Herald of Health

Vol. 5 Lucknow, U. P., May, 1914 No. 5

REVAL AND ITS FORTRESS, RUSSIA

CONTENTS

SUBSCRIPTION

Price including postage, Rs. 2-8 per annum in advance.

SINGLE COPIES

Of this calendar year 4 annas. We have no copies of previous years in stock.

CHANGE OF ADDRESS

In changes of address notice should be given to the office of both the old and the new address. In failing to comply with this request we can not bear any responsibility for the safe delivery of the Journal. Subscribers must also keep in mind that mistakes will at times creep into the postal system. If for any reason you fail to receive the paper, inform the publishers at once; do not wait several months, then ask for back numbers.

REMITTANCES

Make all remittances by Post Office Money Order payable to the International Tract Society, Lucknow, U. P. Registered letter remittances are sent at sender's risk.

ADVERTISEMENTS

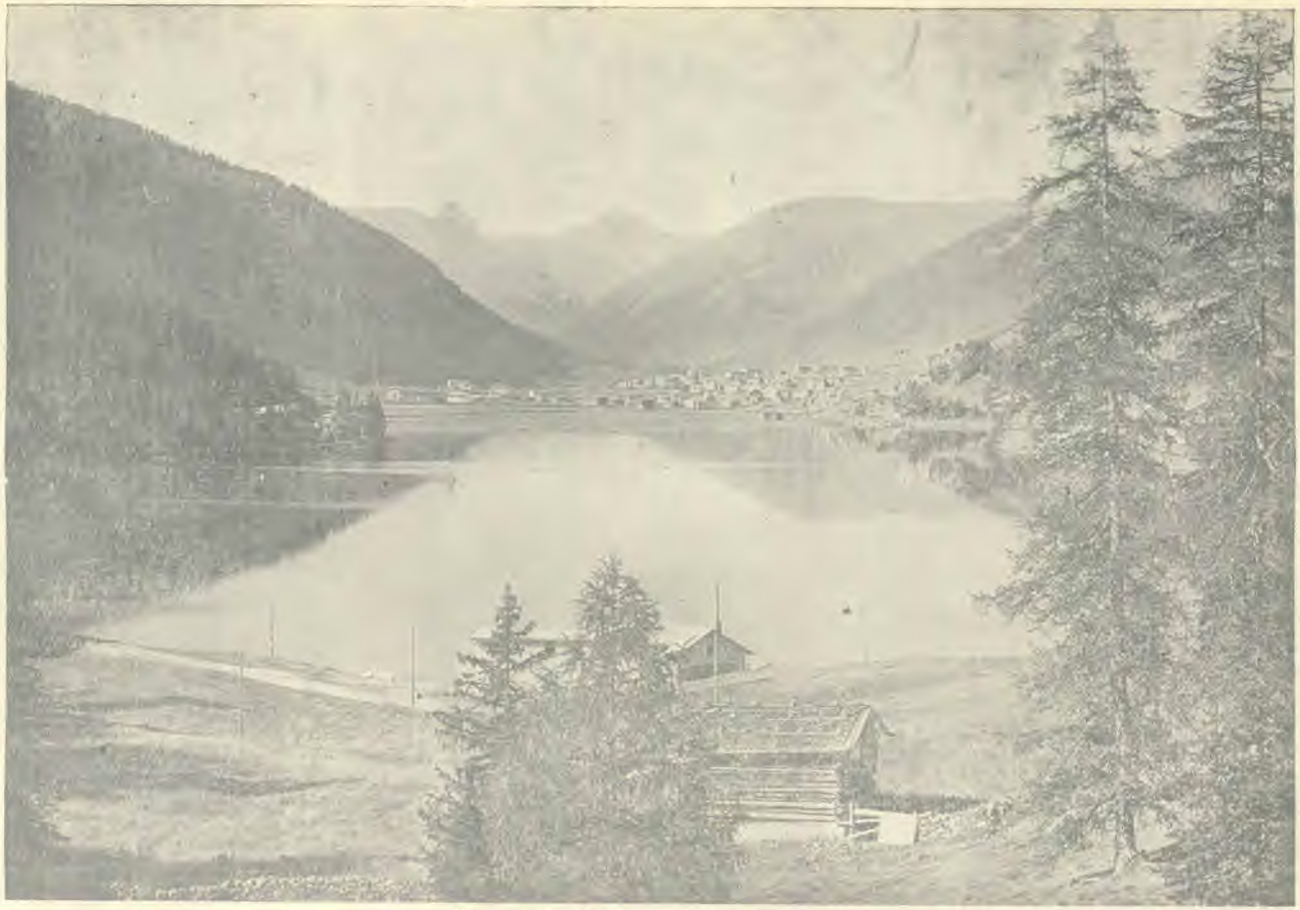
We guarantee the reliability of every advertisement inserted in the *Herald of Health*. We advertise only those things that are in perfect keeping with the principles advocated by the magazine. If after our most thorough investigation an unreliable advertisement gains access to the columns of the journal, we will be glad for any information that will enlighten us regarding the matter. Advertising rates will be sent on request.

CONTRIBUTIONS

Contributions to the columns of the paper will be accepted subject to the approval of the editor. *Anonymous Contributions* are not accepted.

ILLUSTRATIONS

As far as possible we will illustrate the articles of our contributors providing satisfactory photographs or drawings are supplied by the author.



VIEW OF DAVAS, SWITZERLAND

HERALD OF HEALTH

The Indian Health Magazine.

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

Vol. 5 Lucknow, May, 1914. No. 5

Some Rules of Health

"Keep thyself pure." Purity is the cornerstone of health.

Be temperate in all things. Temperance is the discarding of all that is harmful, and the moderate use of that which is good.

Preserve the general health and vitality by plain, simple habits of living; eat good, nourishing food; take sufficient exercise and rest; and there need be but little fear of harm from the many disease germs of which we hear so much. Physical vitality is the best shield from their attacks.

Provide clothing which will best protect all parts of the body from the extremes of heat and cold.

Avoid all styles of dress which restrict the body, or leave the extremities without proper protection.

Live in the open air as much as your work and the climate will permit, and make sure that business offices, and all the rooms in the house, especially the sleeping rooms, are well ventilated.

Great care should be taken to provide a pure water supply. If there is any reason to doubt the purity of the water, it should be boiled or filtered before drinking.

Welcome the sunlight. It is one of nature's most powerful remedies and disinfectants.

Do not permit social functions nor a pressure of work to infringe upon your regular hours for sleep. Eight hours should be set as a minimum for sleep. Some people require more.

Take one or two hours physical exercise every day, and let it be sufficiently vigorous to start a free perspiration.

—Home and Health.

General Articles

The Foundation Law of the Science of Heredity

JOHN M. CONNOLLY, A. M., P. H. D., M. D. L. L. D.

IN the year 1900, the National Association of British and Irish Millers took official notice of the very disturbing fact that the annual wheat yield of Great Britain was exceedingly deficient, and that from a disease called rust a loss was taking place, amounting to one million pounds each year. With a wisdom to which it would be difficult to find a parallel, this association raised a fund to provide for an experimental study of the subject, and engaged the services of Prof. R. H. Biffen, of the University of Cambridge, England.

Professor Biffen discovered an American variety of wheat which was never attacked by the disease rust, but which, unfortunately, was of small yield and with a small kernel. On crossing this variety, however, with the British variety, a wheat was produced that possessed all the good qualities of the original British wheat, and yielded on the average about ten bushels an acre more, and was immune to the disease rust.

It is needless to say that this striking result was developed not by haphazard breeding, but by a series of well-conceived experiments carried out in strict accordance with a definite law.

This law, which through a single instance of its application enabled Professor Biffen to save annually to the British Empire so enormous a sum of money, and which through the many other applications made to plants and animals has conserved or produced wealth compared with which this example is a mere bagatelle, and which is destined to be of yet more profound significance through its application to human beings, is certainly worthy of the most careful and respectful consideration of all who are interested in racial improvement.

The story of the epoch-making law by the light of which Professor Biffen guided his experimentation is a most romantic one.

In the year 1865, Gregor Johann Mendel, O. S. A., president of the Brunn (Austria) Society of Naturalists, read to the society an account of the results which he had obtained during eight years of work in the breeding of pea plants. This paper, in which he enunicated the law now known by his name, was buried in the provincial journal in which it had been published, untill, in the year 1900, de Vries rediscovered it and confirmed the observations of Mendel, placing his law as the foundation-stone of the modern science of heredity, applicable alike to all living things, both plants and animals.

Of Mendel's law, Dr. Wm. E. Castle, professor of zoology, Harvard University, writes that it is "the greatest single discovery ever made in the field of heredity;" and his new book, just issued, concerns itself chiefly "with the operations of that law."

Professor Bateson, of the University of Cambridge, England, says: "I think that I use no extravagant words when I venture to declare that Mendel's experiments are worthy to rank with those which laid the foundation of the atomic laws of chemistry."

Dr. David Starr Jordan, president of Leland Stanford University, quotes Kellogg to the effect that "biologists see in the establishment of the Mendelian principles of heredity

the greatest advance toward a rational explanation of inheritance that has been made since the beginning of the scientific study of the problem."

Mendel discovered that if purple peas and white peas were mated together, the resulting hybrids were all purple; but that if these purple offspring were again bred together, the next generation would contain, out of every hundred, seventy-five purples and twenty-five whites. He went further, and found that if tall and short varieties were mated together, the resulting hybrid was invariably tall, but that in the next generation one out of every four plants was short. The same held true of other characters which he studied, such as colour of the seed, shape of the seed, colour of the pod, distribution of the flowers along the stem, and other qualities. In all these cases he found that one character or quality invariably showed itself by preference in the next generation, while the contrasting quality remained hidden; but that in every instance this hidden quality reappeared in the following generation, and reappeared always in the definite and constant ratio of one to three, that is, in twenty-five per cent. of the offspring.

