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GENERAL ARTICLES.

VARIETIES OF DIGESTIVE DISORDERS; HOW TO DETERMINE THEM.

BY A. J. SANDERSON, M. D.

(*Continued.*)

To obtain desired results in analysis of the stomach fluid, it is necessary to have the fluid taken from the organ after a uniform meal, and at a definite stage of digestive work. Various meals have been experimented upon for this purpose, but the one usually taken is composed of two ounces of unfermented bread and eight ounces of liquid. This is better taken after a previous washing of the stomach, following the preceding meal, especially in those cases where it is suspected that the food remains in the stomach for a long time. At the time of the test meal no other liquid should be taken except that which is taken with the bread.

A soft rubber stomach tube is introduced at exactly one hour after the meal is taken, and the fluid is siphoned into a receptacle. With proper precautions this is usually done with comparative ease, unless the throat is unusually irritable, when it may give rise to considerable strangling.

The usual quantity of fluid obtained from the stomach after this test meal is from one to two ounces. Any great variation from this denotes some abnormality in the absorptive powers of the stomach. Sometimes no fluid at all can be obtained, indicating that the absorption has been so rapid that there is not sufficient liquid left in the stomach to cause it to flow through the tube. It is often the case, however, that there is more liquid obtained from the stomach. In some cases we get the full eight ounces that have been taken, showing that there has been scarcely any absorption during the hour. In rare cases there is even more liquid than is taken with the meal, showing that, besides the lack of absorption, there is an accumulation of the secretion of the stomach itself. This occurs in extreme dilatation of the stomach.

Usually about one-half of the product obtained is sediment, while the other half is liquid. This gives a general knowledge of how much of the digestive products of the food has been passed from the stomach.

These deductions that we draw from the amount and character of the fluid obtained, may sometimes be rendered uncertain by the peculiar shape of the stomach, or other things which interfere with obtaining all the fluid, as the consistency of the liquid may be different in different parts of the stomach, and we obtain different characters of digesta according to the place in which the end of the tube happens to lodge. These errors may be guarded against in these doubtful cases by introducing some water after the fluid for the test has been withdrawn, and washing out the stomach, to determine the character and quantity of the remaining contents.

The fluid is first filtered. By noticing the character of the solid part, or the filtrate, we may ascertain how thoroughly the food has been masticated. The presence of a large amount of mucus may

be determined by the appearance of the fluid, or the difficulty with which it filters. Blood can be easily detected if it is present, and should it be found, would indicate the presence of some ulceration or other inflammatory condition of the stomach. A greenish or yellowish color may indicate the presence of bile regurgatated from the intestines.

If the filtrate shows a marked reaction for starch by turning blue when a solution containing iodine is added, we know that the starch of the food has passed through the mouth in a raw state. On the other hand, if the saliva has properly performed its work, the stomach fluid should contain a good degree of maltose or grape sugar, which can be readily determined by the chemical tests.

We may next determine if the stomach fluid contains free hydrochloric acid. This can be told in a qualitative way by various chemicals which change color when placed in the presence of hydrochloric acid. To determine the exact amount of acid, or total acidity, we ascertain how much of a known solution of alkali it will take to neutralize it. This can be readily done, and experience shows that in normal cases, and at this stage of digestion, it will amount to about 200 millograms to each 100 cubic centimeters of the fluid, or, in other words, about two-tenths per cent of the gastric juice.

To be more definite, we next determine the quantity of the different parts of acid, which we find to be free hydrochloric, or that part which is prepared to do digestive work, and acid albumen, or loosely combined hydrochloric acid, which represents the product of the work performed by the free acid, together with the pepsin, upon the albumen of the food. This part of the acidity does not give the color reactions such as are mentioned above as being present with the free acid.

This is done by carefully determining the exact amount of chlorine as it exists in different stages of digestion; first, as fixed chlorides in the form of sodium chloride; second, as free chlorine in the form of hydrochloric acid; third, loosely combined chlorine in the form of acid albumen.

For this purpose we take three capsules, placing in each of them 5 c. c. of the filtered stomach fluid. The first is treated in such a way that the total amount of chlorine is ascertained. The second is treated in such a way that the free chlorine is given off by evaporation. Thus the result will contain only the fixed and the combined chlorine. The third is treated in such a way that both the free and the combined chlorine are driven off by evaporation, and the result will be simply the fixed chlorine.

From the above we notice that the difference between the first and the second capsules will equal the amount of free chlorine, or free hydrochloric acid, while the difference between the second and third capsules will equal the loosely combined chlorine or acid albumen, or, in other words, what has been spoken of as the first product of digestive work. The amount of free chlorine existing in normal cases has been found by experiment to be from 25 to 50 millograms to the 100 c. c. of stomach fluid, while that of the loosely combined chlorine is from 155 to 180, both of these amounts being expressed in terms of hydrochloric acid. The sum of them together would be equal to the total stomach work as it existed at the time the fluid was taken from the stomach; and this should be about equal, if the stomach is in a normal condition, to the total acidity, which we found to be about 200 millograms to the 100 c. c. of stomach fluid.

By noticing the relation between these two different quantitative analyses of the stomach fluid, we can judge relative to the quality of the work. For instance, if the sum of the free and combined chlorine is equal to 200 millograms, while the total acidity is much less, we know there are some ammonia products, or other substances, which have neutralized the acid products, thus destroying their value. On the other hand, if the sum of the free and combined chlorine is equal to 200 millograms, and the total acidity is found to be very much more, we know that the extra acidity is made up of fermentation of some kind. In such a case the work of digestion is normal in quantity but interfered with by fermentation, making up the class of simple dyspepsias. If the sum of the free and combined chlorine is less than 200 millograms to the hundred c. c., we find the class of hypopepsias. In this class there may be the same fermentation as in simple dyspepsias, and it is even more likely to occur, because the natural acidity of the stomach is its antiseptic power, so that when it is lowered for any reason, the septic and germ activities are often more intense. On the other hand, where the sum of the free and combined chlorine amounts to more than 200 millograms, we have the cases of hyperpepsia. With these, also, may exist different forms of fermentation, though

this is not so likely to occur as where there is less hydrochloric acid present.

To further ascertain the various forms of fermentation which may be present, we test for the presence of lactic, acetic, buteric, and other acids, which come as the direct products of various forms of fermentative changes; also for alcohol, which results from the fermentation of sugar. To determine still more definitely how much good work is done by the stomach, we test for albumen, syntonine, parapeptone, and peptone. All of these exist at various stages of digestion, and are found in the order named. It is usually only necessary to test for peptone, which, if present, will indicate that the other products are good. In complicated cases, however, where this is absent, we may test for the others secondarily, to ascertain if the digestive process of the albumen was started at all, and also at what stage it was stopped in its action.

PHYSICAL CULTURE IN THE ORDINARY OCCUPATIONS.

BY DAVID PAULSON, M. D.

EVERYTHING in nature is in more or less activity. Even the so-called fixed stars have been found to be moving through space at a rapid rate. The lesson of all nature to us is that the living machinery should be in daily activity. In machinery of human make the more it is kept in motion, the sooner it will wear out; but in the human machine, on the contrary, its preserving power depends upon its activity.

The ordinary occupations which men naturally do are well suited for this purpose, but it is unfortunate that work is looked upon by so many as menial, or, in some sense, degrading. It was not a curse to Adam that he was to earn his bread by the sweat of his brow. It would have been a curse to him to have earned it in any other way, and God knew it, but when work is looked upon from that point of view, that is, without the heart being in it, without its being assigned its true dignity, it is mere drudgery, and the benefit which would result from the exercise is not gained.

In many instances gymnastics have been brought in to supply the place of useful occupations, because it has been found that it is easier to create enthusiasm and spirit in gymnastic exercises than in the God-given toil of our daily labor; but they are not without drawbacks. Some have suffered lifelong physical injury from these gymnastic sports. The farmer finds in his labor all the movements that were ever practiced in a gymnasium, and his movement room is the open fields, the canopy of heaven is its roof, and the solid earth its floor. The only objection that is urged against such exercise as a means of physical culture is that it does not develop all the muscles of the body symmetrically, and neglecting to exercise any portion of the body will bring on more or less morbid conditions. Each organ and muscle has work to do in the living organism, and each must be an active, living, and working wheel; and, further, if one muscle is exercised more than the other, the one used will become larger than those not in use, and so the harmony and beauty of the system will be destroyed. This is well illustrated by the immense right arm of the blacksmith. The ordinary employments of life are sufficiently varied so if the correct position was persistently maintained while working, this would be entirely overcome. The difficulty with many is that they do their work in a bent-over and cramped position, and the muscles being thus exercised gradually contract so as to keep the body in this position continually.

Any exercise which develops to a reasonable degree the muscles of the back, and those which hold the shoulders in their proper place, will have the same benefit to the individual as though the same movements were practiced in the finest-equipped gymnasium. Planting, cultivating, sweeping hall carpets, running the washing machine, ironing clothing, washing the ceiling overhead, sweeping down cobwebs, all use exactly the same muscles as are brought to play in the most elaborate system of gymnastics ever formulated.

Walking itself is a good means of exercise when taken properly, but the ordinary listless, relaxed walk, which so many indulge in, is scarcely any exercise at all. Brisk, energetic walking, with the head erect and the chest well raised, putting into it the energy which the body has, is an exercise which calls into play the majority if not quite all the muscles of the body, and sends the blood vitalized to the extremities, and gives a healthful glow to the skin.

The popular system of gymnastics as introduced in our health institutions, is a Godsend to those who have no opportunity to take other forms of exercise, and the inspiration of taking work in large classes of this kind often encourages many who could not be induced to take hold of any forms of ordinary work. But we wish that labor

might be accorded its true dignity, and that its real value as a means of physical culture should not be lost sight of; and while the muscles are being benefited, the organs of the mind are likewise strengthened and better able to cope with the difficulties of life.

RELATIVE STRENGTH OF MEN AND WOMEN.

BY IDA M. POCH.

IN one of the leading daily papers of recent date, we noticed a picture of the strongest man and the strongest woman of the present time—Sandow and Alcide Capitaine—showing particularly the muscular development of back, shoulders, and arms of each. From the picture presented the woman compared very favorably with her muscular brother. In the accompanying article it was stated that woman can be as strong as man if she has a mind to be, and if she is not, it is because she has not tried. It was further stated that if a female were taken when a young child and trained and allowed to develop as a male is allowed to do, that is, without corsets, stays, and other restrictions of modern civilization, there is no good reason why she should not be quite as strong as man. The muscular arrangements are alike in male and female. The development is not dissimilar in kind, and becomes dissimilar in degree only after the drawbacks of our boasted civilization begin to get in their work. The development of the Amazons of Western Africa, and other uncivilized females, who perform feats of strength and endurance of which the men are not capable, has been noted and written about; hence the belief that the habits of life of the civilized woman tend to physical weakness.

Certainly in the case noted, the development in the muscles compared is very similar. The general development of the woman is not so good as that of the man, because she has paid no special attention to it, except as required in work on the trapeze, bars, and rings, while the "modern Sampson" studied the possibilities of each muscle, and, by appropriate exercise, developed each to its utmost. It is certainly reasonable to suppose that with the same method and equal care, all the muscular system might reach the degree of strength shown by the arms, shoulders, and back.

This case is interesting only as it opens before us possibilities which we have failed to recognize. And its practical value consists in bringing to our attention some of the causes of our lack of strength and endurance. The muscular system is developed by use, and the test of development is the muscular effort we are able to make.

Effort is a physiological action which consists in the association of a great number of muscles and bones to assist in the same movement. It also connects with the muscular work two great functions—breathing and the circulation.

To make an effort we go through a rapid series of maneuvers without any action of the will, so that we are not conscious of all it requires to perform a given task; and without consideration we are not aware of the difficulties we frequently lay in our own path to surmount, which often require the greater share of our strength.

When we brace ourselves for an effort, first we take a full breath. The glottis closes, the chest expands, and the ribs are raised, and at the same instant the abdominal muscles contract; thus the air is compressed. The walls of the thorax are pushed up by the imprisoned air, and pulled down by the contracted abdominal muscles; thus, by the action of these two opposing forces, they are held motionless. This makes of it a solid whole, or solid point of application for the muscles. Now if every muscular effort is dependent upon the described action, it is easy to see that the power of the effort depends upon the integrity of the "point of application," or, in other words, the immobility of the brace.

