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DRAINAGE OF DWELLING SITES.

[THE following forcible paragraphs are an extract from an interesting paper by Prof. R. C. Kedzie, M. D., entitled, "Drainage for Health." —ED.]

The sanitary drainage of dwellings has received more attention than that of fields, but is still too much neglected. The sentimental rather than the sanitary idea of home has captured our thought. The paradisaic poetry and fiction, which attempt to describe the ideal beauties of home, which sing of "fuming rills, of fountains with many a rill, of damp moss glistening with orient pearls, of blissful bowers, of thickset covert, of inwoven shade, of umbrageous grottoes and caves of cool recess," will do well enough for the unreal world of the imagination, but will scarcely answer for the hard world of actual life. Mr. Adam, with a crick in his back or his left knee doubled up with rheumatism, Mrs. Eve, with an old shawl over her head and a tear in her eye as she groans over the jumping tooth-ache, and little Abel, as he trots around with a cold in his head and a nose that calls constantly for a handkerchief, are not poetic. They are pathetic rather than poetic. Dampness and shade, gushing springs and dripping moss, delightful smothering with flowers and twining plants, will do well enough to read about before a rousing fire with your feet in warm slippers, but they have their little drawbacks in actual contact. When sentimentalists spin off this delicious alliterative nonsense in behalf of wet and wooing, flowing and flowery, give them the curt sanitary admonition with a double meaning, *Dry up!*

That healthy houses may be built upon very unpromising sites by first securing good drainage, is a matter of daily experience. A tract of land in the suburbs of Detroit was so wet that it was supposed to be nearly on a level with the Detroit river, though it was seventy feet above the river level. During wet seasons it served as a preserve for frogs and mosquitoes, and during the dry season the baked and cracked soil seemed to be gaping and yawning with ague chills. The soil was tenacious clay, with occasional pockets of sand. It seemed an unpromising spot for human habitations. Sewers were sunk ten feet below the surface, with laterals for cellars. The sewers served both as surface drains and subsoil drains. Twenty-eight houses have been put up since 1872, and there have been no cases of ague, dysentery, or fever; indeed, the locality has been rendered exceptionally healthful. —*State Board of Health*, 1877, p. 56.

Examples of this kind might be quoted by the hour. But when houses are built upon retentive, water-soaked soils, and no means employed to take off the ground-water, or ward off its effects, the harvest of woe is sure, though it may be slow to ripen.

Two brothers in Vermont, of strong and vigorous stock, and giving equal promise of a long and active life, married wives corresponding in promise of future activity. They had both chosen the healthiest of all callings—farming. One of the brothers built his house in an open and sunny spot, where the soil and subsoil were dry; shade trees and embowering plants had a hard time of it, but the cellar was dry enough for a powder magazine; the house in all its parts was free from every trace of dampness and mold; there was a crisp and elastic feel in the air of the dwelling. The farmer

and all his family had that vigorous elasticity that reminds one of the spring and strength of steel. Health and sprightly vigor was the rule, and sickness the rare exception. The farmer and his wife, though past three-score, have yet the look and vigor of middle life.

The other brother built in a beautiful shady nook, where the trees seemed to stretch their protecting arms in benediction over the modest home. Springs fed by the neighboring hills burst forth near his house and others by his barns; his yard was always green, even in the driest time, for the life-blood of the hills seemed to burst out all about him in springs and tiny rivulets. But the ground was always wet, the cellar never dry, the walls of the rooms often had a clammy feeling, the clothes mildewed in the closets, and the bread molded in the pantry. For a time their native vigor enabled them to bear up against these depressing influences; children were born of apparent vigor and promise, but these one by one sank into the arms of the dreamless twin brother of sleep, under the touch of diphtheria, croup, and pneumonia. The mother went into a decline, and died of consumption before her fiftieth birthday; and the father, tortured and crippled by rheumatism, childless and solitary in that beautiful home which elicits the praises of every passer-by, waits and hopes for the dawning of that day which shall give him back wife and children, an unbroken family, and an eternal home.

"Look on this picture, then on that."

PATENT MEDICINES.

[NOTWITHSTANDING the fact that every intelligent man and woman knows very well that the patent medicine trade is one of the gigantic humbugs of the age, and readily discovers by reading the advertisement of any particular nostrum, or the fancy label upon the bottle, that there are no exceptions to the universal rule which stamps them all as patent shams, there seems to be as great a fascination about these nauseous mixtures, heralded by cutely-worded newspaper advertisements and roadside placards, as about ghosts and mesmerism; and those who the most thoroughly recognize the fraudulent character of these nostrums, when themselves afflicted, are often among the first to fly to them for aid, seduced by the recommendation of some friend, or led astray by the alluring fascination of mystery. The following excellent remarks on this subject by Dr. Byford we quote from the *Western Educational Journal*.—ED.]

"The patent medicine trade has of late years assumed such alarming proportions, that the government of the United States has found it necessary to interfere by legislation to limit its evil influence.

"There are few physicians who have not been called upon, more than once, to rescue a child poisoned by some of these patent preparations. The so called cough balsams, soothing sirups, teething sirups, and their kind, which render the nerves so promptly insensible to pain and irritation, nearly all contain opium, chloral, chloroform, deadly-nightshade, or some equally dangerous drug. They often temporarily relieve coughing, pain, intestinal fluxes, and other distressing symptoms; but in suppressing these symptoms, which are nature's cries for help, they mask the disease, and prevent the timely use of proper remedies.

"Opium, the great magic principle of the majority of these cunningly labled compounds, impairs the appetite, enfeebles digestion, depresses the vital powers, retards the elimination of injurious elements from the blood, and puts the patient in a much worse condition to go through with a renewal of the original attack, which nearly always follows such a partial suppression or smothering of a disease. How many infants grow up to become stunted, stoop-shouldered, bilious, scrofulous, rickety, weak-minded reproaches to mankind, from the opium habit, acquired and persisted in during infancy, and all from these soothing mixtures, is known only to the physician. And his tongue, either from his natural professional reticence, or from the great difficulty in making people listen to unsolicited advice, is too often silent.