He therefore introduced the term *dominant* to indicate that quality (such as purpleness, tallness etc.) which appeared alone in the first generation of progeny, and *recessive* to signify that contrasting quality which became latent or hidden (as whiteness, shortness). It also became evident from his experiments that these qualities behaved as units independent, distinct, and indestructible, and that although in the first generation all the plants appeared purple and the white character from one of the parents had passed out of sight, yet the white character was still there, though latent, and could be made to reappear without fail in twenty-five per cent of the progeny, independently of all the other characters of the plant. It was an easy matter, therefore, to replace at will one of these characters by its partner of the "Mendelian pair" without changing the other characteristics of the plant.

And this is how Professor Biffen proceeded to secure his immune wheat,—by discovering a wheat that had the quality of immunity to rust, and substituting that quality for non-immunity in the British species. He discovered that in wheat, susceptibility to rust is a Mendelian dominant, and immunity to rust is a Mendelian recessive, and by cultivating only the twenty-five per cent of recessives in the third generation and discarding the seventy-five per-cent of dominant rust attacked plants, he soon had seeds enough and to spare.

I have for many years been interested in breeding Dutch belted cattle; and in the offspring, even when mated with grades, I have found the broad white belt constant. And in the next generation the progeny of these cross breeds almost constantly show the belt. Beltedness in cattle acts therefore as a Mendelian dominant, just as hornlessness in sheep is dominant over the ordinary horned condition.

The list of recognized Mendelian traits in both plants and animals is already large, and is increasing almost weekly. In plants, colours of flowers, stems, seeds, and seed-coats; seed characters, such as amount of starch, sugar, or gluten; annual or biennial habit; smoothness or prickliness of stem in, for instance, the jimson-weed and crowfoot; susceptibility to certain diseases; early or late ripening,—have all been found to Mendelize.

In animals the "waltzing" habit of mice and the pacing gait of the horse are Mendelian traits, and can therefore be bred into or out of the offspring at our pleasure. Length of hair and smoothness of coat, presence of an extra toe, length of tail, and in fowl shape and size of the comb, presence of a crest or a "muff," a high nostril, feathering of the legs, "frizzling" of the feathers, certain characters of the voice, a tendency to brood, —all of these are Mendelian traits, and can

be taken from or added to any desired variety just as a red book may be removed from a book case and replaced by a black or a green one, and this without altering any other characters in the animals any more than it is necessary to disturb any other books in the case.

In man twojointed fingers and toes are dominant over normal threejointed ones, brown eyes are dominant over blue, red hair over brown. Height; weight; physical strength; tendency to certain diseases, as rheumatism, hemophilia, epilepsy, chorea; talent for music; mechanical ability, can all be expressed in Mendelian terms, and it is in our power to modify the transmission of these characteristics to posterity.

Idiecy and imbecility are Mendelian recessives, as are practically all hereditary insanities and mental defects; and it is therefore entirely possible to eliminate by wise, or to perpetuate by unwise, marriage matings all these antisocial and degrading factors.

The possibilities opening before the application of the new science of eugenics, based fundamentally on the law of Mendel, are so immense that we have not yet begun to realize their potency for good. Just as, when it was found that the climate of Manitoba and British Columbia was too severe for the ripening of what were the finest varieties of wheat, the Mendelian clue enabled the early ripening quality of an inferior variety to be transferred to the variety chosen, so that these countries are now producing enormous quantities of the finest wheat in the world; just as a cotton has been produced which combines early growth, by which it escapes the ravages of the boll-weevil, with the long fiber of the finest sea island varieties; just as sheep have been produced combining the excellent mutton quality of one breed with the hornlessness of another and the fine wool qualities of still a third; just as in plants and animals new races, new species, may be built up to meet almost any demand and with almost any desired combination of characters, and these races remain stable,—so in man, by the application of the law discovered by Mendel, we may in the years to come eliminate evil tendencies, delinquency, criminality, hereditary insanity, idiocy, feeble mindedness (all definite, inheritable Mendelian unit characters), and cultivate instead the valuable physical and mental traits and talents. To this result, much to be desired, nothing will contribute more powerfully than an enlightened public opinion, a knowledge of the facts and laws of heredity, a realization of the truth that we are not helpless in these matters, but that we may begin presently to work out our salvation by our own efforts directed by simple biological law. And it is through the faithful following of the laws of biology, which are the laws of our nature and nurture, and thus alone, that we can at length reach the solution of many pressing economic and social problems.

The Dangers of Gluttony

CONDUCTED UNDER THE SUPERVISION OF WM. W. WORSTER, A. M., M. D.

IN spite of increasing knowledge on the conservation of health and the physiology of digestion, the majority of the people of this day and age follow the principle enunciated in an old adage and "live to eat" rather than "eat to live." We depend on soda mints, digestants, stomachics, bitters, and even brave the lavage and surgeon's knife all for the gratification of a depraved appetite.

Overeating continually overworks the digestive organs and needlessly consumes our store of vital energy. If all that is eaten in excess of the body's requirements were to be digested and absorbed it would only add additional work upon the system to oxidize it. This would overcharge the blood and tissues with the poisons of body metabolism. But as a rule the surplus material not only remains in the intestines undigested, or at most partially so, but actually interferes in the proper digestion of the necessary amount.

All the food eaten in addition to body requirement is taken at the risk of health. Deadly germs lie in wait in the bowels to prey upon the excess food. Fermentation and putrifaction is the direct result. Phenol, skotol, ptomaines, alcohol, etc., are liberated. Autointoxication is liable to ensue. Almost daily the list of diseases due to autointoxication is increasing.

The real benefit to be derived from food does not depend upon quantity eaten so much as upon thorough digestion and absorption. Better leave the table hungry than overload the stomach. Continually overloading the stomach brings on prolapse and dilitation of the organ. Overeating of good foods is dangerous to health, but overeating of improper and partially putrified foods is the direct cause of many diseases.

There is an economic side to the question and it ought to strongly appeal to people in these days of high cost of living. It seems foolish to eat Rs. 2 worth of food and allow Rs. 1 worth to remain either unabsorbed or needlessly oxidized. Yet this is what thousands are daily doing to their own hurt.

Overeating is nearly always associated with rapid eating. It is not only a prime factor in overeating but increases the dangers thereof. If the food reaches the stomach in lumps, digestion is greatly hindered. Fermentation and putrifaction are more liable to ensue owing to the delay. Many eat as though the stomach contained a full set of teeth to masticate the food after it has been swallowed.

Food to be of value must be thoroughly digested. Thorough mastication in many instances insures thorough digestion. Mr. Fletcher discovered the value of thorough mastication. He advocates chewing until the food is involuntarily swallowed. He has also determined that less food is daily required if thoroughly masticated than otherwise. Dr. Pawlow of Russia has demonstrated that the gastric juice of the stomach is dependent for its secretion during the first forty-five minutes of digestion upon reflexes from mastication. Dr. Cannon of Harvard University has recently shown that thorough mastication has much to do with the tension of the muscles of the stomach. Thus a great flood of new light has been flowing in upon the subject.

Many people during the first half of their lives spend their health to obtain wealth. In the second half of their lives they spend their wealth in an effort to regain their health. Let us preserve it while we have it. Once lost it may never be regained.

We are alarmed at the rapid increase of suicides. We consider it horrible to think about. Yet thousands by rapid eating and overeating are as surely committing a slow suicide. The end is the same whether realized or not. Time makes no difference. Happy will this or any nation be when her people study the laws of their being and "eat for strength and not for drunkenness."

Keeping Cool

JAMES FREDERICK ROGERS, M. D.

MAN in the temperate zone is occupied for so much of the year in adjusting himself to a colder atmosphere than that to which he was originally native that he has lost or forgotten, to a large extent, the first principles of keeping cool, and, in the few tropical days of July and August, his remonstrances against the weather gods become more vigorous than his efforts toward securing relief.

Man is one of the warm-blooded or, more exactly, one of the even-temperatured animals. Year in, year out, day or night, his internal temperature seldom rises, when he is most active, above 99°, or falls, when he is least active, below 97°, though the thermometer if applied to the skin would of course show very wide variations, according to the conditions of the atmosphere, for we know that the skin may become so cold that it will freeze.

The primary source of body heat is the food we eat, which, in muscle and gland, is ever burning in a slow but constant way. As these fires never go out and can be reduced only to a certain point, it is necessary that heat be constantly lost to the surrounding air, else the temperature of the body would slowly rise until we were cooked by our internal fires. In winter we have no trouble in getting rid of not only the minimum but the maximum of heat produced, and the problem then is to furnish sufficient fuel in the way of food, and to keep the heat from escaping too fast by surrounding ourselves with heat-retaining houses and clothing. We even resort to artificial heat to prevent our own too rapid loss to a cold unheated air.

For keeping cool the procedure must be just the reverse of this: first, the reduction of heat formation in the body, and second, the facilitating of riddance of heat. The heat-regulating machinery of the body will take care of the matter, but, by more carefully obeying its demands upon consciousness, we can help it along, and be much more comfortable to boot.