We have noticed the important part which is played by the breath in making an effort; so we may see the ability to put forth an effort depends upon the breathing and the development of the muscles of the trunk.

But the corset, stays, etc., will not allow these muscles to be used; and without use growth is impossible; neither are the lungs permitted to expand and develop. Here, then, we see how the practices of civilization may tend toward physical weakness.

We are well acquainted with the fact that the heart is a muscle, and of like tone with the general muscular system. When a powerful effort is made, the blood is sent to the heart with great force, and must be held there. If the heart is weak, or in any way faulty, and not equal to great strain, we must, of course, decrease the amount of force, to suit the strength of these vital organs.

Certainly sometimes these weaknesses are thrust upon us; we do not speak with regard to such. More frequently, however, they are the result of improper use or long-continued abuse, such as bad dressing and insufficient daily exercise.

Recently in a debate over the question of Woman Suffrage, the opposition made the point that until woman made herself the physical equal of man, she would scarcely be able to compete with him in the political arena. Since not only the individual strength of woman depends upon her muscular development, but the whole cause of womankind, to some extent, at least, rests upon physical power and endurance, is it not well for us to make a "long pull and a strong pull and a pull all together," from those things that bind us and give ever so slight a weight to the cry of "woman's inferiority"? But more particularly for our individual sakes, and for the sakes of those dependent upon us for help and comfort in woman's recognized and God-appointed sphere, let us free ourselves from the bondage of fashion, and become able to drink in the full measure of vitality and enjoyment there is in a good, deep, full breath.

VEGETABLE AND ANIMAL VITALITY.

ALL thoughtful persons are ever ready to admit the existence of a natural code; the existence of natural laws to govern and regulate every phenomena of nature; nothing happens by chance; everything that occurs does so as the direct or indirect result of definite and immutable laws.

Nature makes the laws, and the thoughtful human being interprets them; to the man who contemplates, Nature makes quite plain the rules and regulations that she has ordained for the guidance of everything, and the ultimate accomplishment of her designs.

Any infraction of these laws brings an inevitable penalty in one shape or another; these laws differ from the laws of man in that they are, so to speak, *automatic* in their action; that the penalty provided for an infraction of human law may become operative, the intervention of humanity is necessary, and human ingenuity can very often avert the penalty that the crime has merited. Not so with natural laws; here we have a sort of automatic, "penny-in-the-slot machine;" commit the crime and the penalty is the certain result thereof, more certain than with any human machine, because the automatic machinery of natural vengeance can not get out of order, and no amount of human ingenuity will enable the criminal to avert, or escape from, the penalty which his own folly or perversity has made imperative.

"Ignorance of the law is no excuse" for its infraction, says the human judge; every good citizen must familiarize himself with the laws of his country and obey them, else he will suffer; so, also, says Dame Nature, "Ignorance of natural laws will not, *can not*, be accepted as an excuse for their infringement, even though I were full of pity and sorrow and commiseration, not even then could I accept this excuse, because I can not change the automatic working of these laws; commit the crime and the penalty *must* follow, and no power can change this natural mechanism." If humanity would but grasp this thought in its entirety, reflect thereon, and act in accordance therewith, the results, both physically and spiritually, would be most beneficent.

Having directed attention to these immutable laws of nature, and suggesting that these laws will be very evident to one who cares to interpret them, let us reflect for a moment upon one that seems particularly applicable to the season that is now upon us.

Ridiculous as it may seem, until reflected upon, there is a great similarity between animal and vegetable vitality. Birth, growth, development, reproduction, constant integration, disintegration, and reintegration of organic molecules, the momentary cessation of vitality in the atomic or molecular constituents, the momentary endowment with vitality of other molecules or atoms, and the ultimate cessation of vitality in the organism as a whole, are all characteristics of every animal and of every plant. The visible seed contains the possibilities of vegetable life that are evolved therefrom in accordance with natural laws; the invisible seed contains the possibilities of animal life that are developed under similar conditions.

The same organic elements that form the vegetable or the flower form also the mosquito or the man. The organized animal and the organized vegetable are but incidents or periods or visible, tangible, ponderable incidents in the never-ceasing cycle of organic matter. Now for nature's lesson.

In warm weather, vegetable life works and grows and reproduces; in cold weather it lies dormant, storing up strength for its next season of

activity. Reasoning by analogy, it seems to us that nature indicates that the period of activity for vegetable should be the period of dormancy for animal life. It is true that the ingenuity of man can force vegetable activity at the improper season, but it is done only at the expense of the vitality and quality of the vegetable so forced; so also can man force animal activity in hot weather, but he does so to the detriment of the physical welfare of the animal so forced.

The practical application of this lesson is that the busy, hurrying, worrying, fretful, fitful, uneasy, restless, almost nerveless American business man and society woman should cultivate the faculty of "*loafing*" during the hot weather.

It is true that the instincts of many incline them to this course; but it is equally true that those who are so instinctively inclined are not, as a rule, those who most require the "*loaf.*" It is the great magnate chained to his desk by fetters of gold who should cultivate the loafing habit, and he it is whom the dog-days find hard at work.

Oh, if human beings would only realize what they really are, what they exist for, and why they exist at all; and what a delightful pleasure life is to those who know how to live, they would shut up the old books periodically, lock the office door, and dreamily idle away some of the hot days of summer!—*Annals of Hygiene.*

PUBLIC LIBRARIES AND THE DISSEMINATION OF DISEASE.

LIBRARIES have repeatedly been accused of spreading disease. A recent communication from a London librarian to the *Westminster Gazette* shows that precautions are adopted in the public libraries both by London and the provinces. The library receives each day a list of the houses in the parish where infectious disease exists. No books, under any circumstances, are issued to readers in the infected houses.

If books have been loaned to dwellers in one of these houses previous to the outbreak of the disease, notice is immediately sent that the books are not to be returned to the library, but retained and delivered to the sanitary authorities, who undertake to collect the volumes without delay and thoroughly disinfect them.

A fine not exceeding £5 is imposed upon borrowers who return to the library books that have been exposed to infection.—*Am. Med. Surg. Bul.*

COLD BATHING.

THE *cold bath*, when properly employed, is one of the most valuable of all the methods in which water is externally applied to the physical economy. The cold bath acts differently, according to its temperature, the manner of application, and the condition of the system to which it is applied. When water of a very low temperature is suddenly applied to the surface of a healthy body, it acts primarily as a stimulant—in virtue of the sudden and rapid manner in which heat is abstracted; next, as a tonic, by contracting and condensing vital tissues; and, finally, as a sedative. For healthy individuals systematic cold bathing is of the highest benefit—hardening the tissues, augmenting the strength, and protecting the entire body against the invasion of disease. A cold sponge bath every morning before breakfast—winter and summer—is not only a delight but a safeguard against colds, sore throats, ennui, and melancholia. The occasional addition of salt to this morning bath increases its value, while subsequent thorough drying of the skin and friction with coarse towels, flesh gloves, or the naked hands, are indispensable. Cold baths by effusion or plunging are useful in diseases with muscular relaxation and debility, but it is essential to the efficacy and safety of all cold baths that the stock of vitality shall be sufficient to create, immediately after their use, those feelings of warmth and invigoration included under the term "reaction." In fevers with extremely high temperature, and those of the typhoid type, cold water in the form of baths, spongings, and wet wrappings is usually productive of excellent results. In the words of another, "After the use of cold spongings to patients restless and even delirious with fever, they usually become calm, and delirium is often succeeded by quiet, refreshing sleep." Cold water is frequently applied as a sedative and antiphlogistic to local inflammations, and when thus applied will often abort abscess, tonsillitis, etc., and relieve the pain of burns, scalds, and stings of insects. Nervous exhaustion, hysteria, and chorea are all benefited by cold bathing—particularly sea-bathing—while even insomnia can not resist its benign effects.

Infants should always be bathed in warm water, and children and elderly persons should eschew the cold baths. As regards the time which should be spent in bathing, much depends upon the kind of bath and the physical constitution of the

bather. As a rule, from two to five minutes will be abundant time for the cold sponge bath or the cold plunge, but with the tepid or warm bath a limit of ten or fifteen minutes may be imposed. The cold bath acts as a tonic and should be taken in the morning; the warm bath acts as a sedative, and hence is preferable when bathing in the evening or after excessive fatigue or prolonged exercise.

While it is to be deplored that we have not in this country more and better public swimming baths, still, the open fresh water in ponds, lakes, and rivers, the sea with its surf and tide, and even the equipments in our own homes, offer facilities for bathing and refreshment which are but poorly appreciated by many.—*Dietetic and Hygienic Gazette.*

HOW WE GO TO SLEEP.

Now physicians and physiologists come to the front with the astounding statement that a man goes to sleep piecemeal instead of altogether and simultaneously, as it were. That is, the senses do not lull themselves unitedly and at once into a state of slumber, but cease to receive impressions gradually, one after the other. At first the sight ceases, and next the sense of taste loses its susceptibility to outward impression.

Even then, the individual being almost in a state of unconsciousness, three senses still remain in a condition of activity,—smelling, hearing, and thought. Gradually the sense of smelling goes, then hearing, and, finally, with the lapse of thought, the entire body becomes completely asleep.

The physiologists have gone even further than this, and they say that the senses sleep with different degrees of profoundness. The sense of touch is the most easy to arouse, next that of hearing, then sight and taste and smelling last.

Sleep steals on the body gradually, certain parts of muscles beginning to sleep before others. Slumber commences at the extremities, beginning with the feet and legs. That is why it is always necessary to keep the feet warm.—*New York World.*

DANGERS OF HARD WORK.

A NUMBER of successful business men were engaged in a most animated conversation the other day, when the conversation turned on a newspaper paragraph that announced with great impressiveness that a man known all over the civilized world as a brilliant writer and humorist was dying from overwork. Regrets were expressed at the condition of one who was known to many of the members of the club, and some comments were indulged in on the folly of working one's self to death.

A man of sixty-five or thereabouts broke into the conversation with the remark:—

"I don't believe that any man ever died of legitimate hard work, and I am willing to back up my statements against any reasonable proof that may be furnished."

This naturally created a sensation, and there were very sharp criticisms on this man's position. But he persisted, and gave his reasons, which were so full of common sense and logic that most of the company were compelled to admit the truth of them.

Men do not die of legitimate work, neither do they, as a rule, die of what they do during business hours. If the man would leave his office and go quietly home to rest or to reasonable recreation, he would not be likely to suffer in health. But he does not do this. He goes out of his office to the club, to the billiard-room, the gaming-house, or other occupations or amusements even less reputable.

Many a man rushes through his business, simply that he may get away to plunge into excesses of various sorts. There may be instances in which a complicated business, handicapped by lack of means to carry it on in a comfortably smooth fashion, may wear on a man's mind during his waking and sleeping hours, and eventually undermine his vitality. But this is not legitimate business. No man has a right to work against such desperate odds. It is very much better to begin on a smaller scale, to adapt one's hopes to the means at hand, and remember that vital force is too valuable to be squandered in straining for the almost impossible. —*Selected.*

No organ of the body should be strained to its utmost. There should be always kept on hand some "reserve force" for every power. This is true especially of the vocal organs. A good voice has been utterly ruined by one effort to reach the extreme limit of its capacity. Many a man has ruined a good physical constitution by a desperate effort to outdo everybody else.

NERVOUS STRAIN IN PAIN AND SICKNESS.

BY ANNIE PAYSON CALL.

THERE is no way in which superfluous and dangerous tension is so rapidly increased as in the bearing of pain. The general impression seems to be that one should brace up to a pain; and very great strength of will is often shown in the effort made and the success achieved in bearing severe pain by means of this bracing process. But, alas, the reaction after the pain is over!—that alone would show the very sad misuse which had been made of a strong will. Not that there need be no reaction; but it follows naturally that the more strain brought to bear upon the nervous system in endurance, the greater must be the reaction when the load is lifted. Indeed, so well is this known in the medical profession that it is a surgical axiom that the patient who most completely controls his expression of pain will be the greatest sufferer from the subsequent reaction. While there is so much pain to be endured in this world, a study of how best to bear it certainly is not out of place, especially when decided practical effects can be quickly shown as the result of such study. So prevalent is the idea that a pain is better borne by clinching the fists, and tightening all other muscles in the body correspondingly, that I know the possibility of a better or more natural mode of endurance will be laughed at by many, and others will say, "That is all very well for those who can relax to a pain—let them gain from it, I can not; it is natural for me to set my teeth and bear it." There is a distinct difference between what is natural to us and natural to nature, although the first term is of course misused.

