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Published monthly by the International Tract Society, 17 Abbott Road, Lucknow

V. L. MANN, M. D., Editor
H. C. MENKEL, M. D.,
Contributing Editor
S. A. WELLMAN,
Managing Editor



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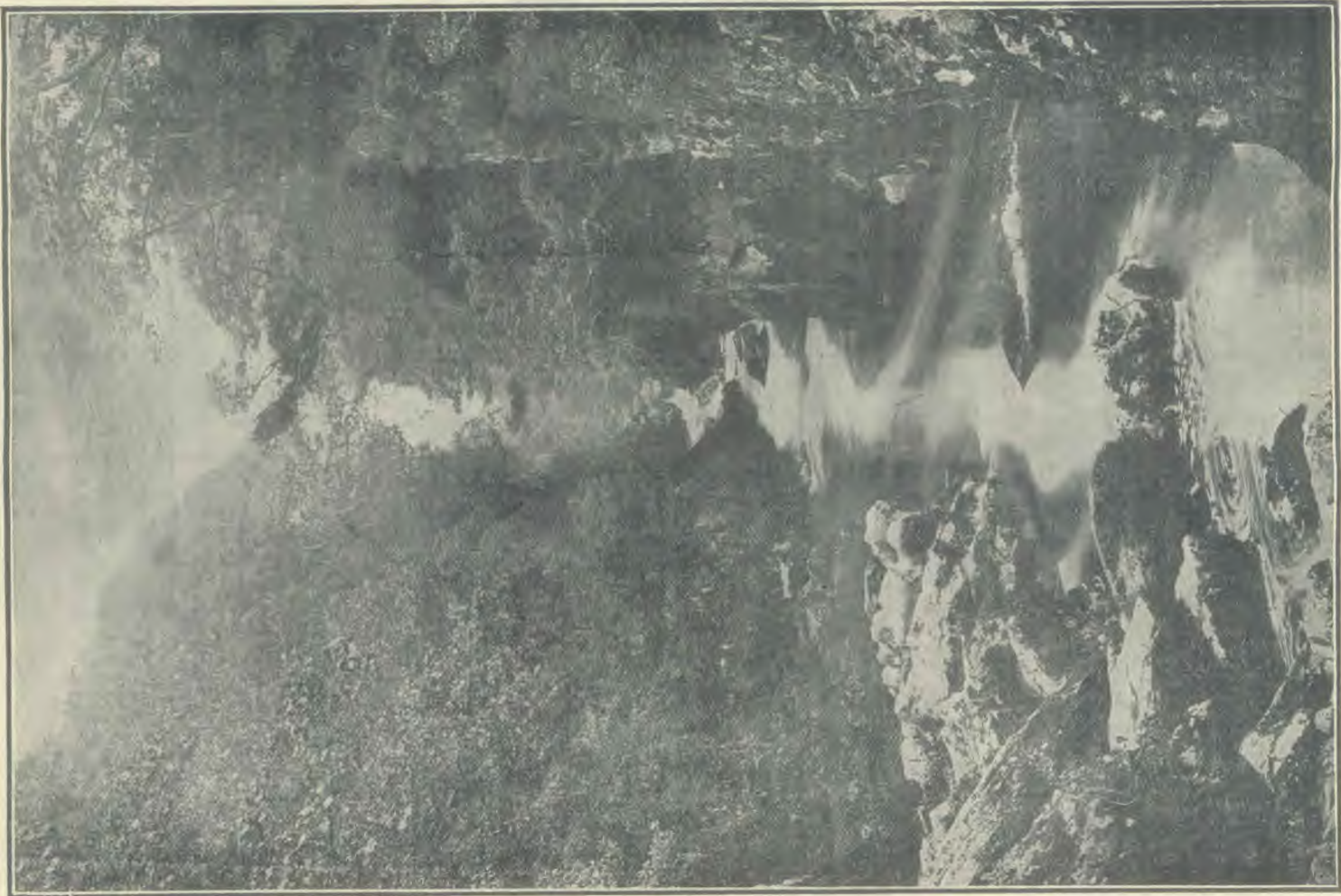
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NO. 8

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GENERAL ARTICLES

Narcotic Drugs, Their Past and Present Use in Medicine

BY D. H. KRESS, M. D.



MOST frequently the drug habit is acquired through the prescription of a physician or through the use of proprietary medicines. The use of these drugs is usually begun to relieve fatigue, to get rid of headache and other pains, to drown sorrow and depression or some other minor trouble. The drugs are also dispensed in cough sirups, pain killers, headache remedies, consumption cures, catarrh sprays and snuffs, etc.

These narcotic drugs bring immediate results. This is what patients demand of physicians. The physician who can bring instant relief to his patients is in demand. The people are in a measure excusable, for they do not realize the dangers lurking in these remedies which bring such apparently gratifying results. Upon the physician should rest the burden to enlighten them. In every case, whether secured in a drug store or prescribed by a physician, remedies which bring immediate results have in them some habit-forming narcotic drug, and ought to be regarded with suspicion if not entirely shunned. Doctors sometimes prescribe these drugs to satisfy impatient patients.

Some of the narcotic drugs which were in general use among practitioners in the past have more recently been thrown aside as unreliable, worthless, and even dangerous. There are others which will in the future meet the same fate.

A certain English professor, it is said, each year in his closing remarks to the graduating class, recommended most highly a certain

narcotic drug which he had employed with apparent success in his practice, and in which he had the utmost confidence. While traveling in France, being called to the bedside of a patient, as was his custom he prescribed his favorite drug. The patient, however, instead of getting better, failed rapidly and died. This shook his confidence somewhat in his favorite remedy. After this, it is said, in his closing remarks to his graduating classes he would speak as highly of his drug as before, but in conclusion would say, "Remember, while it cures an Englishman, it will kill a Frenchman."

Drugs which bring instant relief to one who has a vigorous heart may bring the same relief but prove fatal to one whose heart is weak. It is the physician who has just been graduated who relies most upon drugs in his practice. Observing physicians, after years of practice, place less and less confidence in them.

Narcotic drugs are deceptive. They conceal the symptoms which enable the physician to make an intelligent and correct diagnosis upon which to base his treatments. It is difficult, if not impossible, for him to know of a certainty whether his patient is improving or not, while he is under the influence of a narcotic drug. The patient may have a stronger pulse, and may feel better and appear better, and yet be worse. The physician has no way left of determining the condition of his patient.

Symptoms are of value to the physician, not merely for diagnostic purposes, but because they indicate to the observing physician what nature is endeavoring to do. His

efforts should tend to assist nature in her work. A cough is not necessarily a bad thing to have. It may be and often is a blessing. A cough may indicate that there is some accumulation in the lungs or bronchial tubes that needs to be expelled. It is therefore most unwise merely to arrest the cough by administering an opiate. Nature should be aided instead of hindered. Many a consumptive has been cured of the cough to his own injury.

Fever is an effort on the part of the body to burn up and get rid of certain poisons. It is not the fever which needs to be got rid of, so much as that which is responsible for it. To check a cough or reduce the temperature with drugs may interfere with nature's efforts, and result in death, or else leave the patient with a wrecked constitution after apparent recovery takes place.

The closing remarks of one of the professors of the University of Michigan to the class of '94 were: "Remember, when called out to your first case, you are treating a patient, not a disease. Do not lose sight of your patient. It is possible," he said, "to kill a mosquito on a man's forehead with a club, but remember you may kill the man."

In the remote past, drugs, it seems, were as generally employed as at present. Dr. Robert Wilson, in a most interesting little book, says, "The Hindus at an early date were well abreast with the most advanced medical science of today." *Materia medica* was one of their chief studies, and opium, strychnine, and many other drugs now in general use were then freely employed. Schools of medicine had been established as early as 1570 B. C. Moses, it seems, "who was learned in all the wisdom of the Egyptians," received his training in one of these schools. Being educated as a priest-doctor, he was familiar with all the remedies then employed, yet, strange to say, in his writings he omits all mention of these drugs. Much stress is laid by him upon hygiene, upon sanitary science, upon isolation and quarantine,

and upon the need of implicit obedience to the commandments of God, in order to keep in health or to regain health. Only once do we find mention of a poisonous herb in his writings, and that is evidently a symbol of a sin upon which a distinct curse is pronounced. Deut. 29: 18. Later we read of Asa, who, when afflicted with disease, "sought not to the Lord, but to the physicians." The curse rested upon him as a result, and he died a miserable death. 2 Chron. 16: 12. This is the only mention made either of poisonous drugs or of physicians who dispensed them in Old Testament times. Moses evidently laid aside much of the knowledge he had acquired in the schools of Egypt as of no real merit.