For helping in the reduction of heat production, the first hint is not to be needlessly stirring the internal fires; and we stir these fires every time we make an unnecessary muscular movement, or work our brains unnecessarily over the fact that the weather is warm and that we do not know how to take its warmth philosophically. We should in the hottest weather follow the hint from the temperature regulating portion of our brain to rest, to relax, and even to sleep if we have the opportunity, for only so can heat producation in the muscles be reduced to its minimum. The dwellers in the South are reasonable and wise in following these directions, and we shall not degenerate into Hottentots if we imitate them for a few days of the year.

The second hint for consciousness is to take less fuel (food) into the body. We do not need it, can not use it, and it is a burden for the body to rid itself of it. We must forget our December, or even April, eating habits, even if food does "taste so good." It is the hunger appetite—the heat appetite—which we must obey. There is no danger of our becoming "weak" by such a reduction.

The food should be different from that of the winter months: we need little fats and more fruits. Hot foods and hot drinks of course add to our heat, though we need not go to the other extreme and indulge too freely in ice cold things which may possibly damage our internal linings. Unlimited water is not a help, and the body will inform us when we are taking more than is needed for a sufficiently active perspiration.

In the way of aiding the loss of heat, and so of cooling the body, consciousness is asked to reduce the amount of clothing, and also to reduce the number of layers, for it is the air entangled by the clothing which prevents loss

of heat, rather than the clothing itself. Lightcoloured materials are coolest, as they reflect rather than absorb heat. The hint also comes to move the body to a cool place sheltered from the heat radiating sun, and, as moving air abstracts heat far faster than stationary air, a breeze, even if only from a fan, is a scientific help to comfort. A cold bath also is a rapid reducer of bodily temperature, though we are not asked to keep it up until we are chilled.

The prescription, then, for keeping cool is very simple: To keep as quiet as one's circumstances allow: to take a siesta if so inclined; to put on lightweight, light-coloured, porous clothing of linen or cotton; to take a cold bath at least once a day; to keep out of the sun, and to frequent breezy, shady places free from the reflected heat of the sun; to eat and drink according to the dictates of real hunger and real thirst; lastly, to never mind the weather, for "boiling over," or even "stewing" about it, only makes it seem hotter.

There will be no danger of sunstroke if the above prescription is followed. We should be thankful for any kind of weather, hot or cold, and even if we can not keep cool, we can keep as cool as we can.

Deformities of the Feet

BY CHARLES HENRY HAYTON, B. A., M. D.

ALL deformities of the feet may be classified into two great divisions; one division is known as congenital—that is deformities which are caused before childbirth—and the other known as acquired, in which the deformities are produced during the life of the individual. Of the congenital deformities little can be said except that every effort is now being made to prevent them, and after birth when discovered every means is now taken to correct them. And this correction is to be done before the bones become hardened, or ossified. Of the acquired deformities, flat foot, hallux valgus and bunion, and the hammer toe are the most common, and it is of these that this article will treat.

Flat Foot.

If the normal foot of an adult is carefully examined it will be seen to touch the ground in two distinct places, namely, at the heel and on the ball of the toes. In the accompanying diagram is seen the impression of the normal foot after being placed in water and then pressed on blottingpaper. The balls of the big and little toe with the heel form a tripod upon which the full weight of the body rests; these three points mark the arches of the foot, that is, a longitudinal arch from the ball to the heel, and a lateral from the large to the small toe. The bones of the foot are so arranged as to form these arches and are bound together with ligaments and tendons which allow some elasticity. It is this arrangement in the feet that gives to the walk of man that spring and smoothness of motion so characteristic of his gait.

Now it so happens that during the period of rapid development in youth, that is from the age of fourteen to twenty, a disproportion takes place between the weight of the body and the supporting power of these arches. That is, the body grows more rapidly than the feet are able to support it. The consequence is that, especially in those of feeble muscular development, the ligaments and tendons become weakened, the arches fall, and the tripod begins to flatten out. When these young people leave school and seek employment, if that employment be such as to require much standing and walking, they soon learn to adopt a faulty attitude of rest, which makes little demand upon the muscles of the frame, but which throws the whole strain of the body weight upon the arches of the foot. Consequently the deformity already begun is much aggravated and finally becomes a flat foot. This difficulty manifests itself in various symptoms of which we herewith detail,

Symptoms.

When young people complain of painful feet after walking or standing it is well to have their feet examined. Pain is the first warning that the arches are giving way, and the common seat of pain is first noticed on the instep. Later the pain is felt across the front of the foot and travels to the outside. Many times this pain is mistaken for a sprain or rheumatism. As the arches fall the feet turn out, and a stiffness of walk and a restriction of movement is noticed. The feet are usually cold and sweat excessively. The boots show a bulging of the instep, and the sole seems to wear out more rapidly along the inner border. The patients are always tired, and show a disinclination to do much walking. A slight examination of the feet and boots of such complainers will easily reveal the cause.

Treatment

The treatment of this condition is wholly directed towards restoring and maintaining the arches till such times as the feet become strong enough to carry their own body weight. It is found that in the early stages of flat foot immediately the weight is taken off the feet the arches assume their normal shape; therefore the first principle of treatment is rest. If the pain is marked, rest in bed is necessary for a few days. Daily massage to the body should be given, especially to the muscles of the leg. In time exercises should be practised of the nature of the following:—

1. Raising the body on the balls of the feet with the toes turned in.

2. Bend the knees while standing on the toes.

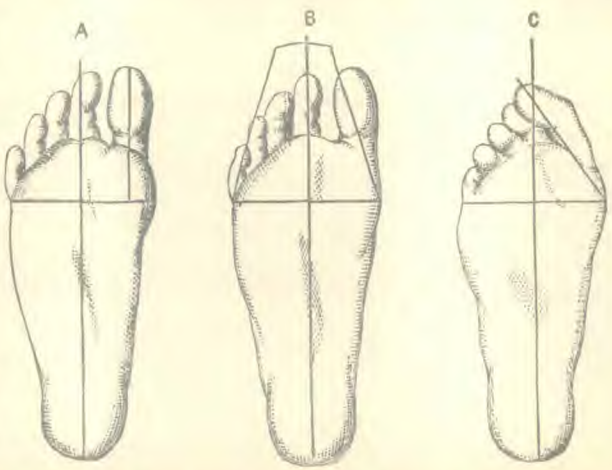
3. Turn the ankles in, and walk on the outer border of the feet.

These exercises should be practised every day for a few minutes each time with the bare feet. They should not be carried to the point or fatigue. Later the limbs can be further strengthened by cycling and skipping and other such exercises. The general health should also be improved by a more nourishing diet.

In cases of long standing flat foot, such treatment as the above is hardly sufficient. Some kind of special metal plate should be worn in the boot to support the arches. Special boots are also made, higher in the instep, to throw the weight of the body on the outer border of the foot. If the bones of the foot have become fastened together in the flat foot position, then a surgical operation is necessary to restore the normal shape of the foot. Flat foot is also caused by certain nervous, infectious and bone diseases.

Hallux Valgus.

This is a deformity of the feet in which the great toe deviates towards the middle line of the foot, and lies either above or below the second toe. It is a very common condition in civilized countries and seems to be a more prominent affliction among woment. The chief cause of this deformity is the continual wearing of illfitting boots, generally of the pointed variety. In the accompanying illustration the normal shape of the foot is seen in A. The utter absurdity of trying to cram the normal foot into a pointed boot is shown in B, while in C, the results of such a process are clearly seen. The forcing of the feet into the narrow, pointed boot has a



Halux Valgus produced by wearing pointed boots

tendency to displace the great toe, especially if the boot has high heels. The deformity is produced slowly, but once the process is begun, the pressure of the boot increases the displacement until the big toe fully assumes this peculiar position. On the bend of the great toe a bunion is found. This becomes inflamed by continual pressure and causes much suffering and pain.

True form foot

Now this deformity could be avoided if proper precautions were taken to procure suitable boots. In the illustration is shown a natural-shaped foot covered in outline by a true foot-form boot. These are the only kind of boots with which to cover the feet. Parents of children should see to it that none other are worn by their children. The wearer of this shaped boot will never suffer hallux valgus, hammer toe, or corns. The patient's chief complaint in this condition is pain in the big toe from the sensitiveness of the joint, and also from the corns and bunions which form on the irritated parts.

The treatment for these cases is first to wear proper fitting boots—namely broad toes and medium heels. Sometimes in extreme cases stockings are worn similar to gloves, a compartment being made for each toe. Then by daily manipulations and massages endeavour to replace the toe in its normal position. A hot foot bath each evening will add greatly to the effect of the treatment. In cases of long standing where the deformity has become fixed and the bunion swollen and painful, an operation is the only procedure to radically remove the condition and to restore the toes to their normal form.

Hammer Toe.

As is seen in the illustration it is the second toe that is the aggressor, but sometimes the other toes are involved likewise. When the second toe alone is affected it is partly buried by its neighbours on either side and the knuckle of the toe projects above the rest. This prominent joint, because of the pressure of the boot, becomes inflamed and painful, and a corn forms upon it. This

The Hammer Toe

condition, like the preceding one is also due to ill fitting boots, boots that are too short as well as pointed. The second toe being sometimes slightly longer than its fellows buckles because of the shortness of space. This condition often accompanies the hallux valgus. A proper fitting boot will likewise remedy this deformity. Sometimes it may be necessary to straighten the toe by putting it in a splint and wearing sandals for a time. If it cannot be straightened by this means a ligament is cut and the toe then placed on a splint. The corn and bunion disappear when the pressure is removed.

Conclusion.

