Health of First-Year Schoolchildren

AT the second annual meeting of the American Association of the Teachers of Diseases of Children, held in Chicago, June 1, 1908, Dr. James Warren Van Derslice read a paper entitled, "Some Phases of the Schoolchild." Dr. Van Derslice had been appointed at the previous meeting of the American Medical Association on a committee to investigate the present status of the schoolchild.

As a result of correspondence with some ten thousand prinicpals and teachers in cities having a population of twenty-five thousand or over in the Middle West, he found such a "uniformity of recognition of stress and strain occurring in the schoolchild during his first school year, by a large proportion of the principals and teachers, coupled with the fact that in every school the percentage of failures [in that grade] was as high as in any other, or higher," that he felt impelled to lay the matter before this body of specialists for their consideration.

Some of the conditions he found were: young and inexperienced teachers; more pupils to teach than in older grades; floor-space to each pupil less than in other grades; inadequate playgrounds; usually no organized medical inspection; and no cognizance taken of physical defects of sight or hearing, enlarged tonsils, adenoids, etc." With a high percentage of absences due to infectious disease, there was little effort on the part of school authorities to control the spread of these diseases. Walls of rooms were not calcimined for years; desks were unwashed for months; free textbooks were used, one book, perhaps, being in use for four or five years, and

being in the successive possession of a number of children; individual drinking-cups were unknown.

Dr. Van Derslice remarks the constantly recurring report, "insufficient sleep," and comments: —

"It appears that to most parents the amount of sleep required by the young child is a matter of little consequence, and we find that the eight or nine hours of the adult is the usual amount allowed to the child, while as medical men, we believe that **the minimum for the six-year-old child should be eleven hours, and that the child be encouraged to sleep more than that amount.**"

As a result of his investigations, the doctor found that —

"The number of public entertainments in which these children take part is enormous, and the amount of nerve energy which is wasted at each of these can not be estimated. The testimony of a large number of teachers is that they see a marked falling off in the quality of the work of pupils taking part in such entertainments."

Answering the question, "Shall the child be admitted to the public school at six years, and to the kindergarten at five years?" he says: "If our aim is to develop strong men and women, the answer to this question must of necessity be, 'No.'"

He has this to say in criticism of kindergarten methods: —

"The kindergartners believe that they develop along natural lines, but there we found the same failure to consider the natural development of the child, and the attention period is entirely lost sight of. The fact that a child enjoys a given task is [made an] excuse for his continuing the work beyond the normal limits; and if the artistic products of the kindergarten displayed by proud parents and teachers are evidences of progress in the little people's training, too often they suggest the fearful cost to future development of the overstrained faculties exercised in their production. That the child enjoys it should have no more weight than that the athlete enjoys the victory which ruins his heart. The earlier education naturally should be restricted to the grosser movements of the free-limbed type, and encouragement of the child to occupations requiring the finer co-ordinations is clearly an error."

He sums up: —

"The schedule should be so arranged that no period shall be longer than fifteen minutes for children under nine years of age, and twenty-five minutes for children eleven to fourteen years of age.

"There should be provided individual drinking-cups or a sanitary drinking fountain.

"Basement rooms should not be used as schoolrooms.

"Where the light is questionable, blackboards should be discarded, and white paper and oil crayons used.

"Some provision should be made for a covered area for outdoor recesses in stormy weather.

"There should be an allowance of at least twenty square feet of floor space for each pupil in the primary grades.

"The walls of the schoolroom should be calcimined each year.

"The desks should be washed at frequent intervals. [What about the floor? — Ed.]

"No teacher should have more than forty, or preferably thirty, pupils."

Increased Valuation of Child Life

THERE is a growing acceptance of the proposition that the adult generation is morally responsible for the welfare, physical and mental, of the child. It is not enough that the children in more fortunate families shall have the advantages that will develop them into efficient and useful members of society. Every child, whether born in a palace or a hovel, has a right to such environment as will develop all that is best in him; and we are coming to realize that much of the environment, in the case of families less fortunately situated, must be furnished from sources outside of the family. In fact, our public schools, our Sunday-schools, and our churches, all attest the fact that even for the most favored families we recognize the advantage of outside influences in the development of the child. The movement for public playgrounds, for school gardens and the like,

is an extension of this idea. Under the heading, "The Rise in the Value of Babies," *Pediatrics,* a monthly journal devoted to children's diseases, shows in an editorial article the general trend of thought in this direction: —

"Mr. John Spargo says that never in the history of the world probably — certainly not in modern times — was so much intelligent and earnest effort devoted to the welfare of children as to-day. In all civilized countries the physical, mental, and moral well-being of the children occupies a large and increasing share of the attention of thinkers and statesmen. The fact is that modern nations place a higher value upon child life to-day than they formerly did, or than any of the nations in the past have placed upon it.

"The future value of the child depends, however, upon his health; and a question that sooner or later will have to be decided is the disposition of the sick and weakly. In view of the fact that medical science has demonstrated that it is possible to raise to maturity a much greater percentage of producing individuals than in former years, we ask, Will parents have the right to feed the helpless babe impure milk, improperly clothe him, suffer him to exist amid unhygienic surroundings, and to deny him competent medical service? Will municipalities have the right to allow impure milk to be sold, and unsanitary tenements to be erected, to allow contagious disease to be improperly isolated in private dwellings and tenements?

"Will the state allow these conditions tending toward a degenerate race? or will it insist that the child shall be raised properly, and become a support and not a burden?"

Formerly, it was thought that it mattered little what became of the first set of teeth, inasmuch as they would all soon be replaced by a permanent set. Now, it is known that decay in the temporary teeth is productive of as bad results as decay in the permanent set. Every cavity is a sink-hole of corruption, a culture-ground for infectious germs, and a point of entrance into the body of, possibly, tubercle bacilli and other germs. In an editorial the *Dental Review* has this to say regarding "The Teeth of Schoolchildren:"—

"There seems to be an ever-increasing recognition of the importance of examining the teeth of schoolchildren, and this matter can not be given too much attention. Through this medium we are beginning to get statistics which are really very astonishing, and which must eventually tend to more systematic and vigorous means for the prevention of decay of the teeth of children. Germany is much ahead of other countries in the matter of public health inspection. . . . In the city of Strasburg, for instance, the municipal government employs four dentists, who are placed at the disposal of the citizens in the following manner: A regular periodical examination is made of the teeth of the children in the public schools. A record is made of the condition of the teeth of each child. Those children in need of dental service whose parents are able to pay a dentist are requested to apply to the family dentist for the necessary attention to the teeth. Those whose parents are too poor to pay a private practitioner are referred to dentists employed by the municipality, and the work is performed for nothing.

"Some of the statistics furnished by these dentists are startling. Out of four thousand children examined, only one hundred four were found with perfect sets of teeth, and some of the illustrations published in connection with the report show a most deplorable condition of the teeth of many very young children."

The Municipal Playground an Uplifting Factor

THE executive committee of the Playground Association of America publish a monthly magazine, *The Playground,* with headquarters at 524 Madison Ave., New York City, which stands for the idea that playgrounds, convenient to the children, adequately equipped, and properly directed, constitute a most excellent means for the education of the young, physically, mentally, and morally.