"The various bitters that have each had a term of popularity, depend mostly upon poor whisky, diluted alcohol, Cayenne pepper, and aloes for their efficacy, or rather inefficacy. No man, even though nature had never given him an appetite, could help having a gnawing, craving, voracious sensation in his stomach after having half blistered it with one of these nostrums. It makes him eat well for a while, and imagine himself improving. But in order to keep on improving, he is obliged to keep on with it, in increasing doses, until he falls at last into the hands

of a physician, who will have a long tussle with that stomach, and never will be able to convince his patient that the bitters did not help him more than any other remedy before or after.

"I have known many an Irishman to literally die from the effects of patent pills. At first the pills would seem to help, but soon their dose would have to be increased, until a whole box would have no effect. Then another kind of pill would be tried, then another and another, until a box of each, taken all at a time, would lie apparently inert in his alimentary canal. But finally, when the accumulated box loads would commence their concerted action upon the mucous membrane of the intestines, he would either die of a quick inflammation of the bowels, or of exhaustion from the chronic form. The only means, in fact, by which such a veteran in pill warfare can keep himself in seeming order—and I have seen such examples—is to start up a dysentery, and never let it get well. The medicines composing the pills are mixed by men who know nothing of their real nature, and are such as are very sparingly used now-a-days by the intelligent practitioner.

"The so-called youth restoratives, female pills, blood purifiers, medical discoveries, etc., etc., are mixtures of such poisons as iodine, mercury, and phosphorus, and injure a dozen for life where they help one permanently.

"The amount of money paid by the public for patent medicines is enormous. A bottle sold for twenty-five cents usually contains about three cents' worth of powerful drugs, dissolved in sirup; a bottle for a dollar and a half contains, say, fifteen cents' worth of poison. But that is a small item compared with the price paid in time lost from the proper treatment, in loss of health, and even in loss of life.

"But the chief argument against the use of all these compounds is that they are shot-gun remedies. For each of the innumerable diseases that the label pretends to be able to cure, there is a separate ingredient, all of which modify each other in such an intricate manner that neither the compounder nor (what is the same thing) the 'Old Nick' himself could discover, invent, or imagine a disease suited to the conglomeration."

—Never keep a medicine on hand of which a child may not take a tablespoonful with safety.

HOW WE SNEEZE, LAUGH, STAMMER, AND SIGH.

BY FREDERICK A. FERNALD.

THE nose is an organ in more senses than one. From its resonant pipes proceed the sonorous tones which tell of blissful slumber, and the convulsive snort, varying from the mere "cat-sneeze" to the tremendous "Horatio," that has less definite meaning; while the Frenchman and the typical New-Englander (who is nearly as rare as the aborigine in New England, by-the-way) give it an important share in the production of speech. To give some physiological explanation of these and other involuntary actions of the respiratory mechanism is the object of the present article.

Snoring is produced in sleep by the passage of the breath through the pharynx when the tongue and soft palate are in certain positions. The soft palate must have fallen back in such a manner as to nearly or quite close the entrance to the nasal cavity from the throat, and the tongue must also be thrown back so far as to leave only a narrow opening between it and the soft palate. It is by the air being forced either inward or outward through this opening that the noise is produced. A snore results, also, when, with a closed mouth, the air is forced between the soft palate and the back wall of the pharynx into the nasal cavity. With deep breathing, perhaps accompanied by a variation in the position of the soft palate, a rattling noise may be heard in addition to the snoring, which is due to a vibration of the soft palate. Hence it is evident how flinging a pillow at a snorer, or poking him in the ribs, will often cause him to be silent, even when the disciplinary measure does not awaken him; for a change of position that lets the tongue and soft palate fall a little forward secures a free passage for the air.

Grunting is a noise which is produced when, after the larynx has been perfectly closed, whether spasmodically or as a voluntary action with the object of holding the breath, the current of air thus interrupted is suddenly resumed. In the grunt we must distinguish two elements: the first is a clicking sound, and the other an explosive sound or slight report. The click is the noise produced by the meeting of air in the space left vacant when two moistened bodies are suddenly separated. It forms, however, but a very small part of

the noise of grunting, and can scarcely be experimentally demonstrated. The "report" is the well-known phenomenon connected with the sudden expansion of a body of compressed air.

"*Talking through the nose*," when a person has a cold, is in reality talking with the nose so stopped that less rather than more than the usual quantity of vibrating air can pass through the nasal cavity. In producing certain articulate sounds—those which occur in English are represented by *m*, *n*, and *ng*—all of the vocal air escapes from the pharynx by the nose. The nasal air-passage has the general form of a resonator, and there can be no doubt but that it has a corresponding influence, and that the sounds produced by the air passing through it are strengthened by its resonance. The larger the nasal cavity, the more powerful the resonance, and consequently the re-enforcement experienced by the tone. Sounds uttered with the nasal resonance, particularly the nasal vowels, are fuller and more ample than the same sounds when strengthened by the resonance of the cavity of the mouth; and it is for this reason that third-rate tragic actors like to give a nasal resonance to all the vowels in the pathetic speeches of their heroic parts. The resonance of the nasal cavity plays a part also in the formation of non-nasal articulate sounds; then, however, appearing only as a re-enforcement of the resonance of the cavity of the mouth. The directly excited nasal resonance sometimes plays an immediate part in the formation of all articulate sounds, producing the nasal "twang." But the general conception of this mode of speaking is by no means scientifically correct, every species of pronunciation in which the nasal element asserts itself with undue prominence being called "talking through the nose." It may, however, arise from two unlike causes: first, from a stoppage of the nasal cavity; or, secondly, from incomplete closure of the posterior entrance to this cavity. If the nasal cavity is obstructed, as when a child's nose is pinched, and he is told to say "pudding," an accumulation of air forms in the back of the mouth, being unable to escape through the nose, and in the end is obliged to find exit through the mouth. The resonance is also altered, and the nasal sounds are, therefore, formed imperfectly and falsely. The same disturbance is produced by the partial obstruction of the nasal cavity which is experienced from the swollen condition of the mucous membrane, and from its increased secretion during a "cold in the head."