It is obvious to all HERALD OF HEALTH readers that much of the suffering and misery caused by the feet could be banished if proper care and attention were give them. The feet are probably the most neglected portion of the body. Being shoved into a stocking and then into an impermeable leather case for sixteen hours of the twenty-four, tends to make the civilized races "tender-footed" in more senses than one. The feet should be daily bathed in tepid water, the nails pared with every care, once a week a hot footbath both to soften the callosites and to remove the dead epithelium. The stocking should be changed frequently. An alcohol rub occasionally is excellent. The boots should be carefully examined and worn-down heels and soles repaired. These trifles make for perfection of health, and health is no trifle.

Weak Digestive Organs

J. J. BELL, M. D.

WEAK digestion is perhaps more prevalent than any other abnormal condition to which the human body is subject. From the infant to the hoary-headed may be found those thus afflicted.

What the Dyspeptic Can Do for Himself

Yet there is possibly no condition of ill-health for which more can be done by each individual himself, if he knows how to select his bill of fare, eating well-cooked, easily digested foods in moderate quantities, at proper times, and exercising due care in regard to thorough mastication. In addition, we should mention as of great importance exercise in the open air.

Knowledge of Foods Necessary

In order to be able to select the right kind of food, it is necessary that we should understand something about the chemical elements that the food contains. We must also know something about the right preparation of food. In other words, everybody ought to be a cook, at least as far as knowing how to prepare simple foods in a simple, easily digestible, palatable manner.

Overloading the Stomach

The quantity of food eaten is just as important as the quality. Often individuals suffer greatly from digestive disturbance simply from overloading their stomachs. One who is accustomed to overeating is never satisfied in the true sense. There is always a craving for more food. He does not get sufficient nourishment from his food, due to the fact that much of it is wasted by fermentation; and although he may consume large quantities, he always remains thin and emaciated.

Perseverance Required

As a rule, persons suffering with indigestion feel weaker and less fit for their regular work as soon as they make a change for the better in their diet. This may be due to the act that with the fermentation there are always poisons produced which act as stimulants to some extent to the individual. When this process ceases for a time, energy and tone seem to depart. However, with perseverance along right lines a permanent improvement soon takes place.

Too Frequent Eating

Many dyspeptics make the mistake of eating too frequently. When the digestive organs are weak, rest is a wonderful help to a cure. A safe rule for nearly all is never to eat more than three times daily; and for many with weak digestive organs two meals are likely to be better than three. When only two meals are taken, it is always best to dispense with the evening meal, which is often responsible for the morning headache, coated tongue, and foul breath, as well as lack of appetite for breakfast.

Thorough Mastication Essential

Too much stress cannot be laid on mouth digestion, or mastication, as this is frequently neglected by all classes of people. Slow and prolonged chewing prepares the food for the stomach, and prepares the stomach for the food. The digestive juices all flow freely as the result of chewing.

Happy Effect of Outdoor Exercise

The effect of exercise in the open air on the digestion is wonderful. A walk in the fresh air, following a meal, is a great aid to its digestion. Violent exercise should not be engaged in soon after eating. But gentle exercise produces a balancing of the circulation as well as an increase in respiration, which have a happy effect on the digestive process.

ONLY slaves die of overwork. Work a weariness, a danger, forsooth. Those who say so can know very little about it. Labour is neither cruel nor ungrateful; it restores the strength we give it a hundred fold.—*Martin Luther.*

Mother and Child

The Care of the Baby

THE SECOND SUMMER

Edythe Stoddard Seymour

MUCH of baby's health during the second summer depends on the simple digestible foods he eats. Until he is two years old he should receive little food except the juice of oranges or fresh, ripe grapes, well cooked cereals, toast, dry bread or crackers with fruit-juice or clean milk over them, roasted potatoes, or lightly cooked eggs.

At two years of age baby should use his teeth. Feed him the pulp of prunes, oranges, cooked apples, ripe bananas, mashed potatoes, young beans or peas, spinach, finely cut lettuce, and simple puddings. No meat, and only fruit or one vegetable should be taken at a meal; a dessert may be allowed at dinner. Better feed a little scantily during the hot weather. Do not feed a child of this age at night and do not give him much milk to drink. It makes fat and unfits the child to stand the heat.

In case of illness, stop the solid foods until the child is better; give toast and milk or milk and lime-water alone; half an orange or a few pretzels or crackers once between the three principal meals are enough. Give the stomach a chance to rest.

Germs cause some bowel trouble the second summer. Allow baby to play out, but see that no sick chickens droop about to be handled,—better kill them,—and that no slop-buckets or drains stand open for baby to play in. If possible select a nice, grassy, shaded spot that the sun reaches every morning and fence it in, or place a large box there for baby's play place. Let him live outdoors every minute possible, but under shelter if raining or wet.

Dress baby very lightly. Have summer dresses very thin. No petticoats are needed. If white ones are used for away from-home wear, they should be very thin. Little jackets of outing flannel are nice for cool days.

Drawers are cooler than diapers, and as easy to wash. Socks and low shoes are cool. Bare feet often get cuts, but for a baby not walking they are best on hot days. Baby can go barefooted in a play box.

Hats and caps are not necessary except to shade baby from the sun on a trip. The washable ones are coolest and most serviceable.

If baby seems overheated, give several tepid sponge-baths during the day under a sheet. This will reduce a fever; often a dose of castor-oil will clean the system and reduce a fever. Fever with vomiting and diarrhœa, in the summer, is very serious. Get a doctor quickly in such case.

It is foolish for a mother to stay in all summer because she has a baby. Changes do the mother good, and make her better able to care for the baby. Fretful babies are often so interested in new things to see that they keep quiet and are benefited by an outing.

Dress baby cool. Make a small package of necessary changes. Take a light wrap for evening. Better take toast and oranges and malted or condensed milk from home. Take a drive, selecting shaded routes or stopping near the water. If necessary to heat baby's food, a small alcohol-stove can be purchased for from five annas up, and a little denatured alcohol can be easily carried each time.

Avoid hot, sunny localities, and noisy band

parks unless there are quiet, cool retreats in them. Do not feed the baby peanuts, frankfurters, pop-corn, candy, fancy cakes, or fruit ice-cream on such trips. A pretzel, if clean, is all right. Health will give more happiness than unhealthful indulgences.

Making Children Rest

BY ANNE GUILBERT MAHON

EVERY child needs to rest at some part of the day, especially in warm weather, and the more active and restless the child is, the more necessary is it that it should have at least a few minutes, a half-hour or an hour, in which to keep perfectly quiet and to repair in a small measure the loss of vitality which is entailed in its "play."

The more restless and ctive a child is, the more it needs this daily period of rest, and yet, the harder it is to get such a child to take it

Children will keep on playing until they are fairly exhausted. Sometimes excessive irritability and quarreling, crying spells, temper and even fevers are known to result from this nervous continuance of play and using up of vitality when the children are worn out. The child knows it feels utterly miserable, but, of course, it does not understand the cause, and so keeps on going and making matters worse.

The mother who understands this need of her children and who recognizes the necessity of making them stop before they get tired beyond all bounds, will devise means for making them rest the minute she sees their condition, or, if she can arrange a special period for rest each day, to which they are accustomed, she will demonstrate the value of the "ounce of prevention."

While some children can be made to take sound, refreshing naps in the daytime, there are others who find it absolutely impossible to sleep or even "lie still and rest," and yet these are often the ones who need it most.

If the children can be made to lie down it is best, but, sometimes, they will sit and rest in mother's lap while she reads or sings to them soothingly and quietingly. Their little bodies and nerves will be rested unconsciously while they listen to the story or songs and never for a moment will they realize that they are actually "resting."

At other times quiet amusements can be suggested, such as some game where the children have to sit still. Looking at pictures, pasting scrap pictures, cutting out paper dolls, painting, etc., require little concentration on the part of the children, yet insure their sitting still and resting their active little legs and bodies and refresh them by the change of occupation and use of a different set of muscles, which is sometimes as good as a complete rest.—*Mother's Magazine.*

Fear in Children

CHILDREN are born without fear. It is taught to them by their mothers, fathers and associates. A young child fears nothing. He will place his hand on a hot stove or under an ax without hesitation. A small baby will go to anyone who cares to hold him.

Children need to be taught caution, but they do not need to be taught fear. Rather they need to be encouraged to self-confidence.

At an early age, children are taught fear by their mothers. "Look out, or the bogie man will get you!" "Come here or the dark will get you." These are expressions commonly heard, and the child is taught to regard the dark as full of nameless terrors.

"If you are not a good boy I will send for the doctor." This threat has caused a great

r

deal of trouble for the mother as well as for others, for when the doctor really was needed the child would cry with terror at his presence. Children should be taught to regard the doctor as a dear friend who makes people well again, not as an object of terror.

Some children are naturally timid, and they should have their fears driven away by a few simple explanations. If something in which there is no positive harm excites them this should be explained to them so that they will not fear it again.

Children will not have as many accidents if taught self-confidence and self-reliance.—*Mother's Magazine.*

Cool Baths in Excessive Heat

SCHREIBER and Dorlencourt tabulate some statistics which confirm anew the way in which babies die on days of excessive heat or the day after. They then report extensive research on puppies exposed to high temperature as in the summer heated term. The results confirm the directly injurious, exclusive action of the high temperature, and that it is proportional to the height of the temperature. Both the naturally fed and the artificially fed suffered alike. Humidity in the air seemed to reduce the resisting powers. The puppies kept at 30 to 37 C. (86 to 98.6 F.) developed fever, with dyspnea and they lost flesh and were very restless. At 50 C. (122 F.) there was actual heat stroke, speedily fatal, but no digestive disturbances were noted. All the puppies died kept at a temperature of 40 C. (104 F.). In one series of experiments, artificially fed puppies had in addition to the other symptoms digestive disturbances, with diarrhœa in two and vomiting in one. On the other hand, they found that cool baths had a marked influence on the overheated puppies, the temperature and the respiration returning to normal almost immediately. Even with pronounced heat stroke the cool bath corrected conditions so that the puppy did not show any ill results from his experiences. The experiments all teach, they declare, the importance of immediate cool baths for infants suffering from the excessive heat, applying the baths extensively and energetically.

