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Chinese Arguments for Vegetarianism. - - - By Wm. Axon, L.L.D.

EMBLEMS OF PURITY

Purity, sweetness, refreshing and delightful cleanliness
are the sensations produced by the use of

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Through vales of grass and meads of flowers our plows their furrows made,
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— *Whittier.*

GOOD HEALTH

A Journal of Hygiene

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THE HOME CARE OF FEVER CASES

BY J. H. KELLOGG, M. D.

IN fever the system is struggling with some morbid element which has been introduced from without. The cause of most fevers is disease germs which are growing within the body and producing deadly poisons. The circulation of these poisons in the blood is responsible for most of the symptoms which occur in the various fevers, the particular symptoms of individual fevers being due to the special characteristics of the germs to which the fever is due and the poisons produced by them.

Ordinary fevers, such as typhoid, scarlet fever, and smallpox cannot be cured by any treatment which can be applied. The things which can be accomplished by treatment are, first, to sustain the vital powers in their battle against the elements of disease; second, to co-operate with nature in the healing process by aiding as far as possible in the removal of causes, and assisting in restoring and maintaining the disturbed equilibrium of the vital functions, especially in lowering the temperature when it becomes too high, in checking the production of heat when possible, in warming the body when the temperature is abnormally lowered, and in encouraging the circulation of blood in parts which are deficiently supplied, while diverting it away from parts which are receiving an excess; third, to take precautions against the special dangers involved in the particular form of disease process present, and in the individual case.

There are certain principles which apply to the treatment of all fevers, which we will briefly consider.

1. *Enforce Complete Rest.*— In fever the normal processes of nutrition are largely suspended. The growth of the hair and nails ceases. There is little or no appetite, very little digestive activity and little power to assimilate food. At the same time, the production of heat, which is carried on at the expense of the tissues, is stimulated by the poisons circulating in the blood. It is no wonder, then, that the body of the fever patient rapidly loses weight, especially after the first week. By perfect rest in bed, this wasting process is reduced to a minimum. Exercise of mind or body in a fever patient produces a quick rise of temperature; hence, the patient must not only be kept in bed and induced to keep as quiet as possible, but mental rest must also be secured. Business of all sorts must be laid aside. The patient must be protected from domestic cares and worries. Noise must be suppressed. The bed must be so placed that the patient will not face a window or any other source of light. The patient's mind must, as far as possible, be put at rest by assuring words and manner.

2. *Maintain Vital Resistance.*— In case of death from fever, the cause is either gradual wearing out of the body and final failure of the vital powers, or special damage to the vital machinery resulting from some complication, such as ulceration, abscess, or paralysis. Death from the first cause is due to weakness of constitution; death from the second cause is the result of the intensity of the poisons or the virulence of the germs by which the body is assailed, and the intensity of the disease processes set up by them.

It is evident, then, that the support of the patient's vital powers is a matter of primary importance. How can this be done?

Fortunately, we have in our hands remarkably powerful, although extremely simple, means for accomplishing this. In cold water, nature has given us an agent by the proper application of which the bodily vitality may be supported to a most remarkable degree. Every fever patient, no matter whether the temperature is high or low, should receive at least three times a day an application of cold water in some form to the whole surface of the body. When the temperature is not higher than 102° the cold mitten friction or the cold towel rub may be employed. When the temperature is higher, more energetic measures will naturally be employed for the purpose of reducing the temperature, such as the cold wet-sheet pack, the rubbing wet sheet, the rubbing shallow or Brand bath, and the large cold compress. When measures of this sort are used several times a day, cold rubbing is not necessary, for the effect of properly administered cold baths, no matter what the purpose of their employment, is always to increase the vital resistance.

3. *Elimination of Poisons.*— Certain organs of the body, particularly the thyroid and the thymus glands, the lymphatic glands, and other less familiar organs which we need not mention, are capable of destroying germ poisons, and of producing substances by which they may be antidoted. The activity of these organs, as of other living tissues, is greatly stimulated by the nervous impressions made by cold applications to the skin; hence these cold applications must never be omitted, no matter what may be the temperature. By means of such applications systematically applied, as experience has abundantly shown, the body may be fortified in advance, so that it may be able to resist the attacks of infectious diseases, such as typhoid fever, malarial fever, and other germ diseases. It is important to continue the same measures after convalescence is established, so that by building up his vital resistance the patient may be protected from relapse, a constantly threatening danger after severe fever.

Unfortunately, the germs themselves are generally so deeply hidden in the body that they are not accessible to any means which can be brought to bear directly for their destruction. We must depend upon the vital powers themselves to accomplish this. Fortunately, the living tissues are active germ-destroyers, particularly the white-blood cells. Unfortunately, the blood in fever is always reduced in quantity; it may not be more than two thirds the normal amount.

The elimination of poisons is to be encouraged by copious water drinking, which should not be neglected in fever. The rule should be half or three quarters of a glassful every hour, or as often as the patient can be made to drink. If

the patient complains of heaviness in the stomach as the result of copious water drinking, less water may be given by the mouth, and warm water near the temperature of the body may be introduced into the bowels in quantities of one to two pints every two or three hours. It is not necessary that the patient should drink half a glass or a glassful at once. A better plan is to give him a tablespoonful or two of water every few minutes, keeping careful count of the amount administered, so that the full quantity of three quarts shall be given every twenty-four hours.

Dilute fruit juice, such as very weak lemonade, dilute grape juice, the juice of raspberries, apples, cherries, and all subacid fruits, are all serviceable. Fruit acids aid in the disinfection of the mouth and stomach. They also encourage the action of the kidneys. Besides this, they furnish just the sort of nutriment, in a completely digested form, that the body requires to support the great loss of heat. Fruit acids, when they are taken into the body, are at once absorbed, and become immediately available for use, requiring no digestive action whatever. The same is true of the sugars furnished by sweet fruits.

Cane sugar should be used as little as possible, as it is difficult of digestion, and encourages the formation of gas in the stomach and bowels. If agreeable to the patient, acid fruit juices may be sweetened with honey, or, if obtainable, with malt honey or maltose, a sweet prepared by the digestion of starch, which is much more easily assimilable than cane sugar. Ordinary sweet concentrated malt extract would be an excellent food for fever patients, only that the flavor is so disagreeable that they cannot be made to take it. Malt honey answers the same purpose, but has the advantage of an agreeable flavor.

The most effective means, then, of combating germs is to aid the blood-building processes of the body in every way possible. This again is best accomplished by the employment of cold baths. After a cold application, the number of blood cells circulating in the vessels is very greatly increased. An increase of more than one third has sometimes been observed. This is certainly a matter of very great importance and one which should not be neglected. By the systematic application of cold baths three or four times daily, the system is somehow assisted to make the blood cells which are so necessary for the defense of the body against the invading germs.

In the case of fevers due to localized infections or inflammations, as in the case of a boil, phlegmon, diphtheria, and erysipelas of the skin, the activity of the germs may be controlled, to some degree, at least, by cold applications. It should be remembered, also, that hot applications may render service in such cases by encouraging the accumulation of the germ-destroying white cells in the affected part. So, if cold applications are made during the greater part of the time, hot applications must be made for ten or fifteen minutes, at intervals of an hour or two. Thus we may both delay the development of the germs and encourage their destruction by simple applications of heat and cold properly managed. This is the reason for the alternate application of the ice bag and the fomentation in cases of diphtheria, and for the use of steam inhalation in diphtheria, quinsy, and various forms of sore throat, while the cold compress is applied to the neck.

(To be continued).

STUDIES IN COSTUME

Mediæval Dress

BY ETHEL REEDER FARNSWORTH

FROM the standpoint of health there is little to complain of in the styles of dress in vogue in Europe at the beginning of the Middle Ages, nor must it be conceived that it was altogether lacking in beauty. No doubt the feature most opposed to perfect healthfulness was the leg-bandage in common use by the men; for to retain their position they must have been drawn about the legs tightly enough to interfere with the circulation. However, it appears that these bands were not worn continuously even during the day, and they disappear altogether before the close of the tenth century. About this time we first find a garment in use which bears any definite resemblance to our modern skirt. The upper part of the tunic worn by the women fitted the body closely, and the skirt hung from a waistband in fine folds or pleats.

The twelfth century was a period of many changes in the costume of Europe. With the return of the first crusaders in the last decade of the eleventh century, the upper classes of Europe began to affect the luxuriant habits and dress of the East. The tunic became longer and wider both in the body and sleeves. The dress of the men dragged on the ground, and the sleeves were from eight to ten inches longer than the arm. The woolen cloaks worn in winter were lined with costly fur, and gloves were worn constantly. The Count of Anjou set the fashion of wearing long-toed shoes, and his countrymen soon followed his example. It is about this time, too, that the fashion of wearing long artificial curls appears. During the first half of the century no radical change took place in the dress of the women, but the skirts and sleeves of their gowns grew longer and longer until the former dragged upon the ground, and the latter had to be tied up to prevent their owners' tripping over them when they walked. Hats and gloves were much worn, and both silk and fur was coming into common use by the nobility.

The thirteenth century is sometimes spoken of as the classic period of mediæval art, and during this time there was something of a return to Greek healthfulness and simplicity in dress; but the return was neither complete nor lasting. With the opening of the fourteenth century we find our ancestors fairly launched upon a series of unreasonable extremes hitherto unknown in the history of dress. Naturally, these extremes were indulged in chiefly by the nobility, and were the accompaniment of a mode of life as unwholesome as it was elegant, a condition which must always develop among a leisure class supported and ministered to by the labor of others.

Up to this period the human body has been considered in its full development, and clothed in a reasonable, comfortable, and therefore healthful manner. But with the passing of the thirteenth century the history of European dress has been, with few exceptions, the story of one long debauch of clothes; a debauch which has left its baneful imprint upon the mental, moral, and physical life of the civilized world. The desire for elegant and fashionable clothing has impoverished minds as well as

purses. It has robbed womanhood of its gracious womanliness, and childhood of its birthright of simplicity.

Up to this time changes in fashion had in the main been the outgrowth of changed necessities, and were subservient to comfort and convenience; but now begins a long period when vanity and caprice hold the reins, and drive the votaries of fashion to the most unreasonable lengths.

YOUNG NOBLE OF THE COURT OF CHARLES VIII

When "Good Queen Anne" came to England from Bohemia, she brought with her much unnecessary display in the way of clothes, giving a new impetus to the English courtiers who already indulged in many foppish extravagances. Velvet and fur were used lavishly, and heraldic figures and mottoes were embroidered all over their gowns.

It is to this period that the corset owes its first popularity, if not its invention. Before this, especially in the twelfth century, the bodices had been made to fit the body closely, but in all the illustrations up to this time the contour of the body is still that of the well-matured and healthy woman. But, "as time rolled on, this tight-fitting bodice was associated with good birth or fine breeding, and hence a small waist became at last a sign of gentility. If the women were coarsely bred, or had more or less tumbled to pieces, what matter? The body was elastic, the ribs were not nailed into their places, and would not a sufficient amount of steady pressure applied day after day insure them naturally fine-shaped, finely bred bodies?—Certainly not; all it gave them was a mere veneer, a false gentility."

"The fifteenth century witnessed the introduction and development of many evils besides that of tight lacing. The use of costly material impoverished many a house that could ill afford it, for we find that in 1404 men without rent or office wore cloth of gold, velvet, large and long hanging sleeves touching the ground, gowns trailing in the dirt, and winter dresses lined throughout with ermine." To such extremes did the fashions go that it became necessary to regulate some of them by law.

Yet it must not be thought that these excesses were indulged in by all classes.

The fifteenth century had its sober-minded men of affairs and dignified matronly women, mostly of the middle class, whose dress was always in harmony with good judgment and utility. "The merchant in his jupon with long-cuffed sleeves, his cossack-like coat 'all buttoned down before,' his voluminous mantle and many-buttoned hood, his handsome and serviceable waist-belt, his beaver hat of Flander's make, and his short-pointed, strap-fastened shoes, was as dignified as the makers of great commercial cities need be."

The women of the leisure classes and the "young men about town" were the chief votaries of fashion. Young nobles, whose fortunes and positions made it possible for them to live without exertion were the leaders of fashion. Royal marriages often gave new impulses to and set new standards of fashion. Montfancon tells us that when Isabeau, sister of Charles le Bel, became the wife of Edward II, "she amazed her royal liege by appearing in a hat of exceeding height, narrowing toward the top, from which floated a veil of length and richness." When Catherine de Medici arrived in France, she brought with her a great many lords and ladies whose Italian modes and manners revolutionized her husband's court. Manstrelet waxes extremely scornful over fashions introduced by Mary of Burgundy, wife of Maximillian of Austria. "Her gentlemen," he says, "clothed themselves shorter than had ever been done before,— like unto monkeys, indecent and indecorous,— cut holes in their coats to show their shirts, wore hair so long that they could not see, and padded out their shoulders like men deformed, visited of God."

A contemporary writes thus of the foppery of Richard II, who died in the last year of the fourteenth century: "That lewd lad ought evil to thrive, that hangeth on his hips more than he earneth; unless the sleeves slide on the earth he will be wroth with those that made them; eke if the elbows be not to the heels. . . . But now is there a guise, the quaintest of all, a wonderous curious craft lately arrived, that men call carving the cloth all to pieces; so that seven good sewers, in course of six weeks after, may not set the seam or sew them up again. Girdles are some of them worth more than twenty marks. Shoes are snouted, and are long like claws of devils, and are fastened to the knees with chains of gold and silver."

Henry IV of England made a manly attempt to stem the

MARY OF BURGUNDY, WIFE OF MAXIMILLIAN

tide of vanity and luxury — "all dagged and slashed garments cut in form of letter, leaves, or posies" were prohibited.

Edward IV also made an earnest effort to bring about a reform in dress by legislation. The following are a few quotations from an act passed in the third, and revised in the twenty-seventh, year of his reign: —

"No knight under the estate of a lord, or his wife, shall wear any sort of cloth of gold, nor any kind of corses worked with gold, nor any furs of sables, under the penalty of twenty marks, to be paid to the king; lord's children excepted.

"No person under the degree of a lord shall wear any cloth of silk of a purple colour, under the penalty of ten pounds.

"No esquire or gentleman under the rank of a knight, or their wives, shall wear any velvet or figured satin, nor any counterfeit resembling velvet or figured satin, nor any counterfeit cloth of silk, nor any wrought corses, under penalty of ten marks. The sons of lords, with their wives and daughters and esquires, of the king's body, with their wives excepted.

"No esquire or gentleman, or any other man or woman under the rank aforesaid, shall wear any damask or satin under the penalty of one hundred pence." There is a long exception to this clause.

"No yeoman, or any other person under the degree of a yeoman, shall wear in the apparel for his body any bolsters, or stuffing of wool, cotton, or caddis, in his pourpoint or doublet, but a lining only according to the same, under the penalty of six shillings and eight pence.

"No knight under the estate of a lord, no esquire or gentleman or any other person, shall wear any shoes or boots having pikes or points exceeding the length of ten inches, under the forfeiture of forty pence." This penalty was increased the next year, and it was then ordained that no cordwainer or cobbler in London, or within three miles of the same, should make, or cause to be made, any shoes, galoches, or buskins, with pikes or poleyns exceeding the length of two inches, under the forfeiture of the sum of twenty shillings; and the year following it was proclaimed throughout England that the beaks or pikes of shoes or boots should not exceed ten inches, upon pain of cursing by the clergy, and the forfeiting of twenty shillings." The accompanying cut gives an idea of the extent to which this ridiculous fashion was carried.

But these were quite generally evaded in one way and another, so that at the close of the century we find the men hindered by sleeves sweeping the ground, and with shoes whose toes were chained to their knees, and the women bearing about lofty steeple-like headdresses, which extend above the head to half the height of the wearer.

THE MODERN SLAVE

BY DAVID PAULSON, M. D.

WHILE modern civilization has abolished involuntary servitude, it has introduced another form of slavery which is responsible for more premature deaths and more wretched misery than ever was attributed to the old-time human bondage. The ancient slave was often forced to subsist upon miserable food, and to eat at irregular times and in a hurried manner. The modern slave, or in other words, the modern business man, "feels" compelled to do exactly the same thing; consequently, he experiences similar suffering.

