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GERSOPPA FALLS, SO. INDIA.

HERALD OF HEALTH

The Indian Health Magazine.

V. L. Mann, M. D., Editor - - - - - S. A. Wellman, Asso. Editor.

Vol. 3. Lucknow, U. P., August, 1912, No. 8.

Editorial

PURE FOOD LAWS

SOME of the nations that have been interested in the health of their subjects have established Pure Food Laws, but in a great many instances they are merely a by-word. In other words the Government is so lax in the execution of the laws and there being so many ways for the manufacturers to get around them that they do not have any weight.

The adulteration of food has become so widespread that we are never sure that we are paying our money for the genuine. Some of the articles used in adulteration are not harmful. A large portion of the coffee and cocoa that is used to-day is made of roasted peanuts and other articles. The adulterant in this case is not as harmful as the staple article, but it is fraudulently putting before the public something purporting to be genuine that is not. Most of the substances used for adulteration are of a decidedly harmful nature. So much so that the health is undermined. Is it not strange that man is so greedy after the rupee that he will poison the food of his fellowmen and slowly put them to death?

A warfare is presently being waged over the Pure Food and Drug Act in the United States. Dr. Wiley, the chief of the Bureau of Chemistry in the Department of Agriculture, who has faithfully performed his duties for twenty-nine years has resigned from office. The cause of his resignation is a discredit to the Government that employed him. In his own words he states why he resigned.

" I believe I can find opportunity for better and more effective work which is nearest my heart, namely the pure food and drug propaganda as a private citizen than I could any longer do in my late position."

In his efforts to deliver to the public the genuine article, he met with such strong opposition from those under whom he was working that he was forced to resign. How corrupt is political machinery !

Again Dr. Wiley says :—

" I found one by one the activities pertaining to the Bureau of Chemistry were restricted and various forms of manipulated food products were withdrawn from its consideration and either referred to other bodies not contemplated by the law or directly relieved from further control. A few of the instances are well known. Among these may be mentioned the manufacture of so called whiskey from alcohol, colours and flavours, the addition to food products of benzoic acid and its salts, of sulphuric acid and its salts, of sulphate of copper, saccharin and of alum ; the manufacture of so called wines from pomace chemicials and colours; the floating of oysters often in polluted waters for the purpose of making them look fatter than they really are for purposes of sale, and the selling of

mouldy, fermented, decomposed and misbranded grains."

We wish the public were entirely dependent upon men like Dr. Wiley for the quality of food that is consumed. We feel that as much or more could be accomplished in prevention of disease along this line as in any other way.

India is not without fault in this matter as nearly every paper or journal we pick up contains the advertisements of some nostrum which contains poor alcohol, opium, and cocain.

SANATOGEN

Sometime ago the question came up in HERALD OF HEALTH as to the advisibility of Sanatogen as a nerve food. At the time the question was asked, we did not have specific data at hand. We could answer it only from a general standpoint.

Lately the journal of the American Medical Association has taken up this life giving (?) food and exposed its fraudulent claims. " The Re-creator of Lost Health, Specific Nerve Tonic, Most Reliable and Scientific of all Nutrients," are some of the names applied to Sanatogen. To have these appelations it must contain something wonderful. The fact of the matter is that it contains mostly the casein of milk, or cottage cheese. You will find that you are paying a good price for cheese when you invest your money in Sanatogen.

The analysis of this substance shows that it contains :—

Water.	8.60.
Ash.	6.23.
Casein.	83.10.
Proteids other than casein.	2.53.
Sodium Glycero phosphate.	5.59.
Insoluble matter.	.84.
Undetermined.	1.87.

(Journal of the American Medical Association.)

Cottage cheese at Rs. 13- per pound is very dear eating as this is what a pound of Sanatogen costs, and it is nearly all cottage cheese.

This firm is very skilful in its advertising and laying its frauduleut claims before the public. We hope our readers will not be misled by the claims of this nostrum or by other similar schemes.

EXPIRED AIR

Many theories have been advanced as to the effects of the lack of ventilation. It is from this standpoint that the Black Hole of Calcutta is famous. There is no doubt but that expired air is antagonistic to life, but it is not easy to ascertain just why this is.

The earlier investigators attributed the uneasiness and discomfort of being confined in expired air to the excess of carbondioxide in the air. The rebreathing of air raises the percentage of carbondioxide as expired air is 4 per cent richer in this compound than inspired air. It is also a fact that the atmosphere at the bottom of old wells with a high percentage of carbondioxide is incompatable with life. This fact is explained not on the basis of the poisonous properties of the compound but because of the lack of oxygen in the air.

Recently it has been found that carbondioxide is as essential to the body as is oxygen; that a lack of carbondioxide in the blood is frequently instrumental in causing shock. That this compound in expired air accounts for its depressing influence does not carry much weight.

Others conceived the idea that the body gives off effete matter which when inhaled into the system brings about the symptoms experienced in the Black Hole of Calcutta. Condensed aqueous vapour of men and animals which when injected into rabbits caused death. Others tried this same experiment with negative re-

(Concluded on Page 168)

General Articles

The Bhistis

WHERE water of undeniable purity is laid on, all that has to be attended to is the method of transport from the nearest standpost to the house, for it is as yet extremely exceptional for pipes to be carried right into buildings as is the practice in Europe, so that a special servant as a water carrier is still a necessity in India, even in large towns. In this case and indeed whatever may be the source of supply, it is of the greatest importance that nothing but metal vessels, so constructed as to be easily cleaned, should on any account be used. In all Mohamadan countries, water is conveyed in a goat or calf skin, striped from the animal entire, with the legs tied up, and filled from the neck, which is secured with a thong for transport; and it is a most unfortunate circumstance that it has become traditional for Europeans to employ the Mohamadan Bhisti with his mashak instead of the more cleanly Hindoo kahar with his easily cleansed iron water vessel, for the Mohamadan water-skin or mashak is an abomination that cannot be too strongly condemned. Few will, it is thought, deny that if a piece of half tanned hide were found lying in water intended for domestic uses, they would at once reject it and apart from the objectionable character of the material of the mashak, it must be remembered that from its construction it is absolutely impossible to clean the interior; and this must necessarily become foul in the course of a few days' use, even if it were constructed of silver instead of half-dressed hide. Added to this, it has been ascertained, by actual experiment, that disease germs, deposited on the out side of a water skin, are capable of growing into and working through it, and so continuously contaminating the contained water. Any one who knows the ways of the bhisti must be familiar with the careless ways in which his mashak is laid down on the ground anywhere that may become handy so that it cannot fail to get frequently fouled with germs of all sorts which, owing to the vessel being composed of organic material find themselves at once placed on a culture medium as congenial to their growth as if prepared in a laboratory.

The above reasons, it is thought, should suffice to show that no leather vessel should on any account be tolerated in connection with our water supply, and it may be added that there is no difficulty whatever in substituting cleanly metal buckets for the abominable filth trap that has just been described.

While the Hindoo holds the handsome belief that contact with leather means utter defilement to water, and would very probably die at the stake rather than drink from a mashak; the use of the latter by the Mohamadans is purely a matter of custom, in no way connected with religious sanction, so that in hospitals too small to afford a double establishment, a Hindu waterman alone is entertained, because no Mohamedan can object on the score of religion to taking water from any cleanly vessel or from any one's hands, so that though a bhisti can serve a Mohamadan alone, a kahar can serve both castes.

For many years before leaving India, the writer insisted on the use of metal buckets for carrying his household water, a pair being carried slung from the ends

of a bamboo balanced on the shoulder, and it never became necessary to dismiss the Mahomedan water-carrier, as he always proved ready to adopt the change, as soon as he discovered one was in the earnest in the matter, and that any infraction of the rules meant instant dismissal.