Let the Children Alone

MOTHERS, mothers, why will you worry your children so? Let them alone, do let them alone. What if they do stand in the window where the wind blows? They will move on long before they catch cold. What if they do run and jump and squeal? Did you ever see a young animal that didn't? What if they do come dancing into the house on a run? What hurt will it do? What if they do break things occasionally in their efforts to do things? What is a dish worth compared with a helpful boy or a womanly girl? What is a garment worth, clean and whole, when placed beside a sturdy little man or woman who just must do something?

Obey? Of course they should, but not because they *have to*, not because punishment, or scolding,—which is the cruellest punishment of all,—will certainly follow disobedience or failure to come up to the standard set by a mature mind. True obedience can be secured only where understanding exists. Think how long it takes you to learn many of the things you do.

Can you put yourself in their place, and feel as they feel? Do you realise that their feeling may be as sensitive as your own—possibly more so? Do you know their little human hearts bleed when cross, harsh words are spoken to them? Do you know how willingly they would obey you, serve you, if you would just treat them as human beings, far more responsible than you give them credit for being? And do you know that

they would be far, far more responsible in every way if you would manifest more confidence in them?

Watch them, of course; guide them, and instruct; for the immature, untrained mind is as awkward as the unskilled little hand, but oh in a thousand little, wholly unimportant things that they do and want to do, let them be natural, let them alone!—*Selected.*

Mother and Son

ALWAYS I was conscious that I must keep my boys close to me. I knew the time would come when my authority could not be enforced. Then only love could bend them to my wishes and judgment. So I sought for nearness and mutual understanding. From the first, they knew I would tell them the truth and never refuse to answer a direct inquiry. When they brought me the physiological questions which are bound to enter the life of the growing child, I answered them simply and clearly. I made nothing common or unclean. Life was pure and sacred, and if there was anything they did not comprehend, they turned to me for the clear truth, secure that they would get it.

It was not only seriousness we shared. Fun of all sorts, outings, jollifications for birthdays and holidays, vacations in the open, all these we had together, and I learned much of games and sports which had been a sealed book to me even in my youth. But a familiar story it had to become to me if my boys and I were to be truly "intimate friends."—*Jane Calhoun, in Harper's Bazaar.*

The Home

THE ideal home is not self-centred. It is a centre of service. So far as circumstances will permit, the old time ideals of hospitality should be maintained. In wise and uplifting ways the home should be shared! It is a good practice to invite young people who are away from home. It relieves loneliness, discouragement, and temptation. Remember, it is—

"Not what we give but what we share,
The gift without the giver is bare."

"The home is the bulwark of civilisation." Within the extreme limits of wealth and poverty a home may be good or bad irrespective of social position or property. Our homes are what we choose to make them. It is a question of what we admit and what we keep out of them. Our best selves and the best that we have to give should go into the home. The home life, to a large degree, determines the character of children. The home tends to make us all better or worse. Thus the home becomes the chief factor in determining the character of the community and the nation. The trend of our times is away from the home into the countless amusements and interests of modern life. But home life at its best should be strongly maintained and cherished. It should not be narrow nor selfish, however; and from it should develop and overflow steadily lives enriched for service and blessing.—*Selected.*

Editorial

To the Hills

THE sharp, penetrating rays of India's sun are now making their presence felt. The short cool season of from two to five months has passed without sufficient snap having come into the person to maintain an equilibrium in our vital forces. Yet we are confronted with another hot season, the heat of which can scarcely be excelled in any part of the globe. It is this long continued heat, without sufficient time for recuperation, that gives a high percentage of tropical morbidity. True, India has no large city that can pile up statistics of heat stroke as do some of the large cities of the temperate zone. New York city for instance, has the largest record of this kind, but these heat periods are only for two or three days in succession, when the thermometor registers 110 degrees and the air is extremely humid and without motion. Five or six days afterward the temperature may drop in this same locality to sixty or seventy degrees. In India, however, we are subject to a temperature of 110° and 120° for weeks at a time. Heat stroke is not so common as in the cities of the West for the dweller in India has found it necessary to his existence to provide against these extremes of heat. He has learned by long experience to keep cool.

During the hot season that is ahead there are two courses that will be pursued: those who are compelled to remain at their post of duty will regulate their life so as to be as nearly as possible in harmony with the tropical conditions in which they live and those who can free themselves from duty will go to the hills. Of these last we speak at this time.

Especially to Europeans, the hills provide an unusual blessing. Were they non-existent, many who now give their lives to the service of the country would be unable to continue in the Peninsula. But nature has been exceedingly generous, and at no point in this great heat-burdened area is it more than a day, or at most two, to some hill refuge, where the cool breezes and invigorating atmosphere of the mountains rapidly restore the lost vitality and courage.

The choice of hill station is quite often an arbitrary matter, yet some information relative to the various hill cities will not be out of place. The Northern part of India possesses a large number of well elevated hill stations varying from 5,000 to 9,000 feet in elevation, and extending from Darjeeling, north of Calcutta, to Thandian, near Peshawar. Although these stations are in the same belt and possess much the same characteristics, yet there are some differences that might lead one to choose between them.

Those in the Eastern section of the Himalayan range have an extremely heavy rainfall, and this makes them disagreeable to some extent during the rainy season. For this reason with many the Western stations have the preference. Darjeeling, at an elevation of 7,000 feet; with a mean annual temperature of 53 degrees, is the summer headquarters of the Bengal government. The mean temperature during the coldest month, January, is 41 degrees F., and the hottest month, July, is 64 degrees F. This station is easy of access from Calcutta owing to the narrow gauge railway which enters into the city after a climb through beautiful hill country from the plains.

In the middle of the row of hill stations are Naini Tal and Almora. Naini Tal is the summer headquarters of the government of the United Provinces. Its temperature

range from 26 degrees F. in January to 85 in June. The rain fall is 95 inches annually. The railway running north from Bareilly, terminates at Kathgodam, thirteen miles from Naini Tal. The first ten miles of this distance are covered by tonga, and the remaining three by pony or dandy. Almora is unique in that it has a very light rainfall, and is the refuge of those suffering from the diseases of the nose, throat and chest. It is some forty miles from Kathgodam, the Naini Tal railway terminous, and is reached either by pony, dandy, or by tonga on the cart road, a distance by this route of seventy-eight miles.

The two most important hill stations in the Himalayas are Simla and Mussoorie. The former is very accessible, being reached by a narrow gauge railway starting at Kalka and winding sixty miles into the interior. It is is 7,500 feet above sea level and is the largest and most important of the hill stations, being the summer capital of the Indian Empire and the seat as well of the Punjab government in summer. The population in season is between forty and forty-five thousand. It has an annual rainfall of 63½ inches. The coldest month, January, has a mean temperature 41 degrees and the hottest month, June, 68 degrees. The heaviest rainfall of the station comes in the months of July and August, and averages 11 inches. This makes the rainy season of Simla very bearable, and gives many sunny days even during the rains.

Mussoorie is not quite as accessible as Simla, as the railway terminates at Dehra Dun. From this point to Rajpur, a distance of seven miles, tongas cover the route, and from Rajpur to Mussoorie, seven miles, further on, dandies and horses are used. Mussoorie is about half the size of Simla, and has a greater rainfall, the average being about 96 inches per year.

The population of Mussooorie is very cosmopolitan and it lacks the official life of some of the other stations. Mussoorie is unique in that it rises directly off the plains which with the Dun in the foreground are gorgeously beautiful seen from the summit of the hills. On the one side of the ridge may be seen the eternal snows, and on the other the wide stretch of tropical verdure of the plains. The time taken from Dehra to Mussoorie is from three and one half hours up, while from Kalka to Simla five and one-half hours are occupied in the train journey of sixty miles. In spite of this Mussoorie is considered the less accessible of the two places.

Madras possesses an excellent sanitarium in the Nilgiris, the principal hill station of which is Ootacamund, with an elevation similar that of Simla and Mussoorie. But unlike them it is situated on a wide, rolling table land, while they are on the sharp ridges of the range. Extremes of climate are not found in the hill stations of the south and for this reason they make better all year locations.

Western India is handicapped by the lack of real stations in the hills. However, Mahableshwar is used as the hill station by the Bombay Government as the highest available point in that part of the country, and one or two smaller ones at lesser elevation are available. The rainfall in the Western Ghats is heavy, Mahableshwar having something like 200 inches in season.

There are a number of places in India which have derived the name of semi-hill stations. Among these are Dehra Dun in North India, Poona, in West India, Bangalore in the South, and Saugar and Jubbulpur in Central India, with many others in various parts of the country. While these places as a rule are more bearable than the plains and offer better opportunities for keeping the health, yet they cannot take the place of a hill station. Children at these semi-hill stations get bleached out during the season.

The question as to who should go to the hills is easier of solution than the one point, that the children of Europeans should not

remain on the plains during the hot season. It is rare to find an exception to this rule. We think of the expression of one who has been in the country fourteen years when he said that he would live on bread and water if he had to, that he might be able to keep his wife and children in the hills during the hot season. The European is under obligation to give his children as good a chance in life as he himself had. We cannot do this when we allow them to become washed out every hot season at that time in life when they should be building up a constitution to battle with life later on.