A nasal twang from improper escape of air through the nasal cavity may be due to a cleft palate, or to some less grave defect which prevents insufficient contact between the soft palate and the back wall of the pharynx. Various other noises emanate from the mouth and nose, accompanying certain unusual and mainly involuntary forms of respiration. These are classified by Von Meyer, from whose "Organs of Speech," in the "International Scientific Series," most of the material for this article has been obtained, as disturbances of inspiration, to which class belong hiccough, gaping, and stammering, and disturbances of expiration, under which he enumerates sneezing, coughing, laughing, and sighing.

Hiccough is the simplest of the former class, and is merely a violent inspiration caused by a convulsive contraction of the diaphragm. The ensuing expiration then takes place quietly. The air inhaled may enter principally through the mouth or the nose, or through both equally, and in each case the accompanying noise is different. A contraction of the glottis may also take place at the same time, and in this case the entering stream of air creates, in passing between the vocal chords, a sharp, clear tone. During an attack, one inspiration in about four or five is convulsive. Hiccough arises from over-irritation of the nerves of the diaphragm, the cause of which we know to be either psychical conditions or overfilling of the stomach. When the stomach is overladen with food or with effervescing or alcoholic drinks, it resists to a greater or less extent the fall of the diaphragm; the contractions of the diaphragm necessarily become more labored, and occasionally, like other over-irritated muscles, assume a convulsive character. Frequently, however, the hiccough appears as a sign of the general over-irritation of the nervous system in hysteria, and, probably from the same reason, it may not uncommonly be observed in otherwise healthy young persons, particularly children. The above explanation of hiccough as a convulsive contraction of the diaphragm, is further confirmed by the manner in which it may be stopped. It is, namely, only necessary to allow an exceedingly protracted and, at the end, forcible expiration to follow a long and quiet inspiration. The slow inspiration, especially when it is chiefly performed by the wall of the chest, prevents the phrenic

nerve from being too powerfully irritated, while the long expiration gives this nerve time to recover from its over-irritation. A remedy which the writer has tested many times without a failure can always be used upon a person who has "the hiccoughs" by some one else, and generally by the sufferer himself. You say to your friend something like this: "See how close together you can hold the tips of your forefingers without their touching. No, keep your elbows out free from your sides. You can get your fingers closer than that. They are touching now. There, now hold them so. Steady." By this time you can generally ask, "Now, why do n't you hiccough?" The involuntary tendency to breathe slowly and steadily when the attention is fixed on performing a delicate manipulation is here what counteracts the convulsive action of the diaphragm.

Gaping is also a convulsive form of inspiration, which, however, is not so short and violent as the hiccough. In gaping, moreover, those muscles which raise the walls of the chest are at once brought into prominent action; while, further, a rapid contraction of the diaphragm is necessary before the climax can be reached, after which a somewhat rapid fall of the thorax produces a quick expiration. The important part which is played by the rise of the chest is particularly shown by the fact that in very violent gaping the head is thrown backward, and the shoulders raised, in addition to which even the arms are sometimes stretched upward. During the gaping inspiratory process, the mouth is opened spasmodically, and at the same time the soft palate is spasmodically raised, closing the air-passage of the nose. The whole phenomenon, including the sense of satisfaction after the inspiration, seems an indication of a strong desire for air, and the existence of this desire under those circumstances which gaping is generally observed—sleepiness, for instance, or weariness—is easily explainable. Such circumstances are accompanied by a general inactivity of the nervous system, from which results a weak respiratory action, insufficient for the body when awake.

Stammering results from efforts to talk while a similar action to that which produces hiccough is going on. The difference is that, in stammering, the contractile spasm of the diaphragm is longer. During its continuance no expiration can take place, and, as speech depends upon the existence of an issuing stream of air, it is impossible for a person while suffering such a spasm to produce any sound. Ineffectual and therefore exaggerated efforts to create sound with the organs of the mouth and throat give rise to distressed grimances, and this distressed expression must necessarily be augmented by the fact that, by so long delaying expiration, a want of breath is felt, and the circulation of the blood is interrupted. When at length the spasm ceases, and is followed by a quick expiration, the natural condition is restored until destroyed by a fresh spasm. But there may be no attempt to speak, and yet the cause of the phenomenon (the spasm in the diaphragm) may be experienced; in this case it will not cause stammering, and may be quite imperceptible to the observer. If, now, as appears from the above, stammering is only an occasionally observed symptom of a contractile spasm in the diaphragm, it must be clear that all attempts to cure stammering by exercising the organs of the mouth and throat must be unsuccessful, and that this defect can be efficiently treated only by following rules already given for the treatment of hiccough. A quiet, unhurried inspiration must be followed by an expiration as slow and long as possible, the issuing stream either being employed in speech or not. With this treatment the motor nerves of the diaphragm can most effectually recover from their state of over-irritation, and return to their normal condition. We must, however, be careful not to fall into the common error of confounding *stuttering* with stammering. In stuttering the process of breathing is quite normal, and the defective speech arises only from inaptitude in the formation of sound; this defect of speech is, therefore, peculiar to children, idiots, and persons suffering from apoplexy.