There are no more hard working and better servants in India than the Bhishtis who are deservedly, as a body, great favourites with the European people, ever ready to put their hand to any thing. One who once served me for several years used often to act as factotum on short expeditions, cooking my food and waiting at table, and finally as no groom was available at the last moment marched one of my horses from one end of the Punjab to the other by himself, and brought it in good condition. With willing and obliging men of this sort, it is naturally easy, by a little insistence to ensure the adoption of any plan that does not actually clash with their religious beliefs—and I can assure my Anglo-Indian readers that they, too, will meet with no difficulty in introducing this important reform, provided they show clearly from the first that they mean to be obeyed. It is rarely even necessary to threaten to entertain a Hindoo Paniwala in the Bhishti's place, for as a race they are of the most amenable.—*From Climate and Health in Hot Countries by Lt. Col. G. M. Giles, M. B., F. R. C. S.*

Tea-Poisoning

THE commonest coexisting diseases, Neild says, are those which most frequently lead to excess in tea-drinking. First among these is *oral sepsis*, due to decaying stumps of teeth, septic gums and *pyorrhea alveolaris*. During the night the undisturbed *incubation* of bacteria in the mouth and the accumulation of their products creates a bad taste, that is removed for a time by an early-morning cup of strong tea ; the more tannin present in the infusion the more efficient for the purpose. With this early cup of tea we have the best conditions for the rapid absorption of a poison. The solution is hot and concentrated, the stomach has had a long rest and it may be an hour or more before any food is taken. But the presence of a bad taste in the mouth is not the only cause of the craving for tea in these cases ; the absorbed toxins from the septic trouble, both by their direct action on the nervous system and by the starvation of that system by the secondary anemia, produce a condition which urgently calls for the stimulant action of tea. The decomposition is also responsible for various disturbances of the digestion and the tea which is taken to relieve the trouble may in turn produce further disturbances on its own account. In women at the *menopause* nervous instability is a frequent cause of excess in tea-drinking ; and although tea seems to brace the nerves for a short time, it also greatly aggravates certain of the symptoms. Among men, those whose occupations create thirst, with the marked exception of brewers' employees, are liable to become excessive tea-drinkers, although it is in sedentary occupations that the effects of tea excess are most rapidly produced. A very large amount of tea is often taken by those whose occupation makes them perspire freely, without producing any distressing symptoms. In the majority of cases of chronic tea-poisoning the symptoms come on very gradually during some months and then rapidly increase during the last few weeks or days before the patient comes under observation. Many of the symptoms are much more prominent and more rapidly produced where there is also sepsis in the mouth or constipation present, particularly the discoloration of the skin and the dyspepsia. Symptoms attribut-

able to the colon are not uncommon, but a dilated colon was found only in a small number of the cases where it was looked for. The roughening of the back of the upper arm is not unusually common in tea-poisoning. The whites of the eyes are not discolored, thus distinguishing the discoloration from a slight jaundice. The hot flushes so frequent in tea-poisoning are, as one would expect, much more distressing at the menopause. Occasionally a patient will complain of *polyuria*. There is only one *pathognomonic* sign of tea excess, but it is not present in all cases; that is, the odour of the breath. It is that of musty old books. The *cardiac* symptons are more akin to those of tobacco-poisoning than to those of alcoholism, the symptoms of nervous derangement predominating over the signs of muscular degeneration. In six cases of tea-poisoning Neild found that the blood-pressure is not much altered, although in one very severe case it was lowered. *Arteriosclerosis* is not more common in these cases than would be accounted for by its general frequency, yet the three types of the preliminary stage of arteriosclerosis, as set forth by Stengel, would cover the great majority, if not all, of the cases of chronic tea-poisoning. Some disturbance of the digestion is always present. *Myasthenic* or atonic dyspepsia may serve as a general hold-all for the symptoms of the indigestion from which these patients suffer. A frequent symptom is a peculiar "sinking sensation," that comes on with striking regularity about an hour and a half after having taken tea, whether with or without food. It comes on quite suddenly and begins with a feeling of movement or contraction at the *pyloric* end of the stomach. It is caused by excess of tea and yet this excess may consist of the only cup taken in the twenty-four hours, provided that the tea and its method of preparation are sufficently bad. Constipation is by no means always present, but is usual, and when it does occur greatly hastens the onset of the severe symptoms. As is the case with other astringents, tea may sometimes cause diarrhea.

Altitute and Blood-Corpuscles

THE response of the human organism to altitude, as exemplified in an increase in number of red blood-cells (erythrocytes) in the circulation, is familiarly pointed out as a useful compensatory reaction. The effect of a diminished partial pressure of oxygen accompanying the rarefaction of the atmosphere is equalized by the larger absorbing surface furnished by the increased number of oxygen-carrying cells. The facts here cited have played a part in the attempt to explain the physiologic effects of mountain resorts and elevated plateaus; and various therapeutic gains have been ascribed to them. The published statistics for the numbers of erythocytes observed under such conditions give figures reaching 8,000,000 corpuscles per cubic millimeter, in contrast with the conventional 5,000,000 counted at lower levels.

Data of this sort have been attacked repeatedly as misleading. It has been asserted, for example, that these high figures do not represent a true gain in red blood-cells, but are the outcome of altera-

Orel Sepsis. Mouth Poisoning.
Phyorrhea Alveolaris. Suppuration of the teeth.
Incubation. Hatching.
Menopause. Change of life.
Pathognomic. Characterstic.
Polyuria. Excess of urine.
Cardiac. Heat.
Arteriosclerosis. Hardening of the arteries.
Myasthenia. Muscular debility.
Pyloric. Entrance of stomach.

tions in their distribution in the blood of various vascular areas. Or again, changes in the water-content (concentration) of the blood at altitudes have been made responsible for a relative increase in the number of corpuscles—again in hemoglobin (colouring matter of red blood cells) which is apparent, rather than real. The debate is one of several years' standing.

It can not be denied that in the past blood-counts have often been attended with not inconsiderable percentage of error. It is interesting, therefore, to find the mooted question of the increase in erythrocytes at altitudes subjected to investigation by a careful student of the technic involved. Professor Bürker of Tübingen, to whom we owe the introduction of a new and efficient hemocytometer (Instrument to count red blood cells) has surpervised a systematic examination of the blood of four trained observers at Tübingen (1,000 feet) and at Davos on the Schatzalp (5,600 feet), and subsequently at the lower altitude again. The location at Davos was not such as to induce the complications of mountain sickness. Although the investigation has confirmed the current view of the influence of altitude on the blood, the effect was found to be decidedly less marked than is commonly assumed. A month's stay at the elevation of five thousand feet occasioned an increase of only about 5 per cent. in the number of red corpuscles and 7 per cent. in the hemoglobin content of the blood. This change came about rather speedily; and a decrease promptly followed the return to a lower atmospheric level. An examination of the blood of the same individuals a month later, in Tübingen, showed a persistence of rather high figures for the blood constants under consideration. The investigators believe that the electrical properties of the atmosphere and the insolation peculiar to mountain resorts can be excluded as causes of the physiologic effects reported. It was noted incidentally that the hemoglobin content of the blood was increased with falling temperature and the cold season—an effect assumed to be associated with acceleration of the oxidative changes in the organism. This is, perhaps, a typical response.