Another class who should go to the hills are those who in one way and another are beginning to feel unfit. This class includes Indians who are doing office and professional work of some kind and need the tonic of the hills to brace them up for the struggle of life. There are cases where a stitch in time saves nine. Almost all diseases of a chronic, constitutional character will recuperate faster in the hills. This leaves the European class who are compelled by their duties to remain on the plains, except for a month or six weeks change to the hills, and this month is best taken just after the rainy season is over. The air in the hills at this time is delightful and gives one the opportunity of spendingthe whole time out of doors at the varions recreations offered.

There are some who suffer from diseases which will be harmed rather than helped by a hill vacation. In these cases each person's condition must be determined on its merits by the attending physician. A hill station with a great deal of rain and fog or moist is not helpful, to say the least, to those suffering with diseases of the nose, throat and lungs. The best all round hill station is the one that gives the right elevation, adequate recreation, and the greatest possible number of sunny days.

The effect of altitude on the vital forces of the body is open to discussion. The larger number of investigators state that elevation during the second week of the stay in the hills causes the red cells of the blood and the hemoglobin to slowly increase until the 15th day, when it reaches its maximum, which is 15 per cent higher in the red cell count and 16 percent in the hemoglobin. At first the blood pressure rises, but some investigators state that the blood pressure soon adjusts itself and returns to normal.

Thank nature for the generosity she has shown in this land of intense heat in providing such refuges from the burning sun rays and take the opportunity of enjoying the blessings they afford whenever the opportunity affords.

What to Do Till the Doctor Comes

Fractures and their Treatment

The Causes of Fracture.

1. Direct violence. A bone may be broken by a direct injury to it, such as occurs when the wheel of a carriage passes over a limb.

1. Indirect Violence. A bone may be broken at some distance from the seat of an injury through the transmission of the force applied, e. g., fracture of the collar bone by a fall upon the out-stretched hand: fracture of the base of the skull by a fall from a height upon the feet.

3. Muscular action. A bone may be snapped across by the sudden and violent action of a muscle, e. g., the knee cap in jumping.

Signs and Symptoms of Fractures.

1. Pain. This usually referred by the patient to the point at which the bone is broken.

2. Uselessness of the limb. The limb cannot be put to its proper use: for instance, when a leg is broken a man cannot stand upon it: when an arm is broken the hand cannot be raised to the back of the head.

3. Alteration in shape. The limb may be bent, twisted or shortened, and, when compared with a sound limb, it appears of an unnatural shape.

4. Swelling. This is generally present. It is due to contraction of the muscles and diffusion of the blood.

5. The patient usually complains of having experienced a sudden snap or giving way of the bone.

The broken bone may be felt. If the broken bone is near the surface as in the case of the collar bone, it may be seen and felt.

6. Unnatural Mobility. That is, when the limb is handled (which should not be unnecessarily done), it gives way where, if sound, it would not be movable.

7. Crepitus. When handled, there is generally a grating sensation, caused by the ends of the bone grating one against another.

Apparatus for Rendering First Aid in Fractures.

Surgeons use what are called splints in the treatment of fractures.

They are supports made of various materials adapted to fit the limbs and applied so as to render the joints above and below the injured parts incapable of movement.

For First Aid purposes surgeon's splints are not available and temporary means of attaining a similar object must be devised from the following articles:—

Lathis, pieces of wood, walking sticks, umbrellas, whips, canes, guns, Indian shoes, folded newspapers, wine bottle covers, etc.

The surgeon keeps his splints in position with roller bandages; in rendering of First Aid you must utilize:—

Puggaries, handkerchiefs, straps, or any binding material which comes to hand.

General Rules for the Treatment of Fractures

1. Send for the doctor.

2. If there is any bleeding, attend to it first and think of the splints afterwards.

3. If in doubt as to what the injury is, treat as fracture.

4. Do not move the patient till he has been treated.

5. Prevent any further injury by supporting limb and applying rough and ready splints.

6. Reduce shock by keeping the patient warm.

7. If you consider that the backbone, pelvis, or thigh are injured, keep the patient lying down.

Manual of first Aid for Nurses, Thacker, Spink and Co., Calcutta.

Vegetarian Sandwiches

GEORGE E. CORNFORTH

IT is said that the sandwich originated when John Montagu, the fourth Earl of Sandwich (1718-92), not wishing to interrupt a game in which he was interested, called for something which he could eat and go on playing. A loaf of bread and a joint of meat were brought. He buttered two slices of bread, and, placing a slice of meat between them, made a combination which he could eat while continuing his pastime. Ever since that time the sandwich has been found to combine foods in a very convenient form for a picnic, party, luncheon, or other informal meal, so much so that even vegetarians have appropriated it, having discovered that many other foods besides meat can be used in making sandwiches that are a delight to the taste, and quite as nutritious and satisfying as those made with meat, and far more wholesome: for the least wholesome meats are commonly used in sandwiches, and hot condiments seem to be a necessary part of them.

The bread used in making sandwiches should be fine-grained. All kinds can be used—white, whole-wheat, Graham, rye, nut, and steamed brown bread. The bread should be one day old, as fresher bread is less wholesome and cannot be cut into smooth, thin slices. The butter should be creamed, not melted. The filling should be something of pronounced flavor, such as cottage-cheese, ripe olives, jelly, or if that which is to be used as filling has little flavour, something should be used with it to add more flavour. We do not recommend removing the crust from sandwiches, which is usually thought necessary; for the crust is the best part of the bread. However, if something especially nice is desired, the crust may be removed. In that case the crust should be cut off before the bread is buttered. This will avoid wasting butter, and the crust can then be dried and made into zwieback crumbs, for which there are many uses.

If it is desired to make the sandwiches specially thin and dainty, this can be most easily done by cutting the loaf of bread in two in the middle, spreading each cut surface with butter, cutting off a thin slice from each buttered end, and putting the two slices together. Continuing thus, the slices, will all fit together. After they have all been cut and buttered, the filling can be put in; but for ordinary sandwiches the desired amount of bread should first be sliced, the slices being piled together as they are cut off, then the slices should be spread with butter and put together in pairs. Next spread the filling on one of the slices, and press the second slice upon the filling. After the sandwiches are all filled, they may be cut into any desired shape. Cutting them cornerwise makes a convenient shape, or cutting them twice parallel with the edges makes oblong sandwiches. Sandwiches are sometimes cut into diamonds, crescents, rounds, and other shapes, but this is wasteful, and is done only because the person desires to do something different. To make round sandwiches the bread can be baked in small round tin cans.

If the sandwiches are not to be used at once, they should be covered with a cloth wrung out of cold water, and set in a cool place to keep them moist.

Like other foods, sandwiches can be made more attractive by a little attention to garnishing. Lettuce or parsley placed between the slices so as to make a pretty green edge around the sandwich is very attractive. Lettuce, parsely, carrot tops, ferns, or other pretty green leaves, also flowers, may be used to garnish a plate of sandwiches. Sandwiches should be served piled on a plate covered with a doily.

Baked Bean Sandwiches

Mash the beans enough to break them up a little, not enough to make puree of them, because the sandwiches are nicer if there is something to chew; use the beans plain, or season them with lemon-juice, or spread one slice of the bread with salad dressing. Brown bread may be used for these.

Lentil Sandwiches

When you have lentils left over, make them into dry puree, by cooking them down dry and rubbing them through a colander; season the puree with salt and a few chopped walnuts, and you have a splendid sandwich filling.

Nut Sandwiches

Spread chopped nuts of any kind upon one slice of buttered bread, and cover with the other slice; or use peanut butter; or season the peanut butter with a little lemon-juice and salt or a little tomato-juice and salt; or make a mixture of chopped nuts of two or three kinds with a little peanut butter, adding salt to season, and enough oil to make the mixture soft enough to spread. Garnish with one or two nut meats pressed on top of each sandwich.

Jelly Sandwiches

Spread one slice of buttered bread with jelly, and cover with the other slice. Garnish with halves of walnut or pecan meats.

Nut and Jelly Sandwiches

Use any kind of chopped nuts. Spread the bread with butter, then for each sandwich spread one slice of the buttered bread with the chopped nuts, and the other with jelly. Graham or brown bread is nice for these.

Cottage-Cheese Sandwiches

Use cottage-cheese seasoned with salt and cream (sour cream may be used) as a filling, or mix a little mayonnaise salad dressing with the cheese. Rye bread is nice for these.

Nut and Date (Fig or Raisin) Sandwiches

Chop together two parts dates and one part nuts, and use as sandwich filling; or use raisins or figs; or use peanut butter with chopped dates or figs.

The House We Live In

The Principles of Nutrition

FOOD, in the physiological sense, is that which, when properly introduced into the body, builds tissue, restores waste, and furnishes heat. These are the three great functions of foods, all of which must be performed. This does not by any means imply, however, that the secondary function of food as a means of social enjoyment should be neglected. In fact, an attractive table and congenial companions serve to render more effective the primary purposes of food.

Classes of Foods: Foods comprise four classes:

a. Nitrogenous foods, or proteins, which nourish the muscles, brain, nerves, and tendons, and furnish some heat.

b. Starchy foods and sugars, commonly designated as carbohydrates, which nourish the fatty tissues, and furnish heat.

c. Fat foods (oils), which take little part in tissue-building, but are fundamentally heat-producers.

d. Mineral foods (common salt, lime, phosphorus, iron, etc.), which nourish particularly the teeth and bones, and furnish the acids and salts necessary to digestion and the translation of fluids in the body.