Pain comes from an abnormal state of some part of the nervous system. The more the nerves are strained to bear pain, the more sensitive they become; and of course those affected immediately feel most keenly the increased sensitiveness; and so the pain grows worse. Reverse that action, and through the force of our own inhibitory power, let a new pain be a reminder to us to *let go*, instead of to hold on, and by decreasing the strain, we decrease the possibility of more pain. Whatever reaction may follow pain then, will be reaction from the pain itself, not from the abnormal tension which has been held for the purpose of bearing it.

But—it will be objected—is not the very effort of the brain to relax the tension a nervous strain? —Yes, it is—not so great, however, as the continued tension all over the body; and it grows less and less as the habit is acquired of bearing the pain easily. The strain decreases more rapidly with those who, having undertaken to relax, perceive the immediate effects; for, of course, as the path clears, and new light comes, they are encouraged to walk more steadily in the easier way.

I know there are pains that are better borne, and even helped, by a certain amount of *bracing;* but if the idea of bearing such pain quietly, easily, naturally, takes a strong hold of the mind, all bracing will be with a true equilibrium of the muscles, and will have the required effect without superfluous tension.

One of the most simple instances of bearing pain more easily by relaxing to it occurs while sitting in the dentist's chair. Most of us clutch the arms, push with our feet, and hold ourselves off the chair to the best of our ability. Every nerve is alive with the expectation of being hurt.

The same principles by which bearing the work of the dentist is made easier, are applicable in all pain, and especially helpful when pain is nervously exaggerated. It would be useless and impossible to follow the list of various pains which we attempt to bear by means of additional strain.

Each of us has his own personal temptation in the way of pain—from the dentist's chair to the most severe suffering, or the most painful operation—and each can apply for himself the better way of bearing it. And it is not perhaps out of place here to speak of the taking of ether or any anæsthetic before an operation. The power of relaxing to the process easily and quietly brings a quicker and pleasanter effect, with less disagreeable results. One must take ether easily in mind and body. If a man forces himself to be quiet externally, and is frightened and excited mentally, as soon as he has become unconscious enough to lose control of his voluntary muscles, the impression of fright made upon the brain asserts itself, and he struggles and resists in proportion.

These same principles of repose should be applied in illness when it comes in other forms than that of pain. We can easily increase whatever illness may attack us by the nervous strain which comes from fright, anxiety, or annoyance. I have seen a woman retain a severe cold for days more than was necessary, simply because of the chronic state of strain she kept herself in by fretting about

it; and in another unpleasantly amusing case, the sufferer's constantly expressed annoyance took the form of working almost without intermission to find remedies for herself. Without using patience enough to wait for the result of one remedy, she would rush to another, until she became—so to speak—twisted and snarled in the meshes of a cold which it took weeks thoroughly to cure. This is not uncommon, and not confined merely to a cold in the head.

We can increase the suffering of friends through "sympathy" given in the same mistaken way by which we increase our own pain, or keep ourselves longer than necessary in an uncomfortable illness.—*Power through Repose.*

PERFECT PHYSICAL GROWTH.

BY KATHERINE O. SWEENY.

No mother thoroughly awake to the importance of physical perfection in the human form, can afford to ignore even one of the little habits that by long indulgence is sure to result unpleasantly.

So insignificant do these habits at first appear that we are blinded to their effect until we awake to find they have gained such a foothold as will require the utmost tact and perseverance to eradicate them. Perhaps we are not aware that our children are indulging in habits which are going to be detrimental to their welfare, but let us notice carefully. There is Harry, for instance, who is blessed with a very good appetite. In some way he has become possessed with the idea that if he holds his mouth very near the plate, instead of making his hand do its proper work, his hunger will be all the more quickly appeased. The bend, you will observe, is not from the hips, as it should be, but simply the head and shoulders.

Again, papa has just returned from the post-office with a very attractive copy of the *Youth's Companion*. Emma and George are both very fond of reading, and in less than a trice are eagerly devouring its pages. Emma stands beside her brother, but, being tall for her age, finally seeks a rest by placing her elbows on the table and leaning on them. Now notice the position her body has assumed, and imagine the effect on a growing girl, if this drooping is often repeated, and it surely will be, if not corrected.

Any morning watch the little folks hurry by to school when the bell has rung for the last time. Their little feet can not carry them fast enough, yet so eager and determined are they to reach school on time, that they push their head far in advance of their feet. What is the effect?

These are little matters, and perhaps one alone, because assumed for so short a time, would not be sufficient to cause any serious deformity; but let me tell you that their worst effect is to slowly contract and weaken the chest muscles, and, by overstraining others, produce a continued desire to let the body sag. These habits often arise from "overeagerness," which points us to an exercise of self-restraint, as a mode of prevention.

An erect position is positively necessary for good digestion and perfect health. It can only be sustained by deep breathings, strong chest muscles, and a vigorous exercise of the will power; but a vigorous will is of the most benefit when supported by a clear understanding. Therefore, give your children a simple yet comprehensive talk on the structure of the body and the composition of the bones. Impress upon their minds the great need of keeping an erect position now, while their bodies are growing. Teach them, and not only teach them but prove to them by actual exercises, how much more easily and gracefully the body folds itself together when we stoop to pick anything up, or when we sit, and how unnecessary in the constant every-day activity it is to bend the shoulders at all. Teach them in walking to hold up the chin and to look square ahead.

Wherever it is possible, awake in your children that innate pride which instinctively associates the stooped form with sluggishness and inactivity.

It is a gross mistake which many mothers make to constantly command a child to "sit up," without ever having explained the reason why. We must remember that a child's judgment is so immature that it can not fully foresee the effects of such habits, and for this reason we should make our illustrations so vivid, our lessons so simple, so numerous and variable, that they will become indelibly fixed. Remember our constant aim must be to make an impression which shall remain with them while they are absent from us as well as when we are with them; otherwise we shall gain no headway.

Not a few children inherit physical weakness, and in such instances an appeal to the will power alone will not be successful. How important it becomes, then, that we use every discreet and commendable means to build up a strong body, and by

no relaxation of our vigilance allow any such habits to become established!

In many homes the children's bedroom is somewhat remote from the comfortable sitting-room. The child experiences a change upon retiring, but in answer to its plea, mama tucks it up well, then tells it to "snuggle down" and soon it will be as warm as toast. Instantly the little body takes a semi-circular position, the knees are drawn up to keep the feet away from the cold bottom, the arms are tightly folded, consequently the chest is compressed and the deep breathings, which were to be a part of our cure, almost an impossibility. Here is a state of affairs which counteracts our best endeavors of the day. How easily we might have remedied the matter by warming a strip of flannel to put at the bottom, or by the use of a warm flat-iron rub out much of that chilly feeling so uncomfortable to little folks. Anything which induces them to keep a straightened position is better for perfect rest as well as perfect development.

Nor is this the only place where we are likely to err. Only mothers know how quickly children outgrow their clothing. The chest portion of the dress becomes too narrow, unless remodeled, and brings the arms forward, which, after a time, makes it very easy for a child to curve out the shoulders.

As mothers responsible for our children during their most important period of growth, we can not be too careful in little things. An erect carriage is something to be truly admired. It is an assurance of self-reliance, of strength, of character, of earnestness and innate power, and is a charming personal recommendation which we are too apt to overlook.—*The Household.*

SCARLATINA BY MAIL.

A NEW way of spreading scarlatina is mentioned by a physician in a country village, which ought to make us thoughtful. The only case of scarlatina which this physician acknowledges to have lost, was one in which the disease was communicated by a letter written by a mother (in whose family there were two cases of scarlatina) to a friend 100 miles away. The envelope of that letter was given to a child as a plaything. That child died from the same disease, and this was the only possible means of infection.—*Selected.*

WHAT is true wealth?—Health.

SANITARY MANAGEMENT OF FLOORS AND FLOOR COVERINGS.

To those who know the true inwardness of things, the sight of a housemaid brushing a dusty carpet is suggestive of many evils. The death of Pasteur has reminded the world of what is constantly present in the thoughts of medical men, namely, that, while microörganisms are the great producers of disease, dust is the great carrier of micro-organisms. Now that we know these things, now that we understand that in the quiet hours of the night the germ-laden dust settles down upon the floor, it is distressing to find how little our knowledge is put to practical use, and to see old customs still unchanged, old habits which we know to be destructive carried on, and to find the housemaid on her knees, with her brush and dust-pan stirring up dust, to the detriment of every one, and breathing germ-laden particles to her own destruction. It needs but a small amount of common sense to see that if carpets must continue, a thing greatly to be deprecated, they should be rubbed with a damp cloth rather then brushed, and that if, in deference to prejudice, they must be brushed, this could be done by a covered American sweeper with plenty of damp tea leaves. Of all ways of removing dirt from a carpet the worst is by the use of the ordinary short brush, which involves the housemaid's kneeling down in the midst of the dust which she so needlessly creates, and drawing it into her lungs with every breath. For ordinary household use something like linoleum, something which can be washed with a wet cloth every morning, would seem to be the best covering for floors; but if carpets must be, and if it is impossible to teach the present generation the evils of seeking present comfort at the expense of future risks, at least let us remember that carpets may be washed even where they lie; that, till the day of washing comes, a closed sweeper is better than a brush, and that the worst form of brush is one with a short handle.—*British Medical Journal.*

WEAK EYES.—And for sore eyes as well. Bathe in hot water, never using cold. In a severe attack of inflammation of the eyes which we suffered years ago, cold water was used for some time, to our injury. When we changed from cold to hot, we obtained speedy relief. Very cold water should not be applied to the eyes at any time.

Mother's Helper

CONDUCTED BY HARRIET S. MAXSON, M. D.

SINCE BABY WENT TO SLEEP TO-DAY.

I CAN not move my lips to pray,
Since baby went to sleep to-day,
Not in her downy cradle nest,
With rosy cheek to pillow pressed,
While soft her tender breathings lift
The coverlet of pinken drift,

But to a couch of chilling gloom,
The sunlight banished from the room.
Saviour, I can not, can not pray,
Since baby went to sleep to-day.
She will not waken though we weep;
Her slumber is too still and deep;
Nor tears nor kisses can not warm
Our precious baby's sleeping form.
Christ, help me, though I can not pray
Since baby went to sleep to-day.

Those hands that would not let me wear
A blossom at my throat or hair,
But pulled its petals off to see
Why sweetness in a flower should be,
Warm, restless hands, now waxen cold,
Clasped 'round the lily buds they hold;
She will not stir them in this sleep,
To disarrange the trust they keep.
Christ, help my breaking heart to pray,
Though baby went to sleep to-day.

Drawn on her white feet, side by side,
The yellow shoes with ribbons tied,
She never will untie again
To find their hidden treasures ten.
Dear Christ, my heart can only pray,
Let her awake with thee some day.

—*Cora A. Matson.*

THE SICK BABY.

(*Continued.*)

Position.—The position assumed by the sick child often indicates much in reference to the seat of the disease. When the child is having fever, it is usually very restless; after a long run of fever, however, it very often becomes very quiet, scarcely moving at all, on account of extreme exhaustion. Children are usually very restless at the beginning of rickets, throwing the bedclothes off as fast as they are put on. This, however, is not always a sign of rickets, as many children who are perfectly healthy in other respects, seem constitutionally opposed to being covered at night. This is often the result of a lack of wisdom in covering the child too heavily.

When a child shows a disposition to be held upright, or to be carried over the shoulder, or to be propped up on pillows, there is usually some difficulty in the throat or chest. It may be in the larynx, the air passage being occluded by mucus or membrane as in diphtheria; or the trouble may be in the lungs, as in bronchitis or pneumonia; or, again, it may be an affection of the heart.

If the child lies very still and cries on being moved, it is probably because the moving gives it pain, and we would suspect rheumatism or rickets.

Kicking of the feet and doubling of the body when crying naturally indicate pain in the abdomen of the nature of colic; especially is this the case if the pain is relieved by pressure. If, however, the pain seems to be increased by pressure, and the child shows a disposition to lie upon its back without turning, we may suspect an inflammation.