Fully one half of our so-called successfull business men are on the very verge of physical bankruptcy. Poor management, physically speaking, is the common cause of the condition. Some vainly attempt to tide themselves over their physical crisis by using stimulants, thus borrowing some of their future nerve supply, and by so doing they only involve themselves still more deeply, and thereby indefinitely postpone the day for their deliverance, and often make their recovery altogether impossible.

Whether the galling yoke of disease manifests itself in the form of slavery to some drug habit, or as a neurasthenia, or in some terrible form of indigestion, or many of the various nerve disorders, it cannot be juggled away by simply swallowing a few drops from some mysteriously labeled bottle. Such an individual must repent so effectually that it will lead him to adopt radical changes in all the habits of his life. He must undertake to earn at least a part of his bread in the divinely appointed way,— by the sweat of his brow.

Instead of trying to induce nature to convert dietetic wood, hay, and stubble, into good and wholesome blood, the business man who wishes to live as long as his country cousins, must begin to cultivate a taste for wholesome and nutritious foods. He must discard pernicious drinks, whether they are served over the bar in the form of whisky, or in his own home in the form of tea and coffee. He must recognize as an inspired truth that every tobacco user is warring against his own interest, and if he instinctively realizes that he is approaching physical disaster, he must earnestly and energetically endeavor to give up health-destroying habits, no matter how dear they may be to him.

SOME CHINESE ARGUMENTS FOR VEGETARIANISM

BY WILLIAM E. A. AXON, L. L. D.

IT is said that in no part of the world is the consumption of flesh meat so small as in China. For this there are varied reasons. Buddhist influence will count for something, and the greater cost of animal food will also contribute to the result. But there are also the precepts of the ancient emperors who forbade the *daily* use of flesh meat. This, while in form only a precaution against excess, shows that the dangers arising from animal food were recognized, and considered of sufficient importance to demand royal notice.

That food which cannot safely be used daily, it would occur to many, may with advantage be entirely avoided. Accordingly, there is a certain strain of vegetarian doctrine in Chinese literature. There is a famous book by a distinguished graduate, Chang, who investigated the subject at the instance of the emperor Tae-Seng, who began to reign A. D. 1763; and there is a copious abstract from this book in Pidding's "Chinese Clio" of 1844. Chang, while acknowledging that regimen is not everything, recognizes its supreme importance. The most skillful farmer cannot insure a good harvest, yet there would be no harvest without agriculture. The evils of excess are plainly set forth. "Maladies enter by the mouth and misfortunes come out of it," he shrewdly observes. Some of his sentences are as incisive as proverbs: "The more dishes are served up at the table, the more drugs or physic must be taken," "We can number those who have been killed, assassinated, poisoned, or who have died in battle, but not those whom intemperance to gluttony have slain." Tae-Tsing, an emperor of the Tang dynasty, confessed that as he diminished his dishes he lessened his infirmities, and that the less he listened to appetite the less he felt old age.

Passing from these general considerations, Chang declares that the science of medicine establishes the truth that grains, vegetables, herbs, roots, or fruits form the true nourishment of man — the best adapted to sustain his strength. This vegetarian diet he declares to be the best for all ages, sexes, constitutions, and seasons. Children, he says, have a natural antipathy to the eating of flesh,— a fact that ought to open the eyes of the prejudiced. In another direction he remarks that many diseases defy cure except by a regimen from which flesh meat is excluded.

Fruits have their distinctive tastes and seasons, and require little or no cooking to make them palatable, differing in this respect from flesh foods. Chang further argues that all countries are destined to be inhabited, and that a large population can be supported only upon a vegetarian diet. "I find," he says, "that all soils being cultivated can produce grain, grass, roots, and fruits; but I do not see that all can furnish the quality of meat which would be necessary for our common and daily food." He mentions, as a fact, the dislike of the inhabitants of the southern provinces for flesh meat, and states that when Tartars settle there they lose their taste for animal food.

The aversion felt by certain persons for particular kinds of meat is mentioned, and stress is laid upon the numerous instances in which sick persons have recovered from many infirmities by adopting a vegetarian regimen.

The connection between the consumption of flesh meat and prevalence of epidemics is pointed out. The plague, he says, attacks the Tartars, who are large eaters of flesh, more frequently and more violently than the other inhabitants of China. Some flesh eaters, it may be objected, live long lives. "True," replies Chang, "but with the exception of soldiers who retain health by their laborious exercises, what are the lives of the rich and luxurious feeders? When does their old age begin? Which of them have strength at sixty? Simple food and industrious habits bring health and contentment, while rich food and indolence have a string of evils in their train."

There is a similar testimony by Lu, an author of the Sung dynasty, who contrasts the luxury of his own days

with the simplicity of an earlier age. Among other quotations from the "Le-Ke" he cites, "The wise man keeps far off from the kitchen." When Wang-tang obtained an order that the physicians of Loyang should keep a register of all the sick persons whom they attended, it was regarded as a foolish whim, but at the end of the first fortnight the statistics showed that there were nine eaters of flesh to one vegetarian among the sick. Of those who died, thirty-five were flesh eaters against four or five of the vegetarians. Hence, for the preservation of the family and of the state, he argues the importance of a vegetarian diet in place of the luxurious foods which do so much injury. Lu retails the anecdote of the pleasure with which the court, detained at a village by rain, enjoyed the vegetarian repast which was served up to them. "Where there are too many persons who eat meat every day at all their meals, there are many who never eat it any time." Lu's argument is against the excessive use of flesh meat. He draws a powerful and detailed picture of the evil results of luxury and of the many advantages to the individual and the community of a frugal diet and an industrious life.

The medical literature of China abounds in the teaching that health and long life are mainly dependent upon sobriety of life and simplicity of food. "Wisdom and innocence are the sources of long life," says Taon-Tsze. "Nothing so rests the blood and purifies the humors, as peace of mind." The emperor Kang says, "There are persons who will pay enormous sums for luxurious dishes; unhappy beings, they are ignorant that he who eats his meals from a wooden plate and drinks from a calabash, passes his days more cheerfully than they."

The same wise emperor says, "Fasting is a truly good work, but I do not know if modern fasters add to it the serious intention of reforming the heart as the ancients did."

Kang himself was abstemious both as to food and drink. He was practically a teetotaler and, it is curious to know, drank distilled water, a point on which Dr. Lamb, the eminent vegetarian physician at the beginning of the nineteenth century, also laid great stress.

"Those who are, like me," he says, "advanced in years, are accustomed to eat but moderately of flesh meat and very solid dishes, and prefer greens and vegetables, and derive from them the greatest benefits in the way of health and strength," and he notices the health and strength of the laborers whose diet was mainly or entirely vegetable in its character. "If we find ourselves ill we ought to begin by retrenching our meals, continuing, nevertheless, to take some slight ones, just sufficient to support us."

There is an ancient saying, "If you do not take physic you have found out the right way to keep yourself in health." Kang quotes this, and comments upon it sensibly, pointing out that it does not mean that when you are ill you are not to take medicine, but only that you ought not to take it to excess nor according to fancy. On the contrary, he felt that physicians and medicine are of great importance to mankind. His impressions on the subject of diet may be summed up in some phrases from his notebook. "The succulent meats with which the tables are loaded are the chief causes of the numerous diseases which afflict the rich, and of which the poor know nothing." "The inhabitants of the country have scarcely anything but herbs and vegetables to eat with their rice; they work hard, suffer with scarcely any alleviation all the rigors

of all seasons, and arrive at old age with almost all their strength, and almost without disease. All the world sees this; all the world desires health and loves life, and yet no one will pay attention to this obvious fact, that it is to temperance and frugality alone they are owing."

There is in Chinese literature a treatise which in some respects may be compared to that of Cornaro. Both authors had restored themselves to health from dangerous and wasting disease. The regimen recommended by this Chinese physician is partly moral and partly physical. "Engage in no thoughts or designs that do not lead to virtue." "In order to avoid being surprised into wrong, watch over your heart every moment,— descend often into yourself, and never forgive yourself a fault." In regard to diet he advised the strictest moderation and simplicity, while not absolutely prohibiting flesh meat. A list of eminent Chinese vegetarians would be a lengthy document. Among them is the emperor Woo-te, of the Leang dynasty, who lived upon one meal of vegetables and fruits a day. The same regard for economy and frugality is enforced in the "Ten Precepts" of the emperor Yung-Chang.

Dr. Robert Morrison has translated a tract against beef eating, which is so curious and interesting a specimen of the vegetarian literature of China as to demand quotation in full. The speaker is an ox; —

"I request, good people, that you will listen to what I have to say. In the whole world there is no distress equal to that of the ox. In spring and summer, in autumn and winter, he diligently exerts his strength; during the four seasons there is no respite to his labors. I, an ox, drag the plow, a thousand-pound weight fastened to my shoulders. Hundreds of thousands of lashes are, by a leather whip, inflicted upon me. Curses and abuses in a thousand forms, are poured upon me. I am driven with threatenings rapidly along, and not allowed to stand still. Through the dry ground or the deep water, I with difficulty drag the plow, with an empty belly; the tears flow from both my eyes. I hope in the morning that I shall be early released, but who does not know that I am detained until the evening? If with a hungry belly I eat the grass in the middle of the field, the whole family, great and small, insultingly abuse me.

"I am left to eat any species of herbs among the hills, but you, my master, yourself receive the grain that is sown in the field. Of the *chen paddy*, you make rice; of the *no paddy*, you make wine. You have cotton, wheat, and herbs of a thousand different kinds. Your garden is full of vegetables. When your men and women marry, amid all your felicity if there be a want of money, you let me out to others. When pressed for the payment of duties, you devise no plans, but take and sell the ox that plows your field. When you see that I am old and weak you sell me to the butcher to be killed. The butcher conducts me home and soon strikes me in the forehead with the head of an iron hatchet, after which I am left to die in the utmost distress. My skin is peeled off, and my bones scraped; but when was I their enemy? When men in life are greatly distressed, I apprehend that it is in consequence of having before neglected virtue. My belly is ripped open, and my bowels taken out; my bones also are taken; the sharp knife scrapes my bones and cuts my throat. Those who sell me do not grow rich; those who eat me do not

grow fat; those who kill me are most decidedly bad men. They take my skin to cover the drum by which the country is alarmed, and the gods are grieved. If they continue to kill me, in time there will not be oxen to till the ground, and your children and grandchildren must use the spade. I am fully persuaded, after mature consideration, that the wicked persons who kill oxen, will, in the next life, be transformed each of them into an ox like me."

This essay is printed so that the characters form a picture of an ox. The "ox tract" is very popular, and is widely circulated.

There is a Chinese proverb mentioned by Dr. Morrison which declares that "To eat flesh is wicked." Another says, "A great flesh eater will be vulgar and mean." But the proverbs of China, like those of other countries, speak with two voices; and there is a popular saying, "Those who eat flesh have no black spots on their face,"— a cryptic utterance, but evidently intended to encourage Kreophagy. But the general ethical sentiment is against the use of flesh food. There were three cases, it is said, in which the ancients refused to eat flesh meat. What they saw killed they would not eat; what they had themselves reared they would not eat; and what was purposely killed for them, they would not eat. In the little book of ethical instructions which is printed under the name of "Prince Kwan-foo-tsze," a deified warrior of the third century, we read, "Avoid killing animals; liberate them to live." The evil consequences of extravagant and wicked life are devoured, while the result of virtue is that "men and animals all enjoy repose."

The vegetarians in China have been variously estimated at one in ten and one in twenty of the population. That would mean that between twenty and forty millions of the people of China abstain entirely from flesh meat, while a proportion of the remainder of the population of that country use it only sparingly. From the strength and power of endurance of the Chinaman a powerful argument may be drawn in favor of vegetarians.

A BIT OF ADVICE

BY CHRISTINE CAMPBELL

"A BIT of meat upon a plate,
A piece of apple dumpling."—
Your diet this? Do not blame fate
For your gay spirits rumpling.

The apple eat without the paste
Which makes of it a dumpling;
For all such paste makes only waste,
And clogs your blood in circling.

Eat granose flakes and granut sweet
If you good health are seeking.
Good blood *they'll* make,—not so will meat,
Which oft with filth is reeking.

DOES THE EYEBALL FLATTEN WITH AGE?

BY J. F. BYINGTON, A. B., M. D.

THE following inquiry has been sent to our "question box:" "Is there any massage or other treatment that will prevent the eyeball from flattening, making it necessary to wear glasses? If so, please prescribe treatment." As this is a very common question and one which introduces a common error regarding the development of the eye, we think it of sufficient importance to answer it quite fully. Our answer to the question is that the eyeball does not flatten with age, and therefore any treatment designed to prevent the eyeball shortening in its anterio-posterior axis will not prevent or postpone "old sight," or *presbyopia*. Just what change does take place in the eye as the individual grows older, we will try to make clear.

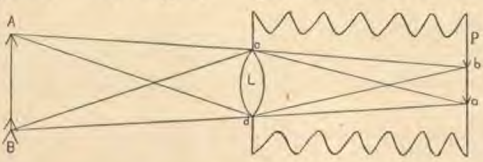

FIG. 1.

The eye may be compared to a photographic camera, and to those who are familiar with the camera our explanation will be very simple. A camera consists essentially of a box, painted dull black on its interior surface to prevent reflections of rays of light within it, in the front end of which is a convex lens, and at the back end of which is a sensitive plate. The convex lens has the property of causing rays of light entering it to be brought to a focus behind, at a definite distance from the lens. When an object is photographed, the lens receives light from each particular point of the object, and focuses it upon the sensitive plate. Rays of light from the different points of the object are focused upon the plate in a position inverse to their position on the object. An inverted image of the object is thus formed upon the sensitive plate. This image is later made to appear by the development of the plate. Figure 1 shows how this image is formed in the camera, and as this illustrates how images are formed upon the retina of the eye, we shall study it carefully. The object to be photographed is the arrow AB. Light emanating from the point A of the arrow falls upon the lens, L, in a cone of light included between the rays Ac and Ad. All rays included in this cone of light are brought to a focus again upon the sensitive plate, P, at the point a. In a similar way light from the point B of the arrow falls upon the lens and is focused upon the point b of the plate. In the same way light from all the individual points between A and B on the arrow, is focused upon the plate in an inverted image, ab of the arrow AB. It is essential that the sensitive plate be the correct distance behind the lens, otherwise light from the different points of the arrow would not be focused sharply upon the plate, and the image would in consequence be dim or not sharply defined. The farther the arrow is placed from the camera, the nearer must the plate be to the lens. In order, therefore, for a camera to take a sharply defined picture of an object placed at different distances from it, the camera box must be adjustable in length. The nearer to the camera the object to be photographed is placed, the longer must be the box.

The eye has the same essential features of construction as the photographer's camera, except in one particular: its walls are rigid and do not admit of an adjustment in length. The accompanying cut (Fig. 2) shows a horizontal cross section of the eye. It is a nearly spherical chamber, blackened on its inner surface to prevent reflections within it. It has a convex lens, the crystalline lens, U, near its front end, and a sensitive plate, the retina, R, in its rear end. The latter is an expansion of the terminal filaments of the optic nerve, E, which conveys impressions of light to the brain. On the front surface of the eye there is a circular, convex window, the cornea, H, which fits into the eyeball something like a watch crystal. Its convexity helps the crystalline lens to bring rays of light to a focus upon the retina. The chamber of the eye back of the lens is filled with a clear viscid fluid of the consistency of the white of an egg, and the chamber in front of the lens by a watery fluid. The walls of the eye consist of three coats: the inner, or retina, receives the inverted image of the object looked at; the middle coat consists largely of blood vessels and supplies nourishment to the eye; the outer coat is a thicker, denser layer which keeps the eyeball in shape. So persistently does this layer keep the eyeball in its original form that after an individual has attained his growth, the eyeball seldom changes its shape, even in old age. During the developing period of life, from birth to eighteen or twenty years of age, the eyeball elongates slightly from before backward. After this period, in a few exceptional cases in which the coats of the eye are exceptionally thin, asin progressive nearsightedness, the eyeball may continue to elongate, but it has very seldom been observed to shorten in its anterio-posterior axis at any period of life. This we are aware is opposed to the popular belief that the eye "flattens" with age. The fact that it does not flatten is well known to every ophthalmologist. The dimness of vision for near objects, which comes on in old age, is the result of another condition.