Calorie is a term used to indicate the quantity of heat afforded by a food product during the process of digestion, or as determined by burning the food in a calorimeter and measuring the quantity of heat produced. The unit of measure is one gram of water (15 grains); the unit of temperature is one degree centigrade (1.8°F.). A calorie, therefore, measures the quantity of heat which will raise the temperature of one gram of water one degree centigrade. When spelled with a large C, except at the beginning of a sentence, Calorie designates the quantity of heat required to raise one kilogram (2.2 pounds) of water one degree centigrade. One Calorie is therefore equal to one thousand calories.

When a food is completely burned in the body, the same number of calories are produced as if it were burned in a calorimeter. Thus fat which is used in the body produces the same number of calories as fat that is burned in a calorimeter. The same is practically true of sugar of starch. On the other hand, when a nitrogenous food, protein, is burned in the body, the combustion is not complete; in other words, the residues of the digestion of protein matter are still capable of further oxidation. Urea is an example of such an incompletely burned product. The digestive calories of protein are therefore fewer in number than the calories of protein burned in a calorimeter.

Often the value of foods is expressed in calories. This is not physiologically accurate. The calories express only the heat-producing properties of foods—whereas one of the chief uses of foods is to build tissues and restore waste, functions which cannot be expressed in terms of heat. The heat value of food (in other words, the number of calories it contains) is the measure of the heat and energy which it will yield, but not by any means the measure of its nutritive value. This point will be further developed in succeeding lessons.

Digestion is a term applied to the various changes which take place in the foods after the process of mastication is completed. The process of digestion, in a limited sense, consists of those processes which render the foods soluble and suitable to be absorbed into the blood-current.

Enzymes, from a physiological point of view, in regard to the digestion of foods, are the organisms which are active in liquefying the food. They are of several classes, namely:

a. Amylolytic.—Enzymes which liquefy starch. The saliva contains an enzyme of this kind, ptyalin, which converts starch into sugar. The pancreas also secretes a similar enzyme.

b. Proteolytic.—Pepsin, the enzyme secreted chiefly by the coats of the stomach, the function of which is to reduce the insoluble proteins to a soluble state, is typically proteolytic.

c. Lipolytic.—The enzyme secreted chiefly by the pancreas, the function of which is to render fats suitable for absorption into the blood-current. The pancreatic secretion is the most important of the digestive agents, since it contains three ferments, viz., amylopsin, typsin, and lipase, attacking starch, protein, and fat respectively.

The Processes of Nutrition

The three kinds of enzymes mentioned above are sufficient to render soluble and suitable for absorption the various kinds of food taken into the stomach. The chief object of mastication is to reduce all foods to a fineness suitable to favour the action of the enzymes. Starches and foods containing cellulose require much more complete mastication than do meats, which contain chiefly protein substances. As an aid to digestion, however, all foods should be carefully masticated, especially those of a starchy or fibrous character. The sum of the changes which take place before the food products enter the blood-current constitutes the process of digestion, in the ordinary application of the term.

Assimilation is a term applied to the

selective action of the tissues of the body in taking up from the blood current the particular foods which nourish them and restore their wasted particles.

Excretion, the opposite of assimilation, is a term applied to the process by means of which the cells that have performed their function are degrated, often rendered soluble, and in this state made suitable for removal from the body through the various organs, such as the skin, the alimentary tract, and the kidneys.

Metabolism is a term applied to the sum total of the changes which take place in digestion, assimilation, and excretion. The process of metabolism is made up of two distinct stages; namely, onabolism, the building up of the tissues, and catabolism, the tearing down of the tissues.—*Good Housekeeping*.

EMETINES IN DYSENTERY.

I have treated a number of cases of amœbic dysentery, in whose stools pathogenic amœbæ were found microscopically, with either cephæline or mixed ipecacuanha alkaloids in the form of soluble hydrochlorides. In all the cases the salts were given hypodermically and the results carefully recorded. It is unnecessary to go into details of these cases, and it will suffice to state that, although both pure cephæline hydrochloride and mixtures of this with emetine hydrochloride both gave results far superior to the old oral administration of ipecacuanha powder, yet the results as judged by the rapidity of improvement in the number and character of the stools and the disapperance of the amœbæ from them, were distinctly inferior to those obtained by the use of an equal quantity of pure emetine hydrochloride. Moreover, the pure cephæline was inferior to the mixtures of the two alkaloids.

We may therefore conclude that the pure emetine hydrochloride is the best alkaloid in amœbic disease, and that any slight gain due to possible lower price of the mixed ipecacuanha alkaloids is counterbalanced in the lesser efficacy of such preparations.—*Selected*.

SMOKING ON STREET-CARS

Sooner or later, every city large enough to need street-cars has to settle this question: Should or should not smoking be permitted on such cars? In all cars of the closed type when smoking is permitted it is usually limited to the front or rear platforms. As passengers need to use both the rear and front platforms in boarding or leaving cars, the condition of these parts of the car is a matter that directly concerns the public health. While many cities have antispitting ordinances, these laws are, in the majority of instances, more honoured in the breach than in the observance. As a result, the street-car platforms where smoking is permitted become both an offense to the eye and a menace to health. Where smoking is allowed on the front platform, and particularly in that type of car that has the front platform enclosed, the motor-man works from morning until night in a tobacco-smoke-impregnated atmosphere, while the passengers who leave the car by the front platform have to pass through this expectoration-decorated "fume-chamber." When the question, Shall smoking be abolished on street-cars? comes up for settlement with any city, there can be only one answer. From the point of view of hygiene and common cleanliness, to say nothing of the comfort of the majority, smoking on street-cars is an indefensible nuisance.—*Journal A. M. Med. Assn.*

In India we can well apply the words of the preceding abstract to our railway cars as it is very difficult for one to rid himself of this nuisance while travelling. Some of our railways have laws against smoking except in certain cars but they are not enforced. Let us hope that the time may come in India when those who do not wish to be polluted with tobacco smoke will be able to protect themselves.

MAKING EXERCISE PAY.

A FRENCH inventor (may his memory long linger) has so combined a bicycle exerciser with a storage battery that the person exercising during the day accumulates an electrical charge which can be utilized at night for lighting purposes. Where a number of persons use the exerciser, the amount of stored current may be considerable.

ANTITYPHOID VACCINATION IN THE SCHOOLS.

THE municipal council of Paris has just requested the administration to collect the number of typhoid cases in each quarter and to publish a table, showing the figures with those of the corresponding school population, to furnish a basis for studying the means of supplying serum to the physicians of the schools most affected.

ALCOHOL IN THE SPINAL CANAL

Two German investigators have ascertained, as a result of an investigation of ten persons who had been drinking alcoholic beverages, that alcohol was present in the spinal fluid of eight of them. In some cases, aldehyde, an oxidation product of alcohol, was present. Several cases showed the presence of alcohol in the cord four or five days after its use had been discontinued.

EXPERT SANITARIANS FROM CANAL ZONE.

THE president of the Louisiana State Board of Health, having visited the Canal Zone and noted the character of the sanitary work done by the men there, is anxious to have the State of Louisiana employ one or more of these men to give their time to the work of bettering the sanitary condition of the State. It would be a good investment.

INSTITUTES OF CHILD HYGIENE

ELEVEN institutes of child hygiene have been opened in the various services of obstetrics and rediatrics in Paris. Instruction in child hygiene will be placed within the reach of all Parisian mothers. Each year, the head of each service in which there is an institute of child hygiene will make a report to the general administration of the public charities on the number of consultations, the number of children examined, the number of pupils following courses, the quantity of milk distributed, etc.

THE INFLUENCE OF LIGHT ON THE NERVES

IN the Transactions of the Illuminating Engineering Society for October is a paper by F. Park Lewis, who makes some significant statements regarding the influence of light, from which the following is quoted:—

"The difference produced upon our state of mind by the glaring brilliance of an unshaded Welsbach light, especially an old one, or the soft glow of even a yellow illumination, is felt by every one, although by no means always recognized as a cause of nervous irritation. In some of the most persistent cases of eyestrain, after the ophthalmologist has employed the highest degree of skill in determining the correct combination of lenses to be employed, it will be found that the discomfort is due to a badly placed lamp, to the improper use or absence of shades, to an insufficiency or an excess of light, to some specular reflection or other local fault in illumination about which he has not been advised. There is probably no one simple element that more deeply concerns the welfare of the people than correct lighting."

The *Medical Record*, commenting on this, says, we believe correctly, that "in these days the fault is generally a too glary light or an excess of light. The object seems to be to have as many brilliant white lights as possible. There is little doubt that a considerable amount of the nerve irritation which is so prevalent is largely due to or greatly aggravated by present-day methods of lighting."

Where it can be installed without too great expense, there is no light equal to the hidden light that illuminates by throwing its rays first to the ceiling, to be diffused from there over the entire room.—*Life and Health.*

TO PREVENT POISONING.

RECENTLY it has been suggested to have bottles which contain poison so distinguished that it will be impossible to mistake them for medicine bottles. One suggestion is to have a bottle of distinctly different shape, say triangular, or to have the surface covered with little knobs, which will immediately warn the holder of the nature of the contents; another is to have the cork provided with a number of needle points, which by pricking the fingers will give the necessary warning; another is to have on every poison bottle a bell, attached by a short chain, which will tinkle as soon as the bottle is picked up.

HUMOUR AT THE EXPENSE OF THE ANTIVISECTIONISTS

As Ernest Thompson Seton is somewhat of an animal lover himself, the antivivisectionists in their world convention in Washington were doubtless expecting a great speech from him against animal experiment; and they must have been disconcerted when he turned and pointed his guns at them. The situation was so deliciously ludicrous that the Washington *Times* could not forbear some editorial comment, which because of its appropriateness we reproduce:—

"That was a cruel bit of common sense that a speaker hurled into the midst of the antivivisectionists when he suggested that ladies wearing furs were giving countenance and encouragement to quite as cruel a treatment of dumb animals as were the vivisectors.