Sleeping with the mouth open and the head thrown back is often caused by obstructed breathing, from enlarged tonsils, or from an enlargement of the gland which occupies the upper part of the pharynx. This condition is usually attended by a peculiar snoring sound uttered by the child in breathing. The head is sometimes thrown back and held stiffly in that position in disease of the brain, or in spinal meningitis.

If the child shows an aversion to the light, and

a disposition to bury its face in the pillow or upon its nurse's bosom, there may be trouble with the eyes, which makes the light painful. This demands attention.

Motions.—Babies often place the hand near the seat of the pain. Thus, in earache, they are apt to put the hand continually to the ear. Picking at the nose is a habit practiced by children who are troubled with intestinal irritation from worms.

Twitching of the various muscles of the body, especially about the eyes and mouth, or a strong pressure of the thumb upon the interior of the hand, is often a forerunner of convulsions. This, however, is the normal position for the thumb of the new-born child.

Color.—The color of the skin is also an indicator of disease. We have seen that the skin of the new-born babe, after the first few days, is normally of a yellow color, due to blood changes. This, however, in the normal child, quickly disappears; but when it persists for a long time, it may indicate severe liver trouble, or some trouble with the nutrition. The color of the eruption in various eruptive and contagious diseases, we will consider in connection with those diseases.

Sudden changing of color from pale to pink, and *vice versa*, sometimes indicates disturbance of the brain. A pale circle around the mouth accompanies nausea. Bright red spots on the cheeks may indicate a tubercular tendency. In chronic diarrhea, the skin gets very pale and of an earthy hue.

Expression.—The expression of the face varies largely with the age of the child. In whooping-cough and measles the face is somewhat swollen; in the latter case it will be accompanied by a rash, which would make a mistake impossible. When a child has been ill for some time, if the face assumes a sunken, ashen appearance, it is generally an indication of waning vitality, and very often a precursor of death.

Wrinkling the forehead denotes pain. Bright's disease is accompanied by a waxy complexion.

In various severe cases of sickness, particularly in diarrhea, it is astonishing to note the difference in the appearance of the face in a very short time, the face rapidly assuming a drawn, sunken appearance. The same thing occurs, only much more slowly, when the child is suffering from marasmus. This is a sort of starvation, due to a lack of power to assimilate the food. The child takes a sufficient quantity of food, but is not able to assimilate it.

If the nostrils move during respiration, it may indicate severe trouble of the lungs, the extra effort being necessary in order to aerate the blood. Sleeping with the eyes partly open often indicates pain or an exhausted condition.

The Chest.—The chest presents a heaving movement, with strong contraction of ribs when there is difficulty in breathing, especially when the obstruction is the larynx. When there is disease of the spine, the chest is sometimes crowded upon itself, so as to present what is known as a chicken-breasted chest.

The Abdomen.—The abdomen is swollen and hard in colic. It is usually very much larger than normal in children suffering from rickets. In cases of indigestion it is very apt to be distended with gas. It is usually much sunken in inflammation or exhausting diarrhea. It may, however, be distended with liquid, as in cases of liver or kidney trouble. In brain trouble it may present a contracted appearance.

The Cry.—In the case of very young children, who can not talk, a study of the cry is very valuable in understanding the language of symptoms. An unremitting cry is due to hunger, or possibly thirst. There is no cry so sharp and heartrending as that produced by earache. We must not conclude that because the baby ceases to cry when given food, the cry is always of hunger. When due to pain in the stomach, it will be relieved momentarily by receiving the warm food into the stomach; but this only increases the difficulty, and usually the cry is more severe later.

A cry that is paroxysmal—very severe for a while and then suspended, to be commenced again after a short interval—is probably due to colic. If the baby cries when it is picked up or turned over in bed, we should look for signs of rickets or of pleurisy.

A peevish, continuous cry is heard in children of general poor health. In inflammation of the brain, the child will scream out in a very shrill, sharp cry, which will cease in a moment.

Whenever there is a nasal sound noticed in the baby's cry, it is well to examine the air passages to see if there is not a condition of catarrh, or of a cold in the head. Crying when the bowels move, indicates trouble, either of the bowels or rectum. Sometimes crying in the night indicates night terrors, and when this is the case, the child should be most tenderly cared for. When the child cries

upon swallowing, we should suspect that there is some trouble with the throat.

A child does not shed tears until after the third or fourth month of its life; after this time, if there are no tears secreted when the child cries, it may be considered a bad indication, and their appearance a good sign.

Cough.—Likewise, also, the character of the cough is significant. A long, loud, continuous cough, at first tight, then loose, may indicate bronchitis. A short, hard cough, which is attended by an expression of pain in the face, followed by a sharp cry, is probably due to some inflammatory trouble of the chest.

The cough of whooping-cough is peculiar to itself. The inspirations are accompanied by a crowing sound, due to the closure of the larynx, while the cough consists of a succession of expulsive efforts. Cough may be produced by an enlarged tonsil, or an elongated palate.

Breathing.—Breathing in a very small child is always irregular at first; if it becomes decidedly so, it may indicate some trouble, especially with the brain. The rate of respiration in fever is according to the height of the temperature; however, it is always very much more rapid in infants than in adults. Sixty respirations per minute is not at all excessive for a child suffering from pneumonia. In disease of the brain, the respiration is often very slow. If a child is poisoned by opiates, too large a dose of paregoric or soothing syrup, the respiration will be very slow, and in this case is an unfavorable symptom. When the child tries to breathe through the mouth entirely, we may conclude that there is some obstruction of the nose.

Long-drawn, noisy inspirations and expirations are heard in disease of the larynx, as in croup and diphtheria.

As already stated, the pulse rate in young children is very much more rapid than in adults; however, it is affected by rise of temperature, and should be watched. Very great irregularity of the pulse is often a sign of disease of the brain. Very great slowing of the pulse is an important symptom, and may indicate an affection of the brain.

The Temperature.—This, as before stated, is easily affected by slight causes; often a slight indigestion or cold may produce a fever of considerable degree. Nevertheless, the temperature should be watched very carefully when it is above normal. A temperature of 106 degrees is very dangerous. The danger from fever depends fully as much upon its duration as upon its height. The heart in children being quite weak, it is apt to fail after a prolonged period, in which it beats much more rapidly than normal. A sudden fall of temperature is usually a good sign, but not universally so, as it may indicate approach of death. Any such changes should be carefully watched. The patient should receive stimulants, and stimulating treatment, and should be supported in every way possible.

Whenever there is an elevation of the temperature, there is a corresponding increase of the pulse. The ratio is about eight to ten beats of the pulse to one respiration. If, however, this should be greatly increased for a short time, it may not be considered as a departure from the normal standard.

We sometimes find depression of the temperature below normal, but when this occurs, it usually is a serious symptom for a child, as the temperature in children rarely runs below normal unless very ill.

The Manner of Nursing and Swallowing is often an indicator of disease. If the child lets go frequently, and swallows only a little at a time, we may suspect some trouble with the throat. If it swallows with a gurgling sound, and often stops to cough, we may suspect it has a sore throat. Entire cessation of nursing in a young child is a sign of great weakness. Great difficulty in nursing is experienced when for any reason the nasal passages are stopped up.

The Urine.—The urine is highly colored and stains the diaper in cases of fever and indigestion. Sometimes the urine is slightly milky in appearance when first passed. The giving of beef juice or meat to young children will produce a reddish cloud. A yellow stain upon the diaper occurs when the baby is having jaundice. If the urine presents a smoky appearance, it is due to the presence of blood. The urine should be carefully watched during and after an attack of scarlet fever. It may contain blood in considerable quantities, and be followed by a long period when albumen will be present more or less.

A bowel movement characteristic of health has already been described. There is little variation, except in diarrhea and constipation, which will be taken up under separate headings. H. S. M.

COLD is the greatest enemy of old age.

THE FATHER'S DOMESTIC HEADSHIP.

BY L. EMILY HEALD.

"AND he shall turn the heart of the fathers to the children, and the heart of the children to their fathers," says the prophet Malachi. This work is to be done now, "before the coming of the great and dreadful day of the Lord." Notice that the Lord sees that the relation existing between the fathers (not the mothers) and their children is so far from what it should be that a change must be wrought, lest he "come and smite the earth with a curse."

Dr. Charles H. Parkhurst, D. D., in November *Ladies' Home Journal*, writes concerning the "Father's Domestic Headship:" "While, perforce, of ordinary circumstances the father's duties will hold him considerably apart from the contacts of home life, yet whatever success he may achieve outside will not atone for any failure on his part to regard his home as the prime sphere of his obligation, and the point around which his devotements will cluster in distinguished earnestness and constancy. Whatever he may have achieved in his art, trade, or profession, or other engagement, the man who stands at the head of a household has been, in the broad sense of the term, a failure if he has not been a true husband and a wise, strong, and devoted father. It can not be a successful home when the mother looks after the children and the father looks after his business. The most productive services rendered are always personal, and any amount of exertion expended outside in providing for the necessities of the home will not take the place of that tuitional ministry which comes only by the direct and continuous contact of father with child. However complete a woman may be as a mother, there are qualities of character which the father will communicate to his children that the mother will be less able to do, as well as less intended to do."

In the November *North American*, E. P. Seldon has an article from which the following thoughts are extracted: "Wife and child suffer for the want of close sympathy on the father's part in all that relates to the spiritual tone of the household. In many instances the father is a far better guide than the mother. His broad contact with life, and his natural force of character, make him an ally that can not safely be dispensed with. The father is generous beyond compare in supplying his family with physical luxuries; he is, however, far less lavish with his time and companionship. Indeed, he refuses to be bothered about such petty details as the formation of character, the discipline of the child, and the general conduct of the home."

And why this indifference?—A professor of one of the colleges of the land says that he thinks it largely the wife's fault in not giving her husband the proper training at first. When their little boy had been in their home a few months, his wife came to him one evening, saying, "I wish you would give the baby his bath to-night, and put him to bed; I feel rather tired." With this she lay down to rest. The professor felt abused to be thus interrupted in his study, called to a task to which he was not accustomed. But they had not been married long, and he meekly submitted. This request was often repeated, until finally the task came to be a real pleasure, and especially so as the boy grew a little older, and seemed to regard it such a treat to have "papa" give him his bath. The professor further said, "I am sure I learned to love my children more, they learned to love me more, and in every way we were bound together more closely, because of this piece of training on my wife's part."

In one home, where the father's business took him away at 7 o'clock in the morning, not to allow him to return until dinner at 6 in the evening, the mother dropped entirely the care and discipline of the children while he was at home, and the father took it up. The mother followed that plan from the very beginning. She thought it best that he bear his part in family discipline, and he took an active interest in all the games and pleasures of the children, in training them to work, and in their deportment and morals. The children are now grown to manhood and womanhood, and the whole family bound together by strong ties of love. Too often the mother assumes the entire responsibility, and makes the father feel that he would be interfering to attempt any part in family discipline.

Another thing to estrange the father from his home, and therefore from his family, is the home to be sacrificed for the *house*. Rev. Anna Shaw, in a recent lecture in San Francisco on this subject, said, "My heart goes out to the man who is followed all his lifetime with a duster and dust-pan." A man of her acquaintance "was dusted every time he came home; and his wife, a good housekeeper, followed him through the house, to keep things in order. Another woman in the same place was a home maker. She had six children, and every other

child that could came there, and it was all so happy that the husband found it the pleasantest place he knew; and any visitor was happy to stumble over an occasional thing out of place. That woman dusted her mind, and made those around her happy." In conclusion Miss Shaw said: "The weakness of the American home is the lack of fatherhood." "The father does not enter into the child life as he should. The children need the strength of the good father quite as much as that of the loving mother." Boys and girls should be brought up in homes where a father's nobility should enter into their lives, and the whole family be bound together with the Christian love, sympathy, and true dignity of a godly life and Christlike character.

From "Christian Education" we quote:—

"Whatever may be his calling and its perplexities, let the father take into the home the same smiling countenance and pleasant tones with which he has all day greeted strangers. Let the wife feel that she can lean upon the large affections of her husband; that his arms will strengthen and uphold her through all her toils and cares; that his influence will sustain hers; and her burden will lose half its weight. Are the children not his as well as hers? Let him seek to become acquainted with his children—associate with them in their sports and in their work. Let him point them to the beautiful flowers, the lofty trees, in whose very leaves they can trace the work and love of God. He should teach them that the God who made all these things loves the beautiful and the good. . . . That father is unworthy of the name who is not to his children a Christian teacher, ruler, and friend, binding them to his heart by the strong tie of sanctified love—a love which has its foundation in duty faithfully performed."