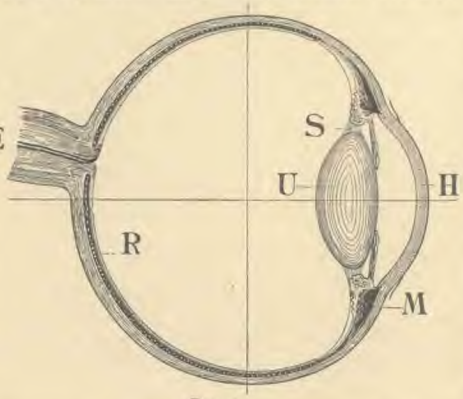

FIG. 2.

Unlike the camera, the eye cannot be focused upon objects at different distances from it by an adjustment in the length of its chamber, for that remains constant. The eye is, nevertheless, capable of being focused upon objects at varying distances from it through the elasticity of its crystalline lens. This lens, being made of living elastic tissue, may change its shape and become more convex, thus bringing to a focus upon the retina rays of light from an object near the eye. The convexity of this lens is regulated by the ciliary muscle, M, which surrounds it as shown in Figure 2. As the muscle contracts, the lens becomes more convex. The ciliary muscle does not compress the circumference of the lens directly, but it slackens the ligament which surrounds and supports the lens, and the lens by virtue of its own elasticity becomes more convex. This power of adjustment of the eye for objects at varying distances from it, is called its "power of accom-

modation." This faculty of the eye varies greatly at different ages. As a person grows older he is not able to bring objects so near the eyes and see them distinctly. The reason for this is that the lens has lost its elasticity, just the same as the skin and other tissues of the body become less elastic with age. *This* is the change, and not flattening, which takes place in the eye as one grows older. The elasticity of the lens bears quite a constant relation to the age. It begins to deteriorate quite early in life. The average person at ten years of age can see the finest print at three inches from the eye. At twenty years the point of nearest vision has receded to four inches, at thirty to about six and one-half inches, and at forty to about fourteen inches, or the usual reading distance. At this age, therefore, the average person begins to feel the need of artificial help in the way of glasses to assist him in doing fine, near work. The accommodation continues to fail, and he finds it necessary to increase the strength of his glasses until he is sixty or seventy years of age, when the elasticity of the lens becomes entirely abolished and the eye has no power of accommodation whatever.

Please observe that it is the power of accommodation which fails. If a person is nearsighted when young, in other words, if his eyeball is naturally too long, he is able to see distinctly near objects without accommodation, and when he grows old, he sees near objects distinctly without glasses, although he has lost his power of accommodation. Such a person has poor-distance vision. Occasionally, a person at eighty or ninety years of age gets "second sight" for near objects. He reads without glasses, but he does not regain his power of accommodation. His crystalline lens does not regain its youthful elasticity, but it becomes more dense and thus refracts rays of light more strongly. Such a person has become *nearsighted.* His near vision improves at the expense of his distant vision. He has not regained youthful vision, however.

What treatment would we prescribe to prevent or retard old sight or the progressive loss of accommodation?—We recommend all the measures advocated by GOOD HEALTH to prolong life and prevent old age. But this function of the body is not exempt from the changes which age makes in our bodies. There is, perhaps, no function of the body from a test of which we could more nearly guess the age of a person than the accommodation of the eye.

As near vision becomes indistinct should one seek relief by the use of glasses?—Most certainly. The modern art of lens grinding is hardly appreciated. Old sight is not a modern ailment, though its accurate correction is a modern art. Ever since we have been "a dying race" this defect has accompanied old age. Of several of the patriarchs, Holy Writ mentions that when he was old his "eyes were dim." We have numerous pathetic allusions to this common defect among Latin writers in the centuries before the introduction of spectacles, and later, in the twelfth and thirteenth centuries, we have numerous references to the great boon to old men brought by the introduction of spectacles. Lenses in those days, and even to the beginning of the present century, were very crude, and the mountings or frames were ponderous. Now we may have lenses ground to fit our individual needs accurately, and the mountings may be made almost invisible. The art of printing and our modern ways of getting and disseminating knowledge, has made the use

of glasses not only a boon but a necessity to a considerable part of the civilized race. What dentistry has done for the teeth, ophthalmology has done for the eye. We need to appreciate these helps, artificial though they are. An accurately and properly fitted lens will not cause the function of the eye to deteriorate; on the contrary, it will help to conserve it. The accommodation will fail whether lenses are worn or not, but an experience with about thirty-five hundred cases of defective sight leads the writer to believe that the function of the eye is better preserved by their use.

We have considered only old sight in answer to the question at the beginning of our article. There are other conditions which we may take up in future articles. There is such a condition as a "flat eye," or one that is too short anterio-posteriorly, but it is always congenital and does not develop during life. The condition is called *hypermetropia*, or "farsightedness." Such an eye requires greater accommodation for near vision, and in consequence requires correction by glasses at a much earlier period of life than the normally shaped eye.

YOUNG WOMANHOOD

BY KATE LINDSAY, M. D.

IT is unfortunate that the idea prevails so extensively that something special can be done at the age when the child is developing into a woman, which will ward off the disorders peculiar to woman in after life. This erroneous opinion is very forcibly expressed by Dr. Anna Galbraith as the feeling by mothers that the development of the sexual organs and the exercise of their special functions are separated from the development and functions of the other organs of the girl's body by a mighty chasm which has to be leaped over or fallen into.

Human life is made up of a series of stages of development, and between the stages there is no distinctly marked dividing line. Each stage is the preparation, or building, stage for the next higher development of the organism. Thus, during the first three months of human existence after the union of the two cells from which the individual life and development starts, all the cells of the body are formed, and also all the organs of the body. The embryo at the end of this period has assumed the human form, and every organ is represented in miniature. It now becomes what is known as a fetus; and for six months more of prenatal life a constant increase in size and perfection of the structure progresses. It is the building and functional-development period when the fetus is preparing for a more independent individual existence after birth. Its own lungs are then ready to furnish it with oxygen. Its digestive organs prepare its food. The heart is ready to do the increased work required to carry on the pulmonary circulation. The brain and nervous system are prepared to furnish the needed nerve energy to meet the increased demands of the actively functionating organs of the body. A year after birth the teeth and digestive organs, and all the other organs and structures of the body, are ready for a change of diet and more physical and mental independence. The child can

masticate its own food to some extent, and begins to have a mind of its own, and to perform individual actions controlled by its own will. It to some extent plans to accomplish its desires and have, as it is termed, "its own way."

Second dentition comes next, and marks the period of childhood and youth. At this time the head has reached almost its full size, and the nervous system has completed its period of most active growth and development.

Next in order, at from twelve to fifteen in the girl's life, comes the time when the sexual organs are so far developed that they can perform their functions, the healthy actions of these organs depending upon the perfection of all the stages of development which have gone before.

The lesson of care which should be bestowed upon the developing child is well given in parable form in the account of the putting together of Solomon's temple. Everything needed to erect the structure was so carefully prepared that in putting the building up no sound of any hammer or workman's tool was heard. Healthy germ cells, under normal conditions, mean a normal embryo. This insures a normal fetus; this, a perfect infant, to be succeeded by healthy infancy, childhood, youth, and manhood or womanhood. If at any period of the life before sexual activity the organism has been damaged, there is no special line of treatment at the age of puberty or any other which will compensate for the hurt the body received before that time. Parents must give their children proper care from the commencement of their existence if they expect them to reach manhood or womanhood with healthy bodies, sound minds, and strong moral principles which will stand the wear and tear and temptations of future life. When Manoah and his wife asked concerning the ordering of the life of the promised child, the angel said, "Of all that I said unto the woman let her beware . . . neither let her drink wine or strong drink, nor eat any unclean thing." These were heaven-given directions, twice repeated, as to how an unborn child, devoted and consecrated to God, should be educated. If this preliminary education has been neglected until womanhood is at hand, then the best that can be done is to strengthen the things which remain. The first thing to do is to educate the young at every age to have right ideas about their own bodies and body functions. Never say or do anything to lead them to believe that any natural function entails upon them discomfort or is a sickness or disease in any sense whatever.

At the period of puberty the reproductive organs need more blood, more oxygen, more nerve energy, and more food, because they are now functionally active. Teach the young girl that while this means the expenditure of more energy, a properly developed, fed, clothed, rested, and exercised body will be all the better for this expenditure in its proper season; for all the years of her life before have been years of preparation for this event. At this time keep the sentimental and emotional impulses under proper control by suitable practical employment of both mind and body. Don't let her be driven at school. On the other hand, do not take her out of school and let her remain idle at home, to become morbid and pass her time reading silly, sentimental novels, and wait with expectation of suffering at each period. Let her have plenty of sleep, loose, suitable

clothing, a good, well-prepared vegetarian dietary, and spend at least three hours daily in exercise in the open air. Do not let her feel that she must enter society, entertain gentlemen friends, or "have beaux." Make it a rule to put her to bed before ten o'clock, and have her sleep seven or eight hours of the twenty-four. This is the time to teach her domestic work. Lead her to appreciate the dignity of baking, sweeping, making, mending, and all kinds of housework. Get her interested in the garden, bees, poultry, and any outside work. Throw on her individual responsibility and let her begin to spend her own money, select her own wardrobe, and plan and execute for herself. This is the best antidote for morbid sentimentality. Let her look away from herself to nature and mankind around her. Make no mystery of any function of the human body; but teach her that the temple of the Holy Ghost is sacred in every part. Every function clean and pure when exercised. not for sensual pleasure, but for the glory of God.

Mothers, make confidents of your daughters, and have them feel free to talk over with you everything pertaining to themselves.

A daily program may be something after this order: —

A short cold bath every morning, followed by half an hour's brisk exercise, breakfast of grains and fruits between 7 and 8 A. M. Dinner at 2 P. M., grains well cooked, vegetables, and subacid fruits. For supper at 6 P. M., fruits, or bread and fruit. Between 9 A. M. and 1 P. M. may come in four hours of school studies, which is all the time developing girls should spend at indoor work. Horseback riding, swimming, and all forms of outdoor exercises are good if practiced moderately.

Keep before the girl that God wants to dwell in her body, and that if she keeps and cares for this temple properly, the Holy Spirit within will keep her sound and healthy — morally, mentally, and physically.

[THE following article from the pen of Dr. Edward C. Hill, which appeared in a recent number of the *Dietetic and Hygienic Gazette*, gives so many practical suggestions upon the same subject that we publish it in connection with Dr. Lindsay's article. ED.]

"The primary establishment and the menopausal cessation of menstruation are the two crucial physical epochs of woman's life. The change from maidenhood to womanhood is one that involves the whole body, and manifests itself alike in the form, the voice, and the sexual and nervous phenomena. In an ideal state of perfect health this transition into puberty should be as natural and uneventful as gliding from sleep into consciousness. Owing, however, to the present civilized modes of living, the cerebral development of young girls is fostered and forced to a degree that deprives the remaining tissues and organs of their necessary nutrition, and too often we are called upon to treat delicate girls that are like buds blasted in the blossoming. Many a woman traces back a prolonged existence of semi-invalidism to exposure and lack of care at the early menstrual periods. Tight lacing also predisposes to pelvic disorders by interfering with circulation and exciting uterine displacements. The strain of puberty upon the nervous and blood-forming structures may be too great in a subject hereditarily deficient in vital resistance and adaptability. So we may count among the morbid incidents more or less peculiar to puberty, chlorosis and anemias,

general debility, neurasthenia and hysteria, acute pneumonic phthisis, chorea, and hebephrenia.

According to Emmett, more than half of all women who have suffered at puberty from menstrual derangements are sterile and delicate in after life. Skene has stated that his observations showed that the vast majority of incurable diseases peculiar to women originate in imperfect development and consequent derangement of function. This development is either primary, during the embryonic stage, or secondary, at puberty. Defects in the former are irremediable, whereas secondary deviations from the normal standard are both preventable and curable in most instances.

Normal menstruation in temperate climates generally begins in the fifteenth year. In the tropics it appears much earlier, so that in Mexico one may see a grandmother of only twenty years. Within the Arctic Circle, Eskimo girls do not generally arrive at puberty until the eighteenth year. City girls usually have the menstrual flow earlier than do hard-working country girls, in whom muscular exercise has the same derivative effect on the pelvic blood supply as too intense devotion to study. The time, amount, and character of the menstrual flow vary normally within wide limits. The menstrual cycle for different individuals ranges in perfect health from two to six weeks. The average duration in the temperate zone is about four days. Soaking more than three napkins daily is considered abnormal. Anemic girls, as a rule, tend to menorrhagia; chlorotic ones, to scanty menstruation. Clots are present when the amount of blood is great, or the mucus and fatty acids scanty. A periodic white menstruation, is not infrequently noticed in the intervals midway of menstruation.

Menstruation is or should be a perfectly physiologic process. In the virgin, disorders of menstruation of whatever nature are nearly always dependent upon the defective nutrition of the reproductive organs, and this in turn upon a blood supply insufficient in quality or in quantity. In the great majority of cases, therefore, our efforts to aid nature in effecting the transformation of the girl into a woman, should be in the line of a happy balance of nutrition between the special female organs and the body as a whole.

Hygienic measures are of the first importance. Fresh air and sunshine are always in order. Exercise is especially indicated for the fat and flabby chlorotic girl, and her diet should be restricted in sugars and starches. The highly active, intellectual girl must rest from her studies and try to become a little lazy. Proper precautions should be taken in regard to reasonable care of the person at the time of the monthly periods. Yet the physician should beware of unduly alarming his little patient, and so bringing about a condition of hypochondriacal valetudinarianism. Simple cleanliness is certain to do no harm, but good. The careful observation of the laws which insure general health and vigor is the chief factor in establishing and maintaining safe and easy menstruation.

In spite of hereditary defects, if the physician could have full control of the diet, clothing, hygiene, and environments of the little girls in his clientele up to the date of puberty, but little if any medication would be then required. Unfortunately, however, the lack of harmonious development in the preadolescent period necessitates considerable medical attention to secure a normal course for the critical metamorphosis of puberty, whose influences, as Dudley

remarks, are fundamental, not only in the reproductive organs, but in the entire woman. Actual pain at the menstrual period in the young virgin may be considered always pathologic, and the same is true of menorrhagia or very scanty menstruation. Such abnormalities of function should direct our attention to the state of nutrition especially. The obese, chlorotic girl must take more exercise; the thin, delicate, sensitive girl, more rest. Fresh air and sunshine are needed in every instance. Blood-forming foods should be taken in such quantities as can be well borne. The appetite for wholesome nutriment should be encouraged. The use of bromides, coal-tar analgesics, and diffusible stimulants at the menstrual periods can be regarded only as a temporary makeshift, and should not be depended upon.

SWEDISH GYMNASTICS.

J. W. HOPKINS.

IN the third class of exercises, *Balance Movements* are included, movements which "cultivate equilibrium in ordinary positions, and correct the general posture." They also produce an easy, graceful management of the body, teaching one to hold it erect; and by carrying the weight of the body mostly over the balls of the feet, accustom him to a light, elastic step.

The primary exercises taken in a standing position, are heel-elevation, knee-flexion, leg-elevation, and walking on tiptoe. Heel-elevation, a simple but valuable exercise, is taken with the hands on the hips (wing stand) first. The heels are lifted quickly from the floor, so that one stands as high as possible on tiptoe. Then they are slowly lowered without allowing the weight of the body to sway backward.

To increase the vigor of the exercise, the movements are taken in yard, rest (Fig. 1), and stretch-standing positions (See Feb. G. H.). If taken in yard position (arms extended sideways, palms turned upward), arm-elevation and breathing may accompany the heel-elevation, making it a good respiratory movement. Or the balance may be made more difficult by having the feet in stride-stand, walk-stand, or close-standing positions. Taken in reach-close-stand (arms extended forward, feet close from heels to toes), arm- and heel-elevation make quite a difficult balance movement, and may also be used as a respiratory movement.