The Greeks, we are informed, received much of their knowledge of medicine from the early Egyptians. Hippocrates was termed the "father of medicine." He aimed to bring about a reform in his school. Students who received their training under him were called upon to take the following oath: "I swear I will prescribe such medicines as may be best suited to the cases of my patients according to the best of my judgment; and no temptation shall ever induce me to administer poison." It is evident that this oath was aimed at the general practice of drugging. Through his teaching a change in public sentiment was brought about among the more intelligent classes.

Cato, in cautioning his son Marcus, said, "I forbid you to have anything to do with physicians." The public sentiment against drugging grew to such an extent that "medical practice," we are told, "was finally brought to a rude standstill in Rome, and the teachers and practitioners of medicine were expelled from the city," and for six hundred years Rome was without a physician.

Pliny says, "Medicine is the only one of the arts of Greece that, lucrative as it is, the Roman gravity has hitherto refused to cultivate." Rome was no doubt better off without this class of physicians.

Luke the evangelist received his training as a physician in the Grecian schools. Yet in all his writings we do not read of his advocating a poisonous narcotic drug. He calls attention to some of the simple agencies employed by the Saviour, and records the marvellous results which followed their use. He tells of the miraculous healing of the man sick of the palsy, of the lunatic and epileptic child, of the man who was a cripple from his birth. He tells of the healing of the woman who had spent all her living upon physicians, but had gradually grown worse, "neither could be healed by any." On entering Christ's school, Luke's training was of a

different order, and yet the graduates from this school were sent forth not only to preach the gospel but to heal the sick, and they met with remarkable success.

If narcotic drugs are so essential in the treatment of disease, why were Moses, a graduate from the Egyptian school of medicine, and Luke, a graduate from a Grecian medical school, so silent about their use? Why did not Christ in his teaching, or his disciples in theirs, refer to the need of making use of them in the treatment of disease? In our modern medical practice, are we advancing along the line of true science, or are we going back to the old Egyptian practice?

Sugar—Its Digestion and Nutritive Value

BY W. HOWARD JAMES, M.B., B.S.



ALTHOUGH sugar is such an important article of diet, it is only within comparatively recent times that it has been manufactured cheaply enough to become an item of ordinary consumption. Sugar from

sugar cane was probably known in China two thousand years before it was used in Europe. In Europe it was employed for a long time exclusively in the preparation of medicines. An old saying to express the loss of something very essential was, "Like an apothecary without sugar." It was in the fourteenth or fifteenth century, when cane sugar from India was produced in northern Africa, that it became a common article of food among the well-to-do. "By many," says the *Farmers' Bulletin* (No. 93, 1899), "the new food was still regarded with suspicion. It was said to be very heating, to be bad for the lungs, and even to cause apoplexy. Honey was thought to be more wholesome, because more natural than the 'products of forced invention.'" In the year 1319, according to Bannister's Cantor

Lectures, its price was 1s. 9¹/₂d. per pound. Now, however, the use of sugar is universal. In the British Isles, for instance, eighty or ninety pounds are used annually for each person.

There are two chief varieties of sugar: (1) The product of the sugar cane and beet; (2) that contained in grapes and other kinds of fruit. The former variety is characterised by the facility with which it crystallises, and by its strong sweetness of taste. The latter is imperfectly crystallisable, and is of much inferior sweetness. It is found in grapes and other fruits, and may also be obtained by the action of acids and ferments on cane sugar, starch, gum, and liquorice. In the production of jam, especially when the jam is boiled for some considerable time, the cane sugar is changed into glucose. This is an important fact, for glucose, or "invert" sugar, is so much more digestible than cane sugar. Aitchison Robertson gives the proportion of cane sugar in most home-made jams as 20 per cent, while commercial jams vary from 10 to 50 per cent. He found that in some of the home-made jams which he examined, the proportion of cane sugar which had been

changed into glucose was as follows:

Strawberry	two-fifths
Raspberry	three-fifths
Blackberry	four-fifths
Marmalade	five-sixths
Plum	six-sevenths

Cane Sugar

Cane sugar is derived from sugar cane, or *saccharum*, a plant which appears to have come from the interior of Asia, and which, in very early history, was transplanted to Cyprus. It was introduced into the West Indies early in the sixteenth century. Sugar is also obtained from the root of the beet, which contains nearly one-tenth part of its weight of this principle. In the northern parts of North America, a large proportion of the sugar used is obtained from a variety of the maple, the *Acer Saccharinum*. There are other sources of sugar, such as green stalks of maize, or Indian corn, the sugar grass in North America and south of Europe and the date and other palms.

Practically all of our sugar, however, is produced from the cane or the beet. After the cane has been crushed through iron rollers, a turbid juice is produced, which contains about 18 to 22 per cent of sugar. This is clarified and evaporated by heat and the addition of lime. After being condensed and the impurities removed, it is passed into coolers to crystallise. The solidified, or crystallisable sugar is the brown, moist sugar which can be obtained from almost all grocers; the dark, viscid, and uncrystallisable residue that drains away constitutes *molasses*. The brown, or moist sugar is again refined; its dark colour and uncrystallisable sugar is removed, and forms the *treacle* of commerce. When treacle is reboiled and filtered through animal charcoal *golden syrup* is produced.

Barley sugar is made by rapidly boiling down a concentrated solution of sugar. This destroys its crystallising power, and on cooling it solidifies into a transparent, amorphous mass of a vitreous nature. Acid drops are similarly produced, tartaric acid being added while the liquid is boiling. *Sugar candy* is

crystallised sugar. A hot, concentrated solution of sugar deposits, on cooling, crystals on the surface of the vessel in which it is contained, and on threads stretched across it.

Glucose or Grape Sugar

This sugar differs slightly in chemical composition from cane sugar; it does not crystallise. The taste is not so agreeable, and its sweetening power is less. Five parts of grape sugar have only the sweetening power of two parts of cane sugar. It is not so soluble in water. There are different varieties of glucose. The best example of these is dextrose, that which is found in the grape. When grapes are dried to form raisins, the dextrose separates out as little yellowish white granular masses. Commercial glucose is usually got by boiling starch with acids. When heated it turns brown, and is used in cooking as "sugar colouring." Mixed with egg albumen, it is largely employed in the preparation of "icing" and "fondants" in confectionery, and in the manufacture of bonbons. Fruit sugar, or levulose, is found in most fruits, and is the best form of carbohydrates for diabetes. Honey is what is called an "invert" sugar, and is a mixture of dextrose and levulose,

Digestibility of Sugar

Ordinary sugar cannot be digested and absorbed into the system until it is acted on by the special ferments found in the intestines. In dyspeptic patients, where the digestion is delayed, and especially where the stomach is dilated, sugar is retained too long, and is very liable to fermentation, with the production of lactic and butyric acids, as well as alcohol. The sugar of milk (lactose) is the least liable of all sugars to undergo fermentation. It, however, has not the sweetening power of cane sugar, but in dyspepsias it is much to be preferred. Sugar in excess has a very disturbing action on the stomach and liver, and increases considerably the liability to diabetes. Brande, in experimenting on dogs, found that a 5.7 per cent solution of sugar produced a red-

dening of the mucous membrane of the stomach: with a 10 per cent solution the mucous membrane became a dark red; while a 20 per cent solution produced pain and great distress. With this irritant action there is also a production of much mucus and the pouring out of a highly acid juice. The irritating action is much more pronounced in the case of cane and beet sugars than the invert sugars, such as glucose, fruit sugar, and honey. "Aitchison Robertson injected 250 c.c. of a 20 per cent solution of cane sugar into the stomach of a patient who was suffering from chronic gastric catarrh. Shortly afterwards the patient felt sick, and vomited a very acid fluid which put his teeth on edge. He complained also of heartburn and flatulence, and of severe pain in the region of the stomach. A solution of invert sugar of the same strength produced no discomfort. The experiment was repeated with similar results in other cases of dyspepsia. The invert sugar produced no unpleasant symptoms, and disappeared rapidly from the stomach, while the cane sugar caused much distress and remained for a long time."—*Food and the Principles of Dietetics*," by Robert Hutchison, page 278. A small quantity of sugar with a meal produces no unpleasant symptoms but sugar in excess will certainly produce discomfort where the digestion is weak. Schule found that two to six lumps of cane sugar could be taken with breakfast without discomfort, but when that amount was increased to twenty lumps, considerable delay of digestion ensued. Much sugar with milk and milk foods is especially injurious to digestion.