The November issue has an article on "Newark Playgrounds," which contains a number of testimonials to the value of the playground. In the first place, the movement cultivates the civic spirit — the spirit of helpfulness,— and implants in the minds of those to whom such an

idea has heretofore been a stranger the conviction that we are a community, with community interests, and we best work for our own interest when we help others. The development of this spirit has greatly lessened the cost of the grounds in Newark.

"The people in general appear to be keenly appreciative of the benefits the playground is conferring upon the district, and the boys and young men have shown it in many ways. Through the co-operation of the latter, the real filling in and grading have been done. Loads and loads of ashes were obtained from the shops in the vicinity, and the boys and young men went to work with a will, day after day filling the ground until it was put in good order. This voluntary work of the boys represents a saving of several hundreds of dollars to the city."

And it means more than that. The free work those young men did was of far more value to them — *and to the entire city* — than if they had been paid for the work by some wealthy philanthropist. For many of them it was, perhaps, the first practical lesson in public-spirited work.

The grounds from the first have been popular, and this is always the case where they are under competent directors.

"Since the opening of the grounds there has not been a day, even when the weather has been the stormiest, that there were not many children present. . . . Cold weather does not keep children of the wretched tenements indoors. And . . . it is possible to provide pleasure for them even on the coldest days and in the stormiest weather."

The moral effect of the playground is excellent. Two gangs of youth in the neighborhood had given the region a most unsavory reputation. The playground seems to have broken the gang spirit. The sheriff — thoroughly familiar with the dark side of city life — said that if the five thousand dollars expended in playgrounds had accomplished nothing besides the breaking up of these two gangs, the city would be well repaid.

As another writer in the same paper says: —

"It has been demonstrated, in every city where the playground system is in operation, that the playgrounds and recreation-centers not only decrease the number of arrests, but add to the moral tone of the community."

Physicians in Congress

PHYSICIANS should be better represented, the Cleveland *Medical Journal* believes, in our national legislature, which is made up of 349 lawyers, 32 bankers, 21 business men, 19 farmers, 16 mine-owners, 13 editors, 8 politicians, 23 of other occupations, and only 5 physicians. The editor believes that while a large number of lawyers are needed in this great lawmaking body, other occupations should be more fully represented. In the past more attention was needed on questions of legal form and technical detail; now the important work of this body is the adjustment of diverse social problems; and —

"A physician is best calculated to meet this requirement because he is in closer personal contact with actual social conditions — as they exist in the homes of the people — than any other man in the community."

The coming congress will undoubtedly consider the creation of a national bureau of health. That this is a much-needed movement is evident from the fact that half a million people die every year from preventable diseases.

"The great national agency that is to grapple with this problem should be fashioned by a congress that enjoys the membership of an adequate number of men who are technically familiar with every element of the problem: such men are to be found only within the medical profession."

The sanitary problems of our island dependencies and of our seaboard, the problem of pure food and drugs, and numerous other questions as important — "have not been solved because there has heretofore been, and are now, so few physicians in Congress."

The Opportunities of the Medical Missionary

T. E. Bowen

CHRIST was the greatest missionary this world ever knew. He left a throne and a glorious heaven, where seraphs and angels vied with one another in rendering him honor, praise, worship, and obedience. Willingly he laid this all aside, and came to a lost world, where he knew he would encounter the hate, the envy, and the terrible enmity of that fallen prince of angels, who had been cast out of heaven itself, and who, through the seduction and fall of our first parents, had obtained a foothold in our world.

The Father's love for the fallen race was so strong that he gave the very object of his love, even the Son himself. The Son so loved the world that he gave himself, and was willing to leave his Father's home and presence. "For God so loved the world, that he gave his only begotten Son, that whosoever believeth on him should not perish, but have everlasting life," John 3:16. Of Jesus, the Son, it is written: "Who, existing in the form of God, counted not the being on an equality with God a thing to be grasped, but emptied himself, taking the form of a servant, being made in the likeness of men; and being found in fashion as a man, he humbled himself, becoming obedient even unto death, yea, the death of the cross." Phil. 2:6-8, A. R. V.

Jesus' life of humility and unselfish service for men is the great example set before all who devote themselves to a life of service for their fellow men. No one has ever been called to endure what he endured. Through him God poured out his affection upon a lost world. And it is through Christ's humble, obedient followers that God still blesses the world.

Christ blended healing and teaching into one grand whole, to benefit the race. He knew that spiritual help could not so well be appreciated while the body was subjected to physical suffering. He relieved the body, and then ministered to the spiritual interests of those among whom he went about "doing good." This plan for helping sinful men and women has never been improved upon.

To-day, as when the Master traveled over the hills and vales of Judea and Galilee, the best fitting-up for service is that of adding to the evangelistic qualifications medical knowledge. The danger is that as soon as the latter is acquired, the student will lose, to a greater or less degree, his interest and keen desire to exercise the former. But those who have reached the highest degree of attainment in pioneer missionary effort have been those who have not for a moment lost sight of the importance of giving the gospel of light the *first place,* and holding as *secondary* the relief of physical infirmities. More and more this great principle is being recognized, and the

medical training is given its rightful place in missionary effort.

This blending of effort is well illustrated by comparing the relation medical work sustains to the gospel message to the relation the right arm sustains to the body. The medical profession, abstractly considered, is not, nor ever can be, the gospel. To relieve suffering is Christlike. But the gospel is defined as "the power of God unto salvation to every one that *believeth*"— believeth the testimony that God has given in his word of his Son; believeth upon that name which has been placed above every name, both in heaven and on earth. This is salvation. And a physician can be as truly a minister of Jesus Christ as he who has been set apart to the work of the gospel alone. We say "as well;" but in fact it should be said "*much better.*" It is only because public opinion has been so molded, that it seems necessary to come up to this point carefully. This sentiment proclaims that "doctors should be doctors," and "preachers should be preachers." But why should not the Christian doctor be a preacher? and the preacher of the gospel a physician? Did not the Saviour of men combine the two? What, therefore, God has joined together, let not man put asunder.

The great suffering world to-day stands in need of both spiritual and physical healing. The Lord of the harvest is calling for servants to go into his vineyard who are able to administer, through the grace which he shall impart, both spiritual and physical help. Shall he call in vain? Shall the goddess of fame, or the golden wedge of gain, turn aside those who are prepared with medical skill and training from going to those sitting in the darkness of sin and ignorance of physical laws, and proclaiming the whole message of God's great love?

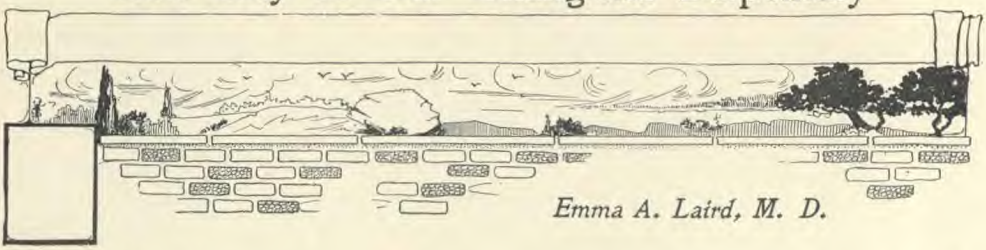
We pray that these words may reach some one who has already learned of Christ's love, and acquired medical skill, whose heart God shall touch, and who can not rest under the burden that his Holy Spirit shall lay upon him, until he yields himself as a willing instrument to be used and sent forth into heathen darkness to minister, as did the Son of God himself, for those who are bewildered and lost in the dense fog of sin and degredation.