Lifting the balls of the feet (toe-elevation) either alternately left and right, or both together, or alternate heel- and toe-elevation, are exercises which also give grace and lightness to the step. Toe-elevation is taken in the various positions of the arms, as above. Knee-flexion, a balance movement growing more difficult with the advance in positions from wing to stretch, calls into use some of the heaviest muscle masses of the body — those of the legs and back. The knees should point in the direction of the feet, separating as they bend. The feet maintain an angle of 90°. (See Fig. 3, Feb. G. H.) This movement brings into play the extensors of the spine. The trunk should not be allowed to tip forward, but should be held erect. This erect carriage of the trunk during the bending of the knees, causes the deep muscles

of the back to contract strongly to preserve the balance of the body. The chest is lifted somewhat, especially if the movement is taken in yard or rest-standing positions.

In the fallout position, (Fig. 3) the foot is moved three times its own length either outward, sideways, or forward. The knee of the moving leg is bent to a right angle, the other leg

FIG. 1.

is straight, and a straight line is maintained from the backward heel to the head. Both feet are flat on the floor, and the shoulders far as at first.

This movement, after it is learned, will be taken with arm flinging sideways, as follows: Have the arms extended forward; then with the fallout fling the arms sideways, and as the foot is replaced, move the arms forward again. Or take bend-fallout-stand (Fig. 3) and slowly stretch the arms sideways or upward. (See Exercise 2, March G. H.)

FIG. 2.

Leg-elevation either forward, sideways, or backward is a difficult balance movement, and more so when accompanied by movements of the arms. The leg is lifted with the knee and foot well stretched, and a good position of the chest and head is held during the movement. Without this it is almost impossible to take these exercises.

Arm-elevation forward, upward, and leg-elevation backward is shown in Figure 2. This is a respiratory exercise, and also corrects the position of the shoulders. But before the movement is taken with arm work, it should be mastered in wing, yard, and rest positions. Then arm stretching sideways or upward from a bent position of the arms (Fig. 3), or arm elevation side-

ways or forward upward is taken with the leg-elevation.

An excellent exercise, which will educate one to carry the chest forward and the hips back, is marching on the toes. This is best taken in rest stand, with the elbows pressed well back. Sideways marching on the toes is as good, and has the advantage of developing the side muscles of the waist. Balance movements, practiced as a part of the day's exercise, will continually strengthen the muscles which hold the body erect, and will finally make of them a perfect support, thus insuring a good carriage.

FIG. 3.

THE FOMENTATION AS A HOME REMEDY

BY ARTHUR W. GEORGE, M. D.

THE fomentation is a simple and convenient means of making a local application of heat to the body. It consists of a cloth wrung out of hot water, and folded in another dry cloth. The use of an agent so simple and yet so important for the relief of suffering should be familiar to every household. There is no agent that can be employed in more different ways with benefit than the fomentation. Pain quickly yields to its magic touch. Inflammation is readily reduced by its power to control the circulation. When applied very hot and only for a short time it is a local tonic; when moderately hot and prolonged, it is a sedative. Its use is indicated in every case where a poultice, a porous plaster, or a blister is commonly employed. A blister will sometimes relieve pain by acting as a counterirritant, but a very hot fomentation is to be preferred, since it is a perfect counter-irritant minus the unpleasantness of the blister. Sprays and gargles have their place in the treatment of sore throat and tonsils by their superficial action on the mucous membrane; but they do not affect the deep congestion of the tissues like a fomentation to the neck, large enough to extend over a part of the face and shoulders. This produces a dilatation of the blood vessels in a large area of the skin, allowing more blood to flow to this part, and less to the mucous membrane of the throat. This same principle applies to the treatment of all deep congestions, as of the liver, lungs, stomach, and other internal organs.

The turpentine, or other irritant, frequently used for congestion of the lungs, produces a superficial hyperemia of the skin, and by this means has a tendency to relieve the engorged condition of the lungs. But this is accomplished much more quickly and completely by a large fomentation covering almost the entire back, with an ice-cold compress to the chest at the same time.

The cold compress, by its action through the nervous mechanism, produces a constriction of the vessels of the bronchi; while the fomentation dilates the numerous vessels of the back, allowing the stagnant blood in the lungs to drain into this portion of the body.

The fomentation also furnishes a simple and very effectual method of giving a sweat. Have the patient lie on a warm cot or mattress; place one fomentation to spine, and another to the abdomen; place the feet in hot water, and cover the patient with a sheet and several blankets. The fomentations should be frequently renewed, slipping them out and in under the blankets, avoiding exposure to the patient.

The articles required for a fomentation are very few and simple. Any old flannel cloth, an old woolen undergarment, wrung out of hot water, and folded in a dry flannel or towel, will do if nothing else is at hand. But every home should be supplied with a set of fomentation cloths. Get two single blankets, one all wool, and the other half wool. Each blanket will make four fomentation cloths. The half-wool absorbs water readily, while the all-wool does not. So that the half-wool blanket should be used to make the cloths to be wet and the all-wool one for those that are to be used dry, in which the wet ones are to be folded. The cloths should be folded to suit the part to be treated. For the spine, fold to six or eight inches in width; for the chest, or stomach and bowels, fold once in each direction; for the stomach and liver, fold to three thicknesses in one direction, and one in the other. The most convenient method of heating the fomentation in the home is by wringing the cloth out of either hot or cold water, and laying it on a hot cook stove, or laying it in a steamer over a kettle of boiling water until it is heated through. The fomentations can be prepared more quickly in this way than by any other method. The hot cloth should be folded in the dry one in such a manner that there will be one thickness of dry cloth between it and the patient's body when applied. The fomentation should be replaced by one newly heated at intervals of three to five minutes for a stimulating effect, the application should be very hot, frequently renewed, and continued not more than ten or fifteen minutes. Each application may be alternated with a short cold compress, or a piece of ice quickly rubbed over the surface, always ending with the cold. For a sedative effect, or the relief of pain, the application may be continued half an hour or more with benefit.

A SPRING LECTURE

BY M. CHRISTINE MORRISON

"THERE, that's done," and Marion sank into a chair with a sigh of relief and took off the dusting cloth which fantastically adorned her head.

"What's done?" inquired her sister Bird, withdrawing for a moment a very dishevelled head from a large chest before which she was kneeling.

"That cellar," said Marion. "I've dreaded the job for the last month, and now it's done and well done, too, if it is me that says it," with a tired disregard for grammar.

"Well," said Bird, plunging once more into the depths of the evil-smelling trunk, "I wish I were done. I'll

confess it is bad enough to clean up a a dirty cellar, but it doesn't hold a candle to clearing out such a drug shop as this, some of it been shut up for a whole year, too."

"I'd like to know why in this world you didn't take that out into the back yard before you began? Talk about a drug shop! Phew! it smells like one of our old chemical laboratories at college."

"You needn't talk," and Bird reappeared to cast a reproachful glance at her sister. "If you had to stand over these things for a whole morning as I've had to, you might be allowed to make a few remarks."

Bird was about to disappear once more when a fresh young voice from the door arrested her attention.

"Why, Birdie, what's up? What are you girls doing, cleaning house? What kind of a compound are you putting into that box? My! but it's odorous."

"Good morning, Sue, come in. Yes, we are trying our hand at it. You see mother went East last fall for a rest, and Marion and I have been trying to meet household emergencies. This is about the time mother usually cleans house, but it's my private opinion she must clean all the year round, for she never seemed to unearth such a mess as we have. Mame's cleaned the cellar, and I have worked over these old furs and flannels until I'm ready to drop. Marion, do get some lunch for us, like a good child."

"But what makes it smell so?" asked Sue, not yet recovered from the first whiff.

"Smell! I should think it would smell. There is turpentine in some, and kerosene in others, pepper in those, and camphor balls in all. I don't believe a moth could get within three yards of the box and live. I presume if she had known of anything else smellable, mother would have ordered it put in."

"Wait until I tell you something, and then you try it as an experiment," laughed Sue. "Two years ago my mother attended what the rest of the family called a "Housekeepers' Convention," and there she lost a lot of her old ideas, and gained some new ones. She used to pack her furs and flannels in all kinds of vile-smelling stuffs. O those boxes! they were the bugbear of spring. The cleaning was bad enough, but nothing compared to that. Now we have no trouble at all with them."

"What do you do?" queried Marion, pausing in her task of setting the table.

"We wipe out the boxes with turpentine, going into every crack and corner thoroughly, then line the box with newspapers, pasting in the corners tightly. The bedding, clothes, etc., are piled in with newspapers slightly touched with turpentine between the layers, the box is nailed up, paper pasted over the outside cracks and around the cover, and there you are till fall. When the boxes are opened in the fall, you have no odor except a very faint turpentine smell which is not at all unpleasant. Sometimes mother uses the papers without the turpentine."

"I'm going to try that this very day. Mame, you may help me turn these spicy fragments outdoors."

"By the way, girls, speaking of housekeeping reminds me; did you go to Mrs. Staines's lecture last Thursday?"

"No," said Birdie. "I was down to the mission all the afternoon helping with the Mothers' Club, and was too tired to go after I got home. Marion was reading a new book and found it more interesting than any lecture on household topics, especially as she has no intention of taking up that line of work very soon."

"All the same you would have heard something both interesting and profitable had you gone. I certainly learned to view some things in an altogether different light."

"Come to lunch, girls," called Marion. "Stay, Sue, and tell us about these modern theories. You always were a crank on the subject anyway. When you get married, your house and children, I expect, will be immaculate, and everything will be done like clockwork. Bird's another. As for me, I should die of the monotony of it all, — getting three meals a day, dusting, sweeping, washing dishes, cleaning lamps, and all that. Bird says that all the trouble with me is I haven't seen the 'glory' side of it yet. Well, I've seen enough of it while mother has been gone to make me wish she were back."

"Mame stop chattering and let Sue give us a synopsis of the lecture."

"Well, she started out by saying that good housekeeping did not consist altogether in being able to cook food, to keep your drawing room in the best of order, or to embroider dainty doilies for the embellishment of the lunch table, though these may all be factors in making home pleasant. The thrifty housewife must be able to make the plainest kind of food appear appetizing, must be able to serve her choicest salads with a dainty wreath of green around the edge of the platter, must make her omelets look as enticing as a golden dream, and all the table appointments not only neat but wholly beautiful. She must look well to the ways of her household in all things, preparing for the changing of the different seasons, and using correct taste and sound judgment in all her arrangements from attic to cellar. Apropos of the present circumstances, she told how each season brought its own particular duties as well as its own peculiar pleasures, and to no one does this statement more strongly appeal than to the housewife."

"Now, that's bringing it down to a practical point," said Birdie. "We are interested in that side of the question just now. What did she say about spring cleaning."

"I've got the cellar clean," cried Marion. "That is one of the first things the receipt book says should always be attended to."

"Yes, she mentioned that as one of the first and most important. But she said that if people would keep their cellars in a sanitary condition all the year round, there would be no need of making such a terrible outcry in the spring. 'Some persons,' said she, 'think the cellar altogether beneath their notice. As a consequence, potatoes are left in one corner to sprout long sickly stems; in another, some cabbage leaves are rotting; gravy and milk are slopped over on swinging shelves to become moldy; apples are not sorted and the rotten ones thrown away; while a carrot or beet lies here and there adding to the general decay which generates disease, causes foul gases to penetrate the pretty bedrooms, the immaculate drawing room, the cozy sitting-room, and the spotless kitchen. In fact, the cellar should be visited every few days, and not a particle of vegetable or animal matter left around. The shelves should be scrubbed with soapsuds or soda water, the windows opened wide, and the fresh air and bright sunshine given free access.'"

"Oh dear me, why didn't you come around months ago and tell us all this," sighed Marion, looking dolefully at her hands. "If mother could have seen the stuff I took out of that cellar this morning!—" and she shook her head in mute eloquence.

"Then she spoke of the kitchen," continued Sue, laughing at Marion's gestures; "advising very great care in emptying dishwater into the sink, in leaving damp brushes and wet cloths in the closed cupboard under the sink, in emptying and wiping out the woodbox every day or two, and in going through the cupboards and pantry with a damp cloth, carefully removing stray bread and cake crumbs or anything else which might decay if overlooked. The refrigerator should be well washed in soda water, the shelves and ice can removed, and the whole interior well scrubbed. Leave it for an hour or so to air thoroughly before replacing the shelves and closing the doors. Thus treated each week with thorough airing and an occasional wiping out, your refrigerator will be sweet all the time."

"Oh dear, what a lot to remember," sighed Birdie. One could hurry, hurry all day long and never get it done."

"Pshaw, Birdie dear," laughed Marion. "You are not supposed to carry all this out in practice. I'd just like to take a peek into Dr. Staines' own house. I'll warrant the corners aren't so very clean, and that the dust is inside as well as outside." "Yes very likely you are correct, for she said she would much rather have dust on her drawing-room table than rotting vegetables in her cellar or a moldy rag in her kitchen.

After this she took up a lot of minor points, "For instance, getting garmetns ready for wear before thye are called for. Her mother whom she evidently considers one of the finest housekeepers in the land, always has her summer sewing done in April, and her winter sewing in September. Then when hot or cold weather comes on suddenly, the family are not clamoring for garments which are not forthcoming."

"How very touching!" from Marion.

"Then she spoke about the cleaning up of the yard," went on Sue, calmly ignoring the sarcastic remark, "not only in front but also the back as being special task, giving them exercese in the fresh spring air. Then, too, the washing out of the dish towels and cleaning-cloths when one is through using them, and hanging them in the fresh air to dry. She also laid emphasis on the importance of each day thoroughly airing the beds, which have, of course, been torn apart early in the morning; and the windows and doors throughout the house should be thrown open to let the fresh air and sunshine circulate and drive out the gases and germs accumulating from the registers, furnaces, coal stoves, etc."

"That woman ought to be president of the International Fresh Air Fund, and serve as a member on each of its numerous committees," declared the incorrigible Marion with a flourish of her napkin.

In speaking of the children she gave a number of splendid points on dressing, feeding, amusements, etc. Snying, said, in brief, that if the children were fed on plain, wholesome food, such as grains, fruits, and nuts, and were not allowed to eat pie, rich cakes, candies, meats, pickles, and all the rest of the list of the indigestibles, to the ruination of their stomachs, the destruction of their appetites, and to the detriment of their health in general; if they were dressed properly and allowed to the romp and work and run and shout in fresh air of autumn, winter, and spring, there would be fewer attacks of croup, less colds, and all the usual list of winter and spring diseases.

"You see, my dear Marion, the good housekeeper has to know a great deal about everything, and practice all she knows, if not more."

The Hundred Year Club

"Though I look old, yet I am strong and lusty,
For in my youth I never did apply
Hot and rebellious liquors in my blood
Nor did I with unbashful forehead woo
The means of weakness and debility.
Therefore my age is as a hoary winter —
Frosty but kindly." — *Shakespeare.*

A RECENT issue of the Chicago *Record-Herald* contains an interesting article entitled "Wonderful Old Folks Mentioned Last Year," in which we are told that thirty-five hundred persons in the United States passed the one-hundred-year limit during 1902. It is said that two thirds of this army of centenarians are women, so that for every man who has reached the one-hundred-year mark, there are two women; statistics of other countries prove this greater longevity of women to be the rule.

Among those to celebrate their one-hundredth birthdays during 1902, was Dr. J. P. Wood, of Coffeyville, Kansas, who is, no doubt, the oldest practicing physician in the United States if not in the world. He was born in Dublin, Jan. 4, 1802, and began practicing when only twenty-two years old. "But," he always adds when talking of it, "I have done mighty little practicing on myself." Dr. Wood attributes his long life and vigorous old age to the fact that he has lived plainly and temperately. He has indulged in no excesses, and shunned liquor and tobacco as he would deadly poisons. While a student at Transylvania Medical College, he was one of a number of students who pledged themselves to this manner of life. All but one of those who entered into this compact lived to be over seventy-five, five lived to be over eighty, one lived to be over ninety, and Dr. Wood, the sole survivor, is now in his one hundred and first year.