Much sugar has an injurious action on the teeth on account of the dyspeptic disturbances produced, and by lingering in the crevices of the mouth and teeth, producing acids which eat away the enamel. The partaking of sweets by children, especially between the meals, is certainly detrimental to the teeth.

As a rule, about a quarter of a pound of sugar can be taken during the day without

evil results; the exact amount depends, however, to a very large extent on the muscular activity of the subject.

Sugars, when they reach the blood, are classed as proteid-savers; they are oxidised, and the proteids are saved. Thus with the intake of sugar the amount of proteid food taken for the production of muscular exertion can be lessened. Sugars and sweets of all kinds are injurious in the rheumatic and gouty constitutions. They interfere with the digestion, the action of the liver, and the complete oxidation of nitrogenous matter in the system, with the result that the unoxidised products, such as uric acid, xanthin, and hypoxanthin, are increased in quantity.

When excess of sugar is taken, it will be passed out in the urine, producing what is termed "alimentary glycosuria," and a continuance of this practice will produce permanent diabetes. Muscular work and exercise, however, oxidise the sugar, and thus lessen the liability to rheumatism, gout, and diabetes.

Nutritive Value of Sugar

Sugar from a theoretical viewpoint should be a food of high nutritive value. It is a pure carbohydrate, and when once it gains an entrance into the blood, is easily oxidised, and yields up its energies readily to the system. One gramme (15½ grains) of sugar will yield 4.1 calories of energy. A lump of loaf sugar (about 5 grammes) would yield 20 calories. Four such lumps would yield as much energy as is contained in a medium-sized potato. One pound of sugar would yield half as much energy as a pound of butter. Sugar, when the digestion and action of the liver are not interfered with, yields up energy very quickly and lessens the oxidising of the proteids and fats of the food and the tissues; thus it is frequently a fattening food. It is doubtful, however, whether the fat thus produced is of the same value as that produced by fatty and proteid foods. We have seen there is danger in lessening the oxidation of proteids, for thereby uric

acid and other purin bodies accumulate in the system, producing gout and rheumatism. Sugar is a much cheaper food than fat. More than twice the amount of energy theoretically can be obtained from the same amount of money expended. Sugar, however, is to a large extent an isolated chemical product, and not a natural food, and when used as a substitute for natural food, many of the salts found in the vegetable kingdom are lost from the dietary. A deficiency of calcium, iron, fluorine, and other minerals may result in anæmia and decayed teeth. Brillat-Savarin long ago pointed out that "the English give sugar to their blood horses in order to sustain them in the trials to which they are exposed." In 1893 Mosso put the value of sugar as a muscle food to the test of experiment. He found by means of a special instrument (the ergograph) that sugar materially lessened muscular fatigue. The subject has been taken up by Vaughan Harley, Schumburg, Prautner, and Stowasser, who came to the conclusion that sugar is a specially valuable food for persons who have to perform a single muscular effort, particularly when this is necessary in a state of exhaustion. Certain rowing clubs in Holland have found sugar to be a valuable food in training. "The rowers," says Hutchison, "who used it always won, on account of their superior powers of endurance, and it

seemed to counteract the bad effects of an exclusively meat diet, so that the men did not become 'stale.'" We believe, however, that good cereal food would be more efficacious. The "staleness" which is quickly produced under muscular exertion, when a great amount of meat is taken, would thus be lessened without the danger and the clogging effects of sugar. Where, however, there is great muscular exertion, there is very much less danger of sugar clogging the system. The German writer, Steinetz, found from personal experience in Alpine climbing that his capacity for exertion was much greater when he partook largely of sugar, and that fatigue was at the same time lessened. Under these conditions, five to ten ounces of sugar in solution could be taken during the day, and for a short time even larger amounts could be utilised without any harm resulting.

Sugar, however, should not be largely used by those of sedentary habits, or where there is a weak digestion, sluggish action of the liver, or any tendency to gout, rheumatism, or diabetes. Sugar, when largely used, tends to bring on first a congested, and then a catarrhal condition of the alimentary canal, producing a large secretion of mucus and a tendency to fermentation and the production of acids. It is especially to be avoided in all cases of acid and fermentative dyspepsias.

Deep-Breathing Exercises

BY JAMES FREDERICK ROGERS, M.D.



HERE has been more foolishness over the matter of deep-breathing exercises than over any other means suggested for obtaining health.

Among the most flattering promises offered for enticing the subject to expand his chest more fully is that, by working his air bellows to their full capacity for a few times each day, his blood will be washed free from all

impurities, become surcharged with life-giving oxygen, and he will be refreshed and invigorated for the intervening periods when he must perforce let nature attend to his respiratory activities.

If such exaggerated rewards induce those who lead a sedentary life to take breathing exercises, we ought not perhaps to disillusion the exerciser by pointing out the error in theory involved; however, the breather learns soon, by experience, that he has been

promised too much, that instead of having found a short cut to health he is in a blind alley. The consequence is that, in discouragement, he stops his deep breathing altogether, and seeks some other more promising pathway to the realm of bodily perfection.

The machinery of external respiration, or what we ordinarily mean by the breathing apparatus, carries on its work only for the purpose of supplying the blood with oxygen as needed, and for carrying away from the blood the waste carbon dioxide and watery vapor which it is ready to give off. The oxygen needed and the amount of carbon dioxide given off depend altogether on the chemical activities of the moment in muscle, nerve, bone, gland, etc., in all parts of the body. If this activity is quickened, if we work our arms or legs vigorously, exercise our brain, or digest a meal, there is more demand for oxygen and more waste from oxygenation; the machinery of breathing works harder; we breathe more rapidly and more deeply. No amount of mere breathing will increase this chemical activity in the body. It is true that with deep-breathing exercises the oxygen in the blood is increased, and the carbon dioxide reduced slightly, but there is no proof that the effects go farther, and the blood returns within a few minutes to the former so-called "impure" condition.

More than this, if the breathing be sufficiently deep and frequent, the person will become dizzy and faint, and respiration will suddenly stop. This is due to the fact that too much carbon dioxide has been "washed out" of the blood; for this substance, once thought so poisonous, is of much use in the body, and is always kept on hand by the blood in large amount,—much larger, in fact, than oxygen. It would be a bad thing if deep breathing did wash away this substance. Deep breathing as a means of "cleansing" the blood is not therefore a success.

Deep-breathing exercises are a good thing, however, notwithstanding the fact that such

promises do not hold water. In the first place, one can scarcely take in a good deep breath without assuming an excellent posture. In order for the chest to take in its largest amount of air, the spine becomes straight and the body erect. This in itself is good, and it is even better if we keep this fact in mind and try to maintain the posture so attained.

In the second place, deep breathing quickens, through the mechanical action of the movements of the chest, the circulation of the blood through the whole body, and at the same time helps the heart with its work. It therefore tends to relieve any local congestion that may have taken place in those who are sitting still.

Lastly but not least, deep respiration brings into play parts of the lungs, especially the upper portions, which are not so much used in ordinary breathing, and no doubt improves the nutrition of these parts. Parts of organs which fall into disuse are liable to be poorly nourished because of having their blood supply reduced, and to become a prey to disease. It is for this reason that those who have lung trouble or a tendency in that direction are benefited by deep breathing.

When it comes to methods, the way to breathe deeply is to breathe deeply. The deepest breaths can be taken standing or sitting without support. We are taught by many teachers who believe they are correct, to raise our arms forward, or sideward, or forward and upward, or sideward and upward, as we inspire, in order to get the best results. As shown by the author's experiments, one cannot take a deeper breath under these conditions than without the arm raisings, and often not so deep a breath; therefore they involve a waste of energy so far as the expansion of the chest and the taking in of air is concerned.

Vigorous exercise, like running or swimming, or even rapid walking, necessitates breathing, and causes all the lungs to be brought into play. Deep-breathing exercises

always become a bore and are apt to fall into disuse. On this account singing, and playing on wind instruments, are of advantage, as these exercises are never injurious, are easily kept up if one is at all musical, and are always accompanied by deeper breathing than usual.

Deep breathing exercises are good for chronic diseased conditions of the lungs and bronchi by improving the circulation of the parts, but should be supervised to some extent, especially in tuberculosis, by a physician.

To review: Deep breathing exercises are not always all they are made out to be; they

never cleanse the blood, and never of themselves bring abounding health. They are good, however, in their effects on posture and on the general circulation for the time, in preserving the less-used parts of the lungs in good nutrition, and for improving diseased structures within the respiratory tract. The use of certain arm movements during deep breathing is of no advantage, though they do no harm. Singing, and playing on wind instruments, not carried to the point of over-fatigue, are doubly beneficial, as they make deep breathing pleasurable.