"As ye go, preach, saying, The kingdom of heaven is at hand. Heal the sick, cleanse the lepers, raise the dead, cast out devils: freely ye have received, freely give." Matt. 10:7, 8. "And, lo, I am with you alway, even unto the end of the world." This command and this promise are from the same Jesus who trod the way before us; who overcame the world, the flesh, yea, and the devil himself; and to whom the Father has committed all power both in heaven and on earth. In his name success is assured every true, loyal servant of heaven.

Etching by C. Rich

THE WINDMILL

One Day at Our Chang-sha Dispensary



Emma A. Laird, M. D.

COME with me to-day, and get a glimpse of our work at Chang-sha. Our first regular work begins at 7 A. M., when my husband spends one hour teaching English to a young Chinese friend. This young man is translating two of our books into Chinese — "Christ's Object Lessons" and "Ministry of Healing." The first is being used as his reader, as is also Rupert's "Inspired History of Nations." It is encouraging to hear this man's intelligent questions on the different points of doctrine, as they come in the reading. In a letter written for correction, he says: "I hope you will daily teach me about the Word of God, so that I may finally be saved." Will you not pray that he may become a light to guide others out of this deepening Chinese darkness?

At 8 A. M. the day's work is planned. A missionary must live: food must be prepared, clothes must be washed and ironed; buttons need sewing on here, just about the same as at home. At half-past eight we have our worship in English, when our young friend joins with us. Five days of the week I spend the hour from nine to ten o'clock teaching him. At ten o'clock on dispensary days there are usually some patients waiting to be treated. Meanwhile, they listen to my husband, who preaches to them in Chinese.

To-day we have a man with very sore eyes. He is told that he must not read books to-day. I put a drop of medicine into his eye, and he is told to repeat this a certain number of times at home, and to return to-morrow. He has tried Chinese medicine; but as the first application nearly blinded him, he is anxious to do as I tell him.

Next, a man brings a baby that has a bunch as large as one's fist under its right jaw. Examination proves it to be an infected gland, with much pus collected, ready for opening. The man holds the child in his arms while the black ink is washed off, and we prepare for lancing. The child cries, but does not wriggle around much, as it is in too much pain. All being ready, what I am about to do is explained to the father, lest he may be frightened at the sight of the knife. A small incision is made, when out gushes about an ounce of pus. A clean bandage is put on, and the man promises to come again with the child for treatment.

A "carrier" is waiting, with a large ulcer which has gone deep into the leg. This hinders him greatly in his work, and is very offensive. A pitcher of hot water, and a bucket of cold water, with a cup, answer for the hot-and-cold pour, while the leg is held over a wide-mouth earthenware crock. The leg is cleaned, and disinfectants are applied. When the sore is dressed, he is requested to call again.

Such cases as these would be better treated if we had a small hospital ward, where they could stay a few days. Again, it would insure their hearing more of the doctrine of a Saviour who died to save them. At the best, we can get them to return only a few times: then we see

them no more, unless they get some other ailment.

Going toward the door, I meet two men just coming in. One asks if the other can buy a pair of spectacles here. I reply, "Yes; please be seated." One eye looks as if the sight had been destroyed. I stop to look directly at this eye, when they both say, "No, no! we want to buy a pair of spectacles," and act very excited about my looking at the bad eye. I call my husband, and he is able to give them an explanation that allays their fear. It is somewhat amusing to hear him telling them that we would not gouge the man's eyes out, as he imagined. Thus assured, the old gentleman becomes calmer, and submits to be tested for spectacles. His friend walks excitedly around, asking curious questions of our women who is preparing some ointment. Possibly he thinks this is something designed to put in the man's eyes at the first opportunity. Thoughtlessly, I walk into the room again, and sit down to watch the fitting of the lenses. He turns suddenly, and, seeing me, gets up hastily, and both leave quickly, without saying a word. Perhaps they feel that they have had a narrow escape this time; and they will be sure to keep far away in the future, preferring to let others try the foreign doctor. This incident shows the distrust of foreigners that exists among the people of Hunan.

A STREET SCENE IN CHANG-SHA
Looking out the East Gate

Before dinner is finished, the gatekeeper comes to tell me that a man, bringing four or five friends with him, has come to have his eyes tested for spectacles. He is told to wait a few minutes. My husband has learned to test eyes quite well, in ordinary cases. Of course all cases are verified. This man's eyes are tested, and he is fitted with glasses. His friends are looking on all the time, to see that he has fair play, and that nothing is put into his eyes.

After dinner my Chinese teacher waits for me to begin my study of the language with him. But while we are getting ready, a man living near comes, in a state of great anxiety, saying that a young child in his house is very sick, and that they wish me to come and see it immediately. This man studied English with us when we first came to this house, so he has confidence in us, and in what we do. Calling the evangelist's wife to accompany me, I hastily get a few remedies ready, and go with the man. We go so fast that Mrs. Chang does not keep up with us on her tiny feet. They were once bound; but she loosened them when she became interested in the gospel.

I find the little three-year-old child on its nurse's lap, unconscious, the other women, and men as well, all around it. Although the day is very warm, and the child has a temperature of one hundred three degrees, they have it dressed in

four or five garments, two of which are padded with cotton.

Calling for a basin of cold water and a towel, I wind the cold wet towel around its little head, and remove all the jackets but one, then sponge its chest and spine with cold water. I must go a little slowly with the treatment; for it must be remembered that to them I am but a "foreign devil," which name we often hear of late, when passing along the street. But lifting my heart to God that he will hear and help, I request a tub, and have it filled with tepid water.

Four or five of the waiting women run to do my bidding; for they are anxious to save the child, it being an only son. The remaining garment being removed, the child is put into the water, three or four holding onto its head and hands, for fear it may go under. The child gives a deep breath, and they all notice that it is already beginning to respond to the treatment. The twitching of the muscles stops, and it falls into a deep sleep. After leaving it in the water for half or three quarters of an hour, I give it a cold sponge, and take it out, when it opens its eyes and looks around.

The parents and relatives are all so pleased that they hardly know what to do. After giving instructions not to feed it anything that day but water, and not to put too many clothes on it, I return home, and send them a small bottle of lemonade, a spoonful of which is to be taken every two hours, and a mild laxative to be taken immediately. Thus an entrance is gained into another of the homes of the well-to-do classes of Changsha.

What we need here more than anything else, perhaps, is your prayers that the power of the enemy of all souls may be overcome, and that the people may be loosed from their centuries of superstition and bondage through sin. It is "not by might, nor by power, but by my Spirit, saith the Lord." A hundred so-called missionaries in any one place would be useless to overcome Satan's power, unless filled with the Spirit.

DRESSED IN WHITE

White House Grounds, Washington, D. C.

QUESTIONS AND ANSWERS.

Conducted by D. H. Kress, M. D., Takoma Park Station, Washington, D. C.

342. To Get Rid of Corns.—What is the best way to get rid of corns and thickened skin on the feet? Is collodion and salicylic acid a good remedy?