It may be objected that the results just reported must be discounted because of the small number of individuals examined. Nevertheless they have been the outcome of a careful study and are not without corroboratory evidence from other recent investigators. Herein lies the suggestion that the influence of altitude on the blood has perhaps been somewhat overvalued in climatologic discussions.—*American Medical Association Journal.*

Typhoid Prophylaxis

ANTI-TYPHOID vaccination has now assumed a position of sanitary importance in military circles. Since the introduction of the plan of immunizing against typhoid fever owing to the suggestion of Sir A. E. Wright, there has been uniform appreciation of the method by the heads of the British and German armies.

As a result of a conference of members of the Medical Reserve Corps the War Department in 1909 authorized the inoculation of volunteers. The value of the prophylactic procedure is evidenced by the fact that out of 12,801 men, assembled on the Mexican border for a period of four months, only two cases of typhoid fever occurred—the anti typhoid immunization (the act of rendering exempt) was effective. As a result of this excellent showing the War Department was quick to act in accordance with the demonstration, and vaccination is now compulsory in the United States army.

The value of inoculation, as shown by

Captain A. W. Williams (*American Journal of the Medical Sciences*, March, 1912), consists of a contrast of the typhoid incidence and mortality rate among the inoculated and noninoculated troops.

Among the 17,978 men who received the *prophylactic* (preventative) inoculation, only seven cases of typhoid fever occured, with no deaths. There were among the 58,252 non-immunized soldiers 13 cases with 10 deaths.

The greatest danger of camp life is now within control. Over 86% of the entire mortality of the Spanish-American War was due to the warfare waged by the myriads of Eberth's bacilli. With revaccination every three years it may be possible to eliminate typhoid fever as the most dangerous ammunition of Mars.—*Medical Review of Reviews.*

Diet, its Relation to Character

By the wonderful process of digestion, food and drink are converted into thought and feeling—are manufactured into mind and soul. Is it then unreasonable to suppose that different kinds of foods produce different kinds of mind? Reasonable or unreasonable, it is nevertheless the fact. Oysters are proverbial for exciting a certain class of feelings proportionately more than other feelings, or the intellect. Rollin, the celebrated historian, says, that in training the pugilists for the bloody arena, to whom a ferocious spirit, and great physical strength, were the chief requisites, they were fed exclusively on raw flesh. Will not this explain the ferocity of beasts of prey; the mildness of the lamb and the dove; the mild and pacific disposition of the Chinese and Hindoo; the blood thirsty, revengeful spirit of the savage Indian. Intoxicating drinks excite the animal organs, located in the base of the brain, more than they do the intellectual of moral faculties. This is unquestionably the fact with every thing irritating in its nature, such as condiments, flesh foods, tea, coffee, and highly seasoned, or highly stimulating food of any kind. And it will be ound that animal food, by keeping the body in a highly excited state, is calculated unduly to excite the animal organs, thereby withdrawing strength, from the top and front of the brain, but imparting physical strength, and concentrating the energies of the system, thereby wearing it out the sooner; and also that vegetable food, by reducing the inflammation of the blood, and keeping the system cool, promotes clearness of thought, quietness of feeling, placidity of mind, and moral and elevated feeling, and develops the nervous temperament, thus producing a tendency to intellectual pursuits.

This subject opens up a vast field for observation, and nothing but facts can guide us to the proper results. Let observations be made, experiments instituted, and the results recorded; and a vast amount of good will flow from them. If you wish to distinguish yourself intellectually, you must regulate the quantity and quality of your food and drink in accordance with the established laws of physiology, or your wings of fame will be melted in the heat of animal indulgence.

CAMP-FIRE GIRLS this is a movement recently organized, somewhat after the pattern of the Boy scouts. Its purpose is to make homely activities attractive to girls. Girls will be admitted to the organization between the ages of twelve and twenty. As Mrs. Gulick, the prime mover, says, "a woman must know how to sew, cook, and care for the baby, or her education is not complete. The camp-fire movement is not entirely untried. In a small way, it has at least two years' trial, with most excellent results.

Indiscriminate Drug Taking

THE danger of the formation of the habit of continually turning to some drug at the slightest pain, in the endeavour to benumb that pain, instead of finding out what caused it to arise, and taking the proper measures to remove the cause, Lambert rightly emphasizes as being a very great one. What we call diseases are really variations or perversions of the normal processes going on in the body and one or more of these processes may become perverted or changed, so that the resulting condition brought about in the body is vastly different from the normal condition and becomes harmful, and the resulting symptoms are what we designate as disease. Consider for example, headaches, and the numerous remedies advertised, bought and taken for them; consider the many causes which give rise to headache; a disturbed digestion, sluggish circulation, tired out and overwrought nervous system, carelessness in personal hygiene permitting constipation, and various sicknesses or little ailments that constantly arise. If we remove the cause, the headaches will cease, and the great danger we have in turning to headache remedies is, that as the pain ceases we forget the cause, believing ourselves better and go on permitting the morbid processes which caused the headache to persist in the body, until we have really allowed a little thing to run along until it may have become a serious condition. Beside the dangers to the blood from various of these aniline drugs, their incessant use is not without its dangers in habit formation.

Another cause which has brought about a wide-spread use of drugs is that of insomnia—and the hypnotics or sleep producers are probably the most abundantly used of all. The dangers of indiscriminate drugging are summed up as follows: It is often harmful, and usually unintelligently useles. The drugs in themselves frequently do harm, to say nothing of the waste involved in pouring in enormous quantities of these remedies to no purpose, since the reasons for which they are taken are often incorrect. Many of these remedies do harm, in that they actually injure and pervert the normal processes of the body. All narcotic drugs, those which benumb pain and the like, have the danger of real habit formation connected with their use, and when once a person is addicted to these drugs, the condition in which he finds himself is worse than the previous one for which they are taken. It is an old, trite saying of the medical profession that he who diagnosticates well will cure well, and this applies to each and every individual, whether he has taken a a degree in medicine, or whether he has not, and certainly the indiscriminate drugging to which the human race is to so great an extent addicted to-day is not based on principles of good sense and intelligence.—*Journal of the American Medical Association.*

Vegetables or Meat

THE majority of scientific and medical men appear to be coming round to the view that a vegetarian diet is one the most suited for the maintenance of health. We have the testimony of two German scientists. Professors Burian and Schur, who have been making tests for the purpose of deciding whether Nature intended man to eat flesh, that "the human constitution is not physiologically adapted to flesh dietary; that a dietetic reform movement is necessary for the upbuilding of the human race, and that everybody should become a vegetarian." They have found that the

reason why a meat diet suits carnivorous animals is due to the fact that their livers are differently constituted, being able to destroy proportionally ten to fifteen times as much uric acid as the liver of man. Thus a slight increase of uric acid normally circulating in the blood might, in the human organism result in mischievous consequences, though capable of producing no effect in an animal better prepared to protect itself against the action of this poison. The two scientists have further found that in man the liver destroys only about half of the uric acid circulating in the blood, whether derived from external sources, such as a meat diet, or generated within the body by ordinary tissue changes. It is this poison of uric acid which ages our arteries, and leads to early senility. Therefore, the secret of maintaining our youth and longevity lies in reducing the uric acid in the blood; and this can only be attained by resorting to a vegetarian diet, for which Nature intended man.—*Madras Standard.*