Sighing, which is classed by Von Meyer as an unusual form of expiration, is better regarded as including the preceding inspiration also. A sigh is, in fact, a long breath, and, like a gape, is an involuntary spurt made to catch up with the demand for air. This is true even when it arises from depressing emotion. The expiration is often the more prominent part of the action, the rapidity with which the air flows out being due to a sudden cessation of the activity of the expiratory muscles, which commonly regulate by retarding the issuing stream of air. In *sobbing*, air is obtained by short, abrupt inspirations, and the tears which overflow into the nasal cavity assist in causing this air to produce sound.

Sneezing is the simplest of the purely expiratory noises. Just as the hiccough depends upon a single violent spasm during expiration, generally of the abdominal muscles, but, when very violent, of the other expiratory muscles also. It is a reflex action which occurs after an irritation of the mucous membrane lining the air-passages of the nose, and also after an irritation of the optic nerve by a bright light. A few slight contractions of the abdominal muscles are at first suppressed by some short inspirations rapidly following each other without any intervening expiration; then follows a vigorous contraction of the abdominal muscles, by means of which the stream of air is violently driven out through the mouth and nose. In its passage through the nose, the air produces a well-known noise, which may, however, be connected with a sound produced in the vocal chords. We recognize the same peculiarity, though the action is voluntarily performed in blowing the nose. Sneezing is not an observer of times and seasons, and often seems to choose the most inopportune moment for exhibiting its power. In such a case the impending catastrophe may be averted by pressing firmly upon some branch of the fifth nerve, say in the upper lip close under the nose.

Coughing and *laughing* are also due to a spasmodic contraction of the expiratory muscles. These acts differ from sneezing only in this respect, that, while in the latter expiration is accomplished by a single violent action, it is here characterized by a number of separate impulses of the expiratory muscles, with small intervening pauses. In long-continued coughing or laughing, short inspirations, which, on account of their shortness and violence, often approach the verge of hiccoughing, are taken between the separate expirations, and, indeed, laughing after a full meal frequently leads to a fit of hiccoughs. Coughing most closely resembles sneezing, not only as regards its origin, but also as regards its execution. This is a reflex action which follows an irritation of the air-passages, particularly of the windpipe and the larynx, but also of the pharynx and the nasal cavity. Stimulation of other nerves, as those of the skin by a draught of cold air, may also produce coughing. The expiratory impulses induced, may attain great violence, so as in this respect to resemble the single impulse of sneezing. While, however, in sneezing, the stream of air escapes, as a rule, through the nose, in coughing it escapes through the cavity of the mouth, which is shut off by the raised soft palate from the nasal cavity, and enlarged by dropping the lower jaw, and by the depression of the floor of the cavity, the tongue at the same time being pushed forward. The closed glottis holds this air back for an instant against the pressure of the abdominal muscles, and then suddenly opens part way, letting it escape with an explosive noise, generally accompanied by a sound, shrill or deep as the case may be, produced by the vocal chords. Performed voluntarily, and with less violence, coughing assumes the form known to us as "clearing the throat." In laughing, the separate expiratory impulses are not so violent, and the stream of air passes through the fairly open mouth, or, when the mouth is shut, through the nose. It is accompanied by contractions of the muscles of the face, and is mainly involuntary, being generally caused by an impression produced upon the higher parts of the brain. Violent laughing may be caused by tickling some parts of the body. Characteristic sounds are produced in the same way as already described in coughing, and in both, when long continued, the air which from time to time is quickly inspired, may produce a clear, shrill note when passing through the glottis.—*Popular Science Monthly.*

OUR CHILDREN'S BODIES.

BY WM. BLACKIE.

(*Continued.*)

IF in the physical education of our boys we are disgracefully backward, are we any the less so with our girls? One of Philadelphia's leading physicians — the eminent authority on neural disorders, Dr. S. Weir Mitchell—says:—

"To-day the American woman is, to speak plainly, physically unfit for her duties as woman, and is perhaps of all civilized females the least qualified to undertake those weightier tasks which tax so heavily the nervous system of man. She is not fairly up to what nature asks from her as wife and mother. . . . If the mothers of a people are sickly and weak, the sad inheritance falls upon their offspring, and this is why I must deal first, however briefly, with the health of our girls, because it is here, as the doctor well knows, that the trouble begins. Ask any physician of your acquaintance to sum up thoughtfully the young girls he knows, and to tell you how many in each score

are fit to be healthy wives and mothers, or, in fact, to be wives and mothers at all. I have been asked this question myself very often, and I have heard it asked of others. The answers I am not going to give, *because I should not be believed*—a disagreeable position, in which I shall not deliberately place myself. Perhaps I ought to add that the replies I have heard given by others were *appalling*."

Detailing some of the symptoms of this deficient physique, he adds:—

"Now I ask you to note carefully the expression and figures of the young girls whom you may chance to meet in your walks, or whom you may observe at a concert or in a ball-room. You will see many very charming faces, the like of which the world cannot match—figures somewhat too spare of flesh, and, especially south of of Rhode Island, a marvelous littleness of hand and foot. But look further, and especially among New England young girls; you will be struck with a certain hardness of line in form and feature, which should not be seen between thirteen and eighteen at least. And if you have an eye which rejoices in the tints of health, you will miss them on a multitude of the cheeks which we are now so daringly criticising. I do not want to give more than is needed of this ungracious talk; suffice it to say that multitudes of our young girls are merely pretty to look at, or not that; that *their destiny is the shawl and the sofa, neuralgia, weak backs, and the varied forms of hysteria*, that domestic demon which has produced untold discomfort in many a household, and, I am almost ready to say, as much unhappiness as the husband's dram."