Ans.—A preparation of collodion and salicylic acid is regarded as a very good remedy. The juice of pineapple is recommended. Pineapple-juice is a digestive agent. If a little is squeezed upon some meat, it will dissolve the tissue, and reduce it to a jelly. It will likewise act upon hardened excrescences.

343. Herbs in Sickness.— In case of sickness, animals resort to the use of herbs. If animals derive benefit from the use of herbs as medicine, why should not man use them in the same way?

Ans.— I have no objection to the use of herbs. The only thing to do is to see that they are thoroughly clean. There is danger of the communication of infectious diseases through the use of such herbs as lettuce, celery, etc., when not properly cleaned. I have known of many cases of that kind. Hydatids, a malady common in Australia, is frequently communicated in this way. Often epidemics of typhoid fever may be traced to something of this kind. The germs adhere to the leaves and surface of these herbs, and if eaten raw, may produce the diseases named.

344. Cooked and Uncooked Fruits.— May different kinds of cooked or uncooked fruits be eaten at the same meal? If not, why not?

Ans.— There is no reason why cooked and uncooked fruit should not be eaten together at the same meal. It is best, however, not to eat too many kinds of fruit at the same meal. I believe it is better to confine one's self to one or two varieties at the most. It would be better to use uncooked fruit, but there is no objection to the use of both occasionally.

345. Influence of Fruit on Starch Digestion.— If fruit juice taken at a meal interferes with the digestion of starch, would not the same objection hold good with fruit itself?

Ans.— Fruit juice does not interfere with the digestion of starch if taken at the proper time. If the fruit juice is eaten with starchy food, it will interfere with the digestion of starch. Both acid and sugar neutralize the action of the saliva. But if the fruit juice is taken at the close of the meal, it will aid in the digestion of the albumins; and if the starches have been properly masticated, and a sufficient amount of saliva mingled with them, the fruit juice will not interfere with their digestion. This is the reason we advocate the use of fruit at the close of the meal instead of at the beginning. Almost all starches, if properly masticated, will digest in from three to fifteen minutes; so it is perfectly safe to take fruit or fruit juices at the close of the ordinary meal. Too large a quantity of fruit juice would not be beneficial because it would dilute the digestive agents too much. A small quantity of fruit juice is beneficial.

346. Morning Tonic.— What would you suggest as a recuperative measure for one who rises in the morning with a feeling of exhaustion, after a comparatively sleepless night?

Ans.— The cool sponge-bath or the hot and cold spray. If the person is in a weakened condition, and has not the power to react to cold, it is better to give the hot first, and then the cold.

347. Early Rising.— Do you recommend early rising?

Ans.— Yes; early rising is to be recommended in nearly all cases. The best way is to go to bed early and rise early.

348. Emaciated by Overeating.— Can you recommend a diet that will help me to put on weight? I am a very hearty eater,— in fact, I think I eat too much,— but still I keep lean. Others on the same amount of food acquire flesh.

Ans.—Your digestive organs are evidently not able to digest well the quantity or quality of food you eat. Those who have vigorous digestive organs often eat and digest more than they really need. The excess is piled up in the form of fat, but the vitality of the tissues is lowered. Others eat too much, and because of the weakened condition of the digestive organs, are not able to digest it all. The excess undergoes decay or putrefaction, and poisons the system. Such persons remain lean. It would be well to eat sparingly of albuminous foods, such as beans, lentils, nut foods, etc., and to use chiefly grains, breads, eggs, ripe olives, olive oil (sparingly), and fresh fruits, and to masticate well all the food eaten. It is not what one eats, but what he digests (if not in excess of his needs) that benefits.

349. Dandruff, Falling Hair.—Can you recommend any reliable remedy for dandruff, and to prevent the falling of the hair?

Ans.—Often the scalp becomes unhealthy because it is not groomed enough. The circulation of the blood is not encouraged, and nutrition of the scalp and hair is consequently poor. Friction and movement of the scalp upon the underlying tissues, made by firm pressure with the fingers, cause the blood to flow more freely, stimulate the sympathetic circulation, and improve the nutrition to scalp and hair. For dandruff, the following preparation should be applied once every twenty-four hours, after the head has been washed with soft water and mild toilet soap, and then dried:—

Castor oil, 5 ounces
Cologne spirits, 2 ounces
Oil of bay, 20 minims
Oil of pimento, 35 minims
Oil of bergamont, 20 minims
Tincture of alkanet to color.

❦ ❦ ❦

Tuberculosis Sunday.—Many Brooklyn (N. Y.) physicians set apart Sunday, November 22, for a discussion of means to prevent the spread of tuberculosis.

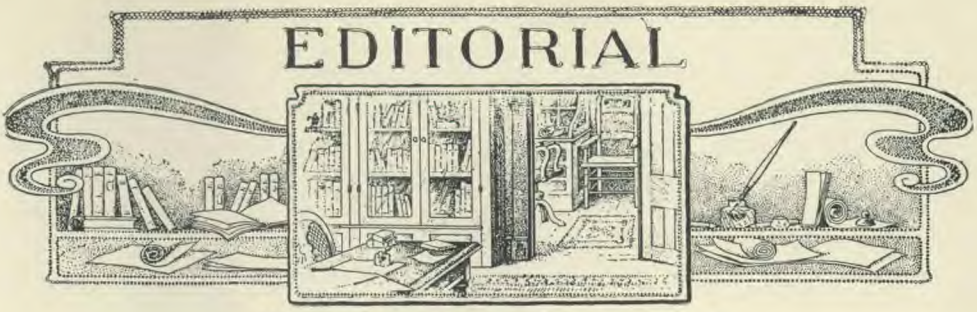
Fresh Air for Children.—Dr. McAllister asserts that if fresh air is important in the treatment of tuberculosis in the adult, it is needed three times as much in the treatment of tuberculous children, and all children who are delicate, frail, and of puny growth. He recommends the old practise of "hardening children."

Washington Shows Signs of Drought.—For the month of November only one saloon license for the coming year was granted by the excise board. Saloons which have not been re-licensed are on probation, and the Anti-Saloon League is attempting to prove to the excise board that they should not have their licenses reissued.

Dr. Knopf Vindicated.—The Baltimore paper which gave the sensational account in May, 1907, of Dr. Knopf's advocacy of morphin for dying consumptives, admits in its issue of November 29, that Dr. Knopf was sadly misquoted; that the false report was a great injustice to Dr. Knopf; that "the alleged confusion following the doctor's remarks had its existence only in the imagination of the reporter;" and that "the authorized version of the speech, as the same appears in the official report of the proceedings of the association, shows that he did not advise that morphin should be administered in quantities so large as to hasten death, but only for the purpose of relieving pain, which is the general practise of physicians."

Dr. Wiley Wants Pure Air.—Dr. Harvey W. Wiley, of pure food fame, has been riding in a Pullman car, and feels pretty sure that the so-called pure air dealt out to the passengers is misbranded. At any rate, he expects to make an attempt to have the supply of fresh air in Pullman cars regulated by law. He has been examining a sample of the stuff breathed by Pullman passengers, and confesses he does not know what it is. He is certain, at any rate, that it is not air.