Medicated Wines

(Continued from the July number)

BY MARY D. STURGE, M.D., LOND.

Many abstainers are found to be under the delusion that, because a bottle is sold under a fancy name, and because nothing about alcohol is mentioned on its label or in the advertisements, it is a medicine or a tonic, and is not alcoholic! The downward trend from taking a medicated wine to taking something cheaper but equally or more alcoholic, and finally to habitual inebriety, is testified to by the profession and by social workers. For alas! many cases of physical and mental downfall are to be found due to these wines, and to the habits of alcoholism and cocainism that they induce.

As an example of the particularly dangerous combination of alcohol and cocaine (the alkaloid of coca) in coca wines we may take the following, reported by Dr. Elizabeth Beatty in 1903:

"A lady who was an ardent temperance worker, said: 'I would not allow wine or spirits into my house, but when I see the girls tired and dull I send to the chemist's for some coca wine and give them a glass, and it does them good.' She was terribly grieved when her youngest daughter became a confirmed drunkard, and ended her days in the asylum. . . . She thought, as many persons do, that coca is just the same as the

ordinary cocoa we use for food. It is not It contains this poison which, while relieving pain and weariness for the time, forms a habit which ruins soul and body, wrecks the nerves, and sends the victim to the asylum."

The insidious dangers from medicated wines can, I believe, only be met by reforms along a fourfold route: (1) clear statements on the label of the nature of the contents of every bottle; (2) reform of the advertisements; (3) education of the public, including the magistrates who grant licenses; (4) repression of grocers' licenses.

1. Before the Select Committee of the House of Commons, which has been sitting this summer on the whole question of proprietary medicines, the British Medical Association put in a strong claim that all bottles sold under proprietary names shall state their alcoholic and other contents on the label, thereby enabling the purchaser to know what he is buying.

2. I learn that in the States the medical journals refuse all advertisements of mixtures which are inaccurately advertised in lay papers. In this sensible way proprietors of patent mixtures are encouraged to be moderate in their claims.

3. By eliciting the alcoholic strength of

the proprietary wines during cross-examination at Brewster Session (as has been done in Leeds and Birmingham) magistrates and the public may be gradually enlightened.

4. All sales of alcoholic mixtures at grocers' shops should be abolished, if only to protect our already sorely tempted women, who, under the existing system, find it both easy and respectable to purchase alcoholic liquids. (I am told that tea carts call at country cottages ostensibly

to sell their wares, but in reality to introduce medicated wines to the household.)

The words of Mr. C. J. Bond, F.R.C.S., may well furnish us with stimulus and guidance:—

"There is abundant evidence of the fact that modern sanitary law has successfully dealt with disease, and it is along similar legislative lines of prevention and control that we must look for a more perfect social protection against the disease of intemperance."

MOTHER AND CHILD

The Little Stranger and How to Care for Him

BY EULALIA S. RICHARDS, L.R.C.P. & S., EDIN.

FORTUNATE the babe whose mother knows how to keep him healthy and happy. No doubt every mother desires to give her child the best possible care, but sometimes her very anxiety leads her to make grave mistakes in the rearing of her baby.

Think for a moment of the actual requirements of a healthy babe. He needs fresh air, suitable nourishment, and sleep. And, like all baby creatures, he also needs to be kept clean and warm. Just five fundamental needs,—air, food, warmth, sleep, cleanliness. He may be depended upon, if unhampered, to take such exercise as is suited to his requirements. So the mother need scarcely think of this at first, except to see that the wee limbs are not hindered by unsuitable clothing.

Now, think again for a moment of some of the things which a young and healthy baby does *not* need.

He needs no *food* during the first day or two of life other than the fluid in his mother's breast, and pure boiled water. Nature (with few exceptions) provides the right food at the right time. Many a babe has a severe attack of gastritis before he is three days old, just because his nurse, impatient at nature's delay, fears that baby will starve.

He needs no *medicine*. Think of giving a new-born baby brandy and peppermint-water and castor oil! Let the rule be, nothing but boiled water unless ordered by the doctor in attendance.

He needs no *elaborate wardrobe*. What an awful bore it must be to a new baby to be dressed in the conventional style for babies. Think of the number of times he must be turned from front to back, and from back to front again before all the tapes and buttons and safety pins are fastened. Just a few simple easily-adjusted, garments are required at one time, and in this land of sunshine not very many changes are needed.

He needs no *stiff binder*, merely a soft woollen bandage for warmth and to hold the needful dressing in place. There is no possible excuse for the old-fashioned binders, which must have been a terrible torture to babies in the days gone by.

He needs no *entertainment*. Wee babies are often passed from one admiring friend to another; they are tossed about; they are laughed at and talked to; they have bright things dangled in front of their eyes, and jingly things rattled in their ears, when all they really long for is to be left alone to enjoy themselves in their own simple way. A healthy baby whose natural tastes have not been perverted loves nothing better than to play with his own toes and fingers until he quietly falls asleep. Certainly there are babies who seem nervous and highly-strung, and require more entertainment than others, but the mothers of such babies should study constantly how to soothe them rather than to seek new and novel means of entertainment.

The suggestive schedule on this page of hours for feeding baby may be helpful to the young mother who wonders how often baby *ought* to be fed.

It will be noticed that from the second week on to the sixth the child should be fed every two and a half hours during the day, and but once in the night. At six weeks of age the interval between feedings should be lengthened to three hours. Some inexperienced mothers continue the two-hour interval throughout the early weeks of life, while others follow no plan at all, or the plan of "warm meals at all hours."

Irregular feeding is most disastrous to the

health of the baby. A few sips of warm boiled water may be given if baby seems thirsty before the proper interval has elapsed. If the interval is cut short, and baby is fed before the proper time, he may be satisfied for the time being, but is almost certain to suffer pangs of colic a little later. It should be noticed also that after four months of age there should be no feeding between 10 p. m. and 7 a. m.

To facilitate this plan, as well as for baby's safety and comfort in other ways, he should sleep in a little cot by himself. In fact, from the earliest days, baby should always sleep in his own little bed. Many a mother is a slave to the demands of her baby, who insists upon having the breast at all hours through the night. Such a procedure should never be permitted. During the early weeks of life baby may be lifted into mother's bed for his one night feeding, but as soon as

he has finished he must be returned to his own cosy nest. But if he should cry to stay with mother, what then? Why, put him back in his own bed just the same, making quite sure, of course, that he is dry and comfortable. He may cry once or twice, but he will learn almost at once to behave like a little man. It is wonderful how quickly even a young baby may be taught regular habits and good manners. It is also very astonishing that a baby less than a week old will discover whether he can have his own way by crying for it.

Not long since a weary-eyed mother sought a doctor's advice for her eighteen-months-old daughter. The baby, who was pale and fretful, was still on the mother's

HOURS FOR FEEDING BABY

1st week	1 week to 6 weeks	6 weeks to 4 months	4 to 8 months	8 to 12 months
7 a.m.	7 a.m.	7 a. m.	7 a.m.	7 a.m.
9 "	9.30 "	10 "	10 "	10.30 "
11 "	noon	1 p.m.	1 p.m.	2 p.m.
1 p.m.	2.30 p.m.	4 "	4 "	6 "
3 "	5 "	7 "	7 "	10 "
5 "	7.30 "	10 "	10 "	
7 "	10 "	3 a.m.		
9 "	3 a. m.			
12 "				
4 a.m.				

breast, though she should have been quite weaned by ten or twelve months. All during the consultation she kept tugging at her mother's frock and angrily demanding a drink. And not only did she behave so by day, but all through the night she made demands upon her weary mother, who was busy all day and needed her rest at night. We mention this case because we believe that many poor mothers find themselves in the same predicament. Such distressing situations can only be prevented by adopting and adhering to regular and proper rules of feeding from the earliest days of baby's life. It should be remembered that even young babies require frequent sips of plain boiled water. It should always be given warm.

The morning bath should be given about midway between the early morning feeding and the second. The temperature of the bath should be about 100° F., or blood heat, and everything required should be in readiness before beginning the bath. Use a mild soap in washing baby, and dust on a little good talcum powder after drying the skin. If there is any discharge in the nose, the nostrils should be cleansed by a small, twisted bit of cotton wool, which has been smeared with vaseline.

To prevent chafing of the skin, always wash baby after removing a soiled napkin, after which rub a little lanoline or vaseline over the parts likely to chafe. Always be careful to remove the napkins as soon as they are wet, and wash and dry them well before they are used again. Even young babies may be taught cleanly habits early in life.