Health and Marriage

NONE knows better than the physician the tragedies caused by the marriage of the physically unfit. The necessity that both parties to the marriage contract should be mentally and physically sound has long been admitted, not only by the medical profession, but also by those who have made a study of sociologic problems. That the state should take action such as would prevent the mating of the unfit has long been recommended. Marriage, however, has a religious as well as a civil significance with many people. What more rational, therefore, than that the religious representatives should take official notice of an evil that so closely concerns both the church and the state? Within the last few days a well-known clergyman announced that in future he would wed no couple that failed to bring from a reputable physician clean bills of health. One might imagine that there would be no criticism of this stand from other representatives of religious organizations. Nevertheless, newspaper interviews indicate that the advanced stand taken by the pastor in question did not receive anything approaching unanimous approval. One preacher in particular is quoted as waxing eloquent in the denunciation of what he was pleased to call "health certificate marriage." Said he: "If you would rob the holy m riage rite of its sanctity, if you would divest a sacred custom of its beauty and holiness, if you would make the union of two souls a commercial transaction; then establish a custom which will permit the physician and his science to stand between two hearts that are drawn to each other." At the risk of spoiling this perfervid utterance, we fain would take the liberty of paraphrasing it, thus: If you would rob the holy marriage rite of its present capacity of permitting the infection of your sisters and your daughters with loathsome diseases, if you would divest a sacred custom of its potentiality for perpetuating epilepsy and idiocy, if you would make the union of two souls synonymous with the union of two clean bodies, then establish a custom which will permit science to stand as a faithful guardian of health and happiness over the two hearts that are drawn to each other!—*American Medical Journal.*

"IT is the way in which a man decides little things, no less than great ones, that indicates what he is made of."

A CAREFUL investigation by competent scientists in England has shown that there is no ground for the belief that tuberculosis may be transmitted by the mouthpiece of the telephone.

Vegetable Gelatin in Constipation

PHYSICIANS are rightly looking for laxatives that act mechanically. The course breads and crackers, and the green vegetables all have their places and serve a good purpose. Yet more is to be desired. In agar agar we have a cellulose with scarcely any taste or odour. It is not irritating to the stomach or intestines. It can be given finely cut or powdered. Children take the latter better. The methods of taking it are various. It can be eaten with a spoon after soaking in water, or taken dry. It may be mixed with cereals or vegetables. Cooking does not injure it, consequently it may be added to home made biscuits or cake. The amount sufficient for relieving constipation in an adult is usually between one and two rounded tablespoons.

When allowed to soak for an hour it takes up twenty times its weight and five times its volume of water. By virtue of the moisture absorbed and its bulk it stimulates peristalsis (Intestinal movement) as if it were training the muscles of the bowel to work. It does not produce a dependence upon itself and may be gradually withdrawn when proper evacuations have been established.

It is a common experience for the feces to change from foul, gaseous ones to those of normal odour and consistency, with the very natural disappearance of symptoms due to absorption of intestinal putrefaction.

It is most useful in constipation due to diets leaving but little residue. Excellent results are noted in cases where, though the bowels move daily or more often, there is undue putrefaction and toxic absorption.

Without other proper measures agar is not successful in constipation due to relaxed abdominal wall, partial stricture or dilatation of the rectum.

Massage in the Relief of Pain

MUSCULAR rheumatism should always receive massage from the first, and very often it will need no other treatment. The deposits frequently found in these cases can be promptly removed by massage, thus relieving pain that has existed for months or years.

The pain of neuritis, sciatica, and many of the neuralgias can at times receive great benefit from massage, but some cases tax the ingenuity of the operator. The operator will be agreeably surprised by the effects of massage for the relief of pain in frost bite, intestinal colic, flat foot, cramps, etc.

The manipulation must vary according to the case, and must be adapted to the position and kind of pain, and to the functional disability. The chief work in massage falls on the thumbs and fingertips, the inner surfaces of the fingers and eminences at the palm of the hand. The movements vary from the slightest touch to the most thorough kneading and percussion, following frequently by active, passive, and resistive movements.

The manipulations should not cause pain, but should be followed by relief of pain, or tension, and a general feeling of lightness and well-being. The case should receive the care given to a surgical operation, such as preparation of the hands, condition of the surface of the body treated, temperature of the room, and the position of the patient.

The physiological effects of massage are increased elimination, circulation, and metabolism, absorption of exudation, improved nutrition, relief of congestion, and quieting of the nervous system.

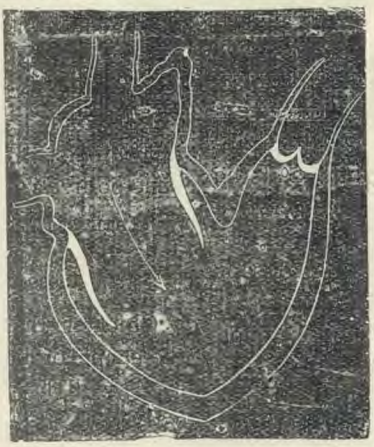
Massage should be much more extensively used. It not only relieves pain but it shortens the time required for treatment.—*E. C. Thompson, M. D.*

Anatomy and Physiology

The Circulatory System

THE circulatory system consists of the arteries, veins and capillaries.

The heart is a hollow muscular organ, pear shaped, and about as large as one's fist. It is located more to the right than to the left of the median line and extends from the third rib down to the 5th rib. It consists of an involuntary muscle differing from all the other involuntary muscles of the body. It is divided into two halves, right and left, and each half is again subdivided into two different parts. Each lateral half consists of two cavities. The upper one is called the auricle and the lower the ventricle. This gives us a right auricle and right ventricle on the right side of the heart, and left auricle and left ventricle on the left side of the heart.



In the walls between the different cavities of the heart are situated valves. The valve located between the right auricle and the right ventricle is called the tricuspid valve. It is composed of three triangular segments made up of fibrous tissue and continuous with fine cords, which close up the aperture. The valve located between the left auricle and the left ventricle is called the bicuspid valve and is constructed similarly to the tricuspid valve with the exception of its having two segments instead of three. The valves are used to keep the blood from flowing backwards when the heart contracts. Instances of the backward flow of blood sometimes occur in the living body. Nodules appear upon the valve leaflets thereby bringing about imperfect closure, eventually leading to heart failure.

There is another set of valves ; one is located between the aorta and the left ventricle called the semilunar valve. The aorta is a large artery which leads from the left ventricle and distributes the blood over the greater part of the body. The other valve is located between the right ventricle and pulmonary artery and is also called the semilunar valve. The pulmonary artery is the vessel that conveys the blood from the right ventricle to the lungs. The semilunar valves differ from the valves between the auricles and the ventricles in that they are made up of circular cusps rather than segments.

The blood which is brought from the various parts of the body to the heart is emptied into the right auricle. From the right auricle it passes through the tricuspid valve into the right ventricle. From the right ventricle it is conveyed to the lungs by the pulmonary artery. The blood is conveyed from the lungs back to the left auricle by means of the pulmonary veins. This is the only example that we have in the body of the veins carrying arterial blood. This is blood that has been purified by coming in contact with the oxygen in the lungs. The blood then is conveyed from the left auricle through the bicuspid valve into the left ventricle. From the

left ventricle it is then conveyed through the aorta all over the body which completes the circulation of the blood.

The heart beats from 60 to 80 times in a minute in an adult. In children and infants the beat is more frequent varying from 100 to 150 times in a minute. The beat of the heart consists of two sounds. The first and second sound. The first sound is caused by the muscular contraction of the heart and the closure of the valves between the auricles and the ventricles; also by the point of the heart called the apex, coming in contact with the chest wall. The second sound is caused by the closure of the semilunar valves which we have mentioned.

Ash is Life

IT is generally admitted among medical men that the great degenerative diseases which usually manifest themselves at about the age of forty have been developing since the age of thirty. The preventive is ash, containing the organic salts, the most important of which are iron, lime, phosphorus, and magnesium.