Mrs. E. G. White, in another work, writes: "As a rule the labor of the day should not be prolonged into the evening. If all the hours of the day are well improved, the work extended into the evening is so much extra, and the overtaxed system will suffer from the burden imposed upon it. . . . Those who do this often lose much more than they gain; for their energies are exhausted, and they labor on nervous excitement."

"Let parents devote the evenings to their families," and make home as attractive as possible to the children. Let the father do his part toward making the home such a pleasant spot that children can not find more pleasure among strangers, in reckless company, or on the streets.

Many a father is too busy with the Lord's work to live a Christian. He forgets that

> "The science of home is the chiefest of all,
> To ward off these dangers that ever befall;
> For a home that rejoices in love's saving leaven,
> Comes deliciously nigh to the splendor of heaven."

And what is home without a father?

God's smile of approval rests upon the man who occupies his place as house-band (husband), manifesting justice and judgment, mercy and equity, and, above all, with a heart of true love, turning the hearts of his children unto the Lord. How much encouragement there is to the father in the words of the Lord to Abraham, "For I know him that he will command his children and his household after him"!

BABY'S COMPLIMENT.

BY S. ST. G. LAWRENCE.

His father and mother were both away,
And baby and I had been friends all day.
Many and gay were the games we played,
Baby ordered and I obeyed—
We cared not at all for the rainy sky,
We built us a block house three feet high;
We threw pine knots on the nursery fire,
And watched the flames mount higher and higher;
We hid in the most improbable nooks,
We looked at the pictures in all his books;
We ran in "tag" till his cheeks were red,
And his curls were tangled about his head.
So, when the twilight was closing down
Over the fields and the woodlands brown,
And nurse declared we must say good-night,
He clung to me still in the soft firelight,
He trampled my gown with his rough little feet,
He climbed on my lap and kissed me sweet,
And, as he scrambled from off my knee,
"You'd make a good mother," said baby to me.

I have had compliments now and then
From grown-up women and grown-up men;
Some were commonplace, some were new,
Never was one of them rung so true,
Never was one seemed half so real:
Baby compared me to his ideal!

—*Happenchance.*

It is affirmed by a man who has studied the subject, that tight lacing causes a foul breath. Yes; anything that clogs the system and weakens the circulation will cause foul breath.

LESSONS IN NATURE FOR LITTLE ONES.

PARTS OF FLOWERS.

WE have studied the many varieties of shape and color and perfume in the flowers; let us now examine each flower more carefully. The first object of the flower, as we have seen, is to produce seed, from which shall grow more plants that will bear flowers like those which produced it. The second, to make the earth beautiful and to add to the pleasure of those who live on it.

Upon examining the flower closely, we will find that it is made up of several sets of organs. Those known as the essential organs consist of the stamens and pistil, these organs alone being absolutely necessary to the production of the seed. These are the smallest and least conspicuous parts of the flower, and occupy the center. We will learn more of the pistil and stamens in another lesson.

The other set of organs is called the flower envelope, and is made to protect the more important organs which produce the seed. This is made up generally of two sets of leaves, called the calyx and corolla. These seem like hard names, but if we read them over several times, I think we can remember them, and then we shall always know the different parts of the flowers that we pick, and it will be very interesting to see the different shapes and colors, and the different ways nature contrives to protect the delicate little organs which produce the seed.

Generally, as in the baby-blue-eye, the parts of the corolla, or the inside row of leaves, presents some beautiful color or colors, in this particular blossom a delicate blue, while the calyx consists of little green leaves. These cover all the other organs of the blossom entirely when it is in bud.

The different parts of the corolla are called petals. Those of the calyx, sepals. In nearly all plants there are just as many petals as there are sepals, or there are just two or three times as many. Sometimes, however, we find that they are irregular, for instance, there will be only four petals, while there may be five sepals.

In some blossoms the petals all grow together as one, uniting at their edges, making a continuous wall about the essential organs within. This is true of the morning-glory and the petunia, and many other plants which we have in our gardens. In nearly all cases, however, we will see, if we look carefully, that the edge of this wall of the corolla is dented or lobed in a way to show just how many petals there are in the whole. Sometimes these notches are uneven as to their depth, some of them being deeper than others. This is true of the honeysuckle, in which one part of the five different parts that form the whole is separated more deeply than the other four. Sometimes the calyx is not green, as we have said, but assumes the same color as the corolla, thus adding to the beauty of the flower. This is true of many of the lilies.

It would be very interesting for our class of little ones if we would gather all the wild flowers we can, and examine them closely to find the different ways in which the petals and sepals are arranged. We will study these particularly this month, and next month learn something about the essential organs.

Let us try to find a snapdragon, and notice the way the petals are divided, and how they are arranged to inclose the essential organs so that nothing shall be lost to the flower. Again, the golden lily-bell, the three petals overlapping each other, and lined with little silken hairs overlapping and inclosing the inner organs of the flower, as though they feared some harm might come to them. The three sepals are alternated in their position with the petals, and all of the same color. These have performed their work of protecting the more delicate parts of the flower in the bud, and now stand out quite a little way from the other organs.

Look at the larkspur also, which is so common in our California fields. The calyx is of that rich, dark purple color, while the leaves of the corolla are a lighter blue. This flower is irregular; for the corolla has only four leaves, while the calyx has five.

The ways are almost numberless in which the Creator has arranged the calyx and corolla in different flowers he has given us to enjoy. We know not why there should be such a variety, unless it be that this adds to the beauty of nature; and while we are studying the flowers, dear children, let us remember that the dear Father who made so very many different kinds, and made them for our pleasure, thinks of us and cares for us even more than he does for the beautiful flowers. He has told us to consider the lilies of the field, how beautiful they are; and yet they do not struggle to make themselves beautiful, but simply grow as

God wants them to grow; and from this he drew the lesson for us that we will be more beautiful and more lovely if we simply try to do what is right.

REPEATING CHILDREN'S SPEECHES.

BY IDA KAYS.

"I WANTED Anna to pick up her playthings the other day, and she said, 'No, me don't,' as big as anybody. I insisted, until she assumed a wonderfully aggrieved air, and began, 'Mama-don't-love-her-little-angel-baby-no-more-'tall.' Then I had to laugh, and was vanquished, of course."

Cute, wasn't it, for a two-year-old mite?

But if the mother could have had a peep into the future, perhaps she would have checked that laugh and defeated defeat.

She made a great mistake there, and a greater one in repeating the incident in baby's presence.

The diplomatic speech didn't seem so cute to me, when I noted the mother's appreciation reflected in baby's face, and a conscious twinkle in baby's eyes.

It didn't need a prophetic eye to foresee results of such training.

The repeating of children's speeches is a very common error, and disastrous alike to the pert, forward child or the retiring, sensitive one.

The boldness of the first is aggravated until he becomes an intolerable nuisance, when his smartness is encouraged, repeated, and magnified.

I have heard small children say, with the most self-conscious air, "Tell Mrs. Blank what I said about" this or that. He couldn't just remember, but he knew that it was something to be laughed at, something smart. And the pert infant courts notoriety.

On the other hand, a sensitive child can hardly suffer keener pain than to be subjected to ridicule, either real or imaginary. A laugh stings like a blow, and many times we wield the blow quite thoughtlessly.

Not long ago I repeated to my children's teacher a declaration of love which little six-year-old made for her; but I felt conscience-stricken when the little face flushed so painfully.

She shrank from her teacher's caress, hid her head, and burst into tears. Nor would she be consoled by assurances that it was right to love her teacher.

"But what made you tell her, mama? I didn't want her to know I said so," she would say long afterward, with mingled grief, shame, and indignation.

And did I blame her?—Not a bit. Perhaps one would who could not sympathize from experience; but memory runs back for more than thirty years, and brings to my mind just such mortifying incidents.

When I was four years old, I became the proud possessor of my first doll—only a rag doll, to be sure, but just as precious in my eyes as if its ownership had represented dollars instead of loving labor. I loved it with all the depth of a baby heart, and testified my affection in this wise: "I love you, dolly. My blessed, precious baby doll! I'll never let you go in all the world; and when I die, I'll put you in my coffin and take you to heaven with me."

Mother heard and laughed.

Will I ever forget the mortification of that moment?

I can shut my eyes to-day and see a little round-faced, rosy-cheeked child standing beside the bed in an old-fashioned bed sink, fondling her newly acquired treasure.

I can see—almost feel—the rosy cheeks grow rosier with mother's laugh, until only the brown curls limit the burning blushes. The brown eyes lose their love-light, and fill with big, hot tears, as dolly is hurriedly thrust beneath the pillow.

Surely mother never realized the pain inflicted, or she could not have repeated the childish prattle to a fun-loving neighbor, who, ever and anon, would picture my "woolly-headed, big-eyed baby" in cherubic garb, with "wings a-sprouting."

I still loved my doll, but only in the utmost secrecy did I dare to open my heart to my one companion.

Some people seem to think that children have no feelings, but I know better. I have known them to resort to absolute falsehood to escape ridicule.

A child is its very own self—or should be—at home with its mother, and a wise parent will think twice before repeating in its presence word or deed to embolden the presuming child, or mortify the timid one.—*Womankind.*

No man ever died of apoplexy who kept his stomach in good condition.

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WELL WATER.

THE public has been thoroughly awakened many times, and with good reason, by common reports of many different diseases coming from contamination of food, air, and water, etc. The question of contamination from well water is always a live issue, and the public generally should be warned against this source of infection. Not that we would condemn all well water, but, on the contrary, would educate the people to a better understanding of this source of contamination, thereby lessening the dangers from this source.

Harvey B. Bashore, M. D., of West Fairview, Pa., gives us some very sensible thoughts on the subject, and we can not do better than to append what he has written, with the hope of its being carefully studied.

In the *Annals of Hygiene*, Harvey B. Bashore, M. D., of West Fairview, Pa., writes as follows:—

"Just about one-third of the population of the eastern states, and a great part of the population of the whole country, depend upon shallow wells for their supply of drinking water. That these old wells will transmit disease is no longer to be doubted, and the fact is established by practical experience. Cesspools and privies have almost everywhere grossly contaminated the soil, and as a well drains a cone-shaped area, the diameter of whose base on the surface is anything from 100 to 200 times the depth of the well, it is almost invariably placed within the drainage of one of these filth-bearing spots. When conditions are such as these, is it any wonder that well water transmits disease? Rather a wonder is it that the result is no worse. For instance, a passing stranger or a visitor, ill with diarrhea, stops in a town. The discharges, loaded perhaps with typhoid germs, are thrown into a privy vault, or, what is worse, are buried a foot or so beneath the surface of the adjoining garden. In the fulness of time these germs have passed into a neighboring well, and numbers of the community suddenly become sick. Or it may be that milk cans washed with this water carry the fatal germs to a neighboring hotel. It is the old, old story, and Providence gets the credit in place of human negligence. I just happen to think of one small town in Pennsylvania where sixty out of eighty inhabitants became ill of typhoid, and eight died,—all because they had drunk infected well water. A strange thing, too, frequently noted, is that the most popular well in a district is the one most likely to be contaminated. This is probably due to the fact that the constant pumping consequent upon its popularity keeps the water at so low a level that the drainage of the well is increased; for the ground water tends to maintain a certain level, and a diminution at any point increases the drainage about that point.

"Although many epidemics have been traced to the use of old wells, there might be many more were it not for the fact that the infectious diseases require a specific germ for their origin, and until that is introduced, contaminated well water counts for little as a direct disease-producing factor; but let a colony of germs gain a foothold in one of these filth-bearing places, and their growth, development, and propagation are simply matters of time. Let us take, for example, an old well at the corner of New Haven Green. For years this has been receiving the drainage of a filth-laden soil, but we have yet to hear of its being counted a factor in disease. Yet who can tell at what moment fatal germs may find a lodgment? Surely he who drinks of this water has a two-edged sword over his head of which he never dreams.