Baby's clothing should be soft and non-irritating to the tender skin. The individual garments should be loose and comfortable, and not so long as to hamper the little limbs. When baby is short-coated, great care should be taken to see that the legs and feet are warmly clothed. Long booties or leggings, which reach well above the knees,

should be worn always, except on hot days. Chilling of the legs and feet is one of the most common causes of colic, diarrhoea, and broncho-pneumonia in babies. While it is necessary to clothe baby's extremities warmly in cool weather, over-clothing the little body in hot weather should be carefully avoided.

Baby should not only have regular hours for feeding, but for sleeping as well. During the first few weeks of life, a healthy baby will sleep nearly twenty hours out of the twenty-four. As he grows a little older he is satisfied with a long sleep in the forenoon and a shorter nap in the afternoon. Still later the afternoon sleep may be dispensed with, but the forenoon sleep should be kept up until baby is ready for kindergarten. We consider it most unfortunate that babies and young children should be taken to picture shows and other gatherings in the evening. A baby's nervous system is sensitive and easily disturbed. He requires long hours of sleep in a dark, quiet, comfortable place; and certainly these conditions cannot be enjoyed at picture shows or on the street. A baby's place at night is in his own comfortable bed. And is not the mother's place during the evening hours at home with her babies? At times the mother may require the rest and diversion of an evening out, but she should not obtain her enjoyment at the expense of her baby's health and development. Let some responsible person remain with the baby at home while the mother enjoys her occasional outing.

Now, just a few words about fresh air for the baby. Baby certainly needs fresh air night and day, but he need not be exposed to strong draughts of air. It is not really necessary for a young baby to be taken for a daily outing. He may obtain the fresh air quite as effectively during his morning sleep as if taken out for a ride in his pram. Make baby quite comfortable in his

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HEALTHFUL COOKERY

Table of Proportions

(Measurements of teaspoons, tablespoons, and cups are level)

Thickening Agents

(Flour should always be sifted before measuring)

1 tablespoon flour to one pint liquid for soups,
4 tablespoons ($\frac{1}{4}$ cup) flour to 1 pint liquid for gravies.
 $3\frac{1}{2}$ quarts ($3\frac{1}{2}$ pounds) flour to 1 quart liquid for doughs.

The thickening power of cornstarch is about twice that of flour.

4 tablespoons ($\frac{1}{4}$ cup) cornstarch to 1 pint milk for cornstarch blancmange. Proportion, 1:8.

4 tablespoons ($\frac{1}{4}$ cup) farina to 1 pint milk for farina blancmange. Proportion, 1:8.

8 tablespoons ($\frac{1}{2}$ cup) cornstarch or farina to 1 pint liquid in cornstarch or farina fruit mold. Proportion, 1:4.

$\frac{1}{3}$ cup pearl tapioca to 1 pint water in tapioca fruit pudding. Proportion, 1:6.

3 tablespoons sago to 1 pint water or fruit juice in sago fruit pudding or sago fruit mold. Proportion, 1:10.

2 eggs to 1 pint milk for cup custard.

3 eggs to 1 pint milk for custard pie.

$\frac{1}{4}$ ounce vegetable gelatin (agar-agar) stiffens 3 cups liquid.

Shortening

Fats are added to doughs to counteract the adhesive properties of the gluten and starch, and to make the product brittle, tender, "short."

Pastry flour contains more water than bread flour, and its gluten seems to be less adhesive. For this reason less shortening is required with pastry flour.

Pie crust No. 1: 2 cups ($\frac{1}{2}$ pound) flour, $\frac{1}{2}$ cup oil, $\frac{1}{4}$ cup water; or $\frac{1}{4}$ as much oil as flour, and $\frac{1}{2}$ as much water as oil.

Pie crust No. 2: 6 cups flour, 1 cup oil, $\frac{2}{3}$ cup water; or 1-6 as much oil as flour, and $\frac{1}{8}$ as much water as flour.

Yeast bread: 1 to 2 tablespoons oil to 1 quart flour.

Yeast buns: $\frac{1}{4}$ cup oil to 1 quart flour.

Flavouring

Salt

1 teaspoon salt to 3 cups liquid in soups or gravies.

1 teaspoon salt to 3 cups water for cereals.

1 teaspoon salt to 1 quart flour in doughs.
1 teaspoon salt to 3 cups total volume in seasoning vegetables.

$\frac{1}{2}$ teaspoon salt to a 3-egg sponge cake.

1 teaspoon salt to 3 quarts total volume in desserts.

1 teaspoon flavouring extract to 1 quart material to be flavoured.

Sugar

For frozen desserts, as ice cream and sherbets: 1 cup sugar to 1 quart liquid.

For most puddings and custards: $\frac{1}{2}$ cup sugar to 1 quart.

For blancmange and junket: $\frac{1}{4}$ cup sugar to 1 quart.

For apple pie: $\frac{1}{2}$ cup sugar to $\frac{3}{4}$ quart sliced apples, $\frac{1}{8}$ teaspoon salt, 2 tablespoons water.

For blueberry pie: $\frac{1}{3}$ cup sugar, $\frac{1}{8}$ teaspoon salt, 3 tablespoons flour, to $\frac{3}{4}$ quart blueberries.

For rhubarb pie: 1 cup sugar, $\frac{1}{8}$ teaspoon salt, $\frac{1}{3}$ cup flour, to $\frac{3}{4}$ quart rhubarb.

For squash or pumpkin pie: 1 quart milk, $\frac{1}{2}$ quart squash or pumpkin, $\frac{3}{4}$ cup sugar, 3 eggs, $\frac{1}{2}$ teaspoon salt.

Miscellaneous

Cream rice pudding: 1 cup rice to 15 cups milk, $\frac{1}{2}$ cup sugar to 1 quart milk, 1 egg to 1 quart milk.

Creamy rice pudding: 1 cup rice to 10 cups milk, $\frac{1}{2}$ cup sugar to 1 quart milk, $\frac{1}{2}$ cup raisins to 1 quart milk.

Tomato bisque: $\frac{1}{3}$ strained tomatoes, $\frac{2}{3}$ water; 1 pound peanut butter to 6 quarts soup.

Cream rice or cream barley soup: 1 measure of rice or barley to 32 measures of liquid.

Tomato macaroni soup: $\frac{1}{3}$ strained tomato, $\frac{2}{3}$ water; 1 pound peanut butter to 8 quarts soup; 1 pound macaroni to 16 quarts soup, or 1 ounce to 1 quart soup.

Bread pudding: 1 quart milk, $2\frac{1}{2}$ cups diced bread, $\frac{3}{4}$ cup sugar, 1 whole egg and 2 yolks. The two whites for meringue.

Pop-overs: 1 cup milk, 1 egg, 1 cup sifted flour, $\frac{1}{4}$ teaspoon salt.

Puffs: 1 cup milk, 1 egg, $1\frac{3}{4}$ cups sifted flour, $\frac{1}{2}$ teaspoon salt.

Cream pea soup or cream corn soup: 1 can peas or corn for $1\frac{1}{2}$ quarts soup.

Bean soup, split pea soup, or lentil soup: 1 cup dried peas, beans, or lentils for 1 quart soup.

The Truth About Coffee

BY A. B. OLSEN, M. D., D.P.H.



THE truth about coffee, or tea for that matter, for their influence upon life and health is practically identical, may be summarized in three brief statements:—

(1) Coffee is in no sense a food and contains no trace of nourishment for the body other than the cream and sugar which are usually added to make the drink more palatable.

(2) Coffee is both a poison and a drug. More than that, coffee, along with opium, alcohol, and tobacco, is a habit-drug. This means that the average person who becomes accustomed to taking coffee or tea soon develops more or less craving for the drink and finds himself distinctly uncomfortable if he is obliged to do without his ordinary allowance. He may also suffer from headache and other aches and pains and feel a sense of unsteadiness when deprived of the drug.

(3) Therefore coffee is not the simple innocent drink that so many people think it to be, but a potent drug which produces injurious effects upon the digestive organs, the heart, the nerves, and the brain. Coffee must be regarded as a harmful narcotic stimulant which should not be used as a beverage by those who have concern for their health and wish to maintain the highest efficiency and keep fit for work.

Composition of Coffee

The chief constituents of the coffee bean are an alkaloidal poison known as caffeine and an astringent called tannin. The characteristic properties of coffee are due almost exclusively to the caffeine, a drug which is listed in most, if not all, pharmacopœias. An ordinary cup of coffee contains a full medicinal dose of this pernicious drug and its daily use simply means daily drugging of the system. Tea contains a similar alkaloid

known as *theine* which, chemically and physiologically, is identical with the caffeine, and the average cup of tea also contains a full dose of the drug.