Not only do nutritional disorders result from mineral starvation, but our skeleton suffers sometimes beyond repair. You might open your eyes if you fed several rabbits on oats, and observed the condition of their health while under the experiment. Oats are poor in lime, and the functions of nutrition are not operative except in the presence of lime. The result is that the blood of the animal saps its bones and teeth.

This weakening of the bones is much more apparent during the period of growth, but even in the fully developed animal the lack of lime in the food is apt to be serious.

One of the important causes of many dental troubles is the lack of lime in our foods. Experiments by Voit in 1880 demonstrated that pigeons fed on a diet poor in lime developed a weakening and a thinning of the skull even to the extent of perforation.

It is easy to bring about a condition in young dogs resembling rickets by feeding them on meat and fat alone. By the addition of lime in the form of calcuim carbonate to such a diet the animals recover.

From this it is quite evident that we can not consider our diet to be safe simply because we eat sufficient proteins, carbohydrates, and fats. It is important to see that the necessary minerals are there.

Dr. Mitchel points out the fact that nerve twitching accompanies lime starvation, not only in the laboratory, but on the field and in the dining-room.

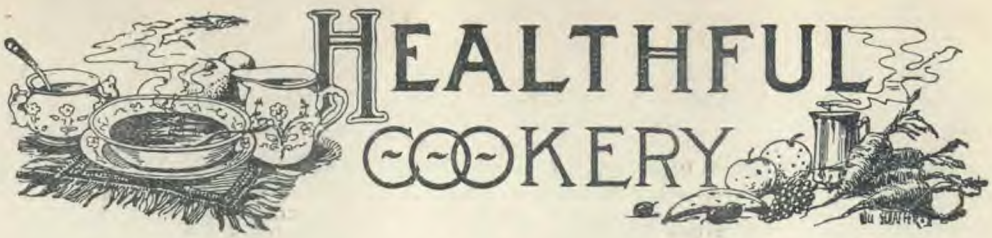
Caged rats fed on corn and distilled water show " nerves, " and later convulsions. The horse fed on hay will be steady, sturdy, and dependable; if changed to a diet of oats, which is poor in lime, he will become lively and nervous.

A nerve robbed of its lime will quiver and twitch. A muscle robbed of its lime will become flabby and shaky.

Chickens that are not fed with lime in the shape of bone-dust or cracked oyster shells, will lay soft-shelled eggs, and die early.

Bread, cake, crackers, cookies, and pie contain partically no lime. The flour is whitened at the expense of its mineral salts, which are largely removed in the process of milling. White flour smybolizes the white monument of the churchyard.

What has been said here about lime is but one of the notes of warning. Potassium, iron, magnesium, silicon, sulphur, phosphorus, and sodium, each has its important part to play in the economy of diet.—*Alfred W. McCann, National Food Magazine, January, 1912.*



Kela

SHALL we eat the ripe or green? The idea is quite prevalent that the kela is hard to digest. This no doubt is an unjust criticism which has been caused by the improper use of this article of food. We shudder at the thought of eating un-cooked green mangoes, plums, peaches, etc., and know what the results are sure to be. All unripe fruits of this kind contain raw starch which is very productive of gastric disturbances.

The colour of the peel is indicative of the stage of ripeness of the fruit. The kela with a light yellow peel is not yet ripe, nor is it fit for consumption. In this stage it contains about 1.5 per cent of proteid and 20 to 25 per cent of raw starch. The ripe kela which has a yellowish-brown skin contains about 16 per cent carbohydrate almost wholly in the form of sugars and are quite easy of digestion. In the stages of the ripening of the fruit, the starch is changed to sugar.

The Kela as a rule is not thoroughly chewed. This is another reason why they are pronounced hard of digestion. The hasty eating of this fruit is very prevalent among children and causes at times considerable disturbance of the gastro-intestinal tract especially when not thoroughly ripe.

This fruit should be discarded when the skin is broken, or if the fruit has reached a soft consistency, especially in places like India where cholera, typhoid fever, and dysentery are so common.

The kela properly chosen adds a valuable article to one's dietary.

PLANTAIN

The plantain is a species of the kela. It is a very important article of food in India. It is not as sweet as the kela, contains more starch and is not so easily digested when uncooked. The plantain eaten uncooked is liable to cause gastric disturbances common to the unripe kela. It can be cooked in various ways and arranged in many tasty dishes.

PLANTAIN FRITTERS

Ingredients :—2 eggs, 2 desertspoonfulls of flour, 2 plantains a little salt, and when preferred some sugar to taste, 2 tablespoonfulls of ghee, ¼ teacup of milk.

Peel and cut the plantains into convenient pieces, beat the whites and yolks of the eggs separately, when stiff add the flour and milk, gradually beating all the time, add the yolks, salt and sugar, throw the fruit in, put the ghee into a pan on the fire, when boiling, take out the pieces of fruit in a tablespoon with a litttle batter of each, and gently slip them into the ghee. With the extra batter on top, fry them to a nice brown, turning when required. Serve hot with sugar strewed over them.

PLANTAIN TART

Ingredients :—Flour ½ pound, butter 4 oz., 1 egg, sugar 1 oz., a little milk, 8 small plantains, 2 limes, 2 tablespoonfuls of sugar, 1 desertspoonful of butter, ghee ½ a cup.

Mode.—Put the ghee in a small frying pan on the fire, when boiling put in the plantains with their skins and fry till the skin bursts, remove the plantains, skin and cut them into slices, place a small cup

inverted in the centre of the tart dish, thickly sprinkle some of the sugar round it, place a layer of the fruit on it, sprinkle more sugar, pour the juice of one lime and put on the rest of the fruit and lime juice, put the desertspoon of butter all over in small lumps; now make the paste, rub the flour into butter, add sugar and yolk of the egg, and just enough milk to make the whole into a smooth paste, sprinkle the pastry board and roller well with flour, roll out the paste a ¼ of an inch thick, place on inverted dish the size of the one used for the tart on the paste and cut into a round, roll out the extra paste again and cut into stripes the width of the brim of the tart plate and make the scraps of paste into leaves, etc., wet the brim of the dish with the beaten white of the eggs, lay on the strips, wet again with the egg and lay on the round by lifting it on the rolling pin and unrolling it over the dish, dip the pastry ornaments in the egg and place on the top and with a fork flower the border all round and bake.

Time ¼ of an hour. Sufficient for 4 persons.

PLANTAIN PRESERVE

Ingredients :—The very small kind of plantains 200, 2 viss of Ashtagram sugar, the juice of 22 limes, ½ a viss of ghee, 4 pints of water.

Fry the plantains with their skin on, in the ghee, almost all the ghee will remain and be good so that you can use it for any other cookery, as the plantains fried in their skin do not absorb the ghee. Make a syrup with the sugar and water and skim well, and, when clear add the lime juice. Boil up, then put in the plantains peeled, simmer for ½ an hour, remove from the fire and bottle when cold.

Will make 14 pounds and fill 17 bottles.

FRUITS AS A CAUSE OF DIEEASE

Fruits are a great benefactor to man and help to provide his menu with that which is healthy and palatable. But when cholera, typhoid fever and dysentery are so common as they are in India, fruits lose their wholesomeness. If we are aware of how they become contaminated, and invent ways of overcoming this source of danger to the health, they still are very valuable in the dietary. Fruits that grow so that they come in contact with the ground are liable to become infected by dressing used to enrich the land. An example of this is the strawberry that is raised in some parts of India. It is very fortunate that most fruits mature and ripen some distance from the ground thereby relieving us of many sources of danger.

The greatest source of contamination by fruit is the handling. The fingers that pick the fruit may be infected. They are handled by dirty hands in the bazars. We buy and eat the infected fruit and disease is oftimes the result.