Francis M. Anthony, a resident of Bloomington, Ill., who celebrated the one hundred and second anniversary of his birth last year, is another enthusiastic advocate of temperance as a means toward long life. At the reception given in honor of his birthday, he told his friends with no little pride, that in all his life he had never tasted alcohol or tobacco.

One of the most interesting old ladies who passed away during the year, was Señora Castalina Flores. She died at Pasadena, Cal., at the remarkable age of one hundred and seventeen years. In all this long life she had scarcely been out sight of the San Gabriel Mission.

Mrs. Mahala Waters, who is said to be the last of the twenty-five girls selected by the mayor of Washington to assist in receiving General Lafayette, in 1825, when he was the nation's guest, died at the capital in October, 1903.

Alexander Gunn, aged one hundred and fourteen, and his wife, who counts

her age at one hundred and four years, were still living at Harrington, Kans., in March, 1902. They have been married seventy-five years, and were supposed to be the oldest married couple in the United States. This honor seems, however, to be claimed by Mr. and Mrs. Valentine Orlik, of Chicago, both of whom are centenarians and who celebrated the seventy-ninth anniversary of their marriage in January of last year.

Mrs. Charlotte Goodman, Aged One Hundred and Eight Years, Hamilton, Ontario.

Mrs. Charlotte Goodman, of Hamilton, Canada, was a child of seven when the nineteenth century opened. She has outlived all but one of a family of fourteen children, and has held the the fourth generation of her descendants upon her knee.

Old Age in Spain.

A number of the Spanish municipalities announced that beginning with Jan. 1, 1901, pensions would be conferred upon all persons within their respective localities who had reached the age of one hundred years.

The announcement brought forth from their seclusion hundreds of centenarians.

At Seville there was a beggar in his one hundred and eighth year; Barcelona boasted of a farmer one hundred and sixteen years of age, while Valencia rejoiced in a mason who claimed to have attained the great age of one hundred and thirty years, and was still hale and hearty. At the age of thirty-eight he was old in war against Napoleon, and remembers the principal episodes in the great Bonaparte's career. At Tortosa there has been baptized a girl, named Elisa Sagarra, in the presence of her mother, grandmother, greatgrandmother and great-greatgrandmother. The latter, who was ninety-eight years of age, stood as godmother.

Godbert Ratte, Aged One Hundred and Two Years, Woonsocket, R. I.

Godbert Ratte, of Woonsocket, R. I., began life with the nineteenth century, — being born Jan. 1, 1800,— and had outlived it two years when last heard from. His life has always been busy and active, out of doors for the most part; and he still takes a keen interest in what goes on about him.

Breakfast Breads[1]

Corn Puffs.

Beat together two and one-half cupfuls of unskimmed milk and the yolks of two eggs, until thoroughly blended. Add two cupfuls of flour, and one cupful of best granulated corn meal. Beat the batter thoroughly; stir in lightly the whites of the eggs, beaten to a stiff froth; turn into heated irons, and bake.

Corn Dodgers.

Scald one cupful of best granulated corn meal, into which a tablespoonful of sugar has been sifted, with one cup of boiling milk. Beat until smooth, and drop on a griddle, in cakes about one inch in thickness, and bake slowly for an hour. Turn when brown. If preferred, the baking may be finished in the oven after the first turning.

Hominy Gems.

Beat one egg until very light, add to it one tablespoonful of thick sweet cream, a little salt, if desired, and two cupfuls of cooked hominy (fine). Thin the mixture with one cupful or less of boiling water until it will form easily, beat well, and bake in heated irons.

Sally Lunn Gems.

Beat together the yolk of one egg, two tablespoonfuls of sugar, and one cupful of thin, ice-cold, sweet cream. Add slowly, beating at the same time, one cup and two tablespoonfuls of sifted Graham flour. Beat vigorously, until full of air bubbles, add the white of the egg beaten stiffly, and bake in heated irons.

Cream Corn Cakes.

Into one cup of thin cream stir one and one-half cups of granular corn meal, or enough to make a stiff batter; add one third of a teaspoonful of salt; beat well, drop into heated irons, and bake.

Cream Graham Rolls.

To one-half cup of cold cream add one-half cup of soft ice water. Make into a dough with three cups of Graham flour, sprinkling in slowly with the hands, beating at the same time, so as to incorporate as much air as possible, until the dough is too stiff to be stirred; then knead thoroughly, form into rolls, and bake.

Hoecake.

Scald one pint of white corn meal, with which, if desired, a tablespoonful of sugar and one-half teaspoonful of salt have been mixed, with boiling milk, or water enough to make a batter sufficiently thick not to spread. Drop on a hot griddle, in large or small cakes as preferred, about one-half inch in thickness. Cook slowly, and when well browned on the underside, turn over. The cake may be cooked slowly until well done throughout, or, as the portion underneath becomes well browned, the first brown crust may be peeled off with a knife, and the cake again turned. As rapidly as a crust becomes formed and browned, one may be removed, and the cake turned, until the whole is browned. The thin, wafer-like crusts are excellent served with hot milk or cream.

[1] From "Science in the Kitchen" and "Everyday Dishes" by Mrs. E. E. Kellogg.

EXERCISES FOR THE SICK

Have you been ill, and are you convalescing? Do you want to regain your wonted health speedily? Then practise physical culture for the sick.

Physical exercise for a man not yet out of bed, even though recovery from a prolonged illness has set in! Certainly; why not? Do not persons who are not sick abed take physical culture in order to secure better health, which is another way of saying more strength? And as comparatively well men are made healthier by proper exercise, doesn't it stand to reason that exercises, devised especially for convalescents, will materally aid you in getting on your feet once more and the more quickly land you in your office?

Of necessity your blood has become sluggish while you languished in your illness; but now that the fever, or what not, has left you, and the doctor declares that you are on the high road to recovery, it is incumbent upon you to stir the blood in order that it may gradually bound through your body as was its wont, and furnish strengthening food to the tissues that have been wasted by disease and disuse. And you can do this expeditiously and without any danger of overexertion if you'll take physical-culture exercises.

Of course, you must remember that you have been ill, in a sense are still ill, and you must be careful of what strength you have left. In other words, you must be extremely cautious not to overdo any of the exercises.

If, when you begin, you find that you are tired after performing one of the gentler exercises once, stop short right there. Do not think of exercising again until the next prescribed time for exercise comes around.

Then, if you are fagged after the second performance of an exercise, stop and lie down again. Likewise, when first starting, do the exercises with as little exertion as possible, and as you find yourself becoming stronger, increase the energy that you put into them.

Do not be discouraged if you discover that you are able to do an exercise only once or twice before tiring. Even such seemingly insignificant exertion will be of great benefit.

Just one performance of an exercise will send a sick man's blood pounding along more rapidly, and will quicken his breathing. Quickened breathing means more oxygen for the blood as it flows through the lungs, and the more oxygen from the air one can get into the system the sooner will health be recovered.

In order to get this highly necessary supply of oxygen, you should see to it that the sick room, which should be thoroughly ventilated at all times, has a bountiful supply of new air immediately prior to begining the exercises. Physical culture taken in a room redolent with the contents of many medicine bottles is worse than no exercise.

The proper time to exercise? — Either an hour before or an hour after each meal.

An hour before will give the blood plenty of time to quiet down and be ready to rush to the stomach to take up the task of digestion. An hour after will not interfere with the process of digestion by distributing the blood to the various parts of the body being exercised.

This rule should be rigidly observed, for, above all things, a convalescent needs to assimilate food properly so

that he shall get all possible strength therefrom.

Also, in order to reap the best possible results, you should approach the exercises in a spirit of pleasure, and not with the idea that they are drudgery. Recall your former healthy state. Say to yourself: "I wonder if I can do this or that as I used to;" and then take a curious delight in trying to do it.

If you can't execute the thing off hand don't let that give you the blues. Be cheerful in the thought that, maybe, you can do it all right next time.

And now to the exercises, constantly bearing in mind that you must stop the second you feel tired, even though you have scarcely begun one exercise.

Exercise 1. It is a well-known physiological fact that when a healthy man lies down, his lungs do not take in as much air as when he stands. Another axiom in physiology is that a sick person uses only about one half of his lungs, often only one third.

Therefore, when you find yourself convalescing, the first thing you should do is to develop your power of lung expansion, which illness has lessened. You should send fresh air to all the different parts of the lungs, and you can do it in this way: —

Lie flat on your back in bed, with your body relaxed and at entire ease. Inhale all that you can, hold your breath as long as you can without becoming dizzy, and all the while tap gently over your chest with lightly clenched hands.

The tapping will loosen and make more pliable the lung tissues, and thereby cause air to creep more easily throughout the lungs.

Exercise 2. This exercise is splendid for stomach and abdomen. If your sickness has left you without relish for food it will give you a good appetite. If your appetite is well-nigh voracious, as is frequently the case with convalescents, it will aid your digestion.

Get your wife, nurse, or some friend, to place two large pillows back of your head and shoulders. With legs straightened out, lie perfectly comfortable. With thumbs interlocked and the fingers of the right hand resting on those of the left, stretch your arms behind your back.

Then draw the arms forward, and as you do so, sit up straight. At first bring the hands only to the knees, but as you gain strength try to reach the toes with the finger tips.

At first, also, hold on to the knee caps as you gradually lie down. When stronger you can try sitting up with the arms folded on your chest, and descend while in the same position, and you can also discard the pillows.

If you are very weak, you can do this exercise by drawing up the knees, and clasping the hands under them, pull yourself up to a sitting posture.

For a variation of this exercise, and for strengthening the side muscles of the abdomen, instead of the front and back muscles as in the original exercise, hold your outstretched arms straight in front of your body on a level with the shoulders and have the palms touching.

Gradually describe the biggest possible arc that you can with your arms, always keeping them on a level with the shoulders. As you do so the body will be twisted sideways at the abdomen.

As you become stronger twist the body of your own accord, and keep the arms folded over the chest. If you find that it is too hard work to do the exercise with the arms outstretched, turn the body sideways while holding to the sides of the bed with the hands.

Exercise 3. Lie flat on your back, body comfortable and relaxed. Draw

up the knees, keeping them together, to the point where they can be reached without undue exertion by the hands. Also see that the feet are flat on the bed.

Then gradually let the knees fall apart as far as they will. Place the flat of the hands on the outside of the knees, and with the legs entirely relaxed and offering no resistance except their own weight, push them together.

As your accustomed vigor returns, resist with the knees while the hands are pushing them together. Exhale as the knees are brought together, and inhale as the legs fall apart. This exercise is good for all the muscles along the inside of the arm, for many of the chest muscles and for the outside of the legs between the knees and hips.

In order to bring into play the muscles of the inside of the leg, the outside of the arm, and the shoulders, place the palms of the hand on the inside of each drawn-up knee. Pressing only with the palms and resisting with the legs, press the legs apart.

Inhale as the legs fall apart, and exhale as they are coming together in spite of resistance by the hands.

Exercise 4. Lie flat in bed on your back, with the body at perfect ease. Raise the arms straight up from the shoulders, at the same time raising the shoulders as much as you can.

Imagine that you are stretching your arms and shoulders in order to grasp a thousand-dollar gold certificate just suspended above your normal reach. This exercise is splendid for the shoulders and the side walls of the chest.

Exercise 5. Lie flat on your back, hands under the hips, and legs together all the way to the toes. Then raise the legs off the bed as high as you possibly can. Do not bend the legs.

Perhaps at first you will be able to raise the legs scarcely a foot, but even that will be of benefit, and after a while you will find that you can make a right angle with your body. This is excellent exercise for the abdominal muscles, from the groin up, and it strengthens weakened stomach and abdominal linings.

Exercise 6. While lying flat on your back, draw up the feet close to the hips. Place the hands, palms downward, firmly by the sides of the body at the hips.

First, try to raise the hips from the bed, and later on, on the same supports, raise up all of the body except shoulders and head. As more strength returns, execute these two exercises with the arms folded over the chest. And when you are well and strong, you can raise the entire body on the feet and the back of the head.

When just the hips are raised, the muscles in the back of the hips and the small of the back are brought into play. When all of the body except the head and shoulders is clear of the bed, the back is exercised up to the shoulders; and when the body rests on the back of the head and feet only, every back muscle all the way to the neck is actively engaged.

Exercise 7. This exercise is for the upbuilding of the various front, back, and side muscles of the neck. Lie on the back of your head and the flat of your back, with legs touching and arms at your sides. Move the head first to one side and then to the other as far as possible, every time seeing to it that one ear is completely buried in the piliow.

Raise the head from the pillow as far as possible and look at the ceiling. Hold for a moment and then let the head fall back. Next, press the head hard back onto the pillow and hold for a moment; and lastly, with the head on its back, look behind as far as you can. — *Anthony Barker, in N. Y. Sun.*

General Health Topics

Less Work for the Doctors.

Far more important and encouraging as "signs of the times" than any developments in politics or industry are the advertisements of physical-culture systems and health foods and other means for promoting a sound body. The enormous increase in this kind of advertising within the past five years means a sudden enormous increase in an intelligent public interest in health. And that means oncoming generations with purer, stronger blood, and therefore with clearer, more active, more courageous brains. And that, in turn, means that all the problems of living,—personal, social, political, —will be met and taken care of.

Some one once said that the peoples of Asia were enslaved because they did not know how to say "No." But back of this vaccillation lay poor health — the universal Asiatic complaint, due to a universal neglect of health, mitigated though it was by the sanitary regulations imposed under the guise of religious ordinances. No physically robust people was ever enslaved or was ever retrogressive. The first warning of the downfall of the Roman Empire before the Northern races was the throngs of weaklings in the pestilence-haunted cities of the Mediterranean.

Heretofore in the world's history civilization has meant decay, because it has meant taking a nation's best from the healthful open-air toil of the country, and degenerating it in noisome cities where the very ideals of happiness involved destruction of health.

And our civilization of overabundant food, of exercise-ending street cars, and of all manner of muscle-saving and therefore of muscle-decaying machinery would have meant speedy ruin to us of the modern world had it not been for the progress of sanitary science.

The first fruit of this progress has been the doctrine of the relative importance of drugs and the passing of the "family doctor" — two developments that are so rapid that we hardly appreciate them as yet. The other day Sir William Treves, the eminent English surgeon, announced what England seemed to regard as an amazing discovery, that pain is not an evil, but a good — a friendly sentinel rousing the garrison to repel the invader, disease.

It is a grand advance that we have made in discovering that the body does not wish to get sick, does not accidentally get sick, but on the contrary wishes to stay well, and will stay well if its owner is not ignorant or reckless. This discovery will make two great changes in our system of education.

The first will be the teaching of breathing. To breathe properly means health, long life, capacity for work. Yet to-day how many people know how to breathe? How many people of the millions who are anxious that their children should learn spelling, reading, ciphering, and manners, give a thought to their children's learning to breathe?

The second great educational change will be the matter of diet. In this country and in nearly all of Europe except France we are still eating the things our forefathers managed to digest when they were toiling and sweating terribly in the open air instead of sitting at office desks.

Nature made the appetite for food keen because she had to deal with conditions in which the food supply was short and hard to reach, and if the appetite had not been keen, the animal would have easily given over the struggle. We ignore the changed conditions and use nature's no longer necessary bait as an excuse for stuffing ourselves three times a day and eating between meals. If it wern't that sanitation is much better nowadays, and cooking also, the consequences would be even severer than they are. As it is we suffer a great deal from "overwork" and "nervous prostration," don't we?

It is pleasant to eat to satiation. It is comfortable to take on exercise and breathe lazily in one corner of the lungs. But it isn't the way to be long-lived and healthy. And it is the way to let the other fellow who breathes and exercises and eats properly, distance us.— *Saturday Evening Post.*

True and False "Tonics."

The spilling of a little ink may sometimes upset a republic or topple a throne. That depends on the shape of the strokes and curves, parabolas and pothooks, it is made to trace on the paper. A good deal of very good ink is spread on paper instead of being poured into the gutter, where it would at least do no harm and tell no lies. In that case it would only be wasted, whereas a good deal of medical ink is so much worse than wasted.

Take the talk about some popular remedies. Oceans of ink have been squandered on the subject of "Tonics."