Is neuralgia common in our country or not? Is there any reader who does not know at least one sufferer from it? And, again, would any sensible girl like to marry a man nearly certain to be, during most of their married life, an invalid, and very likely an irritable invalid at that? And if not, can a man be blamed for taking a similar view when he comes to make what he hopes will be his only choice? Dr. Nathan Allen, of Rhode Island, speaking of the "strictly native New-Englanders," says:—

"The women have deteriorated physically in a surprising degree. A majority of them have a predominance of nerve tissue, *with weak muscles* and digestive organs."

The New York *Sun*, in commenting on this statement of Dr. Allen, says further of the New-Englanders who have remained at home:—

"Their families are small. They are not physically as vigorous as their fathers. *The women are not symmetrically developed, and their nervous organization is apt to be morbid.*"

If, then, by the testimony of witnesses well qualified to judge, and with exceptional facilities for observing, it is found that so many of our girls lack physical vigor and symmetry that the number is simply "appalling," if the nervous and other disorders which indicate a deteriorated condition are, as all are aware, so common to-day, and seriously threaten to be so among our children as well, might it not be wise to pay some direct and effective attention to even yet freeing them from much needless pain and discomfort, and to securing to them, if possible, that health which Emerson says is the first wealth, and without which our power of enjoying all else is seriously crippled, if not entirely gone?

But is there not already some remedy provided for an evil at once so wide-spread and so serious. Here and there trifling calisthenics are practiced, but often of so light a kind as to be, to one who knows how to build up anything worth calling vigor, positively ludicrous, and almost always accompanied by utter ignorance on the pupil's part, and often on the teacher's as well, as to their effect on the child practicing them, or as to what muscles are by them brought into play. These do a little good, but it is at least a question if they do not do more harm than good, because they stand in the way of exercise of a sort adequate to work the pupil any substantial or lasting benefit, and cut off the very time in which he or she might otherwise be at exercise of this latter sort.

In New York City they have gone so far as to insert in a recent manual of the Board of Education the following resolution:—

"PHYSICAL TRAINING.—The pupil should be exercised daily in such a manner as to expand the lungs, develop the muscles, and impart an easy and graceful carriage to the body."

Yet in two other places in the same manual one may read that every minute of the twenty-nine hours of school-time per week is strictly devoted to other studies in the most peremptory manner!

But besides not educating the boy's or girl's body side by side with the mind, or even stopping to consider whether

throughout the year they progress physically at all or not, in every city, town, and hamlet of our land we provide machinery and require them to use it, which, kept within reasonable bounds, has proved one of the great sources of national progress, to which we point with just pride, but which, like almost everything else that is good, may yet be so injudiciously used as to work positive harm, and that is the school system. With many of our cities doubling in population every generation or oftener, with parks and play-grounds narrowing almost annually, and many of these so well kept that the children are not allowed to use the greater part of them at all, with school-yards so diminutive that half the pupils in some of the schools could not even stand up together in their own school-yards, much less do any playing, in an immense number of our schools we put the boy where from five to eight hours of each day are given up to close, exacting study, often in rooms in which the air much of the time is a second-hand article, and hence unfit to breathe. Is it difficult to see why, under such treatment, many of the boys are anything but hale and robust?

Maclaren, speaking of an English school-boy of whom he knew, says that his mother boasted that he studied seven hours a day regularly, sometimes eight, and then he wonders whether that boy's headaches were real or sham. But if this surprises him what would he think of such cases as the following, which are only one or two out of scores sent to the New York press some months since, when the matter of school overwork was under discussion. One parent wrote:—

"My daughter, aged fourteen, attends German School No. 72, one of the best in the city, and conscientiously strives to obtain a good report. She reaches home at half past three, spends one hour at the piano, and then studies until half past six. After supper she studies again until nine, and then retires to rise again at six to study away until breakfast-time, after which she starts for school."

Another parent wrote that his daughter of fourteen, going through the regular course, and wishing to keep up with her classmates, "has come direct from school, and sat in her room studying *usually about five hours*." If Mr. Maclaren thinks eight hours of study or even seven a day ought to give a child a headache, what will he say to the ten or twelve of each of these girls? Is it strange that the father of the second one added:—

"The result has been that I was obliged to take her out of school, and put her under the care of a physician, who is yet treating her for no less a disease than St. Vitus's dance. Physicians and all who see her agree that her brain has been overworked."

School Commissioner Fredrick W. Devoe, on investigating these and other cases, said, "I was speaking to a school trustee to-day whose daughter, a public-school pupil, is afflicted with St. Vitus's dance, the direct result of overstudy. *The present course of study is so elaborate that nothing more than a superficial knowledge can be gained by the pupils.*"

Here, then, a course of study which not only crowds out even one minute a day of attention to the body, which compels many pupils to keep their minds on the stretch, not four or five hours daily, but often more than twice that long, and this when they are under no care or instruction out of school which begins to fit their bodies for even their present way of living, much less for effective work in the future years, when others besides themselves must depend on them for support—this plan is found by one of the commissioners himself, after careful examination, to be "so elaborate that nothing more than a *superficial knowledge* can be gained by the pupils."

Is not this paying a pretty good price for a pretty poor article? If all that this injudicious, and in many cases dangerous, method of education brings to the pupil is but "superficial knowledge" after all, would it not be well to stop such a plan at once, and substitute one which will acquaint the pupil thoroughly, not superficially, with whatever he attempts to know, and will at the same time educate his body as well?