"Still there are hundreds of just such wells scattered through the country, simply waiting to become infected; but only typhoid breeds typhoid, and for the moment we are perhaps safe; but,

after all, we are not so safe as we may imagine, for it has been found that polluted water, although not directly causative of disease without the special pathogenic germs, still predisposes those drinking it to at least one disease—typhoid fever.

"What, then, shall be done with the old wells? We all know that in the absence of a public supply deep tube-wells would be the best remedy. Many, very many, people can not avail themselves of this source of supply; and the next best thing is to treat these wells after a method devised by Dr. Koch, which is effective, cheap, and greatly lessens the dangers arising from the use of well-water. An iron tube, two or three inches in diameter, with its lower end perforated, is placed in the center of the well, and the surrounding space filled with fine gravel up to the highest point of water level. This is then covered with sand to the top of the well; and a pump attached to the end of the tube makes a very effective tube-well. All water, in passing through the layers of sand and gravel, is effectually filtered, and the nitrifying organisms change the filth into harmless nitrates. A filter bed like this removes, too, from 80 to 90 per cent of the bacteria, and greatly, very greatly, lessens the danger to which all are subjected who drink shallow well water."

QUERIES.

18. WILL you be so kind as to answer a question for me in the HEALTH JOURNAL? I have a friend who wishes to devote her life to the care of lepers. She would like to know what leprosy is, and whether there is any cure for it.

M. T. S.

The leprosy is a disease that prevails mostly in eastern countries, and is occasionally met with in North and South America. It is most prevalent in hot climates. It occurs oftenest in new countries, where there is a lack of drainage; and after the country is settled up, it usually dies out. Thus in England and Scotland in the thirteenth century, it was more or less prevalent; but the disease is now departed from those lands. It has been quite generally supposed that leprosy was largely due to an impoverished diet, a diet of fish, or any diet that will diminish the vitality of the individual. It is believed by some to be hereditary, but is usually considered noncontagious. Nevertheless, there is history of a first appearance of leprosy among a population after the immigration of foreigners from a leprous country, which, with other instances, might indicate that it was to some degree contagious.

A specific form of bacillus has recently been found in leprosy. Most forms of leprosy begin, or seem to center, in the integument, and some changes in the nervous system, and in some cases a tubercular element has been noticed. Leprosy often makes its beginning so unobtrusively that it is rarely detected in its earliest stages, debility being the chief symptom, indeed, a marked degree of lassitude. Sometimes the symptoms resemble those produced by malarial poisoning, and may be regarded as the incubation of the virus.

The common form of leprosy in the eastern countries is a sub-group, known as *elephantiasis anæsthetica*, which is remarkable for its action upon the tissues about the joints, going so far as to amputate at the various joints in the extremities. There is a growth of solid papules or tubercles in the skin. These usually do not make their appearance until after the disease has existed for several months. They are at first reddish in color, afterward differing a little in tint from the surrounding skin. These tubercles thus developed in the skin, weaken the tissues until they break down and ulcerate, which may discharge for a long while.

Indeed, the individual who has well progressed in this disease is a pitiable sight. The writer, in traveling through Palestine, had opportunity to study many groups of lepers at almost every turn in the road outside of the walls of the city, as they assemble in the ways, sitting in the road, and rising upon the approach of the traveler, to beg for their only means of sustenance, crouching in degradation and filth, usually lifting up the hands that have been partially amputated by the disease. Every indication points to the fact that it is a filth disease, developed only in filth, and incurable in a filthy environment.

Very little has been written upon the treatment of leprosy, from the fact that it usually baffles treatment, and is considered an incurable disease, when once it is well settled in the system. As it is a disease of poverty and filth, any treatment that will improve the general nutrition of the system will be the first to be considered. Isolating the patient, putting him in clean quarters, giving him nourishing food and good care, are of the first importance. Taking care of the ulcerations and loosened joints, cleanliness, washing with antiseptic solutions, and stimulating with alteratives, would

conclude, in brief, the treatment, which in these cases has so little hope of success. Those of missionary intent, who desire to take care of this class of patients, must do so with a view to ameliorating the symptoms rather than effecting a cure. It may be distinctly understood that there is no specific for leprosy, or any specified mode of treatment that has been used with marked success.

19. WILL you please tell me something of the vacuum treatment, and what diseases it will cure? R. S.

The vacuum treatment, as its name implies, consists of producing a vacuum about the surface of the body, or a portion of its surface, thus taking off more or less of the pressure of air upon the system, which amounts to fifteen pounds to the square inch. This relieves the pressure from the surface of the body, and the internal pressure being greater, draws the blood to the surface; consequently this mode of treatment is an excellent measure in bringing the blood to the surface. People generally carry too much of their blood in the internal organs of the body, and too little on the surface. In such cases the vacuum treatment is serviceable.

It is usually given by a boot for the leg, or a large mitten for the hand and arm, so arranged that it can be made air tight at its opening, and then the air is pumped out. The limb in the vacuum will enlarge and the blood come to the surface. Another form of this treatment, which is more commonly given to various parts of the body, especially the spine, is what we call the dry cupping. Special cups are made for the purpose; however, a common glass will answer the purpose, by lighting a piece of paper within it and placing it immediately upon the spine, inverted. Shutting off the oxygen will put out the blaze, and the partial vacuum made by the glass will draw the blood to the surface. Aches, due to congestion of the spine or head, will often be relieved by this measure.

20. WILL you please tell us the best diet for too much flesh? R. S.

The person who stores up a good deal of his food in fat, instead of using it in the production of muscle, nerves, and nerve force, will run down quite rapidly. Physiologically increasing the respiratory and circulatory functions is of the first importance in using up the food as it should be used. This may be partially accomplished in a passive way by the use of massage, manual Swedish movements, and eliminative treatments.

However, this will not accomplish very much in the majority of cases. It may serve to reduce the fluids of the body somewhat, and thus make the weight fluctuate. The active treatment, or the physiological and more energetic way of using up the food properly, is to increase the vital power of the heart and lungs. This can be done by work or climbing, and we believe there is no patient with comparatively strong organs but what will be benefited by a regimen of exercise that will call forth more heart and lung power, and increase the muscular activity of the body. This can be accomplished by hill climbing, to great advantage, if taken up systematically, and so carefully at first that there is no over-strain produced. Climb until a healthy surface glow and free perspiration are well established.

Diet is of secondary importance. A few simple rules will serve in most cases. Very little water should be taken. Take a cup of hot water just before rising from the table. Use no liquors. Avoid sugar, nuts, and pastries. Eat nothing between meals. Confine the diet largely to lean meat or some of the grains that are rich in gluten if well borne by the stomach; if not, then the former is preferable, with stale bread. Tomatoes, celery, spinach, turnips, cabbage leaf, may be taken with the meat diet, and a slice of stale bread, preferably graham, or gluten crackers.

CREMATORY FOR REFUSE IN NEW YORK CITY.

ON September 5, a new crematory for the incineration of city refuse, except garbage and ashes, at Twelfth Avenue and Fifty-third Street, began operations. Three car loads of material were burned, and the inventor of the system said he was well satisfied with the result. If this system is adopted by the city, it will require five or six plants conveniently located to dispose of all its refuse. The capacity of the first plant, when working night and day, is estimated at sixty tons.—*Selected.*

WE heard a lady say that she had heard that a hearty supper injured the reflective powers; but she knew better; for when she took a hearty supper, she reflected nearly all night.

WORSE THAN DISEASE.

SOME of the remedies prescribed by physicians in the "good old times" were certainly, judging by the accounts of them, infinitely worse than the diseases they were supposed to cure. Rheumatic persons were buried up to the chin in mud baths; cows were brought into the bedrooms of consumptive patients, their breath being regarded as a specific. Gold and pearls were taken internally by the sick who could afford the remedy. Baxter relates how he nearly lost his life by swallowing a golden bullet. John Wesley, in his "Primitive Physic," prescribes "six middling pills of cobwebs" for ague. The "balsam of bats" was a favorite remedy of one of the old court physicians. A medical adviser of Queen Elizabeth used to prescribe "a small young mouse roasted" for a child with a nervous malady. Our forefathers seemed to have valued the internal rather than the external use of soap. It was prescribed for certain diseases by a great medical authority; in fact, it would appear that whatever was particularly nasty, and whatever lowered the system, seems to have been considered a good remedy in those good old days. Much virtue was also attributed to things that were ghastly. A ring made of the hinge of a coffin was thought to relieve cramps. The chips of a gallows on which several persons had been hanged, when worn in a bag around the neck, were pronounced an infallible cure for ague.—*Sel.*

HEART FAILURE FROM OVEREATING.

THE heart is about as perfect an organ as any in the body, and one that rarely shirks its duty. It commences its labors during the early infancy, and goes on until the last moment of life, without intermission, for seventy-five years or more. At every beat it propels two ounces of blood through its structure. At seventy-five pulsations per minute, nine pounds of blood is sucked in and pumped out. Every hour, 540 pounds; every day, 12,960 pounds; every year, 4,730,400 pounds; every hundred years, 473,040,000 pounds. Now the heart has for a neighbor an organ, the stomach, very fond of self-indulgence. The stomach lies directly under the heart, with only the diaphragm between, and when it fills with gas, it is like a small balloon, and lifts up until it interferes directly with the heart's action. The stomach never generates gas, but when filled with undigested food, fermentation takes place, and gas is formed, and the interference depends upon the amount of gas in the stomach.

To overcome this obstruction, says the *Journal of Hygiene*, the heart has to exert itself in proportion to the interference; more blood is sent to the brain, and the following symptoms are the result: A dizzy head, a flushed face, loss of sight, spots or blurs before the eyes, flashes of light, zigzag lines or chains, etc., often followed by the most severe headache. These symptoms are usually relieved when the gas is expelled from the stomach. Now, when this upward pressure upon the heart becomes excessive, more dangerous symptoms supervene, a larger quantity of blood is sent to the brain, some vessel ruptures, and a blood clot in the brain is the result, and the person dies of apoplexy, or, if he lives, is a cripple for life. When a sick person, or an old one, or one with feeble digestion, sleeps, digestion is nearly or quite suspended, but fermentation goes on, and gas is generated, as before stated.

A man was found dead in bed, and the physician pronounced it the result of heart failure. Now, the man was out late maybe, partook of a large dinner of roast beef, turkey, chicken, lobsters, oysters, mince pie, plum pudding, ice cream, cake, an orange, nuts, and raisins, coffee, etc., went home at midnight, and died of heart failure before morning. The heart failed from overloading, just as a horse might do. Again, a man is sick with typhoid fever or pneumonia, or almost any other disease, and dies of heart failure; but what has his diet been during the sickness? At present it is very fashionable to commence at once with what might well be called the stuffing process. Iced milk, which is so cool and grateful to the patient, from three pints to one gallon during the day and night. How unwise! Moral: If you don't want to have your heart fail, don't abuse it, don't overload it.—*Selected.*

NERVOUS HEADACHE.

A VIBRATING helmet for the cure of nervous headaches has been devised by a French physician. It is constructed of strips of steel, put in vibration by a small electromotor, which makes 600 turns a minute. The sensation, which is described as not unpleasant, produces drowsiness; the patient falls asleep under its influence, and awakes to find that the pain has ceased.—*Popular Science News.*

SELF.

Two little children sat 'neath the stars,
Watching the light that in silver bars
Through the tree-tops was gleaming;
And the large, fair moon, like a golden ball,
Swaying in mid heaven over all.

At last one small voice the silence broke,
As a strange, new thought in his mind awoke,
With childish fancies teeming;
Looking to starry skies overhead,
"Just one moon, and we've got it," he said.

And I thought how oft that boyish mind
Would find an echo in older kind,
Our worldly pride revealing;
In opinions, possessions, and pelf,
We see but ONE, and that one is self.

—*Selected.*

DO OUR CHILDREN DEVELOP THEIR REAL CHARACTERS?

BY MRS. M. D. LINCOLN.
(*Bessie Beech.*)

ADMITTING that our children have had the advantages before birth of prenatal training, through wise and judicious conditions of maternity, what are their chances for the development of their real characters after we bring them into real active life.

When our little ones open their eyes on this strange, new world, we may look into their faces as completely ignorant of their tendencies, tastes, dispositions, and destinies, as we would be of the astronomy of the heavens, without a course of astronomical study.

The average parent goes about the study of that most intricate of all earthly problems, viz., child life and child needs, as ignorantly as a sea captain would go about the construction of a dress suit, or a blacksmith about the making of a fashionable bonnet.