The Paris Museum of Hygiene.—Paris is to have a model museum of hygiene in twelve sections, among which are: Air and light; water; food and clothing; hygiene of infancy; hygiene of hospitals, asylums, etc.; hygiene of prisons, barracks, schools; residues of life (cemeteries, refuse, slops, sewers); public conveyances; smoke; demography. It will be noted what a small proportion is devoted to food and dietetics,—only a portion of one of the twelve sections,—yet some writers seem to think that hygiene and dietetics are synonymous terms.



All unsigned articles are by the editor

Why Worry?

SOME one has suggested that every number of LIFE AND HEALTH should be a "don't worry number," and he is right; for there is no fault more common, perhaps, than that of worrying, and there is nothing that will so surely undermine health as worry. If the editor of this magazine, even by riding the "don't-worry" hobby to death, could persuade the greater part of its readers to forego forever the pleasure of worrying (it must be a pleasure, else why so persistently kept up?), he would feel amply repaid for his trouble; for LIFE AND HEALTH readers would be the soundest and sanest people living.

Why not worry? To worry is to invite the disasters worried over. Worry does absolutely no good. Worrying always results in harm, diminishing efficiency, lessening self-reliance, undermining health.

Why worry? Every one perhaps asks himself this question, or a similar one, and goes right on with his worrying as before.

Worry is nothing more than a habit, a powerful habit, it is true, but none too powerful to be conquered, if one will use for that purpose the same energy and determination and perseverance which he consumes in worry.

The very ability to worry places one at once on a plane above the lower animals. The young rooster does not worry, though day by day others from the flock go to the chopping-block. Worry is not a characteristic of the subhuman mind, nor of the less organized types of human mind. It is some credit to a person that he is able to worry; and that ability, if properly directed, will raise him to a plane above worrying.

Worrying is wrong thinking, ending in an unpleasant emotional condition — a condition of friction and ill-ease because the ideal is not being reached, or because something may not prosper in the future.

As a rule, one worries most when real cares are comparatively light. The great disasters drive away worry for the time. At no time in the history of San Francisco were worry and suicide so uncommon as shortly after the great earthquake. Real troubles drive out imaginary ones.

A young man, receiving a telegram that his father's mill had burned to the ground, traveled all night on horseback that he might be present to comfort the father, who was given to constant worrying over trifling matters. Arriving at the scene of the fire, he was surprised to find his father taking a cheerful view of the situation, and making active plans to rebuild. The disaster had acted as a tonic. Perhaps many of us would worry less if we had a rude shake-up more frequently.

But one does not need to have this drastic treatment applied if he will himself apply milder measures. Nothing will have a better effect in the prevention of worry than the practise of considering the condition of unfortunates who have met with actual disaster, and of giving them a helping hand. Nothing will so thoroughly change our pessimism into a living optimism as will a little Christian help work, done in the right spirit.

To get out of our shells sufficiently to come into sympathetic touch with the great throbbing world outside; to realize that the universe means something more than ourselves; to feel the heart-strings being pulled by other woes than our own; to open the soul to a sense of the oneness of humanity and the dignity and importance of life in all its phases; to come into loving communion with nature in her various forms — these are some of the remedies that will drive away the blues.

If our hearts throb more for the woes of others, they will not be broken with our own.

* * *

What Is a Cold?

THIS seems a very simple question, and one almost anybody could answer. There is hardly any one who does not know just what causes colds, and perhaps almost every one has a sure cure. Nevertheless we continue to have colds, and to have hard colds, which run their allotted time regardless of treatment.

Do we, after all, know anything about colds? Are they the result of drafts, sudden cooling, cold feet, being chilled, and the like?

One will ride for hours in a forty-mile gale, and have no cold, though he may be chilled to the bone. Nearly every bather experiences sudden cooling when he plunges into the water, and yet one never thinks of taking a cold from this cause. Some people habitually have cold feet, and yet are not more subject to colds than others. For nearly every process that is supposed to produce a cold, there may be cited an example of a more severe process of the same type that evidently does not cause cold.

What is the origin of the popular opinions regarding the cause of colds? Perhaps we can not trace these back, but we can easily understand how a popular opinion may become firmly rooted in the mind of an individual.

Say, for instance, one has imbibed the idea that colds are caused by drafts. If he notices a "cold coming on" (it has probably been "coming on" several hours when first noticed), he at once recalls the fact — or the fancy — that he sat exposed to a draft a few minutes before. And of course the draft is the culprit!

Whatever our opinion may be regarding the origin of a cold, it is apt, in this way, to be strengthened by each new experience.

Modern medical research indicates that every cold is very probably an infection, either from some other person or from the germs one habitually carries in his own mouth.

There are epidemic colds, which — either because some atmospheric condition makes many persons susceptible to the action of germs that are ordinarily harmless, or because some persons with colds are spreading in the atmosphere germs that are unusually virulent — seem to attack whole families and schools and communities. It is customary nowadays to call such epidemic colds

"grip," whether they are caused by the influenza bacillus or not.

Undoubtedly such epidemics are often spread by the intermingling of the sick with the well. Sanatorium workers have learned to dread, and to prevent as far as possible, visits to the institution of any one having "a cold;" for such a cold is nearly always transmitted to a large number — possibly all — of the patients, much to their detriment.

It should be remembered that any one who has a cough, whether it be tubercular or not, and whether any sputum be raised or not, may, by the droplets dislodged in coughing, transmit the disease to others. Think of the possibilities of a crowded, poorly ventilated assembly room, where there may be large numbers of such germs in the air, and where the warmth and stuffiness may be such as to lower the vital resistance of all who are present!

And this brings us to another consideration. To have a cold there must be, in addition to the germ, a susceptible individual.

Susceptibility to colds may be permanent or temporary. Some persons, because of diseased air-passages, are subject to every passing cold. They are hardly over one cold before they have another, or perhaps they contract a cold in the fall which lasts all winter. These cases may be tubercular, or they may be subject to conditions which demand thorough local treatment of the nasal passages and throat.

There are many things which may temporarily increase the susceptibility to cold, and among these are those usually attributed to drafts, etc.; but it will probably be found, in nearly all cases of this kind, that there has also been some overheating from stuffy rooms, or from too much or too heavy clothing, or there have been gross habits of eating, or other excesses that have lowered the vitality.

Arctic explorers have no trouble with "colds" while in the arctic regions, where fuel is scarce, and where their rations are the most rigid. It is when they return to warmer climes, that they "catch cold."

An active, open-air life, or at least the avoidance of hothouse influences, and bad air, and contact with those who have colds, will lessen the number of colds.

* * *

Overcoat Colds

WE clip the following from an English health periodical for comment: —

"Nothing seems more simple than to adapt the clothing to the weather by the addition of an overcoat, light or heavy, as the occasion requires. It must not, however, be forgotten that just in proportion as the garment superimposed upon the ordinary clothes is effective in producing a sense of warmth, it acts by arresting the escape of warm vapor from the body. This warm vapor continues to rise through the ordinary clothing, but it is prevented from escaping, and the clothes are saturated with it. The general effect is well enough while the overcoat is kept on, but the moment it is removed, evaporation recommences, and the body is placed in a 'cooler' constructed on the principle adopted when a damp cloth is wrapped round a butter-dish, the vapor passing off, abstracting the heat, and leaving the contents of the cooler refrigerated."

In England houses are not warmed in winter to the extent they are in this country, and perhaps a more sensible

plan there would be to wear heavier underwear during the cold weather, and not depend on an overcoat while out.