Whatever kicks up a certain kind of temporary row in the human system has acquired the title of "tonic." Nitroglycerin is a tonic, after its own peculiar fashion. It can be made to "boom" things in its immediate vicinity for a brief time, and so it is given in many of those sudden emergencies, like heart failure, angina, collapse and dangerously severe syncope. In fact, many practitioners, when confronted by a case that seems a bit mysterious and in which there is sudden and severe depression, whether from shock, loss of blood, or "trophic inhibition," fall back upon their hypodermic syringes and tubes of trinitrin. If this does not resuscitate the victim, it is about time to notify the undertaker. The corpse will be forthcoming.

The modus operandi is something like this:—

When the circulation, for one or another cause, gets panicky and makes a sudden rush for the central citadels, the heart and brain, thus endangering the entire structure, a very little cartridge of dynamite, exploded anywhere under the skin, or in the stomach, brings the stagnant fluid back to the surface, relieving the overstrain on the central organs in time to save them from damage, rupture, or collapse.

But it is a misuse of words to call this result tonic; it is simply revulsive. A real tonic is restorative, not a temporary stimulant. It builds, instead of booming. It strengthens, instead of merely exciting. It feeds, instead of frightening the vital forces. A tonic, in the true sense, is food, a nutrient. It must nourish. It does not follow that all foods are tonics. In fact, there are many conditions in which foods are only added impedimenta, because they cannot be utilized. It is the old story of leading the colt to the trough but utterly failing to make him taste the water.

Another very common misuse of the term "tonic" consists in ascribing tonic properties to drugs and prepara-

tions which do not add the slightest fraction of fresh strength or vigor to the system, but merely call out and utilize the reserve forces which are normally present in every healthy organism. When a bank loses its reserve fund it is well along on the road to suspension. It is not different with the human system. When a tonic proves to be merely a special draft on a vital fund, that is already on hand and being held for use in those special emergencies to which all human beings are subject, it is a false tonic. In other words, it is not a tonic. A large majority of all reputed tonics now in such extensive use belong to this class. They are special requisitions, and the reactions they induce should be classed as vital overdrafts. Only those drugs, "bitters" and "vegetable" restoratives should be called tonics which supply some form of specially needed nutritive. Outside of drugs, certain forces and processes are properly classed as tonic, because they develop or increase muscular or nerve strength, such as exercise, electricity, massage, etc.

The Use of the Thermometer in the Home.

When I was practicing medicine in the country I was continually coming in contact with overheated rooms. This was especially true during the winter. After a drive of three or four miles through the crisp wintry air, I would hitch my horse before some house, and enter to find the room stifling hot. Sometimes it would be past endurance. Patient and attendant would simply be sweltering.

They did not realize their condition. Staying indoors in a temperature of ninety degrees or more, the combustion within their bodies was reduced to the lowest ebb, and thus they did not realize the heat in the room.

Everywhere I went I found this same state of affairs. Great wood stoves stuffed full; large, bulky bodied base-burners filled to the brim with coal; rooms hot night and day.

I began to persuade these people to use thermometers against overheating. I have introduced thermometers into many households, making them self-conscious as to the degree of heat they were using in their houses.

Afterward I practiced in the city. I found the public offices in the same condition. Overheated, overheated, everywhere overheated. The living rooms of private dwelling houses in the city were a little better in this respect, but it still remains a habit among the American people which it is highly important to correct.

The living rooms, the working rooms, the offices, are too hot for human habitation. Overheat breeds catarrh, makes pneumonia prevalent, and prepares the system for all manner of winter diseases.

In Germany and Russia people live in cold rooms. They are thus hardened against the climatic changes and are not so susceptible to disease as we are.

We use twice the fuel we need. This is not only a waste but a great damage. Our burying grounds are made larger every year to accommodate the remains of those who have died as a direct result of using too much fuel. If the money that is wasted in this way could be carefully invested it would be an amount sufficient to keep all the paupers in our land.

Use a thermometer. Buy yourself a little thermometer. It need not cost more than a dollar, or possibly a dollar and a half. If you use it right it will do you a great deal of good.

Hang it up in your living room. If you have an office, hang another one in your office. Now you just watch that little thermometer. It will earn the price you paid for it inside of a week if you work it right.

You just consult it five or six times a day, and notice how hot the room is where you are living or trying to do business.

Don't let it go above 75.° It would be better if you kept it down to 70.°

If you are an invalid it is all the more important that you keep the room cool. Don't simmer and sizzle in a hot stuffy room. If you do, you will never get well. You may be well now, but if you spend the winter in such a room, you are very likely to be sick before spring.

Keep the room cool. Make the body keep itself warm. It will very quickly become accustomed to a cool room if you will start out that way.

The temperature of the body is about 98½° F. It constitutes a very wholesome activity to the body to be obliged to maintain that temperature surrounded by an atmosphere of about 70° or 75.°

But if you provide your body with an atmosphere of 85° or 90,° as many do, you cheat your body out of the necessary activity of keeping itself warm. This clogs up the system with material which would otherwise be burned up.

It isn't necessary to wait for some one to get sick in the house either. Every doctor has a few families that recognize him as their regular family physician. This makes the doctor in part morally responsible for the health of the household. He ought to consider himself their adviser in all matters pertaining to health and the prevention of disease.

With this in mind, he ought to see to it that every one of his families is provided with a proper thermometer, and that they are instructed as to the proper temperature of living rooms and sleeping rooms. The sleeping room should be ten or twenty degrees below the living room, with plenty of fresh air. The thermometer can also be made useful in getting the temperature of the bath. In the summer time the thermometer can be hung outdoors in some shaded place, perhaps on the porch. It should be consulted every day to guard against overheating. When a high degree of temperature is noted early in the morning everybody should be careful about eating and overexertion. On such a day in a rapidly rising temperature great care should be taken to keep the head cool. In a rapidly falling temperature the same care should be taken to keep the feet warm. As long as the head is cool and the feet warm there is little danger from heat or cold.

But one cannot trust the senses alone, as to the temperature. The thermometer can be made a very useful safeguard, a cheap, ever-present weather bureau to predict changes.

A careful, intelligent mother thoroughly instructed in the use of the thermometer in a household can do more to protect her family against climatic ailments than all the microbe doctors in the world.— *Medical Talk.*

Wouldst thou lead a happy life?
To others happiness impart.
The happiness that we bestow
Returns to dwell within our hearts.
— *Calm.*

THE COMING OF SPRING.

THERE'S something in the air
That's new and sweet and rare —
A scent of summer things,
A whir as if of wings.

There's something, too, that's new
In the color of the blue
That's in the morning sky,
Before the sun is high.

And though on plain and hill
'Tis winter, winter still,
There's something seems to say
That winter's had its day.

And all this changing tint,
This whispering stir, and hint
Of bud and bloom and wing,
Is the coming of the spring.

And to-morrow or to-day
The brooks will break away
From their icy, frozen sleep,
And run, and laugh, and leap.

And the next thing in the woods
The catkins in their hoods
Of fur and silk will stand,
A sturdy little band.

And the tassels soft and fine
Of the hazel will entwine,
And the elder branches show
Their buds against the snow.

So, silently but swift,
Above the wintry drift,
The long day's gain and gain,
Until on hill and plain,—

Once more, and yet once more,
Returning as before,
We see the bloom of birth
Make young again the earth.

— *Selected.*

Maternal Nursing.

Practically all of the diseases of infancy, as well as a large majority of those of early childhood, are directly due to disorders of digestion resulting from improper feeding. Mother's milk is the ideal infant food, and has no perfect substitute; hence it is to be preferred to other forms of feeding in the absence of a positive contraindication. Human milk is the natural food for the infant, and is therefore best adapted to its digestive powers and capacities. The importance and necessity of breast-feeding cannot be too strongly stated to mothers who are capable of performing that function, and when they are made to realize its double value in giving to their infants increased power of resistance during the perilous period of infantile life, as well as assuring to themselves greater probability of a physiological process of involution, I am inclined to think that very few mothers will desire to be relieved from the duty. There are conditions, however, in which a mother should not be allowed to nurse her infant, much less requested to do so.

Holt says no mother who is the subject of tuberculosis in any form, whether latent or active, should nurse her infant; it can only hasten the progress of the disease in herself, while at the same time it exposes the infant to the danger of infection. Nursing should not be allowed where serious complications have been connected with parturition, such as severe hemorrhage, puerperal convulsions, nephritis or puerperal septicemia; where the mother is choreic or epileptic; where she is very delicate, since great harm may be done to her without any corresponding benefit to the child; where it is known that syphilis has been contracted late in pregnancy, since it is possible that the child may not be syphilitic. If, however, the disease was inoculated previous to or at the time of conception, the child should be suckled. In cases of chronic diseases of the skin, caries and chronic joint diseases, chronic rheumatism, pregnancy, abnormal milk, where it disturbs the digestion of the infant, and when it cannot be corrected by changes in the

mother's diet or faulty habits, and of course when no milk is secreted.

In addition to the above may be mentioned cases of abnormal or deformed nipples, where there is an involution or a flattening of the nipple, rendering the act of nursing very difficult or impossible. Such conditions can many times be remedied, if proper attention is given them during the late weeks of pregnancy, such as massaging the nipples, removing all pressure of clothing, and drawing them out by suction with the aid of a glass nipple shield.

The commonest form of difficulty met in the nursing mother early in lactation is eroded, cracked, or fissured nipples. These conditions can usually be prevented by proper care and treatment during the last month of pregnancy. The nipples should be gently massaged daily after having been cleansed thoroughly and anointed with cocoa butter or sterile olive oil. This insures a patulous condition of the ducts, renders the skin soft and pliable, and inures the nipples to the pressure effects to which they will be subjected in the act of nursing. It is to be remembered that the sore nipple is nearly always the forerunner of mastitis and mammary abscess, furnishing as it does the most favorable conditions for the growth and propagation of pathogenic organisms. The act of suckling is accompanied by pain which in some cases is so excessive as to necessitate the withdrawal of the child from the breast for an indefinite period. In the treatment the most scrupulous cleanliness is demanded. The fingers of mother and nurse should not come into contact with nipple or breast unless they have been thoroughly cleansed. The mouth of the infant should be gently mopped out with a ten-per-cent solution of boracic acid before each nursing. Immediately afterward the nipple should be cleansed with a saturated solution of boracic acid and patted dry; this may be followed by the application of cocoa butter or sterile olive oil, over which a protective film of compound tincture of benzoin may be placed, all of which should be carefully removed before each nursing.

It is much better, in obstinate cases, to withdraw the child from the breast entirely for a time, put on a tight bandage, and treat the nipples until healed, after which nursing can be again resumed.

The importance of regularity in nursing should be impressed upon the mother, and correct habits should be formed in the beginning, for upon it the health, development, and proper nutrition of the child will depend, as well as ability on the part of the mother to furnish milk that is normal in quantity and quality. Explicit instructions should be given regarding the frequency of nursing and the length of time the child should be allowed at the breast. Of course the directions should be sufficiently flexible to provide for the individual conditions and demands of mother and child, but much deviation will rarely be necessary. Unless contraindicated by the condition of the mother, the child should be put to the breast in six to eight hours after birth, and should not be given food of any kind during the interim. The custom of filling an infant's stomach with catnip tea, weakened whisky, bread water, fat meat, etc., deserves notice only for the sake of condemnation. If for any reason it is necessary to delay putting the child to the breast, it may be given a teaspoonful of sterile water at intervals of one or two hours to allay restlessness. I have frequently seen the wisdom of such a procedure demonstrated in cases

where the child was kept from the breast for two or three days after birth.

The child should be nursed at intervals of four or five hours for two days, or until lactation is thoroughly established, when the intervals should be shortened to two hours during the day, from 5 A. M. to 9 P. M., and once during the night. This rule provides for ten nursings in the twenty-four hours, each of which should be from fifteen to twenty minutes in duration. Where the conditions are normal, such regularity will promote healthy secretion in the mammary glands and perfect digestion in the child. After the fourth or fifth month the intervals should be lengthened to three or four hours, and nursing in the middle of the night entirely discontinued. It is essential to the mother's health and ability to furnish a good quality of milk, that she be relieved of all unnecessary worry and responsibility, and have six or seven consecutive hours of sleep at night. Hence the child should not sleep in the bed with the mother, but in a crib. One of the commonest forms of trouble comes from nursing the infant whenever it cries to quiet it. This will sooner or later result in acute or chronic infantile indigestion. It is by no means uncommon to find that a child is being nursed at frequent intervals during the entire night. The mother is simply increasing the trouble that she seeks to relieve. The milk may be so modified from violent emotional paroxysms on the part of the mother as to produce acute indigestion or severe nervous disturbances in the infant, from which convulsions, acute diarrhea, collapse, and death have been known to result.

The secretion contained in the mammary glands immediately after labor and until lactation is inaugurated, does not differ from that of the late weeks of pregnancy. The chief value of this secretion is its cathartic action on the child, due to the high per cent of salts causing free action of the bowels, and for this reason should be invariably utilized.

The secretion of milk is usually well established by the third or fourth day. The average daily quantity of milk secreted under normal conditions is, at the end of the first week, ten to sixteen ounces. By the end of the eighth week this quantity is doubled. From that time it increases but slowly, and at the end of the ninth month there is secreted thirty to forty ounces a day. The average quantity taken by the child at one nursing during the first week is one to one and a half ounces. The quantity is gradually increased until there is taken during the sixth to ninth month six to eight ounces. On account of varying physiological and pathological conditions in different individuals, and even in the same individual, the human milk is subject to considerable variation.

The real test of the mother's ability to nurse her infant is the physical condition of the child. During the first week of life the most important sign of insufficient food is the temperature. It is not unusual to find an elevation of from two to five or six degrees where there is an insufficient supply of nourishment. In the absence of positive signs of illness, a failure on the part of the child to gain in weight should be taken as evidence of inadequate nursing. The gain should not be less than four ounces per week, and if below that, an examination of the milk is called for. Other evidences of inadequate nursing are fretfulness, disturbed sleep, crying, irregular and unhealthy looking stools, and where prolonged nursing is necessary to satisfy the child. During

the later months the symptoms are those of general malnutrition, anemia, irregular bowels, delayed closure of fontanelles, delayed dentition, flabby structures, etc. In making an examination of milk, the entire contents of one breast should be obtained, in order to get results that represent the real composition of the secretion. A healthy mother with well-developed breasts that are full and tense at nursing time, whose infant suffers from indigestion, malnutrition, etc., is probably secreting an over-rich milk. In such case it will usually be found that the diet is chiefly nitrogenous, the habits sedentary, with very little open-air exercise, and that the mother is taking alcohol in some form, as a result of the mistaken notion that because the child is not doing well the milk must be poor. The indications call for a reduction of the rich, nitrogenous food, an increase in the vegetable diet, more exercise in the open air, and the complete withdrawal of alcohol. The condition is more serious when the milk is scant in quantity and poor in quality. This is generally observed in delicate, anemic women from whom it is often difficult to obtain a sufficient quantity of milk for examination. If there is not early signs of improvement as a result of treatment, nursing should be discontinued and artificial feeding substituted. Efforts should be made to improve the general health and nutrition of the mother. Exercise in the open air should be taken regularly as soon as her strength and condition will permit. Massaging the breast two or three times daily is an excellent stimulant, and takes front rank with many obstetricians.

Where the milk is simply deficient in quantity, the condition is easily remedied by increasing the liquids taken. If, however, the quantity is abundant and the quality poor, there is, as a rule, little hope for improvement, for the reason that the condition is generally seen in women who have been taking large quantities of fluids to improve the milk.

The question of weaning is an important one to which we can only give passing notice. Nursing should never be continued beyond the eleventh or twelfth month and, as a rule, not longer than nine months. The milk deteriorates in quality very rapidly after the eighth month, and has little nutritive value. Weaning should always be accomplished gradually, never suddenly, as is a rather common practice, unless conditions develop in the mother or child that demand an immediate withdrawal from the breast. During the fifth or sixth month artificial food should be substituted for one nursing daily. This should be gradually increased until weaning is accomplished.— *Dr. J. T. Scott, in Motherhood.*

TO "THE SUFFERIN' NEAT."