Of course all cooked fruits are safe, as the cooking destroys any germs that may have lodged in the fruit. The first precaution in connection with uncooked fruit is that the peel be not broken. The peel is an impervious covering that keeps out germs as well as all dirt. If the peel is entire, we know that the pulp is safe and free from contamination.

Fruit should not be selected that is over-ripe as over-ripe fruit is a medium in which germs grow rapidly. Fruit that is too ripe often causes minor disturbances of the stomach and intestines even though it be free from infection.

It is a good plan to thoroughly scald the outside of fruit that is to be eaten raw, before it is peeled. This method may be utilized to advantage with peaches, plums, apricots, mangoes, in fact, almost all fruits that are to be eaten uncooked. Tomatoes although not classed as a fruit are rendered almost free from danger in this way.

"CHEERFULNESS has been called the bright weather of heart."

Mother and Child

Marriage, and its Ideals

MRS E. G. WHITE.

MEN and women by indulging the appetite, eating rich and highly seasoned foods, especially flesh-meats with rich gravies, and by using stimulating drinks, as tea and coffee, create unnatural appetites. The organs of digestion become injured, the mental faculties are beclouded, while the baser passions are excited, and predominate over the nobler faculties. The appetite becomes more unnatural, and more difficult of restraint. The circulation of the blood is not equalized, and becomes impure. The whole system is deranged, and the demands of appetite become more unreasonable, craving exciting, hurtful things, until it is thoroughly depraved.

With many, the appetite clamors for the disgusting weed, tobacco, and ale, made powerful by poisonous, health-destroying mixtures. Many do not stop even here. Their debased appetites call for stronger drink, which has a still more benumbing influence upon the brain. Thus they give themselves up to every excess, until appetite holds complete control over the reasoning faculties; and man, formed in the image of his Maker, debases himself lower than the beasts. Manhood and honour are alike sacrificed to appetite. It required time to benumb the sensibilities of the mind. It was done gradually, but surely. The indulgence of the appetite in first eating food highly seasoned, created a morbid appetite, and prepared the way for every kind of indulgence, until health and intellect were sacrificed to lust.

Many have entered the marriage relation who have not acquired property, and who have had no inheritance. They did not possess physical strength, or mental energy, to acquire property. It has been just such ones who have been in haste to marry and who have taken upon themselves responsibilities of which they had no just sense. They did not possess noble, elevated feelings, and had no just idea of the duty of a husband and father, and what it would cost them to provide for wants of a family. And they manifested no more propriety in the increase of their families than that shown in their business transactions. Those who are seriously deficient in business tact, and who are the least qualified to get along in the world, generally fill their houses with children, while men who have ability to acquire property generally have no more children than they can well provide for. Those who are not qualified to take care of themselves should not have children. It has been the case that the numerous offspring of these poor calculators are left to come up like the brutes. They are not suitably fed or clothed, and do not receive physical or mental training, and there is nothing sacred in the word, home, to either parents or children.

The marriage institution was designed of Heaven to be a blessing to man, but in a general sense it has been abused in such a manner as to make it a dreadful curse. Most men and women have acted, in entering the marriage relation, as though the only question for them to settle was whether they loved each other. But they should realise that a responsibility rests upon

them in their marriage relation farther than this. They should consider whether their offspring will possess physical health, and mental and moral strength. But few have moved with high motives, and with elevated considerations—that society had claims upon them which they could not lightly throw off—that the weight of their families' influence would tell in the upward or downward scale.

The Women Who Count

IT is a habit we have nowadays to glorify women who "do things," as we say. The newspapers, particularly, love this sort of thing. A newspaper lies before me now with a department called "Women Who Count." It says: "This department is devoted to women who are doing things worth while, who count for something in the world's progress." Then it tells about "A Woman Landscape Gardener," "A Woman Magician," "A Famous Woman Writer," "A Premier Suffragist," and so on.

All this is very interesting, but why not have such a department called "Unusual Women," and thus not mislead a thoughtless public? For the "women who count," the women who really count most of all, who are really doing the things most worth while for the world's progress, are not in such a department, and won't be there, for they are not picturesque. They are a quiet lot, the women who really count, but an editor can find them if he chooses. One way is to have him go to any public school, visit any room and ask the teacher to introduce him to a child who is well cared for; who is polite; who is considerate of others. Then let him go home with that child, and he will meet one of the "women who count," one who really counts. Not that it is not worth while for a woman to be a landscape gardener, and to plant trees and shrubs where they are needed, but infinitely more worth while is it to plant boys and girls where they are needed in the garden of life. Many worthy women consider it worth while to agitate the question of votes for women, but can anybody doubt that it is more worth while to make men who are worthy of the ballot? It is probably both interesting and lucrative to be a magician; but to banish human faults and weaknesses, and to awaken in their stead strength and virtue, certainly count for more in the world's progress than the juggling of flags and rabbits. It is a great thing for a woman to be a writer; but is it not far greater to create a strong character in flesh and blood than to create one on paper? These women are not picturesque enough for the newspaper, but when we speak of the "women who count" they are, after all, the only women who count so much that without them the race could not go on. A book, a garden, a vote does not count much in the balance with a child.—*The Ladies' Home Journal.*

Feeding in Infancy

YOUNG animals at birth begin to receive their nourishment immediately, and a corresponding increase in their weight takes place from the first day of life. The human infant in like manner should begin with its nursing early, getting what it can from the breast until the full supply of milk has come. In this way it will not be so likely to have a large initial loss of weight to regain, a condition by which it is often handicapped at the very beginning of its career, when there is most danger to be apprehended from a depression of its vitality. Every day, every hour, is of the utmost importance in the early days of life, and provided it can be

done without detriment to the condition of the mother, the sooner the infant is put to the breast the better it will be. During the first twelve hours of life, and in most cases during the first twenty-four to thirty-six hours, owing to the inability of the mother to supply milk for her infant, scarcely any food is, as a rule, obtained. If during this period the infant is restless and evidently hungry, 5 to 10 c. c. (1 to 2 drachms) of a sugar solution may be given at intervals of two or three hours. This solution should be made by dissolving milk-sugar in sterilized water, and its strength should be from five to six per cent.

INTERVALS OF FEEDING

The younger the infant the greater the metabolic activity, and hence the greater need of frequent feeding, for food is required not only for repair of waste, but also for the infant's rapid proportionate growth. This, with the increased demand for additional animal heat, makes essential the regulation of the intervals of feeding according to the age.

Age.	Intervals.
From birth to 4 weeks.	2 hours.
„ 4 to 6 weeks.	2 hours.
„ 6 to 8 „	2½ „
„ 2 to 4 months.	2½ „
„ 4 to 10 „	3 „
„ 10 to 12 „	3 „

The intervals constitute a very important part of the management of breast feeding, when the quantity is regulated by the breast itself. These intervals should be definitely stated to the mother at different times throughout the nursing period, and should be adhered to. The following table represents the intervals for an average breast fed infant, but it should be understood that the intervals of feeding should be made to correspond to the stage of development of the individual.

The following are supposed to begin at 6. A. M. and end at 10 P. M.

When the milk has begun to be produced in the breast, the infant should be fed once in two hours during the day and once during the night until it is six weeks old. The day feedings are usually reckoned from 6. a. m. to 10. p. m. This interval of two hours should be adhered to, allowing that exceptional circumstances may arise in which the mother must judge according to the individual case, until the sixth or eighth week is reached, when the intervals may be made two and one-half hours, and the number of feedings in the twenty four hours eight. At about the fourth month the intervals can be made three hours, and the number of feedings six. When the infant is two or 3 months old, the night feeding can be omitted. The number of feedings at ten months may be reduced to five. Allowing the mother to have as many hours of continuous sleep at night as possible is especially important, in order that she may not be exhausted by the lack of that regular and sufficient rest which is of the utmost necessity for the production of a normal milk.