But here, where the custom is to heat the houses almost to summer heat, and where one must almost necessarily submit to the hothouse process or live as a hermit, the place to avoid transforming the clothing into a wet compress is in the house, and that by the use of light underwear through the winter. In going into the street, it will be necessary to use such wraps, whether overcoat or cloak or shawl, as will avoid the chill incident to the change in temperature. The writer has not lived long enough to see the "overcoat colds" spoken of by our English contemporary, and he can not conceive how such colds can be possible in this country, provided one is "dressed for the occasion;" that is, dressed for the warm rooms in which most of the time is spent,— with such additional wraps as may be needed for special occasions. In this country it would be more appropriate to warn against "heavy-underwear colds" or "chest-protector colds," or "stuffy-room colds."

Let Us Have More Air

IN *McClure's* for July, 1908, Samuel Hopkins Adams says: "We doggedly, despite counsel and warning, continue to poison ourselves perseveringly with bad air, bad water, and bad food, the three 'B's' that account for ninety per cent of our unnecessary deaths."

Note the order. We are apt to reverse these, placing food first and air last. It is a fact that one can live several weeks without food, several days without water, and only a few minutes without air. Many of us who would consider it a crime against our bodies to eat certain foods, will this winter breathe poisoned air because we "can not afford to warm all outdoors," or we will sit for hours in a stuffy assembly room, listening to a lecture on alcohol or tobacco, while we are poisoning ourselves with carbonic acid and organic waste matter from the lungs of our neighbors.

Let us be consistent; and while we give due attention to the food we eat, and the liquid we drink, let us not forget the very important item of fresh air.

Within a decade we have discovered that tuberculosis may be cured by fresh air. It was at first supposed that fresh air is curative because tuberculosis is a lung disease. Now we know that tuberculosis of the joints and bones and glands may be cured by fresh air, or rather, that fresh air *builds up the vital resistance of the body,* so that it can throw off the disease. And we are to-day curing other diseases with fresh air.

But WHY NOT USE THE FRESH AIR BEFORE THE DISEASE IS CONTRACTED?

This we do in summer, on our camping expeditions; or if we stay at home, we live largely on the verandas, or throw wide open our windows. But in winter! Well, just examine the first half-dozen houses you come to, and see how much air is admitted.

FORTUNATELY, we become accustomed to adverse circumstances. The user of any poison, as tobacco, whisky, or morphin, can take quantities which would have disastrous effects on a novice. The body becomes partially immune to these poisons. But is such immunity an advantage? — It certainly is, *if one has to use them;* but better off are we if we never contract the poison-habits.

A bird placed under a bell jar will become gradually accustomed to the vitiated air, and may be kept there for a considerable period without manifesting any very serious symptoms. If, now, a second bird from the fresh air be placed with the first, the second, not being used to the vitiated air, will succumb first. Nature, when it has time, always sets up a resistance against any unfavorable environment, whether it be in the air, or food, or drink, or the temperature. Examples of this adjustment are everywhere present. It is well for the first bird that he possesses such an adjustment. It is not well for him that he must submit to the bell-jar treatment. It is well for all men that they have the power of gradual adjustment to poisons. It is not well for them to come under the effects of the poisons; for the adjustment is, after all, an abnormal condition.

Some persons live under almost unbelievable conditions as to ventilation. It is said that a Chinaman, in order to economize heat, will go to sleep in a tight box no larger than a coffin, with the lid on. The fact that nature has enabled him to withstand the deleterious effects of poisoned air is no argument for the practise; for while existence can continue under such circumstances, such a life is not for the permanent welfare of the individual or of the race.

The Jew of the congested city districts, subject for generations to overcrowding, is undersized and flat-chested, and contracts tuberculosis easily; but with all his disadvantages, he is able to fight the disease for years, and may die of some other disease. Nature has been establishing for generations a resistance against the disease which has been his constant foe.

The Irishman, fresh from his native land, large, ruddy, and broad-chested, if placed under the same squalid conditions as the Jew, is much more likely to succumb to consumption. If he gets the disease, he usually dies of it; while nature enables the Jew to endure the unfavorable conditions, by a gradual adjustment. And yet we all know the Jew would be much better off if he did not live under such adverse and unhealthful conditions.

We should not compel nature to be constantly adjusting our bodies to adverse conditions — not that we should coddle ourselves in an absolutely uniform temperature, with no adverse influences. A certain amount of adverse influence is needed to preserve the resistance of the body. We are better for the cold of winter, provided there is not too much of it. But with the wonderful results obtained in the cure of disease by abundance of fresh air, we certainly should not attempt to " harden " the body to a diminished supply of oxygen. Let us have fresh air summer and winter.

* * *

A New Cattle Epidemic

A PLAGUE has appeared among the cattle in the States of New York and Pennsylvania, which is causing alarm among those who are best acquainted with the serious nature of the malady. The disease is known as the " foot and mouth disease." It is not uncommon for stock-owners in England, France, and Germany to lose five million dollars' worth of stock in one year from this disease. With the greater number of cattle in America, the loss would be almost incalculable, should the disease become general. In 1902 it made its appearance in Vermont, New Hampshire, and a few other New England States,

and thousands of animals were destroyed by government agents. The disease is highly contagious, and spreads rapidly when it appears. Every animal in the herd usually falls a victim to it. It is characterized by the eruption of vesicles, or blisters, in the mouth, upon the heels, or between the toes, and upon the teats and udder. The appetite of the animal is depressed, the milk-flow diminishes, the animal loses condition, and becomes lame. After a day or two the vesicles break, peel off, and leave a raw surface that may heal in a few days, or may remain sore for a long time, and lead to other complications.

Every available State and federal veterinarian in New York and Pennsylvania has been called upon to assist in the fight against this plague. It is estimated that in New York and Pennsylvania alone, under the most favorable outlook, fully fifteen hundred cattle will have to be destroyed.

The disease has also made its appearance in Maryland, where every precaution has been taken to prevent its spread. At present a rigid quarantine has been established in the plague-stricken areas. No meat or milk is permitted to be shipped from twelve of the central and eastern counties of Pennsylvania, or from East Buffalo, Tonawanda, or Lockport, N. Y. Needless to say, the milk supply has been greatly reduced in both these States, and the price of milk has rapidly advanced. Consumers are forced to pay a high price, or resort to the use of condensed milk.

With the tuberculosis, cancer, and foot and mouth disease among cattle, is it any wonder that some are regarding with suspicion dairy products of all kinds, and are urging that gradually they should be replaced by more wholesome substitutes, if substitutes are needed? If milk is used, it certainly should be sterilized. If butter is used, it, too, should be made from sterilized milk.

D. H. KRESS, M. D.

Raw Milk Versus Cooked Milk for Infants

MUCH has been said, and justly said, regarding the danger of feeding babies with raw milk when it is not known that the milk is clean and comes from a healthy herd; but there are some dangers connected with the feeding of cooked milk that can not be disregarded.