There was a little woman
In a very sorry plight;
For, strange to tell, this woman
Disliked to dwell with light.

She closed her blinds up tightly,
Then craped the windows o'er,
For fear the blessed sunshine
Would spoil her walls and floor.

This dainty little woman
Grew very pale and thin,
Just like the weak potato sprouts
In cellars deep and dim.

Ah, silly little woman!
You have faded out of sight,
Because you would not let in
The sweetness of God's light.

—*Farm and Fireside*

EDITORIAL

THE EFFECTS OF A GENERAL APPLICATION OF COLD WATER

WHEN cold water (70° to 50° F.) is applied to the general surface of the body, the action of the perspiratory glands is instantly checked. The blood vessels are contracted, the skin becomes pale, and the blood is diverted to the internal portions of the body. The natural result is a cooling of the surface and a slight elevation of the temperature of the internal parts. Such a general application would be exceedingly dangerous were it not for the fact that the portal veins are capable of holding all the blood in the body; so that when the blood is prevented from entering the surface vessels, an outlet is found in the large veins of the abdomen. Were it not for this provision, cold applications would be likely to produce rupture of the delicate vessels of the brain, lungs, and other internal parts. Such accidents rarely happen, but there is a possibility that it may happen in certain diseased conditions, as in apoplexy, a state of the body in which the blood vessels have been narrowed and weakened. In such cases the inrush of blood following the application of cold water may be so rapid that a rupture of the blood vessels of the brain may occur before there has been time for compensation through the accumulation of blood in the abdominal veins.

If the cold application is relatively short, that is, if the application is interrupted before the subject has become thoroughly chilled and exhausted, the blood vessels of the skin soon become freely dilated, as shown by reddening of the surface. The skin is filled with blood which, as it flows into the surface vessels, gives rise to a very agreeable sensation of warmth. If the surface is quickly dried, rubbed, and covered, the reddening of the skin continues for a long time. This great movement of blood toward the skin is, of course, accompanied by a great diminution in the amount of blood in the brain, lungs, stomach, kidneys, and other deep-lying portions of the body.

There are other important effects which follow a general application of cold water to the surface, which should be noted. The most important of these are fuller and deeper breathing, slower but stronger pulse, greater activity of the brain and nerves, increased strength and activity of the muscles, increased clearness of thought, and ability for mental application. In fact, the activity of every bodily function is increased. Every organ, every cell of the body works more vigorously and efficiently. The stomach is prepared to make more and better gastric juice, the liver does its work more readily and efficiently, the kidneys secrete more freely, the skin is more active, sensible perspiration sometimes occurring; all the vital machinery runs at a more active and energetic rate.

The natural consequences of this are a feeling of buoyancy, exhilaration, energy, and strength, increased appetite, increased power to digest, increased intestinal activity. These effects are truly wonderful and cannot be so fully produced by any drug known to man, nor by any other application than the general cold bath. These effects result, not from harmful stimulation, but through quickened activity of the forces by which the tide of life rises higher, the wheels of life run more smoothly, and all the life processes are facilitated.

The effects of the cold bath are well recognized in our everyday experience. When one is exhausted with labor and

heat, simple bathing of the face and hands brings great refreshment. An application made to the whole surface of the body operates in precisely the same way, only on a larger scale, since the surface to which application is made is so much greater. The exciting effect of the cold bath is instantaneous. As soon as the cold water comes in contact with the millions of nerves distributed in the skin, invigorating impulses are sent inward to the nerve centers from which these nerves arise, quickening their activity and setting into more active motion all the machinery of the body.

A cold bath influences to a remarkable degree the process of heat production in the body, increasing the amount of heat produced, and hence the rate at which the tissues are consumed to two or three times the normal amount during the application. When, however, a cold bath is continued for so long a time that the temperature of the blood is lowered, the production of heat is diminished through the cooling of the muscular tissues and of the parts which are active in heat production.

We may briefly summarize the effects of a general cold bath as follows:—

1. The brain and nerves are excited, and the mind rendered clear and buoyant.

2. The muscular system is energized, the power of the muscles being increased and movement made easier.

3. The heart's action is slowed and strengthened.

4. The breath is deeper and fuller.

5. The circulation in the skin is first lessened, then greatly increased by the return of blood to the surface on reaction.

6. Heat production is increased, and after reaction occurs, heat elimination is also increased, so that the normal balance is quickly regained.

7. A prolonged cold bath (5 to 15 minutes) lowers the temperature of the body by cooling the blood.

8. The general effect of a short cold bath (5 seconds to 2 or 3 minutes) is tonic and invigorating.

9. The general effect of a very prolonged cool or cold bath (5 to 30 minutes) is depressing.

10. The tonic effects of a short, cold bath depend upon the reaction of the body, while the depressing effects of a prolonged cold bath depend upon the abstraction of heat, the lowering of the temperature of the blood, and the exhaustion of the nerve centers upon which reaction depends.

The cold bath is one of the most valuable remedies known to man, but it must be administered skilfully as it may do harm as well as good. The cold bath should always be followed by a complete reaction. An incomplete reaction is indicated by headache, cold hands and feet, nervousness, chilliness, depression.

THE PATENT-MEDICINE MANIA

It is a well-recognized fact that insanity of every form is increasing. One particular form of lunacy seems to be a wholly new product of the last half century. The ingenuity of the nostrum venders, displayed in the preparation of ingenious newspaper advertisements and catchy announcements of the marvelous properties supposed to be concealed in the packages labeled with their wares, has led to the development in thousands of men and women of the patent-medicine habit which in numerous cases has assumed the proportions of a genuine mania. Some persons have actually impoverished themselves by their prosperity for trying every new medicine the name of which appears in the columns of newspapers and popular magazines.

A case recently reported in the *Practical Druggist* is doubtless an extreme example, but many experienced physicians

might report cases similar, if not quite so extraordinary. This man swallowed in the course of a few years, in addition to several hundred gallons of Lithia water, 610 bottles and 182 boxes of patent medicines. The following is a partial list of the nostrums swallowed by this poor victim of misplaced confidence: Swamp Root, Celery Compound, Expectorant, Vermifuge, Kidney Cure, Peruna, Swayn's Specific, Omega Oil, Munyon's Remedies, Nervura, Skin Ointment, Magnetic Ointment, Cough and Catarrh Cure, Glycerine Tonic, Tar Tablets, Cold Cure Pills. "And yet—he died!"

The patent-medicine mania is a widespread malady. Many thousands annually die victims to the drug habit. The healthiest man on earth could not possibly abuse his constitution as do many of those who are victimized by the alluring representations of patent-medicine manufacturers, without breaking down his constitution within a few months or years. It has been proven that many of the above-named nostrums contain certain powerful and highly injurious drugs which cannot possibly be swallowed without the most pernicious effects upon the patient. The patent medicine is a plague far more deadly than smallpox or Asiatic cholera because of its insidious character. It is a delusive snare which presents death-dealing poisons under the guise of a healing balm.

HOW TO BREATHE

HORSES, dogs, and babies know how to breathe without instruction, but the majority of adults and even half-grown children are quite unacquainted with the art of physiological breathing.

In normal breathing the principal movement is at the waist. It is not only the chest which should increase in size, but the whole trunk as well. As the diaphragm contracts it moves downward, occupying a part of the space formerly occupied by the stomach, liver, and other organs. These are pushed down. The farther the diaphragm ascends, the greater the amount of air which can be drawn into the lungs. When the lungs are filled to the utmost capacity, as in full respiration, the chest first expands at the waist and then in its upper part.

Some suppose that the lungs are filled by the action of the abdominal muscles. In filling the lungs the diaphragm is forced downward in opposition to the abdominal muscles. The chest is emptied largely by the elasticity or contraction of the abdominal muscles which resist the diaphragm, thus diminishing the size of the chest. At each contraction of the diaphragm the liver, stomach, and other abdominal organs are compressed between the diaphragm and the abdominal muscles. The blood which they contain is thus forced into the chest cavity, and quickly finds its way to the heart to be again distributed throughout the body.

Deep breathing, then, is of the highest importance in maintaining the health of the stomach, the liver, and other abdominal organs. When deep, forceful respiration does not occur, the blood stagnates in the abdominal muscles and disease is the result.

The best means of inducing deep breathing is rapid walking or running. Special gymnastics are also useful for the same purpose. Any form of exercise which quickens respiration will encourage deep breathing.

This is a question of the highest importance, and should receive more than passing notice. Chronic invalids of all classes should practice deep breathing assiduously, not only during gymnastic exercises or for a few minutes daily, but systematically during their waking hours.

CHEESE BOTANY

It is probably not known to most of our readers, that cheese is not altogether an animal food. It is true that cheese is made of milk. It is often well filled with lively inhabitants,— mites or skippers,— but there is, besides, in cheese, a flora consisting of countless numbers of bacterial germs and molds of various sorts. The ripening of cheese is due to decomposition, the change which takes place being similar to that found in decomposing meat, in the production of ammonia, fatty acids, and a great variety of other decomposition products. According to the *Dietetic and Hygienic Gazette*, "The object of keeping cheese at certain temperatures is to provide the conditions most favorable for the growth of bacteria, without which the ripening process would not be possible. Nineteen varieties of bacteria have been found by Adametz to be active, usually, in the ripening of various kinds of cheese, some of them coming from the milk, or the vessels in which it was kept, others from the air, and labferment which had been added. In the course of time one variety or another predominates; some varieties disappear altogether, but on the whole, the total number of bacteria grows steadily and rapidly. Adametz, from a series of examinations made by him, estimates their number at 850,000 in one gram (one fourth dram) of ripe cheese, (or 25,500,000 germs in one ounce).

"Some varieties, like Roquefort, Gorgonzola, Stilton, etc., owe their quality not merely to bacterial action, however, but also to the influence of certain mold, or fungi. These can be grown on sterilized bread, and thus be obtained in pure culture. Roquefort, for example, is made by adding to the curd of ewe's milk a dough consisting of equal parts of wheat and barley flour with which yeast, and sometimes vinegar, has been incorporated. The mold formed on this dough, which is rubbed into a powder before being used, is found to consist of three fungi: The *Penicillium glaucum*, *Mucor Racemosus*, and *Oidium Aurantiacum*. This is the cause of the peculiar pungency and grayish-green or bluish veins and spots which characterize the above-mentioned cheeses. The first named of these fungi forms the mildew often seen on eatables, ink, shoes, and other objects which have been kept in warm and moist places. Another mold fungus, the *Aspergillus glaucus*, is also frequently met with in some cheeses. An undesirable parasite not uncommonly found living on overripe cheese is the cheese mite, *Acarus domesticus*."

These molds, as shown by Einhorn and others, sometimes take up their abode in the stomach, and are the cause of disease. They may even give rise to symptoms of serious poisoning. Certainly, one ought to be as loath to eat moldy milk in the form of cheese, as moldy bread, moldy fruit, or any other stale substance. Cheese is an unnatural food, and one which may well be discarded.

PORK AND BEANS

These two articles so largely associated together as a favorite dish with the working classes, and extolled for their strength-giving properties, are now charged with occasioning an epidemic of jaundice in a regiment of soldiers. The proof in the case was conclusive. As the pork and beans were eaten together, they were, of course, together held responsible for the disease; but from the fact that beans alone have never been known to produce any such disturbance, while pork is a notable cause of "biliousness," we should not hesitate to charge the jaundice to the eating of the pork rather than the beans.

ANSWERS TO CORRESPONDENTS

Lung Trouble.— Mrs. E. W. P., Donnybrook, asks if the coughing up of hard, mucous particles about three sixteenths of an inch long and one sixteenth of an inch in diameter, is indicative of serious lung trouble.

Ans.— No. These concretions are derived from the tonsil where they form in small patches. They do not come from the lungs.

Neuralgia of Heart.— Mrs. F. H., Lacon, desires advice regarding treatment for neuralgia of heart. Is also troubled with chills in one side of head. Kindly advise.

Ans.— This affection is probably not in the heart but the intercostal nerves in the neighborhood of the heart. The affection is often due to indigestion. In these cases there is also tenderness on pressure at the pit of the stomach close to the lower end of the sternum. Heat may be applied over the painful part by cloths wrung out of hot water, or fomentations, or a hot-water bag. The applications should extend around to the spine. It should be followed by a large heating compress covering the whole affected area.

Oatmeal.— F. N., Forida, inquires as to the best time to eat oatmeal mush, morning or evening. Also, for dietary for one troubled with indigestion.

Ans.— Oatmeal mush is an unwholesome article of diet and should never be eaten.

Indigestion of Lower Bowels — Wearing of Wool — Lame Feet — Stiffening Cords.— N. M. Minnesota, "1. What is the best treatment for indigestion of the lower bowels? 2. Should persons subject to rheumatism wear woolen underwear? 3. What is the best home treatment for lame feet? They swell some and can scarcely bear weight of body, no pain when sitting or lying (a young person). 4. What treatment when cords of the arms contract, draw the forearm up toward the arm, no pain unless straightened too much? Would electricity from a galvanic battery be good, or would steam baths be better?

Ans.— 1. The graduated enema. Begin with water at a temperature, of eighty-five degrees, lowering the temperature two degrees daily to sixty degrees. The quantity at first may be two or three pints, but should be very gradually reduced. Administer daily.

2. Woolen is not particularly curative. In many instances cotton flannel will be preferred, and is just as wholesome providing sufficient warmth is obtained.

3. Soak the feet in very hot water at night. then apply a light bandage in such a way as to slightly compress the parts. Wear a heating compress over all.

4. Thorough massage will probably relieve this difficulty. Steam baths would be beneficial, and electricity might be used with advantage if the muscles are weakened.

Baby's Cough — Asthma — Bedwetting — Tooth Powder — Lemon Juice — Beet Sugar — Fruit Bread — Ripe Olives — Vegetables — Roasted Walnuts — Protose.— Mrs. S. H. G., California: "1. When baby has a cough or cold what treatment would you give for a speedy cure? Is the compress good worn day and night? 2. Can asthma be cured? Please give advice as to treatment. 3. Please prescribe treatment for child who has gas on stomach after eating. Does this indicate indigestion? 4. Can a child eight years old be cured of bedwetting? What treatment can one give at home? 5. Will you please give formula for best tooth powder. 6. Is pure lemon juice if taken quite freely injurious to the stomach? 7. Is beet sugar more healthful than cane sugar? 8. Is fruit and bread and butter too much for supper for one doing physical work? 9. Are ripe olives unhealthful? 10. Are vegetables such as peas, string beans, and the like unhealthful if prepared for table with a milk or cream gravy over them? 11. Are roasted walnuts easily digested? 12. Is protose made of nuts and grains only?"

Ans.— 1. A warm bath followed by rubbing with cold water. Protect carefully from chill, and keep the child in a warm room until the cold is cured.

2. Yes. The treatment required depends on the nature of the case. Some cases of asthma are due to indigestion. In such cases a careful dietary, out-of-door life, the wet girdle, or compress, worn at night; and a daily cool sponge bath are generally sufficient to effect a cure. When due to catarrh a chest pack should be worn at night. Special attention should be given to cool bathing. In some cases a change of flannels is required.

3. A more careful description of the child will be necessary,— how old is he, what is his dietary, how is he fed; that is, how many times a day, what is the condition of his general health, etc.

4. Yes. Cool bath just before retiring at night. No food or liquid should be taken

within three hours before retiring. This disorder generally disappears when the child reaches the age of twelve or fourteen years.

5. Precipitate of French chalk with a little orris root is as good as anything, but is not positively necessary. Simple cleansing of the teeth daily with cool water is all that is necessary if the brush is used before and after each meal.

6. Probably not in a healthy stomach, but it is better to dilute the lemon juice.

7. No; beet sugar is cane sugar.

8. It is better to take a late dinner and nothing but fruit for supper.

9. No. Well-ripened olives if properly treated are healthful. In eating, however, care should be taken to chew them thoroughly.

10. No.

11. Walnuts are easily digestible without roasting.

12. Yes.

Hay Fever.— Mrs. A. C. P., California, wishes the diagnosis and outlined treatment for hay fever.

Ans.— Hay fever is in part a nervous disorder and in part a disease of the nasal mucous membrane. General treatment for the improvement of the nerves is required, together with special treatment for the nose and throat. The service of a specialist is usually required.