Our sons and daughters marry, most of them—be it to our dishonor as parents—unprepared for the solemn obligations of married life and the responsibilities of parental relations.

As for children, a majority of young people look upon them as a nuisance, and imagine they are to escape the burdens of raising a family by some special favor of providence.

Before they are scarcely acquainted with the responsibilities of wedded life, a helpless little being comes to them, and behold the young father and mother!

In many instances, it is quite useless to attempt to teach the parents a single thing.

They suddenly seem to know all about the rearing and training of the little one.

The very effort of the infant to let its nurse know it is hungry, or ill at ease from any cause, they immediately attribute to its temper, and decide that it must be disciplined at once; whereas, if a pet dog or cat expresses its hunger in the most positive manner, they pity the poor things and order them fed at once.

Hugging to their bosoms the doctrine that the child is born in sin, and full of natural depravity,

they are watching constantly to head off the monster *sin*.

Granted that the child is born in sin of some cruel, wicked, depraved human beings, it should excite our pity, and command our tender love and sympathy.

Sermons upon sermons have been preached, the best writers have treated exhaustively on the grave responsibilities of parents, and yet the practical solution of this important question is as far as ever from being settled.

Hundreds of parents are ignorant from choice. They will not read what wise and experienced teachers say, because they purport to know all there is worth knowing.

I wish I could speak in trumpet tones to every such parent, to make these all-sufficient ones stop to consider that in their hands they hold the solemn destiny of an immortal spirit, that they (who by example and precept are polluting the soul of a child) would seem freighted with such enormous meaning that the heedless would stop to reflect.

After years of careful study and experience, weighing, deducting, and comparing the various methods adopted by parents, I cite actual occurrences to demonstrate the position parents assume. I believe overindulgence is less injurious than excessive and unfeeling discipline, which so often amounts to tyranny.

As one child may be as totally unlike another as the cedar tree is unlike the mountain ash, we can not, at the risk of life, either indulge or discipline our children alike.

Some natures are as sensitive as the tenderest plant, shrinking at the harsh, unfeeling, unreasonable demands of parents, while the robust, hardy, don't-care small edition of the sturdy oak specimen, thrive on even what would kill morally and spiritually the tender, delicate blossom in whom God lovingly planted a refined and sensitive spirit.

With all our wisdom, we may never learn what is best for those intrusted to our care, until it is too late to undo what we have blindly and often wilfully done.

From the hour we assume to govern our children, we take the responsibility of making a good child, with noble characteristics; or a bad child, wilful, vicious, untruthful, or broken in spirit and a wreck.

Experience is a wonderful teacher, but sometimes even this rugged discipline does not develop good common sense, a large share of which is necessary in training our children.

An incident I saw may illustrate:—

A lovely, sensitive little boy of three years was playing contentedly on the floor with his blocks, when a sickly little puppy, his tender-hearted (?) parents had taken from the street, came into the room. The child loved animals dearly. He took up the tiny puppy, which squirmed and struggled in his hands, and with a look of fear in his face, the child quickly dropped the dog on the floor. The mother rushed for her little boy, rudely seized him, shook and scolded, in an angry voice, the already frightened child, called him a mean little wretch to throw a little dog down that way. The child, now excited, began to scream, trying to tell his mama something, while she shook him harder, and as punishment ordered him to pick up every one of his playthings and put them away.

This nearly broke his heart. He tried to plead, but in vain, then stood screaming nervously. His mother seized him roughly, whipped him, until it seemed as though the little one would go into spasms, and then dragged him out of the room.

At lunch time the child looked pale, ate very little, and, as usual after the frequent attacks of maternal discipline, he had indigestion, which his parents attributed to something he had eaten, when the truth was the child was half sick and nervous, and indigestion *must* necessarily follow, as a result of cruelty to the child, who, without a thought of wrong-doing, dropped the puny puppy, which he tried to pet, because its twisting, squirming frightened him.

And just here one could preach a sermon on the diseases inflicted on children by their parents, nurses, or guardians.

Even the children of strong nerves, and much endurance, yield to the pernicious influences of constant nagging at the table, while the sensitive ones often die early from its effects.

From the time a little one can sit in its high chair at the table, and takes its first lesson in eating properly, on through the gradations of discipline, it is tortured by constant correction.

The way it holds its fork or spoon, the way it raises it to its mouth, the quantity it takes, the "don'ts" there, the "be careful" here, the sudden stern tones of "stop that, or you will leave the table," the frown if the little one asks for some-

thing it can not have, and the unfeeling "no," the sharp rebuke, if it dare to cry or plead, are enough to ruin the digestive organs of anybody.

Does the parent ever think of the sacrifice that comes to most little ones? Two-thirds of everything they love is denied them.

Children under rigid discipline never eat what they choose, but what is given them. They are told they have eaten enough, when they look longingly to the well-spread board, when their parents eat unstintingly of all that is set before them.

Perhaps if a giant, as much larger than the parent as he is larger than the child, should swoop down on the parent, and take the food away, it would be a mercy to some parents who have never learned the golden rule.

Children need the tenderest, and at the same time the firmest, guidance.

The way is new to them, they live groping in the dark, to learn, step by step, of life's strange problems.

They are emotional and enthusiastic from their very simplicity. They are wise, too, and make deductions in their own minds, which might astonish their parents.

They are imitators, and yet they are punished for the very things taught them daily by example.

A child has just as much right to get angry as its father or its mother; yes, more, for it has not learned to govern its temper.

It has just as much right to strike, in a majority of cases, as the parent who believes the rod should be used in season and out of season, and thus antagonizes the little one, and cultivates the belligerent, wilful, and fighting qualities, which eventually dwarf all the finer and tender sensibilities the child may possess.—*Practical Housekeeper and Ladies' Fireside Companion.*

THE MURDERER TREE OF BRAZIL.

THERE is a species of tree growing in Brazil which has the unhappy name of the murderer tree. It spreads its creepers along the ground till it comes to some giant of the forest, then the creepers twine around the trunk till they reach the top of the tree. When the creepers blossom, the seeds fall into the ground and produce other creepers, and soon the great trunk is covered with the branches of the creepers, and in time the tree gives way to the enemy and becomes nothing but a dead trunk.

How like the murderer tree is the habit of drinking intoxicating drinks! Who could suppose that a few single creepers would have the power to kill a great tree? Who could foretell that in the future these creepers would increase so greatly that they would have the power to do so great a harm?

The single glass of beer at dinner, the apparently innocent glass of wine at the party, who could imagine that these would bring about ruin to the body and soul of a human being?

And yet it is a solemn fact, which must be borne in mind, that all drunkenness has its origin in the first drinking of a glass of alcoholic liquors, and that the taste thus created grows and grows till the drinker is unable to master the habit.

A story is told of a father who was in the habit of taking every night a glass of whisky and water. Sometimes he took a piece of sugar out of the liquor and gave it to his little son, with the words, "Here, Jack, have a bit of sugar, boy." The boy took it willingly, and though at first the taste of the whisky was unpleasant, he soon overcame this and began to like its flavor, till at last the father was persuaded by the boy to give him a sip out of the glass. One evening a sister of the boy was standing by when the father offered her a piece of sugar from his glass. Fortunately at this moment the mother entered and said: "No, stop; whatever you give to the boy, I can not allow you to give it to the girl; she shall not learn the taste of intoxicating drinks."

Many years had passed away, and the father had grown old and bent, when he was called upon to perform a most unpleasant duty.

He had to visit his son in prison. How changed was the once bright, happy boy, his face haggard, his eyes sunken! Dressed in the meager dress of the convict, he was led out to see his father. He did not welcome him, but looked at him angrily. "Ah," he said, "you see me in my shame and punishment; you think me a bad son, but remember it was *your fault* that I am thus placed! The sips out of your glass led me to love drink, and that love has been the cause of my crime; I am here because I was taught by you to become a drunkard." The father felt the truth of what the son said; it was an arrow that pierced his heart; he hung his head in sorrow; he had no reply. Surely, we should take warning and shun the beginning of evil.—*Onward.*

THE TRUE IDEAL.

BY IDA M. POCH.

(Continued from April number.)

As we examine the various organs and their work, we are impressed with the suitability of each to its special portion in producing the grand total. We see the form, structure, size, situation of each is adapted to its peculiar task with a nicety of construction that no human mind can equal, much less excel. We all understand that a fine piece of mechanism is intended to do delicate and important work; we also know that in order to do the required work satisfactorily, each tiniest part must be wholly unimpaired and exactly adjusted. Still another fact entering into this consideration is, the more delicate the mechanical construction, the more easily is its nice adjustment disturbed; and if disturbed ever so slightly, the work performed is imperfect and unsatisfactory.

Careful study will reveal the fineness of adjustment and the wisdom in the arrangement. We have only to look about us at the achievements of men's hands, governed by the human brain, and to reflect upon the wonderful possibilities that lie before him here and in the "beyond," to realize something of the infinite importance of the various processes necessary to produce the materials from which emanate these grand, lofty achievements, and upon which depends the glorious and awful thing we call "life."

In the natural human body stands before us, then, an organism permanently adapted and equipped to perform every function of life perfectly. Its power to perform, and the quality of its work, are all that can be desired. The adaptability of the human body is the sum of the adaptabilities of each portion to its appointed task. Without this our sense of the "eternal fitness" would not be satisfied, and one important factor of true beauty would be lost. But only in a condition of perfect health do we find this fitness for the fullness of life; consequently, we must add health to adaptability. This is the practical side of true beauty.

Now let us look at the outward form. How shall we describe it? Let us look at the female form alone. In the natural figure we find every line of grace and beauty reproduced. We find each portion brought into the whole, and united to it with every attention to the minutest detail, to make the whole a "thing of beauty and a joy forever." We notice the careful following of the laws of symmetry and harmony. We see that with infinite pains the body is so constructed that each thought and motion may be perfectly and gracefully expressed.

Our bodies are so constructed that we may look upward to the bright blue heavens above. God never meant that our heads should hang down, that our whole attention should be fixed on the earth upon which we walk. It was not intended that we should burden ourselves so heavily with the things of "mother earth" that that portion of our body which represents the best in us should be cramped and crowded by the mere physical. Hold up the head and throw out the chest; fill the lungs full of God's free air. Let only the feet be upon the ground; let the higher part, represented by the chest, lift you above all this. Ah! with such a body, and such possibilities, we grow strong, and hope, that great health giver and beautifier, shines above us to lure us onward and still upward. Such is the ideal creature set before us. Such is the wonderful machine intrusted to you and to me, with which to do our life-work.

But, strange as it may seem, it is nevertheless true that an artificial form, a false ideal, has so long been held up before the world that many are wholly unacquainted with the true. Fashion has been followed blindly, and a real live figure that presents the same lines and curves admired in marble, is, to say the least, a surprise. Yes, it comes as a revelation, and strikes the mind as something unreal and rather queer. Think of it! A normal body, which a portion of the human family has worn since the first woman left the hand of the Creator, so changed by human inventions and devices that it seems strange and unfamiliar. Yet so it is.

Let us turn from this false; let us seek again the true. Let us escape from this bondage of error and walk again in the freedom of truth. As we bring our bodies into harmony with the laws of our being, it becomes possible to grasp the meaning of life and its possibilities, and our grand march into futurity will not be a blind following, but a stepping upward nearer to the truest and best.

SECURE GOOD VENTILATION.—It has been shown by actual experiment that the water which streams down the inside of the window of a closed sleeping-room is so impregnated with the noxious exhalations of the sleepers that one drop is sufficient to poison a rabbit.

HOW TO MAKE POULTICES.

Bread and Water Poultice.—Although this is one of the simplest and commonest applications in use, and one every mother should know how to make, yet few possess the knowledge to enable them to prepare it properly. Badly made, it is often injurious instead of useful, and, instead of soothing the part, causes inflammation or irritation. Nothing, however, is more simple than the method of its preparation. Scald a basin, and then pour boiling water into it. Take the inside of a loaf of stale bread and crumble it into the water. Most of it will sink to the bottom. The portions that float should be skimmed off with a spoon. Prepare a piece of linen to hold the poultice, and lay the linen on a folded towel—an arrangement which will drain the superfluous moisture from the poultice. Then pour off the water, and empty the poultice onto the piece of linen, the edges of which should be folded over the poultice. Apply just warm enough to be borne, and cover it with oil silk.