A New York physician, E. Mather Sill, who has annually the care of five thousand infants, and who has for five years made careful observations on these infants, numbering in all about twenty-five thousand, as to the results of various feeding methods, makes in the *New York Medical Journal* of Feb. 8, 1908, the following significant statement: —

"Of the infants that were fed on sterilized or Pasteurized milk continuously, or part of the time on one and part of the time on the other, ninety-seven per cent developed scurvy or rickets, or a combination of the two, the so-called scurvy-rickets of the English authors. These infants had been fed for a varying period of from three to eighteen months on heated milk: Pasteurized milk was given during nine months of the year and sterilized milk during the three summer months. This milk was all carefully modified to suit the age and digestion of each individual infant. About twenty per cent of the infants had five feedings a day, supplemented by breast feedings. These also

had signs and symptoms of rickets, but in a less degree than those who were fed exclusively on Pasteurized or sterilized milk. No infants fed on *modified raw* milk developed rickets or scurvy or any other disease due to improper feeding, such as anemia, malnutrition, marasmus, etc."

" . . . It has been found that every infant suffering from rickets, scurvy, malnutrition, etc., that has come to our notice, and that has not been fed on patent baby foods, has been fed for varying periods on Pasteurized or sterilized milk."

" Being anxious to know whether sterilization and Pasteurization of milk could be the entire cause of these diseases, raw milk was substituted with no other treatment, whereupon the children immediately began to improve. Infants which were in good health when fed on raw milk, were attacked with symptoms of rickets when sterilized or Pasteurized milk was given."

He concludes that " the advantages of raw milk when properly used far outweigh any advantages which heated milk may possess. If milk is heated, it should never be raised above a temperature of 140° F. for twenty to thirty minutes."

At best, heating milk is a bungling apology for its being dirty and diseased. The ideal milk is clean milk from healthy cows; but how to get such milk in any but small quantities, is the problem that awaits solution.

Tuberculosis and the Young

WHATEVER the port of entry of tuberculosis, whether by the air-passages or by the food-passage, — a question which it seems impossible to settle at present, — Dr. Woods Hutchinson's paper, read at the tuberculosis congress, *seems to point* to a human source as the principal cause of tubercular infection of the young. Notice the italicized words; for the question of tubercular infection involves problems of such complexity that it will be a long time before the last word will have been said on some of the disputed points. Dr. Hutchinson says: —

" The data so far collected appear to point toward the following conclusions as probable: First, that the frequency of pulmonary tuberculosis in children is much greater than was formerly supposed. Second, that the lung is the most frequent site of tubercular involvement, in children as in adults. Third, that whatever the port of entry, the lung suffers most severely and most frequently. Fourth, that instead of tuberculosis having a special preference for the bones, joints, and glands in childhood, the tuberculous process in these regions would appear to be secondary to the involvements of the lung, and to represent a residual stage of generalized infection. Fifth, it would appear probable that even the glandular forms of tuberculosis did not represent an earlier or milder form of the infection, but are secondary to a pulmonary involvement. Lastly, the field in which the decisive battle of our future campaign against tuberculosis must be fought is the home; our chief enemy, infection in early childhood."

In the same section, Dr. Martha Wollstein made a report showing the frequency of tuberculosis in the New York City Babies' Hospital. Of nearly nine hundred children dying under one year old, twelve per cent, or about one eighth,

had tuberculosis. Of those who died during the second year of life or later, about one third had tuberculosis. Evidently, among this class of children at least, tuberculosis begins early (four cases were less than three months old, and one was only seven weeks old), and the proportion of tuberculous children rapidly increased during the second year.

Is it milk, or is it tubercular sputum flying in the dust, that causes the infection of the little ones? That is the unsettled question, and until it is fully and finally settled, a due regard for the health of the children will suggest that it is unwise to ignore either the milk or the sputum as a probable cause. Perhaps, when all controversy is at an end on this subject,— if such a time ever comes,— it will be found that both cow's milk and human excretions, including sputum, play important parts in propagating the disease.

Drs. Floyd and Bowdich, of Boston, as a result of the study of nine hundred children ranging from a few months to fifteen years in age, who had been exposed to tubercular relatives in their homes, found forty per cent with signs of definite disease in the lungs, and twenty-six per cent more had symptoms pointing to tuberculosis. In other words, *two thirds of the children exposed to tuberculous relatives were found to be tuberculous.* In many cases the children were apparently healthy, having no symptoms that indicated the presence of the disease, and were only known to be tuberculous by careful examination. These doctors believe that the home is the most important place for the application of preventive measures, and that where there is a consumtpive in the family, there should be close medical supervision, not only of the sick one, but of all the members of the family.

It is here that the personal work of the visiting nurse and of the physician is particularly valuable. It is here that leaflets, explaining the nature of the disease, and cautioning about the care of sputum, etc., can be most useful.

The lesson that the new methods of diagnosis should teach all of us is that right around us everywhere, apparently in good health, are people infected with tuberculosis — some of them, perhaps, since childhood. Many of these, not raising any sputum, may be harmless to others.

But what about that boy or girl of yours that is not gaining weight, that is becoming pale and hollow "from too much study"? Are you sure that it is not the first stage of tuberculosis? Have you been to some physician, who, after the manner of olden days, says, "Your child has no tuberculosis now, but his lungs are weak; be careful of him"? That, translated into modern language, means that your child probably has incipient, or even moderately advanced, tuberculosis, and should be placed under intelligent hygienic treatment at once.

Be very suspicious of any diagnosis of "weak lungs." The tuberculin test or the X-ray would probably demonstrate every such case to be one of tubercular infection.

DO NOT DELAY: for delays are DANGEROUS.

Tuberculosis Exhibit.— The tuberculosis exhibit shown in Washington in connection with the International Congress has been installed in the American Museum of natural History, New York, where it has been given three entire floors. This exhibit, which is by far the most complete exhibit on tuberculosis ever collected, will be open to the public for six weeks.

Cause of Loco-Disease.— It has been definitely determined that this disease, which on Western plains causes a kind of insanity among cattle, and usually ends fatally, is due to barium poisoning. The "loco-weed" is capable of taking up this metal in appreciable quantities, and animals eating the weed grown on soil containing barium develop the disease. Animals feeding on loco-weed grown in soils containing no barium do not contract the disease.

Cause of Heat-Stroke.— Dr. Harvey Sutton, of Oxford, has made some observations on himself confirming the view that the essential cause of heat-stroke is a combination of high temperature and great humidity. When the wet bulb temperature reaches ninety-five degrees, the heat-regulating mechanism fails, and the temperature begins to rise. As evaporation fails, oxidation increases: and once this process has begun, it gradually accelerates, the temperature rising faster and faster. The most important procedure in the treatment of heat-stroke is the reduction of body temperature.

A Specific for Three "Incurable" Diseases.— There are three diseases which, though they net the doctors some handsome fees, are usually so hopeless in their outcome that the medical men almost dread to see them. For these diseases, neurasthenia, exaphthalmic goiter, and locomotor ataxia, Dr. Louis Kolopinski proposes the use of chromium sulphate in one- to four-grain doses three or four times a day. He says he has observed remarkable improvement, and even cures of all three diseases, by use of this drug alone. Of course, we always, if we are wise, wait till the first sound of such a report has died out, to see whether the echoes tell the same story. Usually they do not.