Shaking Palsy.— C. M., Cozad: "1. Is shaking palsy curable? 2. What effective home treatment can be given? 3. The patient, an old man, has suffered with this disease for seven years. Can now walk only with assistance. Is troubled with cough which disturbs him at night. Give advice concerning case."

Ans.— 1. This disease is, in the majority of cases, not curable.

2. By treatment at an institution a cure may sometimes be effected.

3. From the description of the case it is unquestionably beyond recovery, and probably very little, if any, improvement could be obtained by any sort of treatment.

Obesity. — Mrs. W. E. B., Michigan, wishes to know if rapidly increasing flesh is an indication of disease, and what disease.

Ans.— Yes. A disturbance of metabolism. Usually, there is also more or less disturbance of digestion.

Sick Headaches. — Mrs. B. F. D., Toronto: "1. Are the periodical headaches peculiar to so many women curable? 2. Why are they accompanied with vomiting? 3. Is there any remedy for these headaches? Outline treatment."

Ans.— 1. Yes. These headaches are generally due to a disturbance of the circulatory nervous system. They are usually induced by improper mode of dress by which the bowels become compressed and the stomach dilated.

2. Because the food is retained in the stomach until decomposition takes place, giving rise to poisoning, nausea, and vomiting in connection with the headache.

3. Yes. These cases are always curable. First of all, the patient must adopt a proper dietary. Meat must be discarded and in many cases milk must also be avoided. The diet should consist mostly of fruits and grains. Nuts may be eaten moderately. Such preparations as malted nuts and cocoanut cream may be used in the place of milk. Well-baked potatoes may also be eaten, if care is taken to thoroughly masticate. Eggs may be used moderately. The bowels should be kept open by enemas, taken every other day if necessary, at a temperature of seventy-five to eighty degrees; quantity should be two or three pints. Several hours should be spent in active exercise in the open air daily. A cool bath should be taken daily, and a sweating bath once or twice a week. A moist abdominal bandage should be worn constantly.

Diet.— O. B., Rockford, asks to have dietary outlined for one whose assimilation is poor and blood very thin.

Ans.— The dietary should consist of baked potatoes, poached eggs, nuts or nut preparations, particularly protose, nuttolene, cocoanut cream, malted nuts, Sanitarium breakfast toast, granose flakes, granola, toasted wheat flakes, and other health foods. Avoid mushes, meats, tea and coffee, and all unwholesome articles of diet.

Breathing Exercises.— M. J. R., Maryland, complains that deep-breathing exercises cause a severe headache and foul breath. Is not subject to headaches and has them only after taking the deep breathing. Kindly advise.

Ans.— The exercise may be taken somewhat too violently or too soon after eating. It seems impossible that breathing exercises should have such an effect.

Enemata — Throat Gargle — Fruit Diet.— E. B., California: "1. Is the practice of flushing the colon by injecting three or four quarts of moderately warm water advisable, or would it result in injurious effects? 2. Which is preferable as a gargle for the throat, warm or cold water? 3. Could one live and thrive on an absolute fruit diet?

Ans.— 1. Flushing of the colon is sometimes necessary, but only in special cases, when there is evidently an accumulation of fecal matter. It is better to use cool water at seventy-five to eighty degrees instead of warm water. Warm water is necessary only when severe pain is present. The practice of using warm water daily or frequently is injurious, as it has a relaxing effect. Cool water has a tonic effect. It may be used daily, if necessary, as it improves the tone and retracts the colon when dilated.

2. Cold water is to be preferred as a tonic.

3. Yes, by selecting ripe fruits. The Arab lives almost exclusively on dates. The camel lives on the same diet. Dried figs and the banana are both capable of supporting life.

Cold — Deep Breathing.— M. N., Decatur: "1. What treatment is best for cold affecting vocal cords? 2. Outline treatment for bronchitic colds. 3. What exercises will assist in relieving it, and also strengthen the chest and throat? 4. What is deep breathing? How is it done? Will it effect a cure in case of colds?"

Ans.— 1. Fomentations to the throat, followed by a heating compress consisting of a cloth wrung out of very cold water and covered with mackintosh and dry flannel.

2. Employ the chest pack. Use daily cold baths, live in the open air, and adopt a thoroughly hygienic dietary.

3. Deep-breathing exercises, particularly vigorous out-of-door exercises, such as walking, running short distances, etc. Sleep in a well-ventilated room, and employ other methods by which the general health may be improved.

4. See article on "Deep Breathing" in the editorial department of this number.

Brown Spots.— Mrs. M. F. B., Glenburn, is troubled with dark brown patches which appear on her arms and back of hands in the fall, remain during the winter, and disappear in the spring. Kindly give cause and cure.

Ans.— The indication is a general disturbance of the health. The daily cold bath and out-of-door life, particularly sun baths, would be found helpful. The dietary must be thoroughly hygienic. Fruits should be freely used. Avoid animal fats, tea, coffee, meats, and all indigestible foods.

Locomotor Ataxia — Bright's Disease.— E. D., Mt. Vernon: "1. Give characteristics of locomotor ataxia. 2. Give symptoms of last stage of Bright's Disease."

Ans.— The most common and easily recognizable symptoms are a staggering gait and so-called "lightning pains" in the limbs.

2. Dropsy, convulsions, and stupor.

Mucus in Throat.— S. S., Illinois, asks the cause and cure for mucus forming in the throat at night. No tea, coffee, or meat is eaten, diet being principally fruit and grains.

Ans.— Catarrh of the throat. There may be nasal obstruction, giving rise to mouth-breathing. This may be indicated by snoring, unless the nose is entirely obstructed, in which case mouth-breathing will occur when the patient is walking as well as during sleep. The general health must be improved by an out-of-door life, the daily cold bath, and general muscular activity.

Kumyss.— Mrs. E., desires recipe for making kumyss or kumyzoon at home.

Ans.— Kumyzoon cannot be made at home. An apparatus is required for introducing carbonic acid gas.

Joint Snapping — Onions.— L. J. L., Kensington, wishes to know (1) the meaning of a snapping of the joints whenever movement is made by the body; (2) if onions are a wholesome article of diet.

Ans.— 1. This symptom is generally due to the slipping of a tendon.

2. Onions have a certain nutritive value but are rendered unwholesome by the presence of an exceedingly acrid and irritating oil. By boiling, this oil may be mostly removed, but the onion still remains a questionable article of diet.

Simplex Spirometer.— Subscriber, Brooklyn, wishes opinion on spirometer. It is endorsed by well-known hygienists and physicians in this country, as a lung developer.

Ans.— The instrument is good as a means of exercising the lungs. A small glass tube or the stem of a clay pipe will answer just as well, however.

LITERARY NOTES

Books Received.

"Journalism," an address delivered by Frank A. Munsey, at Yale University, Jan. 12, 1903.

This is one of the most interesting of the series in the Isaac H. Bromley Lectureship Course, and is a plain talk on practical journalism.

"Obesity, the Indications for Reduction Cures," founded upon a critical scientific study, is one of a series of monographs by Prof. Carl von Noorden, senior physician to the city hospital in Frankfort. The other two volumes are "Nephritis," treatment of various forms of Brights'disease based on exhaustive experiments and bedside observations, cloth, $1, and "Colitis," a masterly treatment of the complex subject of membranous catarrh of the intestines *(Colica Mucosa)*, small 8vo, cloth, 50c. The three volumes sent carriage paid on receipt of $2.

E. B. Treat & Co., Publishers, New York.

The **Life Boat** for April is another Prisoners' Special. It contains choice articles written by men and women of wide experience in mission work, and will be sent into every state's prison and local jail.

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The high authority of the series on the Government of the United States, now appearing in **Scribner's Magazine,** is again shown in the March number by the article on "The Supreme Court of the United States" by Hon. David J. Brewer, Associate Justice. There never was a clearer presentation of exactly what the supreme court has done in the development of our institutions. Judge Brewer is a master of vigorous, condensed statement, and he here outlines the part which the court has played in our history by its uniform decisions in favor of the principle of nationality. He also quotes a number of cases showing how the States have been kept supreme within their constitutional field. In the latter part of his article, Judge Brewer looks ahead to the four classes of cases upon which the court will have to make future important decisions. They are those growing out of the relations of labor and capital, the efforts to increase and concentrate the power of the nation, the relations of the nation with the new colonies, and, finally, the intricate questions arising from the place which the United States is taking among the nations of the world.

Captain A. T. Mahan opens the March **Atlantic** with his recent address on "The Writing of History"—a remarkably sound and stimulating paper which will be eagerly welcomed.

John Burroughs follows with a paper on "Real and Sham Natural History," in which he characterizes with outspoken and delightful pungency the utterances of certain writers whom he considers sham naturalists. He does not hesitate to name names and call "a spade a spade," and introduces a new element into certain tendencies in current natural-history writing.

There are nine short stories in the March **Lippincott's** of pleasing variety, and by many names well known in magazinedom: Cy Warman's animal stories are as popular as are those of the railroad. This, entitled "The Fidelity of a Dog," is strikingly good. "Told after Dinner," by Ella Middleton Tybout, may "come home" to some senator or member of Congress at Washington. Phœbe Lyde calls her story "Tiberius the Truant," after a pet lamb, "Tiberius." A peculiarly powerful tale by Clara Elizabeth Ward is called "The Regeneration of Mary Mather." It threatens a tragedy but ends happily. "The Other Side of Boss," by Jerome Case Bull, is a spirited story of a Western logging camp. "Piscator and the Peri," a young fisherman's love story, is by Henry Wysham Lanier, who is by the way, a son of the gifted poet, Sidney Lanier. He possesses the family talent in a marked degree. The stock exchange is the scene of a remarkably good story called "The Bull in Lamb-Skin," by Edward Childs Carpenter. A story of the mines by Clinton Dangerfield, called "The Wheel of Fortune," is a happy illustration of the best man winning with a woman's timely aid.

"Water Craft of the World," the opening article of the **New England Magazine** for March, seems particularly appropriate at this season when all water lovers are looking forward with eager anticipation to their summer's outings. It is a far cry from the prehistoric raft made of rushes, to the luxurious yacht and the magnificent war ships and ocean liners of to-day, and it has taken the combined intelligence and energy of the nations of the world to attain the present degree of excellence. The different stages of transition are shown in a most interesting manner by Randolph I. Geare, who has illustrated his article from models in the United States Museum at Washington.

To Americans perhaps the most interesting of the Russians is Count Tolstoy. In "A Visit to Tolstoy's Home," the sixth paper of "A Reading Journey Through Russia," by Dr. Edward J. Steiner, a welcome visitor at this same home, we come face to face with the great reformer in a charmingly personal way. Dr. Steiner's views on Tolstoy's theories and accomplishments are keen, fair, and refreshingly individual. The illustrations form one of the best collections to be found on this subject in magazine literature.

Breezy as becomes the season is the March number of **Good Housekeeping;** full of life and "go" and practical help for everybody. The land of St. Patrick, whose birth month is March, is celebrated by Ireland's most noted writer of the present day, Miss Jane Barlow, with an article on "Pot Luck in Ireland," illustrated from photographs by Clinton Johnson. "Maids a-Courting" is the title of a novel and handsomely illustrated discussion of a phase of the domestic-service problem. The home of Mrs. Ellen H. Richards, the foremost of American authorities upon home science, is described with the aid of photographic illustrations. There is a charming story, "Grandma Trumbull at Cooking School," and a narrative full of valuable suggestions for parents and teachers, entitled "Learning by Doing." It relates the actual experience of young girls in building a miniature house, and its attending lessons.

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SUBJECT.	CONTRIBUTOR.
CONGRESS	Thos. B. Reed.
POLITICAL PARTIES	John Bach McMaster.
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LABOR ORGANIZATION	Carrol D. Wright.
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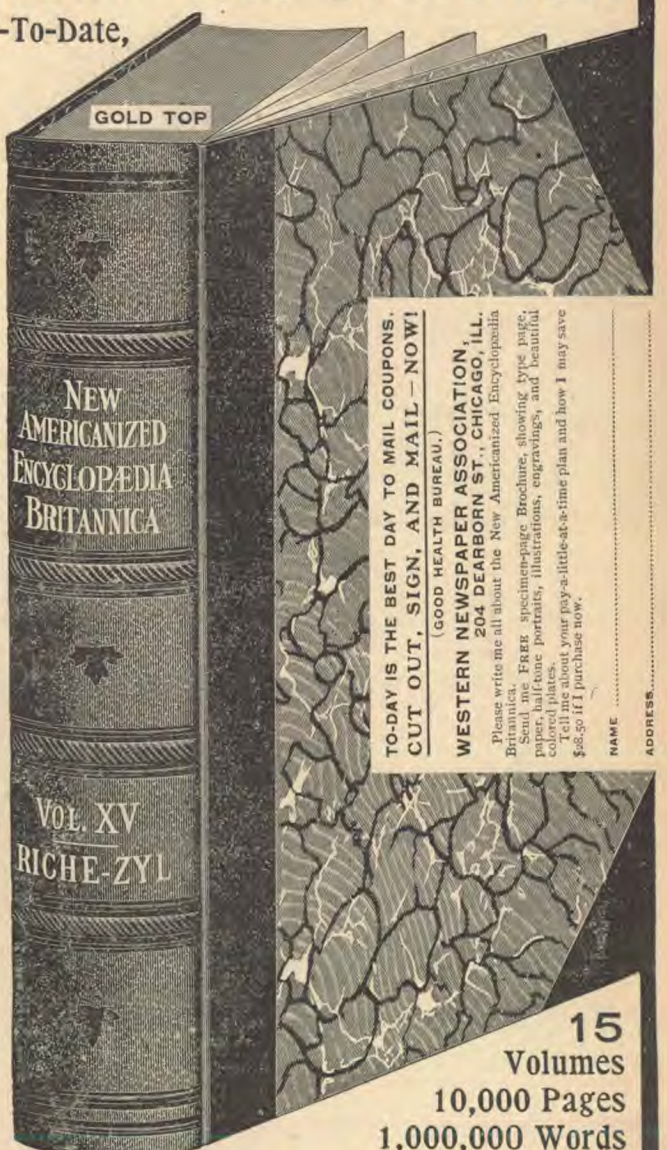

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FOR PHYSICIANS and others, who desire an extra large and very fine battery, we make **The Double Dry Cell Dial Battery, Price**..... **$12.00**

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These batteries are operated by dry cells of the very best quality. They are neat, always ready for use, and operated at a very small cost, as the cells will last several months. When exhausted, any person can put new cells in the machine in a few seconds.

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It is guaranteed to be **absolutely pure** and **free from all adulteration.**

We want you to be particular about your flour. We want you to use a flour that is always **uniform in quality,** always **pure and wholesome,** always **guaranteed to make perfect bread** with ordinary care. **We want you to use**

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East Hall

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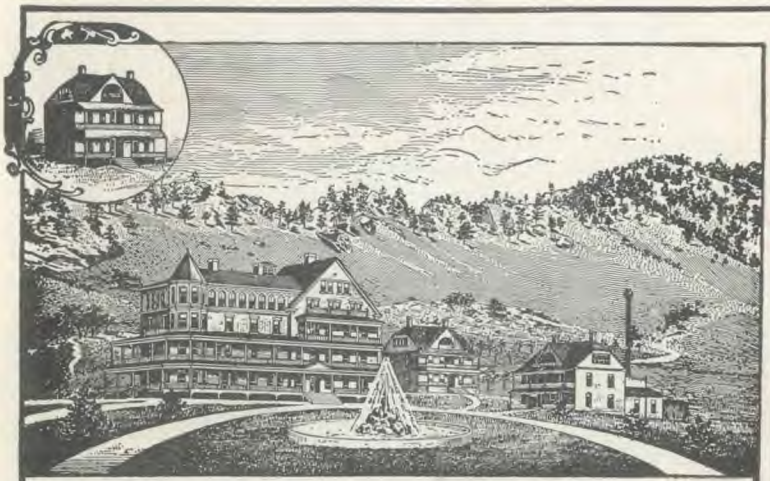
Battle Creek Sanitarium, Battle Creek, Mich.



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