Number of feedings in 24 hours.	Number of Night feedings.
10.	1.
9.	1.
8.	1.
7.	0.
6.	0.
5.	0.

Irregularity in nursing, and too prolonged intervals often so disturb the quality of human milk as to transform a perfectly good milk into one entirely unfitted for the infant's power of digestion. Thus, too frequent nursing lessens the water and increases the total solids in human milk, making it resemble in a certain way condensed milk ; while too prolonged intervals result in such a decrease of the total solids as to render an otherwise good milk too watery and unfit for purposes of nutrition, however well it may be digested. The lesson that may be drawn from these facts is that some general rules for the feeding intervals should not only be recommended but enforced. The mother should neither injure her infant's digestion by nursing it too frequently, and thus giving it a too concentrated fluid, nor, by neglecting to feed it often enough, interfere with its nutrition by giving it a food that is too diluted.

Current Comment

FEATHERS IN THE SPREAD OF CONTAGION

SCHABLOWSKI gives an interesting account of a small outbreak of smallpox that occurred in Breslau, which was traced directly to infection from handling imported feathers. During the summer of 1906 while there were no known cases of smallpox in Breslau or in the neighbouring provinces, eleven cases of the disease occurred in the city.

An investigation of the cases ill with the disease showed that the first case occurred in a woman who was working in a feather factory. Within a month two other cases of the disease occurred in the same factory. All the other cases could be readily traced as contact cases. These circumstances, in view of the absolute freedom from the disease of the rest of the community, suggested that the original infection came from the handling of the feathers.

Investigation showed that besides domestic feathers this factory received feathers from Russia, Galicia, and from other countries where smallpox is more or less endemic. It was further shown that not all the goods were new, but that quite frequently old feathers were mixed with the new ones. It was, therefore, quite possible that the old feathers imported might have been infected.

The danger of spreading other contagious disease by such means was, of course, apparent.—*Boston Medical and Surgical Journal.*

BLACK WATER FEVER IN BURMA

DR. FINK, M. B., C. M. in the *Indian Medical Gazette* gives some interesting facts relative to the distribution, cause and prevention of Black Water Fever. It was noted that it was only these last five years that this disease was reported in Burma. That its area of distribution corresponds to the distance between latitude 23° and 26°, 20′ north which includes the Myitkynia, Katha, Bhamo, and Ruby mines Districts. It was also shown that it was between these same latitudes that this disease existed in India and other countries as the southern states of China and the island of Formosa.

When hemglobunuric fever is noted in Burma malaria exists in a very severe type. The conclusion reached was that in the causation of black water fever in Burma malaria was the essential cause.

The prevention of Black Water Fever means the prevention of Malaria. Quinine sulphate is suggested as a preventative in 10 grain doses two consecutive days in the week. This has reduced malaria infection in the army to 1/10 of what it was before this prevention was used. Of course the men were made to sleep under nets. The condition of the men was better. He said:—

"In previous years it was common experience amongst outdoor patients to be asked to treat men who complained of headache, lassitude, loss of appetite, muscular pains, etc., which no doubt were due to malarial infection. These are greatly lessened after the use of Quinine.

LIFE INSURANCE IN INDIA

ADRIAN CADDY, surgeon to the Hindu Marwari Hospital, Calcutta, presents interesting points which indicate the differences between individuals presenting themselves for examination for life ins-

urance in England and those who are examined in India. In regard to the native lives Caddy finds that the native is usually a shorter man than the European, that height for height the native weighs the same on an average as the European and that there is no evidence to show that his tissues are any lighter than those of a European. The native is very subject to glycosuria, due probably to his carbohydrate diet; he is also liable to develope hydrocele, but the reason for this is not evident. The author is of opinion that opium and hemp drugs are not commonly consumed by the insuring classes. He maintains that Europeans do not acclimatize in the tropics, and submits as a proof of this statement the inability to withstand the tropical sun without any head covering, and after years of residence in a hot climate there seems to be a greater liability to sunstroke than on arrival. He further contends that the children of Europeans who have been sent "home" when four or five years old for their education are generally not so fine phsically as their parents, owing to the debilitating influence on their constitution of the tropical climate at an important growing period of their lives. These are points which have an important bearing as regards the rating on candidates for life insurance in India, and Caddy's observations are worthy of attention.—*Lancet*, London.

ATHLETICS HAVE DELETERIOUS EFFECT

IN reference to the statement of the Surgeon-General of the United States Navy as to the hazard incidental to College athletics, it is my belief that football, rowing and track athletics, especially long-distance running, have a deleterious effect on the health of the average man who participates in them. There are several reasons for my opinion: First the age of the participants; second, the serious injury to undeveloped organs, such as the heart, the great blood vessels, and the muscles, due to the excessive amount of exercise and strenuous course of training. The accidents of these sports are of secondary importance to the structural changes which result from over-straining in early youth. I most firmly believe in proper exercise for developing boys. It is not the exercise or the sport that lies at the bottom of the trouble. It is the abuse of the exercise due to the overpowering desire to excel. College athletics should be cultivated and regulated, not abolished.—DR. GEORGE G. ROSS, in *the Medical Times*.

INSURANCE AGAINST SICKNESS.

The introduction of compulsory insurance against sickness and industrial accidents has been repeatedly voted down in Switzerland, but by a recent referendum vote it was finally adopted by a small majority. The cantons bordering on Germany and Austria voted for it, those bordering on France and Italy against it, confirming again the general trend of the Germanic peoples toward and of the Latin races against compulsory insurance of wage-earners.

REMARKABLE EYE SURGERY IN PARIS.

A piece of the transparent cornea of an eye that, after removal, had been kept in a serum in a refrigerator for eight days, was transplanted in the eye of another patient, who had been rendered sightless by a corneal ulcer, caused by a lump of lime entering his eye. The piece of cornea had been neatly cut to fit the little oblong hole cut for it, 1/5 by 1/6 inch, in the surface of the patient's eye. Though it was not sutured, it retained its place, and in two days the union was complete, and the eye was transparent, with a vision of one-tenth normal. Seven months after the operation the eye was still doing good work. A part of one eye had been successfully grafted on the eye of another man.

- Physical Culture -

VALUE OF DEEP BREATHING

THE act of respiration is produced by the action of the muscles of inspiration and the muscles of expiration which are excited by a nerve stimulus. The lack of exercise of any muscle leads to its lack of tone. In like manner the muscles concerned in the respiratory movements suffer for want of exercise.

The practice of deep breathing every day increases the oxygen in the blood which gives renewed strength to every part of the body. It also hastens the withdrawal of the carbon dioxide from the blood and forces it into the outside air. It brings about a greater purity of the blood.

Disease is most liable to settle in those cells of the lungs that are used the least. In deep breathing we have a means that helps in the prevention of phthisis, pneumonia and bronchitis. The esthetic eye demands of a man a well developed, broad chest. No man is more incapable of meeting the wear and tear of life than he who has a shallow chest or small lung capacity.

If one spends a few minutes a day in taking deep breaths, he educates himself in deep breathing routinely and still is unconscious of it. This exercise causes greater exertions of the diaphragm which comes in contact with the liver. This acts similar to a direct massage to this organ which in a great many cases is chronically congested. The liver being a filter and a destroyer of the poisons of the body is greatly aided in these functions. Billious attacks are prevented.