Linseed Meal Poultice.—Scald a basin, put a small quantity of finely-ground linseed meal into it, pour a little hot water on it, stir it quickly into a thick paste; add a little more meal and a little more water and stir it again. Do not let any lumps remain in the basin. If properly made it can be tossed like a pancake without falling to pieces. Take as much as you require out of the basin and lay it on a piece of soft linen—let it be about a quarter of an inch thick and sufficiently wide to cover the part inflamed.

Mustard Poultice.—This is an invaluable application in some diseases of infancy and childhood, and therefore frequently ordered. It is made as follows: First mix two-thirds mustard flour and one-third wheaten flour, as much as you require for your poultice. Then scald out a basin with boiling water; into this put your mixture of mustard and wheaten flour, pour a little hot water on it, stir it round, and add water sufficient to make it the consistence of thick paste. Then spread on soft linen about a quarter of an inch thick, the size ordered, and apply next the skin. The time it is to be kept on will depend on the sensibility of the child's skin. From fifteen to twenty minutes is generally sufficient. As soon as the skin becomes tolerably red, the poultice should be removed, and the application should be carefully watched and not allowed to remain too long. After its removal a piece of soft linen should be put over the part, and if very painful it may be dressed with spermaceti ointment.—*Selected.*

SELF-RELIANCE.

THERE are always people ready to enslave others, who are willing to be enslaved, irrespective of sex, and I believe that is the secret of woman's unhappy past. She did not exert her mind or make use of her faculties and opportunities, but drifted with the tide, and if rough hands seized her and forced her this way and that, what wonder is it? The lesson she needs to learn is this, to look to herself for emancipation—to depend on her own strength, and not on outside aid. All the men who have ever amounted to anything were workers. They did not fritter away the best years of life having a good time; neither did they yield to "circumstances," and retire from the battle crushed and brow-beaten. They had a purpose in life, and they followed that purpose, in spite of every drawback and every obstacle. With Paul, they could say, "This one thing I do." And it is this concentration of purpose, this determination to succeed, not to be baffled nor turned back, which has placed man where he is to-day—leagues in advance of woman.

There is scarcely a man of note who has not known poverty, and toil, and hardship. Collyer worked at the forge. Henry Ward Beecher preached in the backwoods, built his own fires, swept out his own church, and thanked God for the chance. Prof. David Swing told me himself that the first dollar he ever had, he earned cutting ax handles in the forest. A poor and friendless boy, his home a rude cabin in the woods, his only capital a brave and noble heart, yet he one day stood before the world one of the most able men of an able time.

Lincoln knew hunger and cold and privation, and was scorned because he once split rails, but to-day—

> His silent tent is spread
> On Fame's eternal camping ground,
> And glory marks with endless round
> The bivouac of the dead.

Not one of those men scorned labor. Not one of them said, "Smooth the way, that I may walk therein." The way was smoothed, though, and not by prayers or tears, or a special Providence, but literally and figuratively by a swinging ax that cleared a pathway from the wilderness to a world of light.—*Helen H. Preston.*

THE HUMAN BODY.

THE average weight of an adult man is 140 pounds 6 ounces; average weight of a skeleton, about 14 pounds.

Number of bones, 240.

The average weight of the brain of a man is 3½ pounds; of a woman, 2 pounds 11 ounces.

The average weight of an Englishman is 150 pounds; a Frenchman, 136 pounds; a Belgian, 140 pounds.

The average height of an Englishman is 5 feet 9 inches; a Frenchman, 5 feet 4 inches; a Belgian, 5 feet 6¾ inches.

The average number of teeth is thirty-two.

A man breathes about twenty times a minute, or 1,200 times an hour.

A man breathes about eighteen pints of air in a minute, 1,067 in an hour, or upwards of seven hogsheads in a day.

A man gives off 4.08 per cent carbonic gas of the air he respires; respires 10,666 cubic feet of carbonic acid gas in twenty-four hours; consumes 10,666 cubic feet of oxygen in twenty-four hours —125 cubic inches of common air.

The average of the pulse in infancy is 120 per minute; in manhood, 80; at 60 years of age, 60. The pulse of females is more frequent than that of males.

At each beat of the heart, about 72 a minute, about 6 ounces of blood are driven into the aorta from the left ventricle, and the same amount driven from the right ventricle into the pulmonary artery. The whole of the blood in the body, about 5,760 grams in an average man, passes through the heart in thirty-two beats.

One thousand ounces of blood pass through the kidneys in an hour.

One hundred and seventy-four million holes or cells are in the lungs, which would cover a surface thirty times greater than the human body.

Two thousand five hundred square inches may be estimated as the surface of an ordinary sized man's body.

Each pore is about a quarter of an inch in length.

Three thousand five hundred and twenty-eight pores have been counted on one square inch of the palm of the hand.

There are about 7,000,000 pores in an ordinary-sized man.

There are 1,750,000 inches of pores, that is, 145,838 feet, or 48,600 yards, nearly twenty-eight miles, of this drainage in a human body.

Thirty-three ounces of insensible perspiration pass from the human body in twenty-four hours.

Ninety-eight degrees is the average temperature of the human body.

The pressure of the atmosphere being 14 pounds to the square inch, the human body sustains a weight of 29,232 pounds, about 13 tons.

The average duration of life in towns is thirty-eight years; in the country, fifty-five years.—*Sel.*

REFORMS.

REFORMS often move slowly and fail of producing much of the desired result, because, while they seek to close one avenue, they leave others equally prejudicial to health wide open. The so-called total abstainer, while he denounces everything in the shape of alcohol, may be himself a slave to tobacco. The good wife and excellent mother, while she frowns upon the wine cup and will have none of it at the table or in the social circle, freely furnishes to her guests and her family, tea, coffee, and chocolate. She does not realize the fact that narcotics, carried to excess, are just as injurious as alcoholic stimulants, and that all should be used guardedly, with an eye to their tonic action, rather than as a beverage.

The epicure or the glutton, loading the stomach three or four times a day with gross or highly seasoned food of the strongest character, has no right to gather his garments about him as he passes his neighbor who indulges in the wine cup to excess, with the Pharisaical phrase, "Touch me not; for I am holier than thou." The glutton is infinitely more animal than the other. He clogs his system with food he does not need, and which leads to every variety of disease. There is no doubt we eat too much, especially of meat, and with more moderation in our diet we should live longer, healthier, and purer lives. A religious order called the "Trappists" illustrates this point. They eat but one meal a day, and that at three o'clock in the afternoon. Rising at three o'clock in the morning, the intervening twelve hours are spent in prayer and hard physical or mental labor. And yet, so far from being weakened by this course of life, they are wonderfully vigorous, and cases of illness are seldom met among them. They live mostly upon vegetables,

fruits, and grains, and meat is almost unknown among them.

The house physician of the monastery in France says he has not met in the monastery with a single case of paralysis, dropsy, congestion, diabetes, or cancer, while gout and rheumatism are almost unknown. It is true that these men live quiet, pure, and uneventful lives, but there is no doubt their frugal diet could be copied to a limited extent by those in the rush of life. Badalan, the celebrated French divine, on being asked the secret of his excellent health and his longevity, said that he ate only one meal a day. Among all the great reforms, none is more important and takes a stronger and deeper hold of the very foundations of life than that of diet.—*Medical Times.*

OUR BABY.

BY JULIET HOWELL.

A TENDER little soul has come
To make with us her earthly home.
She does not know, she can not tell,
If she will like this world full well.
Her little feet have never trod
This earth so nobly planned by God.
Her little hands no work can do
But clutch the air—the whole day through.
The dainty mouth, a cupid's bow,
No evil thoughts can outward throw.
She has no thought of care or wrong,
Or short her days and nights, or long.
She trusts to gentle hands to feed,
To clothe, and minister to her need.
At sound of mother's voice she crows,
And smiles as though the face she knows.
The pretty eyes, the dainty nose,
The shell-like ears, the cheek like rose,
The dimpled body, pink and plump,
Combined in one, make a sweet lump
Of babyhood, whose little life
We pray may be all free from strife.

—*Record-Union.*

A COMFORTER.

VEXED with the trials of a dismal day,
I sat me down to rail at God and man,
To pour into a bitter-venomed lay
All vile anathema, a curse, a ban;
Hope seemed to stumble on her weary way,
And a dark purpose, like a river, ran
Through my sad soul. But how, O friend, I pray,
Can one long murmur at the ordained plan
When to the haven of his arms there slips
A baby daughter, robed in snowy white,
Who, with love's prattle on her infant lips,
Has come to kiss and bid a sweet good-night,
And whispers, cuddling close her precious head,
"I'm sleepy, papa; come put me to bed"?

—*The Household.*

RETREAT NOTES

—Professor White, of Berkeley, with his wife, are at the sanitarium.

—Mrs. Goodrich, of Berkeley, has returned to the sanitarium for a season of rest and refreshment.

—T. R. Glass and wife have returned to the Retreat, after having made a brief visit in Guatemala.

—Mrs. Kendall, of Oakland, still remains with us, and we are happy to report that she is doing very well indeed.

—Plans are on foot for the enlargement and improvement of our laundry facilities. The laundry is to be enlarged, and fitted with time and labor-saving machinery.

—Dr. L. A. Herrick and daughter, of Carson City, Nev., recently came to the sanitarium. The doctor remains for treatment, while his daughter has returned to their home.

—The lateness of the season has served to prolong the beauty of the spring, and our guests continue to return from their daily tramps with their arms full of wild flowers of every variety.

—The sound of hammer and the stretching of ropes fills the grove. The call for tents, while not so early as usual, is none the less imperative, and the canvas village is rapidly assuming its usual proportions.

—The sanitarium has recently enjoyed a visit from its old friend and supporter, Doctor Lovejoy. We are happy to report that Doctor Lovejoy continues to hold his hard-earned health, in the face of much hard work.

—The rose season is a month late, but is none the less appreciated. The sanitarium rose garden presents a beautiful picture indeed at this date, with its great variety of choicest trees. The rose arbor is fast being shaded by the rapid growth of the vines.

—Wedding bells! Miss Mamie Hoar, who will be remembered by many of our readers as a member of our class of '95, was, on the evening of May 7, united in marriage to Mr. Stephen Hare, another member of our family. They take up their residence among us for a time.

—News from Professor Nash, so long a patient sufferer at the sanitarium, assures us that he is still improving and has been able to assume some duties in connection with his work at the Pacific Seminary. He confidently expects to be able to resume his former relation to the work by the time school opens next fall.

—Miss May, who has been so long a guest at our home, has recently returned, with her mother and sister, to her home in San Jose. We are happy to report that Miss May has greatly improved, and we confidently expect she will again completely recover the degree of health for which she has labored so long and patiently.

—Mr. and Mrs. Ackerman, after having remained with us for the larger part of two years, have taken their departure from our midst for the present. We had learned to regard them as indeed an essential part of our family, and they are greatly missed. Mr. Ackerman has been greatly improved while here, and feels that he has received a new lease of life.

—Among recent arrivals we mention the following: W. H. Mills and family, San Francisco; Mrs. W. E Schricker, Laconner, Wash.; Miss Mabel Robinson, E. Oakland; Mrs. H. L. Drake, Suisun, Cal.; Mrs. McFarlane and daughter, Vancouver, Wash.; A. M. Silverstein, San Francisco; F. F. Winchell, Vallejo; F. S. Carr, Marysville, Cal.; L. J. Simpson, San Francisco; D. McFadgin and wife, Visalia, Cal.

—With the smiling face of Old Sol, which now beams upon us continually, have come many other familiar faces of those who have returned to the resting-place for a time, and these, with the many new ones, have caused a large increase in our family, and the general aspect of our home is as busy as before—busy with people who are bent on getting well, and with the efforts of those whose duty and pleasure it is to help them to this desirable end.

—The sanitarium family has recently enjoyed a brief but very satisfactory visit from our former patient, Mrs Gilmore, and her mother, Mrs. Carey. Mrs. Gilmore's friends will be pleased to learn that she enjoys very much better health than formerly. Mrs. Carey and her daughter were accompanied by their friend, Mrs. Leidy, widow of the late Professor Leidy, of Philadelphia. We hope Mrs. Leidy will return to remain with us a portion of the season. Mrs. Gilmore expects to return for a longer visit later.

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