Tannin is an astringent that retards both salivary and gastric digestion and has an irritating effect upon the delicate mucous membrane of the alimentary canal. Its presence renders the food more difficult of digestion, but its evil influence is practically confined to the digestive organs.

Some Evil Effects of Coffee

Lack of space necessitates a very brief mention of the evil effects which the use of coffee has upon the body and mind. Coffee-drinking is a prolific cause of dyspepsia and especially of that common form known as nervous dyspepsia which is so difficult to cure. Indeed a cure is usually impossible unless the habit is discontinued. Some of the symptoms of coffee dyspepsia are nausea, sickness, giddiness, faintness, headaches, languor, stomach-ache, and occasional diarrhoea.

It is a well-recognized fact that the habitual use of coffee, and especially its free use, has an exciting influence upon the heart itself and may cause not only palpitation but also other irregularities more or less serious. Thus coffee may put a serious strain upon this vital organ.

But the chief mischief caused by the drinking of coffee is seen in its disastrous effects upon the nerves and the brain. The nerves are irritated and excited by the drug and are rendered hypersensitive. There is an early stimulating effect which is followed by depression or narcosis of varying degree. This narcosis is in reality a mild form of paralysis of the nerves and explains the obliteration of certain discomforts or even mild aches and pains that is brought about by

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DISEASES AND THEIR TREATMENT

Typhoid Fever: Its Cause and Symptoms

A Disease that Ranks Fourth in the Number of Deaths It Causes

BY CLARENCE E. NELSON



YPHOID fever is a general infection, caused by the bacillus typhosus; but it has been recognised as a specific disease a little less than one century.

In 1829 the name "typhoid" was given to the fever. At this period typhoid fever prevailed in Paris and many European cities and it was universally believed to be identical with the continued fever of Great Britain, where in reality typhoid and typhus co-existed. In the list of diseases causing the greatest number of deaths, typhoid fever ranks fourth. This much-dreaded disease is due to one thing, ignorance of the cause. Let me impress this one point: The only way any one gets typhoid fever is by ingesting it by way of the mouth, and that only with some article contaminated with the discharges of a typhoid patient.

How Typhoid is Caused

Imperfect sewage disposal and contaminated water supply are two special conditions favouring the distribution of the bacilli. Filth, overcrowding, and bad ventilation are accessories in lowering the resistance of the individuals exposed; while from an infected person the disease may be spread by fingers, food, and flies.

In the United States typhoid fever continues to be disgracefully prevalent. From thirty-five thousand to forty thousand persons die of it every year. According to a moderate estimate, nearly one half a million people are attacked annually. It is more prevalent in country districts than in cities;

and as Fulton has shown, the propagation is largely from country to town. What is needed is a realisation, by the public, that certain primary laws of health must be obeyed.

A very striking incident occurred at Plymouth, Pennsylvania, in 1885. The town, with a population of eight thousand, was in part supplied with drinking water from a reservoir fed by a mountain stream. During January, February, and March, in a cottage at a distance of sixty to eighty feet from the stream, a man was ill of typhoid fever. The attendants were in the habit of throwing the evacuations out on the ground toward the stream. During these months the ground was frozen and covered with snow. In the latter part of March and April there was considerable rainfall and a thaw, in which a large part of the three months' accumulation of discharges was washed into the brook. At the very time of this thaw, the patient had numerous and copious discharges. About the tenth of April, cases of typhoid fever broke out in the town below, appearing for a time at the rate of fifty a day. In all, about two hundred persons were attacked. A large majority of all the cases were in the part of town that received water from the infected reservoir.

Diverging now from the cause to the symptoms, of these I shall speak very briefly as it is the doctor's duty to recognise that phase, and also render the necessary treatment and directions.

Briefly, the symptoms are a gradual onset,

during which there are feelings of lassitude and inaptitude for work. The onset is rarely abrupt. During the first week, there is in some cases a steady rise in fever, the evening record rising a degree or a degree and a half higher each day, reaching 103 or 104. The tongue is coated and white. The abdomen is slightly distended and tender. Headache and mental confusion are very common. In the second week the symptoms become exaggerated. Diarrhœa and tenderness of the abdomen are marked. The third week shows a gradual decline in the fever. Loss of flesh is very noticeable, and weakness is pronounced. With the fourth week, in a majority of cases, convalescence begins.

Now as to treatment: It is necessary to call a competent physician, who will give full instructions. Permit me to say this much: Take great care to see that all the excreta are carefully disinfected with chloride of lime or with some other effective agent, and thus prevent the spread of this awful disease.

If You Will Drink

To the married man who cannot or will not get along without drink, the following is suggested by the *Watchman Examiner*:—

1. Start a saloon in your own house.
2. Be the only customer. You will have no license to pay.
3. Give your wife the price of a gallon of whisky and remember that there are ninety-six drinks in a gallon.
4. Buy your drinks from none but her; and by the time the first gallon is gone, she will have one pound and twelve shillings to put in the bank and the price of another gallon with which to begin business again.
5. Should you live ten years and continue to buy liquor from her, then die from the effects of your drinking, she will have money with which to bury you respectably, educate your children, buy a house and lot, marry a decent man, and quit thinking about you.

Vaccine Treatment for Trachoma

Two prominent physicians have recommended the use of material from trachomatous granules as a remedy for the disease. The material pressed out from granules is rubbed up in a mortar with normal salt solution, and is injected hypodermically into the patient. No reaction follows the injection, but about eight or ten days later the disease begins to improve, and in four or five weeks is all practically healed over. In some cases the restoration of vision was remarkable.

Recurring Colds in Children

McCornac, in *Western Medicine*, March 15, says that children with recurring colds usually eat too much, especially of carbohydrates and fats. He suggests that the sugar be reduced or eliminated, that skim milk be given in place of whole milk, and that there be a reduction in the amount of meat taken. The clothing should be light and warm. The children should have a warm bath daily, followed by a cool sponge and a brisk rub. The bowels should be kept open. The children should have fresh air day and night. He advises the use of soda bicarbonate for the lithemia.

Vaccination Lessens Blindness

Smallpox, which has been quite prevalent in Argentina, has resulted in much blindness. Since vaccination has become more generally practiced in that country there has been a marked reduction in smallpox, and consequently in the amount of blindness, we are informed in a report sent out by the National Committee for the Prevention of Blindness.

Silver Nitrate for Erysipelas

Rondet in *Lyon Medical*, Lyons, has used a 1-to-40 solution of silver nitrate, applied to the affected area every three hours night and day for seven to nine days. The skin is first cleaned with hot soapy water. In from twelve to fourteen hours the benefit is so marked that one might be tempted to discontinue treatment, but if the applications are given up, the inflammation increases. In order to be sure of a permanent result, the treatment should be kept up for nine days, never less than seven. The fluid should be swabbed over the entire area and for two finger-breadths beyond. The earlier the treatment is begun the more favourable the result.

TEMPERANCE

Science and Alcohol

Some Pointed Comment by American Scientists

Is Alcohol a Food?

THE question as to whether alcohol is technically a food is constantly recurring. Some scientists believe that as it is burned in the body it should be so classed. Others, including Winfield Scott Hall, professor of physiology, Northwestern University Medical School, Chicago, believe that alcohol, though burned in the body with the production of heat, should not be classed with the foods.

You say it is merely a matter of definition, perhaps, and not worth the words used in discussing it. It would be, were it not for the fact that the liquor interests, who have never been accused of being too particular as to their methods, make use of the statements of scientists in such a way as to lead young men to believe that liquor is actually beneficial. For this reason it is well to know how a prominent physiologist looks upon alcohol. In his paper, "The Relation of Alcohol and Alcoholic Beverages to Nutrition," Professor Hall says,—

"When one eats a real food, it is assimilated largely by muscle tissue, and is oxidized for the purpose of liberating life energy. When one ingests alcohol, it is carried by the blood to the tissues, mostly to the liver, where it is oxidized as any toxin would be for the purpose of making it harmless.

"Its oxidation liberates heat energy, but this energy cannot be utilized by the body, even for the maintenance of body temperature. *If a food is defined as a substance which, taken into the body, is assimilated and used either to build up or repair body structure, or to be oxidized in the tissues to liberate the energies used by the tissues in their normal activity, then alcohol is not a food.*

"The fact that alcohol is oxidized in the body has been generally misunderstood. The first impression naturally was, Foods are oxidized; alcohol is oxidized; therefore alcohol is a food. As logically might one reason, Man is an animal; the lobster is an animal; therefore

man is a lobster. The fallacy must be apparent. Not all things that are oxidized are foods. Many poisons which from time to time get access to the body are readily oxidized in the body, but nobody has contended that these poisons, because of their oxidation, should be looked upon as foods, with the one exception of the protoplasmic poison, alcohol.