In this same way the gall bladder is drained of its bile. Thus acting as a preventative against inflammation and stone of the gall bladder.

The stomach which is located just below the diaphragm gets good service from the descent of this muscular structure in deep inspiration. It helps the stomach empty itself and it excites the motility of both the stomach and the intestines. It is a preventative in dyspepsia. Let us take time to receive the benefit obtained from deep breathing exercise :

Exhale any breath which may be in your lungs, then slowly inhale (through nostrils) drawing the air down into the lobes so that you feel your abdomen expand under the pressure of the descending diaphragm muscle which is being forced down by the expansion of your lungs.

Then just as the upper lobes are filling raise your shoulders so as to take the the weight off your chest, and when filled exhale at once with full vigour drawing the abdomen inward and upward so that the chest walls expand and prepare to inhale an even larger quantity of air next time. Practice this exercise from two to three minutes every morning.

MUSCULAR DEVELOPMENT AND CLIMATE

As a general rule muscular development is better in the cold or temperate climates than in warm climates. There is less bodily exercise but this is off-set by taking less food, augmented skin action and therefore increased circulation. In colder climates there is, of-course greater force required to disintegrate the animal tissues to generate heat and the like.

Furthermore the muscular development of people living in the interior is better than that of those living on the coast and in the mountains better than in the interior. People in the interior are usually farmers whose occupation necessitates out door life and the use of the muscles : the reason for hardiness of the people in the mountains is of course, obvious.—*Sel.*

Questions and Answers

What is the nutritive value of Cocoa and its harmful effects upon the system?—G. G. L.

Cocoa has considerable nutritive value. Analysis shows that it contains about 76 per cent food. It consists of 13½ per cent of proteids, 14⅓ per cent of fats, and 13¼ per cent starches. It also contains an active principle or drug called theobromine, which is very closely allied to caffeine and theine which are found in Coffee and Tea. There is, about 1½ per cent of the alkoloid theobromine in cocoa. One cup of cocoa contains, about 9/10 of a grain of theobromine. Ordinarily a dose of this drug is 15 to 20 grains so that when we drink a cup of cocoa we are getting a very small amount of the drug; probably so small that its effect upon the system would be imperceptible, yet we would not advise its constant use even with this small amount of the drug. The cocoa that is put on the market is often heavily adulterated.

II. In what conditions is butter milk used?—C. S. R.

Butter milk or milk that has been worked upon by a strain of the lactic acid bacilli is used in conditions of the stomach and intestines that produce what is called autointoxication. This checks the growth of the germs in the intestines that cause fermentation.

III. Is there any physical culture system for a neurasthenic?—C. S. R.

If our reader will keep in close touch with the physical department of this journal he will find in the near future a system of exercises that is good for neurasthenia.

IV. What is Mechanotherapy?—A. R. S.

Mechanotherapy is stimulation produced by vibrators. There are a great number of machines made to give vibrations to various parts of the body. It is stimulant in character, increases the activity of the skin and acts as an irritant to the muscles, producing contractions which cause the increase of blood supply, greater temperature and increased nutrition. By producing muscular condition it thereby stimulates muscular cell growth. It is therefore indicated in the treatment of weak or atrophied muscles and is a stimulant to secretory channels; and is a substitute for exercise.

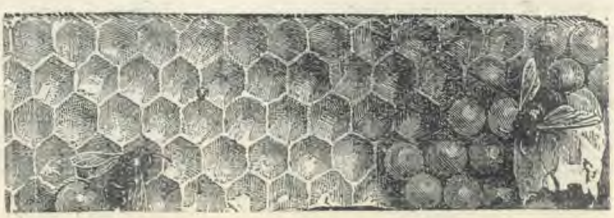
V. What is the cause of Uric Acid in the blood?—L. C. S.

Uric acid is always found in the blood in appreciable quantities. It is the result of the destruction of cell substance in the body. It is carried by the blood to the various eliminative organs and cast from the body mostly in the urine.

This compound is increased in the blood by a disturbance in the building up and tearing down processes of the body and by the digestion of foods that are rich in nutrition which are oxidixed or changed into uric acid.

VI. What is the relation of uric acid to disease?—B. L. M.

This is a question that has not been settled to the satisfaction of the scientist and the physician. The increase of uric acid in the body due to disturbed metabolism and the increased intake of foods that change to uric acid has definite relation to the causation of various nervous affections as neurasthenia and constitutional diseases as gout and lithemia.



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HEALTH once lost is rarely recovered. For this reason guard it carefully.

THE CHOLERA SITUATION.

CHOLERA in Italy is steadily improving. There are still a few cases in Marseilles, southern France. The disease is spreading in Tunis, north Africa.

NEW WATER SUPPLY, LAHORE.

THE Sanitary Board of the Punjab has made a grant-in-aid of forty thousand rupees to the Lahore Municipality towards the construction of the new water supply wells in Lahore.

PELAGRA IN NYASSALAND.

DR. Stannus has reported the prevalence in Nyassaland, South Africa, of what appears to be a new disease in that section (it may have been present though unrecognized previously), which he has identified as pellagra. It is interesting to note that the natives who have the disease rarely if ever eat maize. Their staple food is rice.

THE PANAMA-CANAL AND YELLOW FEVER.

"COLONEL William C. Gorgas will have made possible 'more than any other one man' the construction of the Panama Canal. The canal would have been a French achievement, had it not been for yellow fever and malaria. Whatever of dishonesty in affairs may have existed in the French company was of small import beside these two tropical diseases. Shoulder straps have never prevented the bite of a malaria carrier, nor of a yellow fever carrier."

And this is no disparagement to the engineering skill of Colonel Goethals. Gorgas has made the greatest feat of the age a possibility at Panama.—*The Alienist and Neurologist*, St. Louis.

INCREASED CONSUMPTION OF TEA IN ENGLAND

WITH the decline in the consumption of alcoholic beverages in recent years there has been a corresponding increase in the consumption of tea, coffee, cocoa and other non-intoxicants. A great increase has taken place in the popularity of tea. During the past year 276 million pounds of tea were consumed, while in the United States the amount was only 112 millions and in Russia 136 millions, although the population of these countries is more than double that of the United Kingdom. In 1895 the amount of tea drunk per head of the population was 5.65 pounds; now it is 6.3 pounds. Contrast this with the decreased consumption of beer. In 1900 the number of gallons of beer drank per head was 30.8; in 1900 only 25.9.

WINSLOW'S SOOTHING SYRUP BARRED IN AUSTRALIA.

THE board of health of New South Wales has prohibited the advertising and sale in that commonwealth of Mrs. Winslow's Soothing Syrup, as being injurious to life. The decision has been advertised in the Sydney Papers so that the public, the newspapers, the druggists and the manufacturers may know what has been done. We are optimistic enough to believe that the time will come, in a not far distant future, when a similar prohibition for this and similar dangerous nostrums will be operative in this country. The indiscriminate sale of such dangerous opium-laden products is a disgrace to any civilized community that permits it.—*Exchange.*

EXPIRED AIR

(*Continued from Page* 148)

sults. These theories in turn have been exploded.

More recently two ideas are current on this subject. Dr. Hill conducted a course of experiments from which he concluded that the depression due to confined quarters was caused by an increase in the temperature and the humidity of the atmosphere. Professor Rosenau explained this phenomenon from the stand point of anaphylaxis. It has been noticed that some substances when injected into certain animal organisms form a hypersuseptibility instead of an immunity to the substance. On the reinjection of the substance the organism suffers with an anaphylactic shock or symptoms of depression.

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