Minnesota Canneries Inspected.—According to the bulletin issued by the State Dairy and Food Commission of Minnesota, that State is the only one in the Union which has a special law regulating canneries. There certain sanitary conditions are required in each factory; and where the goods are canned under the supervision of a State inspector, the product is labeled, "Minnesota Standard, Inspected and Approved." Water, cane-sugar, and salt are the only ingredients added to the approved goods. According to the inspector, no artificial preservatives, bleaches, colors, or fillers of any kind are being used. This standard should cause an outside demand for Minnesota canned goods.

Rat Virus Starts Epidemic in Business House.— Twelve employees in a London establishment became suddenly and severely ill, in a manner that pointed to infection. An investigation by the bacteriologist, Dr. Klein, revealed the fact that they were infected by a virus that had been spread for the destruction of mice. All the victims ate in one dining-room, where, on removing boards, numbers of decomposing mice were found. It is possible that after traveling over the virus these creatures may have infected some of the food afterward eaten by these people. The virus, which was fatal to the mice, only produced severe illness in the men. However, the claim that these rat viruses — of which there are

a number — are harmless to humans, seems to be open to grave doubt.

Squirrels and Plague.— In August a boy in Los Angeles, Cal., picked up a sick squirrel near the city, and took it home to give it a drink. The squirrel bit him, and a few days later he developed bubonic plague. The squirrel was not saved for examination, but another squirrel owned by the boy became sick, and proved on examination to have plague. It is known that the ground-squirrels in the counties around San Francisco Bay have been infected for some time. The question now arises whether this infection has traveled all the way down the State by means of the rodents. At any rate, it would seem that a war of extermination against these pests, conducted by the government, should be begun at once.

Increase of Suicides in the United States. — Within a quarter of a century, deaths by suicide have increased in this country from twelve in each million to one hundred twenty-six a million annually — more than tenfold. Suicides are more frequent where the climate is mild, and especially during fine weather. Great catastrophies, like the San Francisco earthquake, put an effectual stop to the suicide mania for a considerable time. Possibly a lot of the would-be suicides are killed off, and the rest are so happy to find themselves alive that they forget for a time their morbid train of thought. There can be no doubt that the wide publication of the details of these self-murders encourages their repetition.

The American Academy of Medicine, which recently held its annual meeting in Chicago, elected as its president Dr. Helen C. Putnam, of Providence, R. I. The American Academy is the most learned body of physicians in America. Its chief purpose is to raise the standard of medical education. Dr. Putnam is one of its most distinguished members, and we are glad to see the academy honor both itself and Dr. Putnam by electing her its president. Dr. Putnam is the first woman to receive such an honor in the history of American medicine, and the women physicians of America will especially hope to see the achievements of the academy under Dr. Putnam's administration eclipse those of her worthy and efficient predecessors.

The Miracle Cures of Lourdes.— Each year this famous cure receives an increasing patronage from Germany, much to the disgust of some Germans who strenuously object to this "wasting of Teutonic savings on French soil." A Munich physician has been treating a case of severe lupus in a woman, whose "miraculous cure" at Lourdes had been widely published. A number of Munich physicians appeal to their brother physicians to look carefully into the after-history of some of the alleged cures, thinking that perhaps a careful investigation will result in the discovery of many cases showing that the cures are only apparent. Undoubtedly the testimonials to cure are obtained before sufficient time has elapsed to prove the cure permanent.

Endurance Records Broken.— Professor Fisher of Yale has an ergograph arranged with a weight which an ordinary person can lift from thirty to sixty times. The maximum before Horace Fletcher tried it, was one hundred seventy-five. Mr. Fletcher, the champion of the gospel of chewing, lifted it three hundred fifty times. Now Karl Mann, the lacto-vegetarian, who has distinguished himself in Europe by his endurance as a pedestrian, eclipses all records by lifting the weight six hundred eighty-seven times, and he "was not exhausted when he stopped." Pity he did not raise it just thirteen times more, and thereby double Mr. Fletcher's record! It should be remembered that beef-eating athletes have the opportunity to break this record — if they can. G. A. H.

Object to Medical School Inspection.— In Toledo, Ohio, a committee from the chamber of commerce appeared before the board of education, asking the privilege of having the children in four schools inspected by physicians, free of all cost to the school department, but were refused by the school board (who admitted that children were in the schools who ought to be weeded out, and that there were many cases of contagious disease in the schools), on the ground that the doctors would disclose a state of affairs that would render imperative a system of inspection for all the schools, and, the board said, "We haven't money to do it now; we are building school buildings." But inspection will come; for publicity has been given to the admission of the school board, and parents will not long stand for a policy of making the health of the children secondary.

The Dispensary System in Oklahoma.— The Woods County Dispensary in one month received forty prescriptions for liquor from one physician, and only twenty from all the other physicians in the county. Naturally this gives the man who has such a penchant for prescribing liquor an unenviable notoriety. In another county, the medical society passed a resolution condemning the practise of prescribing liquor. Evidently the medical men of Oklahoma do not intend to leave any "loopholes" through which liquor may enter the State.

A Department of Public Health.— At the time of the International Congress on Tuberculosis, a meeting of representative men favoring a national department of health was held in Washington, D. C., at which an announcement was made that President Roosevelt is planning for the concentration in one department of the bureaus relating to health now forming part of various departments. The President does not contemplate the creation of a new department, — at least at present,— but expects to have the health work transferred to one of the existing departments, possibly the Department of the Interior.

Tuberculous Milk in London.— Of ninety-two samples of milk recently examined in London, twenty-two, or nearly one fourth, proved to be tuberculous.

Cats as Plague Preventives.— Observation confirms the belief that where cats are kept, there are less likely to be developed cases of plague. In India, where the native prejudices prevent the use of anti-plague vaccination, there is hope that a more general introduction of cats, thus driving out the rats, will aid materially in the control of the plague.

Tuberculous Beef Boycotted.— Butchers in England have been losing heavily on account of condemned tuberculous meat on which they could recover nothing from the farmers. The butchers' society last fall passed a resolution notifying farmers throughout England that all farmers who, after November, "refuse to sell their cattle with a guaranty against tuberculosis will be boycotted." This means that hereafter the farmer must stand the loss from tuberculous cattle. This seems quite just, and should awaken farmers to the necessity of cleaning up their herds.

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The February Number

CANCER, rapidly becoming a scourge of civilization, is occupying the attention of some of the ablest of scientists. Dr. D. H. Kress will give a paper on "Cancer: Its Cause and Rational Treatment."

Dr. G. T. Harding presents a forcible, practical, and timely paper—"A Faith That Works Against Disease."

Dr. Ruble's article, "Preventive Treatment of Sore Throat;" Dr. Godsmark's "When the Baby Has Croup;" and Dr. Heald's "The Treatment of Tuberculosis" contain hints that may mean not only improved health, but the saving of life.

We have not yet exhausted the subject of Fresh Air; and Dr. Otis's paper on this subject will serve to reinforce what has appeared in the January number on this topic.

Many other articles appear covering a variety of topics. The reader will find it a number containing "meat in due season." The illustrations will be a special feature.

Baths Before Books.—The New York City superintendent of schools declares that the usefulness to the city, in point of morality, of the Carnegie libraries is small compared with what would result from a comprehensive system of public baths. He knows no better way to promote the physical and moral welfare of the rising generation, their health, cleanliness, and comfort, than by placing two hundred fifty thousand dollars at the disposal of the board of education for the construction of shower-baths in all school buildings in the poorer neighborhoods.

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