"When a food is oxidized there is liberated the energy of muscular action, of gland action, or of nerve action. There is also liberated heat which maintains the body temperature, but the oxidation of alcohol disturbs muscular, glandular, and nervous activity, and the heat which is liberated incident to its oxidation does not maintain body temperature."

He makes this distinction between the oxidation of foods and the oxidation of alcohol:—

"All body oxidation may be classified in two groups: (1) *Active oxidations*, which take place in the active tissues,—muscles, nervous system, or glands,—and take place incident to action. Active oxidations are under the perfect control of the nervous system, and are proportional to normal activity. (2) *Protective oxidations*, which take place in the liver. This class of oxidation is wholly independent of the usual tissue activity, and is proportional to the ingestion of toxic substances, and independent of muscular action, brain action, or gland action (other than liver action)."

New Evidence Against Alcohol by Carnegie Nutrition Laboratory

IN an editorial article entitled "New Evidence Against Alcohol," the *Journal A.M.A.*, March 4, says,—

"If laboratory and clinical evidence shows that alcohol in so-called moderate quantities (social moderation) produces definite ill effects, such as lowering the resistance to disease, increasing the liability to accident, and interfering with the efficiency of mind and body and thus lessening the chances for success in life, to say nothing of any toxic degenerative effect on liver, kidneys, brain, and other organs, the excess mortality that unquestionably obtains among moderate drinkers as compared to total abstainers must be ascribed chiefly to alcohol."

According to the writer of the article, the "extremely voluminous" data already collected "may be said to be tinged with almost inevitable traces of personal bias, for the subject is one on which many persons have firm convictions, often based on ethical, social, or economic grounds rather than on physiologic evidence." He continues,—

"Nothing is more convincing in this field, however, than clear-cut indications furnished by strictly objective scientific investigation of the possible effects of alcohol in moderate doses—for these alone are worthy of debate—on the functions of the human organism. Duplication of results and frequent repetition of the experiments by independent investigators in a matter of such fundamental importance will call forth no criticism of wasted scientific energy."

Then follows a reference to the work of the Nutrition Laboratory of the Carnegie Institution of Washington, "ideally equipped for a reinvestigation of the alcohol question under the best auspices," which has "taken up the subject anew with a thoroughness and on a scale which it is expected will satisfy the majority of scientists as to the dependability of the results."

After giving a brief account of some of the investigations, the article continues:—

"These observations bring further evidence of the general depression of the neuromuscular processes at all levels of the cerebrospinal system. There is depression of even the simplest forms of motor processes, such as are found in eye and finger movements. Certainly nothing in all of this suggests any true stimulation—any increase in psychologic or physiologic efficiency. Impairment seems to be the keynote expressed by the depression."

Some Aspects of the Alcohol Problem

(Continued from the July number)

"Looking now to the instincts and appetites of mankind, as distinguished from the purely mental faculties, it is undeniable that the highest and most important of them all, the love of life, with efforts to sustain and prolong it, is not in any way strengthened by alcohol. Men are rasher and less cautious in action under its influence. They will thoughtlessly run more risks to their lives when under its influence. Forty per cent of the suicides in England are due to alcohol.

Reproductive Instinct

"The great instinct of sex and reproduction does not seem to be, in itself, stimulated by alcohol; but, undoubtedly, less pains are taken to restrain that instinct within moral and conventional limits, and things relating to it are talked of far more freely than when men and women are not under its influence.

"It cannot be said that the part of the reproductive instinct which consists in the love of offspring, with efforts to nourish and protect it, are in any way increased by alcohol. On the contrary, such efforts in rational, persistent, and altruistic ways are lessened. People who indulge in alcohol to excess are notoriously apt to neglect their children.

The Moral Sense

"The sense of right and wrong, the desire to follow the one and avoid the other, largely constitutes the 'character' of a man. Alcohol, if taken to any excess, and in many cases in strict moderation, tends to blunt or weaken this supremely important faculty, and thereby injure individual, social, and family life. Taken in excess it destroys it entirely. Weakened will-power, accentuated desire, and blunted moral sense together, are the characteristics of a degenerate and a social type of man or woman, which a well-governed state is entitled, for its own protection, to deprive of personal liberty. That excess of alcohol produces this condition is proved by the fact that all the authorities put down from three-fourths to five-sixths of all our crime to alcohol.

Desire and Craving

"Desire is one of the fundamental qualities of man and every one of the higher animals. It is a normal, necessary, and primary attribute. Desire in an accentuated form becomes a craving, and that craving may be under control or pass out of the regulation of the will. The great characteristic and one of the surest tests of unsoundness of mind is

that desires have become uncontrollable, and certainly it is one of the characteristics of a man in any way under the influence of alcohol, and of the man whose brain has been damaged by continuous alcoholic excess, that this condition of craving has arisen. Desire, in the normal condition of living creatures, and the pleasures which its gratification gives, implies that there is some necessity for the thing desired, and that its gratification and the pleasure such gratification gives, do good to the organism. Desire and necessity are not found in antagonism in nature. Even accentuated desire in the form of craving may be absolutely physiological. A man deprived of water becomes thirsty; he has a desire for it. If that is not gratified, desire may become the intensest of cravings—so much so that its gratification cannot possibly be resisted. Neither the man nor his camels and horses can restrain themselves in the desert when they come across water. But a similar craving may arise, in human beings at least, for things that do harm. Such we call a 'diseased' craving. Now alcohol has in many human beings the fatal power and tendency to rouse an ordinary desire into such a diseased craving. This is one of the most injurious and common of all its evil results on certain human brains. If there is in addition to this an impaired power of inhibition, an actual disease is thereby constituted. The craving becomes uncontrollable. This occurs in the condition we call 'dipsomania.'

Experimental Inquiries by Kraepelin and MacDougall

"Various scientists, particularly Professor Kraepelin of Munich and Dr. MacDougall of Oxford, have made accurate scientific experiments as to the effect of moderate doses of alcohol, well within the quantities constantly taken dietetically by millions of persons, their inquiries extending to both the intellectual capacity and the co-ordination of muscular action with mind. Kraepelin

states that there was "a sensible lowering of the capacity for work, and increased excitability," that the power of attention was diminished, the will power lessened, and the reflexes dulled; while the co-ordination and adjustment of mental effort with accurate voluntary muscular co-ordinations were adversely affected. There was set up a tendency to "automatic," as distinguished from voluntary action of the brain. He also found that a certain effect on the brain cells was left after the alcohol was discontinued, so that they were more susceptible to its effects for at least several weeks, so that, when the use of the alcohol was resumed, the faults of attention and muscular co-ordination appeared sooner, and were so great under the influence of one ounce of whisky that eleven per cent of errors occurred and that three ounces of whisky produced fifty-four per cent of error as compared with the normal power of those experimented on. Professor Kraepelin told me last year that he was so impressed with the scientific results of those experiments that ever since he made them he had abstained from the use of alcohol in any form, and that no inducements would make him touch it in his diet. Professor Forel of Switzerland, a distinguished medical scientist, as well as many other medical men and laymen in Switzerland and Germany, have been similarly impressed by those scientific experiments. Dr. MacDougall, in repeating some of Kraepelin's experiments, adopted a plan of concealing from the students whether they were taking alcohol or not, so that the power of expectation and suggestion might be eliminated. He found there was not so large a proportion of error under those circumstances, but still the general results remained somewhat the same. Those experiments certainly make out a strong case against alcohol from the ordinary working of the brain point of view. If a brain is to do its best work, let it be free from any alcohol stimulation whatever—is their moral. On the other hand, such

accurate scientific experiments for accurately measuring the effect of alcohol on the emotions, the happiness, the social enjoyment, and the powers of the orator to influence his audience, are not possible.

"The habitual use of alcohol in any degree over the strictest moderation, in my opinion and experience, certainly tends to bring on the signs of old age before their

time. Grey hairs, disinclination to muscular exercise and mental exertion, blurred facial expression, loss of keenness of eye, loss of memory, diminution of the usual interest of life, selfishness, are all more apt to come before their time in the man given to taking a "little too much."—Sir Thomas Clouston, M.D. L.L.D., in *British Journal of Inebriety*.