Look into the life of Lincoln or Garfield, and of many another man great in our country's history, and we find that all the book-education they had while boys would not make one-third part of what is imposed on the school-boy of to-day. Yet is it certain that the plan now adopted with the boy's education—an education, by-the-way, which he can only have once, be it on a wise plan or a foolish one—will bring him out fitter for successful, perhaps even great, life work than were those same seemingly less-favored men, or even as fit? One thing they did make sure of, whether from chance or necessity, extremely tough, vigorous, enduring bodies, strong and sure foundations for the wear and strain, the

privation and suffering, most of us are sure to know. Lincoln's youth was dotted with feats of athletic prowess. He was one of the greatest wrestlers in Illinois. Colonel Lamon, his former law partner, says that three men were trying one day to move a hen-coop weighing about six hundred pounds, and could not budge it, when Lincoln, coming along, and getting under it, *carried it off on his shoulders!* No man who ever saw Garfield before his last illness, or who ever read the story of that illness, need be told that he was a man of exceptional vital and muscular power, and his whole younger life abounded with further conclusive proofs of this, were there room here to recount them. Mr. Huxley says he would far sooner have his son broad-chested, deep-lunged and enduring, and with sound, well-trained common-sense, for anything he may have to do in life, than a keen and brilliant man, flashy and unsteady in his efforts, and not to be relied on for persistent, hard work. Who would buy an ax with an edge like a razor's, but without much of any back to it at all? Yet is not this the kind of mental axes our schools are producing to-day? Look at that mighty army of absentees from the New York City schools alone who are annually detained at home by sickness! All of us may at times be sick; but who are the likelier to sicken easily, the weak, half-built, and delicate, of low vital power and even lower muscular, or the well-knit deep-chested, and sturdy? When the steam-heating companies were digging up Broadway and other adjacent New York streets, a while ago (and occasionally blowing a citizen skyward), it was remarked that many gentlemen whose offices were on the first floors of buildings near the upturned earth sickened with disorders which were pronounced malarial, but that the stalwart laborer, with his nose right down in the foul-smelling earth, saturated with sewer gas and coal gas, never sickened at all, in fact rather seemed to thrive on it. When the system is toned up and hearty, it is not only harder for disease to get in, but there comes also an indifference to physical privation and discomfort wholly unknown to the delicate or nervous person.

What spur has a bright and studious girl in one of our city schools to build up her health and strength? Who teaches her anything about either? Ambitious to stand well in her class, no matter how much work is set before her, she goes at it with determination, and willingly spends not only all her school hours, but often, as has already been seen, her hours out of school as well, in close, exacting study. Who teaches her to intersperse these with an hour or two, not of a dwadling walk at a dead-and-alive gait, but with sensible hearty exercise and play, making her for the time wholly forget her brain work? Not only has she no guide in this direction, but her very lack of physical vigor makes her indisposed to anything like continued or even momentary muscular exertion; indeed, often she is afraid to take it, and even thinks it dangerous. Many a day passes in which she does not take one single full breath. Is it any wonder that she has small lungs, when she does nothing to expand them? Miss Von Hillern, the pedestrian, walks six miles in an hour; but how many girls in the highest class in any grammar school in United States can walk four and a half or even four miles in one hour? Yet the latter is hardly more than worthy of the name of a smart pace, and one at which any really good walker can stay many hours, often all day, without discomfort. Notice the daily walks taken by girls and young ladies at the more prominent female seminaries and colleges—a listless affair of from two to three miles an hour, just enough to make them nibble at cakes, confectionery, and other trash between meals, and then wonder why they have no appetite for their meals.

In what contrast with this make-believe walking and the woefully defective physical culture and condition of many of our city girls is the story told in the following dispatch from the Montreal Carnival last winter:—

"Next came skating races, which were only second, in drawing spectators, to the trotting. As is universally known, Montrealers are like ducks, who take to the water when born. They assume skating frolics when escaping from the cradle. It is literally true that they are skating almost before they are able to walk. The fascination in the exercise, which seems to be hereditary, increases as they grow up, and when they have arrived at manhood or womanhood—*for the girls are even more expert than the men—they can rival the world for grace and agility as runners.* Proof of this last assertion was seen by thousands on the river this afternoon. The contests were in some cases more tightly fought out than by the trotting equines."

What a ring and tingle and glow of ruddy health there is about all this! We

wonder if those girls know what a headache is, or a side-ache? Or if "the shawl, the sofa, and neuralgia" are likely soon to be their destiny? Or if there is any immediate danger of St. Vitus's dance? Just happen in with them at meal-time, and see if they merely peck at their food, or whether they make the platter clean. Try if the study done by brains cleared by an hour or two of such glorious sport as that is not almost as thorough and almost as valuable as the "superficial knowledge" which the New York School Commissioner found so prevalent in his city. Which of the two sets of girls have the exuberant animal spirits, the overflowing geniality, the vivacity, so attractive in almost any woman, and such an aid to her socially, especially if she is reasonably fair to look upon? If Herbert Spencer has it aright that "men care comparatively little for erudition in woman, but very much for physical beauty and good nature and sound sense," in which class are they likely to find the object for which they generally make the best searching in their lives—those who, no doubt without at all neglecting their varied accomplishments, can yet "rival the world for grace and agility as runners," or those who, although well stocked with the "superficial knowledge" mentioned, might possibly skate ten miles in one afternoon, but with the doctor inevitably on hand bright and early the next morning—if not the undertaker? Do dyspepsia and neuralgia directly contribute to either physical beauty or good nature or sound sense? How would, not the weakest and most inert, nor yet the fleetest and most enduring girl, but she who fairly represents the average girl in one of our school classes, have fared in that inspiring struggle that bright winter afternoon on the gleaming, broad St. Lawrence? Would she have been in it at all, much less anywhere near the front rank, at the end of half a mile, or even of a quarter? Ask her brother, and he will tell you plainly — whatever different and more flattering version some other girl's brother may make of it.

(*Concluded in next number.*)

—As a well-known professor was one day walking near Aberdeen, he met an individual of weak intellect. "Pray," said the professor, "how long can a person live without brains?" "I dinna ken," replied Jimmy, scratching his head. "How auld are ye yourself?"

OVEREATING.