"If he had mentioned the wholesale cruelty of deliberately raising fine, fat pigs and beeves for the express purpose of killing them, he would have emphasized it a bit. And to think of doing all that when there is high authority for the contention that we would all be better off—in purse and person alike—if we would quit eating meat!

"Now we are assured, further, that the wicked doctors experiment on human beings as well as animals. Of course they do, more's the horror of it. Jenner had to vaccinate some particular person first, and it was a wicked shame. If he hadn't been permitted ever to try it on any particular person first, it never would have been perpetrated on any of us, and we would yet enjoy the high privilege of dying from smallpox.

"Likewise with, say, the diphtheria antitoxin. It is among the greatest outrages against the business interests of the undertakers, and the sensibilities of the antivivisectionists, that experiments with this fearful concoction were permitted."

DANGER FROM EXCESS PROTEIN

THE *Journal A. M. A.*, October 18, in an article on the treatment of typhoid fever, has some things to say on the subject of diet, which, while written with reference to typhoid fever, are scarcely less important in any case, for we know almost of a certainty that a very large proportion of man's diseases gain entrance to the body through the digestive tract, and usually in connection with and on account of the food he eats. This is what the *Journal* says:—

"The diet in typhoid fever is exceedingly important. The many investigations in diarrhœa, especially in children, have demonstrated how much the bacteria of the intestine may be changed by variations of the food. On any one kind of diet the bacteria of the intestine, or intestinal flora, remain about the same during health. If this diet is changed for another, for instance from carbohydrate to protein, the flora change. In brief, it has been shown that a diet of carbohydrates favours the growth of certain kinds of bacteria, which, however, bring forth more or less non-toxic products which inhibit their own growth. A protein diet, on the other hand, allows bacteria to develop and fermentation to occur, and products are absorbed that are more or less toxic to the organism, especially if the bowels are not thoroughly moved and the membranes of the intestines are in a condition to absorb toxins more readily than normally, which conditions are present in typhoid fever. A diet that allows such fermentation and putrefaction to occur, readily causes secondary toxemia, to say nothing of a high temperature entirely separate from the poisons and the disease of typhoid fever. Sugar has been shown to prevent, to some extent, the decomposition of protein, and lactose seems to be a good sugar for this purpose."

In saying this the *Journal* is only repeating what has been proclaimed by various observers for some time past, that the excessive protein diet, such as one gets when eating freely of meat and similar foods, is likely to be followed by diseased conditions.

BUTTERMILK FOR ERYSIPELAS

IN the *Practitioner* for May, 1913, Arnold makes an astounding statement regarding his success in the treatment of erysipelas with buttermilk.

Some seventeen years ago he was treating a girl of nineteen for erysipelas of the face and scalp. After an illness of several weeks, in which she had a number of relapses, she finally seemed to recover, and was sent to the seashore to build up. Here a long walk used her up, and she returned exhausted. The next day there was a recurrence of the erysipelas in full force, with a temperature of 104°, and severe pain. A friend suggested the free application of buttermilk, a remedy she had learned from a farmer's wife.

Rags soaked in buttermilk were accordingly

(*Concluded on Page* 148)

That's the Permanent Sapphire Point

and the POINT
of DIFFERENCE.

Send for Our 1914 Machine List To-day

Many years ago the world was interested to find that a machine had been discovered which reproduced the human voice, and ever since Scientists have from time to time effected improvements, and are still engaged in perfecting the mechanical means of the reproduction of Sound.

The ultimate goal must be that machines for the reproduction of Sound be so faithful to nature as to form an acceptable and welcome substitute.

Lovers of music may not—especially in India—have the opportunity of listening to all that is greatest in the world of song, instrumental solos, or their favourite selections played by Bands and Orchestras. This the PATHEPHONE claims to accomplish and in your own home, in your own time. The PATHEPHONE aims at being a musical instrument and not only what is generally known as a "talking machine."

The use of the Sapphire not only obviates all bother and renders the reproduction perfectly natural,—doing away with that metallic vibration so inherent in needle machines—but preserves the record for a much longer period.

If you have not got a PATHEPHONE send for our list now ere you decide on investing in machines of other makes.

Our Machines will play all makes of records; ask for Particulars

THE PATHEPHONE INDIA CO.,

11, Church Gate St., BOMBAY. **7 A, Lindsay St.. CALCUTTA.** **and DELHI.**

POONA: MARCKS & CO., LTD.

BUTTERMILK FOR ERYSIPELAS

(Concluded from Page 146)

applied to the inflamed area, and almost immediately the pain was relieved. As the temperature remained high, the patient drank some buttermilk, with the result that the temperature soon dropped to 99°. She was practically well the next day.

Returning from the seashore, she told Dr. Arnold her experience, which led him to test the remedy in other cases. Since that time he has treated every case of erysipelas by this method, keeping the cloth over the affected parts constantly wet with buttermilk, and uniformly the pain disappears, and the disease process rapidly aborts.

NEWS NOTES

AMERICAN POSTURE LEAGUE.

This league, which has for its object the improvement of human health and efficiency through the med um of correct physical posture, was incorporated in Albany, N. Y., October 22.

POISONING FROM APPLES.

Several cases of obscure arsenical poisoning in Norway, so it is asserted, have been traced to the use of apples from orchards which have been sprayed, after the fruit had set, with a mixture containing Paris green. Traces of arsenic are said to have been detected in the skins of some of the apples. Carelessness in the spraying of fruit may in this way be dangerous to the health of the consumers of the apples, and, moreover, might easily spoil the export trade in apples.

MODEL 10 (with Column Finder) for Correspondence and all ordinary purposes.

MODEL 11 (with Decimal Tabulator) for Billing, Invoicing, Statements and Accounts.

REMINGTON TYPEWRITERS

BRANCHES EVERYWHERE.

BRANCHES EVERYWHERE.

MODEL 11 (with Wahl Adding and Subtracting Mechanism) for Writing, Adding, Subtracting and Auditing.

For particulars apply to:—
Remington Typewriter, Co., Ltd.,
75, Hornby Road, Bombay.

THE AUTOMOBILE Co., Ld.

TELEPHONE No. 2180.
TELEGRAM AEROPLANE.

New Queen's Road,
BOMBAY.

Dear Sir,

This is the Little Car you have been waiting for. It is the '"A.-C. 10 H. P. A perfect little runabout at a moderate price. Write us for full particulars.

Our catalogue of Cycles, Motor Cycles and Cars is sure to interest you. We are the people who sell a high grade Cycle for Rs. 75. We have three grades: ALL INDIA, MODELE RICHE, and MODELE D'OR. They are the best obtainable for the money.

Yours faithfully,
THE AUTOMOBILE CO., LTD.

Herald of Health,

The Indian Health Magazine

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

REGISTERED, - - - No. A. 457

ANTITYPHOID IN ARMY.

There was no case of typhoid in the American army in 1913. This is said to be due to the free use of antityphoid vaccine.

ALCOHOL FORBIDDEN TO RAILWAY MEN

The management of the French state railways has prohibited the sale of liquor to railway employees. Officers of the railway are expected to keep watch and prevent employees from going to saloons during work hours, and to prevent the bringing of liquor on to the railway property.

PELLAGRA INVESTIGATION.

The report of the pellagra commission thus far favours the view that there is no evidence to support the theory that corn, either sound or spoiled, is a cause of pellagra; that pellagra is probably communicable from person to person; that the stable-fly is a probable carrier of the disease; that intimate association in the household may be a means of transmission.

CAUSE OF ARTERIOSCLOROSIS.

That the injection of minute doses of nicotine into the bodies of animals is followed by the onset of arteriosclerosis has been observed for some time, and the phenomenon has been studied with the purpose of determining in what manner the nicotine causes the hardening of the arteries. The most plausible explanation so far suggested is that the body, in order to neutralize the effects of the nicotine, gives up its reserves of lipoids. The lipoids seem to be protective against the effect of nicotine; for when an amount of nicotine which otherwise would be capable of producing death is injected with a small amount of cholesterin (a lipoid), the animal survives. It is suggested that the body lipoids are thrown into the blood stream for the purpose of neutralizing the nicotine, and, being relatively insoluble, they are deposited as atheromatous patches on the walls of the blood-vessels. So, then, it may be that the very substances that render one immune to the immediate effects of tobacco-poisoning are themselves the source of danger in later life, by hardening the arteries.

PIANOS AND ORGANS

Specially Built For India

S. ROSE & Co., are Agents for the justly Celebrated MASON and HAMLIN Organs. Recognized as the world's standard of Excellence.

CABINET ORGANS
Rs. 150 to Rs. 3,500

PIPE ORGANS

of all grades and powers built to order. Estimates free.

HARMONIUMS

Best French and English Manufacture. Rs. 35 to Rs. 875.

PORTABLE ORGANS
Rs. 55 to Rs. 275

PIANOS

By the leading makers specially built for India and supplied on hire, on monthly payments, and on special terms for cash. Rs. 300 to Rs. 4500.

Agent for

BRINSMEAD, KNAKE ERARD, BECHSTEIN, COLLARD & COLLARD, SCHIEDMAYER STEINWAY, and other first class makers

Lists Free

Old Pianos taken in part payment.

FORT, BOMBAY

S. ROSE & CO.,

Telegrams; Rosebud - - - - Bombay.

Printed by W. E. Purvis at the International Tract Society, 17, Abbott Road, Ludhiana.