CURRENT COMMENT

Are You in Vigorous Health?

Ask the first ten or hundred or thousand persons you meet this question, and if they answer truthfully the greater number will reply No. Perfect health is the exception. One who is in superb health—who knows no aches nor pains; who digests well, sleeps well, and has perfect use of every organ; who is efficient physically and mentally—ought to be earning a salary as the principal exhibit in a side show; for such an individual is really more of a curiosity than the fat man or the two-headed man, the giant or the dwarf.

But if we accept a lower standard, and seek for those who, while not in absolute health, are satisfied with their condition of health, we still find that a large proportion of persons do not reach the standard. Begin a little personal investigation on your own account, and you will find that the average person is dissatisfied with his present physical condition, and with this dissatisfaction you will likely find a deep-rooted belief that for this "off" condition there must be somewhere a remedy, if only it can be found.

Skillfully-worded advertisements help to increase this confidence in the efficacy of drugs, or of plasters, belts, oxyfakes, or other appliances. Countless millions are spent yearly for patent medicines and other fake cures. One nostrum after another, one appliance after another, is tried in the vain hope of finding relief.

The poor patient who has found himself badly duped regarding one nostrum, or who has paid out hard-earned cash which he could ill spare for some electric foot warmer or ozonized belt,

or violet-rayed trinket, turns just as eagerly and hopefully to the next flaming advertisement he sees, and parts with more of those precious coins. Why?—Because it is a part of his faith, inculcated from childhood up, that disease is an entity that can be driven out by something in a bottle or by some appliance, and that for every disease there is a specific remedy if only he knew what it is. For this sublime faith the poor sufferer gives himself a martyr, and the harpies and scalawags reap the ill-gotten harvest, all the time protesting loudly against the improvement in the Public Health Service; for well they know that when this is so efficient that the common people are taught the science of health, the nature of disease, and preventive methods, with the three R's at school, the fake cures might as well go out of business.

There is some truth in the statement, "For any disease there is a remedy," but the remedy has relation to the cause of the disease.

The first rule in the treatment of disease is: *Find the cause (or causes) and remove it.*

The second is like unto it, and none the less important: *So surround the body by favourable conditions that it will increase in its powers of resistance and throw off the disease.*

There are some occasions when the medical man may help a little by giving "something in a bottle;" but at best this is only a temporary expedient. The body, if it is given half a chance, is its own best defender.

The path to health is not a short cut. The short cuts of the fake cures all have their pitfalls, and lead nowhere but to destruction.—*American Life and Health.*

About Disinfectants

The Good and the Inefficient

Bulletin No. 39 (Hygienic Laboratory) of the Public Health and Marine Hospital Service of the United States relates entirely to the antiseptic and germicidal properties of solutions of formaldehyde. The bulletin is, of course, very technical, designed entirely for scientific and medical men; but its summary of the results of extensive experiments is clear even to a layman, and is valuable to all who have to do with the sick, especially those suffering from contagious diseases. From this summary we gather the following:—

"Five per cent formalin acting upon *faeces* destroyed most of the non-spore-bearing organisms within ten minutes; a few resisted ten minutes. The spore-bearing organisms resisted as long as sixty minutes.

"*Faeces* exposed to ten per cent formalin solution were rendered practically sterile immediately; a few colonies only developed after ten minutes' exposure. The spore-bearing organisms were destroyed after forty minutes.

"A ten per cent solution of formalin completely deodorised *faeces* at once. A three and five per cent solution renders them almost odourless after a very few minutes' exposure.

"On account of its germicidal efficiency and deodorant action, formalin would seem to be one of the most useful agents for the disinfection of infected human discharges or sputum, when used in a ten per cent dilution, allowing an exposure of one hour after mixing.

"The action of formalin on toxins is an important property in its use as a disinfectant, for not only are the bacteria themselves destroyed, but their soluble products as well."

By a five per cent or ten per cent solution is meant five or ten parts of the formalin to one hundred parts of the matter to be disinfected.

Bulletin No. 15 of the same laboratory, treating of copperas, or sulphate of iron, as a disinfectant, and giving detailed reports of many experiments with that substance, concludes:—

"Sulphate of iron (copperas) does not show any restraining influence over the development of putrefactive changes unless it constitutes more than two per cent of the mixture. It does not permanently restrain the development of putrefactive changes unless it constitutes at least five per cent of the mixture.

"As a germicide it has little or no action, even when applied under the most favourable

conditions for disinfection. When the material to be disinfected was flooded with the agent in saturated solution, in nearly all experiments, its action was not apparent, and it failed to disinfect under such favourable conditions seven different varieties of pathogenic organisms out of nine, after an exposure of one hour to a saturated solution.

"Tested upon *faeces*, it failed to disinfect after three days, . . . and when it was applied in saturated solution and in double the bulk of the material to be disinfected.

"It seems, therefore, that copperas or sulphate of iron is of no real value as a disinfectant. The strongest solution has either no disinfectant action at all, or its disinfectant action is so slow and uncertain that its demonstration might be a matter of interest, but certainly could not be of practical value."

In view of the fact that copperas has so long been looked upon as a reliable disinfectant, the report of these careful experiments should be of interest and value to all.

The Truth About Coffee

(Continued from page 183)

drinking a cup of coffee. It is true that there is a temporary sense of well being and comfort, but this is at the expense of the nerves and the brain cells which are partially stupefied. Insomnia is a not uncommon product of coffee drinking and various forms of nervous disorders are liable to develop, such as hysteria, neurasthenia, and similar complaints. There is indeed a certain form of "coffee drunkenness" which is occasionally met with either in those who are unusually susceptible to its influence or in others who take it in large quantities.

Coffee and the Intellect

It must be obvious to the reader that more or less injury results from the habitual use of such a drug as coffee, whether taken once, twice, or more frequently each day. The pernicious results naturally vary with the susceptibility of the user, and it is a notable fact that nervous people are far more sensitive to its influence and suffer most. Like tobacco or alcohol, coffee poisons the brain and blunts the intellect so that the victim is no longer able to reason properly or use his

brain power in a sane and normal way. In a word he is suffering from chronic brain poisoning and it would be folly to expect him to act in a natural or normal way until that poison has been withdrawn and the system has been cleared of it.

People who have anything like proper regard for their health and strength, and who wish to maintain the highest degree of both mental and physical efficiency will not allow themselves to become slaves to a habit-drug like coffee; or, if they find themselves in bondage, they will, as soon as they learn the truth, promptly discard the poison-drink which is injuring their health.

Clean Hands and Faces

THE little ceremony of washing before meals ought to be a matter of course in every well conducted home. Boys, as they are growing up, are often indifferent to the necessity for clean hands, and imagine that if they wash their faces when they get up in the morning they have done their duty for the day. A mother who wishes her children to be refined in manner and neat in appearance should insist on immaculate hands and faces at the table.

The next step from well-washed hands is the assuming a clean jacket or a fresh print dress by the boy or girl, particularly before the evening meal. A little care and attention as to this detail makes for health. Absolute purity should characterise everything about the table, not only in the cooking and serving of the meals, but in the toilet of those who partake.—*Selected.*

"IF the average man would keep his eye on his employer's interests as steadily as he does on the clock, the days would not seem so long. If he paid more attention to the *quality* of his *work*, and less to the quantity of his pay, he would soon discover a tendency to obesity in his pay envelope."

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The Little Stranger and How to Care for Him

(Concluded from page 181)

carriage, and leave him on a sheltered verandah or balcony. Here he may sleep without the jars and jolts and street noises incident to a ride in his go-cart. Often-times baby will sleep for two or three hours if left in a quiet out-of-door place. The mother may require once during his long sleep to change his position, turning him from one side to the other, as babies often wake from being weary of one position, and will go to sleep again if gently turned over to the other side. When baby grows a little older he will greatly enjoy a daily outing.

Peroxide for War Wounds

A Philadelphia physician reports that peroxide of hydrogen, sprayed into wounds after the removal of gangrenous parts, has been the means of saving many soldiers from serious operations and death.

School Lunches

In the belief that a hot dish at noon, if only a bowl of milk soup or a cup of good cocoa, is highly important to school children, many schools throughout America are either supplying a regular hot luncheon to school children, or providing a single hot dish with which the children coming from a distance can supplement the cold food in their lunch baskets. In most cases the children bring money with them and buy the dishes at cost price. Those in charge of the lunchroom see to it that nothing is for sale that would be hurtful to the children, and direct them in their purchases so that they will not buy merely sweets or pastry. This overcomes the danger of the child's spending his money unwisely or patronizing an insanitary shop.

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