THERE is no doubt whatever that overeating is the cause of much of the ill-health from which people suffer. Prof. H. C. Wood of the University of Pennsylvania, in his *Brain-work and Over-work*, one of the "American Health Primers," calls attention to this source of disease. He says:—

Whatever the individual opinion may be on the temperance question, it is certain that now-a-days there is to every one an abundance of warning as to the effects of alcoholic excess. The value of temperance in the other pleasure of the table is, however, not so often lauded or appreciated. Not long since, in a company of so-called temperance people, I joined a group of men who were discussing, with much warmth of feeling, the amount of money wasted in the United States on alcoholic drinks. Jolly, well-fed reformers were they, with rotund and placid outlines which bespoke habitual good cheer and good digestion. Each, during the day, had had his overplus of food, yet each soon swept from the table a most bounteous quantity of the expensive luxuries furnished by the generous host—one, two, three, perhaps four hundred dollars' worth of provisions gone to weigh down stomachs already overcrowded, to enrich blood already too richly fed, to still further choke emunctories already clogged up with the surplus of food daily furnished beyond the wants of the system. Injury to the system from alcohol is great; injury from gluttony only less. The yearly waste of money in alcohol in this country is frightful; that of superfluous food only less. Almost every one eats more food than is required; indeed, the system is so constructed as to provide for a habitual oversupply of food. The food that is not needed is soon broken up in the blood into substances which are incapable of forming tissue. These substances are really poisonous, and, if allowed to remain, produce grave injury; but in the skin, in the intestines, in the kidneys, they meet with thousands of glands whose duty it is to remove them from the blood. These glands are the so-called *emunctories*.

The power of these excreting glands is limited; they are only capable of so much labor. When a great excess of food is habitually taken, they are habitually overworked.

The blood, under these circumstances, becomes loaded with improper materials; and it may be that a gouty habit is created, which in turn is prone, sooner or later, to produce degeneration of the walls of the blood-vessels, resulting in apoplexies.

The man who gets an occas'onal jolly hour from a moderate potation is, perhaps, morally no more of a sinner than he who gets an occasional heavy night from over-indulgence at the table, and appears, also, to suffer no more permanent physcial ill. Almost every well-to-do person eats more than is necessary for the requirements of the system. As above stated, Nature has, however, provided for the removal of this excess; but overwork brings enfeeblement, and an excess of noxious matters in the blood is a constant irritation to the emunctories; enfeebled and irritated, no wonder these long-tried but faithful servants often finally become fatally diseased. The food principles, which are composed largely of nitrogen, are chiefly taken out of the body by the kidneys. Hence it is an overplus of food containing much of the nitrogenous principles, *i. e.*, meats, which is especially liable to overwork and irritate the kidneys. I believe, myself, that many seemingly inscrutable cases of chronic disease of the kidneys depend upon excessive flesh-eating.

Very few, if any, of those who read this article will ever suffer from an insufficient supply of food, but among the so-called working-classes, cases of nervous exhaustion, hysteria, etc., are frequent, in which the lack of proper nourishment has greatly aided in the production of the disease. There are multitudes of seamstresses who subsist chiefly upon bread and tea. Under these circumstances, the impoverished blood fails to nourish the nerve-centers, and headache, hysterical symptoms, and other manifestations of lowered nerve-tone soon develop.

As either extreme in food-taking is capable of doing injury, what should be the food of the brain-worker, and is there any especial diet to which he should adhere? The answer to the second part of this double question is: There is no food especially adapted to nourish the organ of thought; no peculiar diet for the brain-worker. He or she should eat such food as other rational beings eat, avoiding excess, but always eating a sufficiency.

—Air and light are among the best medicines known to man.

WHAT SHOULD NOT BE DONE.

PROBABLY there never has been a time when so much tobacco in its various forms was used in the various countries of the world, as at the present. Nearly everybody uses it as the rule, the abstainers being the exception. In public places the very air is redolent with the mephitic fumes of this deadly nicotine. Nor is this all; twenty thousand persons annually die a violent death from using this poison, while hundreds of thousands live on with shattered nerves and beclouded minds, what little is left, anything but a blessing to the world about them. *Nor is this all;* millions upon millions of property is destroyed by fires resulting from the careless use of pipes and cigars. NOR IS EVEN THIS ALL; how many accidents take place, resulting in maimed bodies, loss of life, and destruction of property, all because somebody's brain was so beclouded by tobacco that the switch was turned the wrong way, or the signal was not given, or something was not done as it should have been on the track, aboard the steamer, or in the factory? What only is accountable for many of the horrible disasters by sea and land? *Ans.* Tobacco.

Now, in the opinion of the writer, no person ought to be intrusted with even the responsibility of a railroad switch, or to flag a crossing, WHO USES TOBACCO IN ANY FORM! The tobacco-user should not have any position of public trust where life is at stake. He should not have the responsibility of an engine, or a telegraph line, or hold any position whatever where the life and property of our citizens are in his hands.

Tobacco beclouds the mind, rendering the individual who uses it liable to become confused, and thus he is not prepared to act promptly and wisely in emergencies. It is again repeated, NO PERSON WHO USES TOBACCO IN ANY MANNER SHOULD BE PLACED IN A POSITION OF PUBLIC TRUST. Think of it, you railroad and steamboat and telegraph officials, and directors of the ten thousand kinds of machinery, what countless accidents have taken place, destructive of life and property to the public, in consequence of your employees' using tobacco.

Again it is most solemnly averred, that no individual who uses tobacco should be placed in those responsible positions where life and property are at stake.

G. W. AMADON.

Battle Creek, Mich.

TEMPERANCE AND MISCELLANY.

Devoted to Temperance, Mental and Moral Culture, Social Science, Natural History, and other Interesting Topics.

Conducted by MRS. E. E. KELLOGG, Superintendent of Hygiene of the National W. C. T. U.

THE SUNBEAM.

THOU art no lingerer in monarch's hall—
A joy thou art, and a wealth to all!
A bearer of hope unto land and sea.
Sunbeam! what gift hath the world like thee?

Thou art walking the billows, and ocean smiles;
Thou hast touch'd with glory his thousand isles;
Thou hast lit up the ships, and the feathery foam,
And gladden'd the sailor, like words from home.

To the solemn depths of the forest shades,
Thou art streaming on through their green arcades,
And the quivering leaves that have caught thy glow,
Like fire-flies glance to the pools below.

I look'd on the mountains—a vapor lay
Folding their hights in its dark array:
Thou brakest forth, and the mist became
A crown and mantle of living flame.

I look'd on the peasant's lowly cot—
Something of sadness had wrapt the spot;
But a gleam of *thee* on its lattice fell,
And it laugh'd into beauty at that bright spell.

To the earth's wild places a guest thou art,
Flushing the waste like the rose's heart;
And thou scornest not from thy pomp to shed
A tender smile on the ruin's head.

Thou takest through the dim church aisle thy way
And its pillars from twilight flash forth to day,
And its high, pale tombs, with their trophies old,
Are bathed in a flood as of molten gold.

And thou turnest not from the humblest grave,
Where a flower to the sighing winds may wave;
Thou scatterest its gloom like the dreams of rest,
Thou sleepest in love on its grassy breast.

Sunbeam of summer! oh, what is like thee?
Hope of the wilderness, joy of the sea!
One thing is like thee to mortals given,
The faith touching all things with hues of Heaven!

—*Mrs. Hemans.*

SKETCHES OF TRAVEL, NO. 14.

BY MRS. E. E. KELLOGG.

THE CHURCH OF ST. PETER.

THE first object to command attention as one approaches the city of Rome, and the most conspicuous from all out-looks, is the lofty dome of St. Peter's church, the largest and most magnificent temple for religious worship to be found upon the globe. The foundations of the present structure were laid almost a half century before the discovery of America, while more than three centuries were required for its completion. Its erection cost over fifty million dollars, exhausting the treasuries of forty-three popes, who lived, reigned, and died while it was building, and requiring the sale of indulgences, against which Luther protested, to bring in the immense amount needed, while the annual expense of its maintenance is over thirty thousand dollars.

The edifice stands upon the site of the ancient circus of Nero, where so many of the early Christians suffered martyrdom. In front of the church is a vast square, or court, well paved, and crossed by marble walks. From the church as a center, on either side, partially inclosing the grand court, extend two immense semicircular colonades, built, as an inscription tells us, for a "shadow in the day time from the heat, and for a place of refuge and a covert from the storm and from rain" (Isaiah 4:6), and consisting of two hundred and eighty-four Doric columns, each sixty feet in hight, arranged in four series, with passage-ways between, the whole covered with a stone roof. The central passage under the colonade has space for two carriages abreast. Arranged along the battlement of its roof are the marble statues of one hundred and sixty-two saints and martyrs, executed by the celebrated artist, Bernini; and on the higher battlements of the church in the center are thirteen colossal statues representing Christ and the twelve apostles.

In the center of the grand court rises a lofty Egyptian obelisk of red granite, which was first brought from ancient Heliopolis by the emperor Caligula, and is said to be the only monument of the kind at Rome which has never been overthrown. It is also the sole remaining witness of the heroic death of the Christian martyrs who perished in Nero's circus, for whom it stands as an enduring monument, bearing on its four sides the inscriptions, "Christ is triumphant! Christ reigns! Christ is Emperor! Christ paid all our debts!" The obelisk, which weighs five hundred tons, was removed from its original site (at the left of the church) to its present position on rollers, an extremely difficult undertaking. During its removal occurred a thrilling incident still frequently cited. The superintendent of the work, in the construction of his apparatus for raising the shaft, had omitted to allow for the tension of the ropes; and when it was suspended high above the crowd, it would have fallen had not a brave sailor, at the critical moment, shouted,—although silence was imposed on all under penalty of death,—"*Wet*

the ropes!" thus solving the difficulty. Of course he was pardoned for his timely violation of the King's command, since he saved the lives of the people, and was the means of preserving the obelisk. He chose as his reward the privilege for himself and his family of providing the palm branches for St. Peter's on Palm Sunday, —a privilege which is still accorded to his descendants.

Two magnificent fountains, one on each side of the obelisk, send up a continuous feathery spray of bright water, upon which the sun paints many a brilliant rainbow ere it falls with ceasless splashing into the immense porphyry basins below.

Passing across the grand court, and ascending the marble steps, we entered an immense vestibule extending across the front of the building, from which two great portals lead into the temple itself, one, the *Porta Santa* (Sacred door), is opened only once in a quarter of a century, during the year of Jubilee; the other, the great central doorway, is closed by the famous bronze doors, and only used on grand occasions. Other smaller doorways, over which hang heavy quilted leather curtains in place of doors, are for more common use.

The church, which, like most European cathedrals, is built in the form of a Latin cross, covers an area of more than five acres. We had been repeatedly told of its immense dimensions, of its vast space that no crowd ever fills, and where one can almost lose himself in its immensity; but so perfect is the harmony and symmetry of itsproportions, that we could hardly credit the figures until our guide called attention to the comparative measurements of other immense European cathedrals, as indicated upon the pavement, showing that several good-sized churches might easily be contained within St. Peter's.

Of its interior grandeur no adequate description can be given. Its floor of rich mosaic, its lofty paneled vault, magnificently adorned with gildings and rarest works of art, its thirty gorgeous altars, its marble and alabaster pillars, its costly statues, the master-pieces of such artists as Michael Angelo and Bernini, its beautiful copies in mosaic of world-renowned paintings, its sculptured tombs, grand arches, rare frescoes, splendid chapels, each as large as an ordinary church, its massive columns and gorgeously tinted windows,—all combine to make it a place of such overwhelming grandeur and surpassing loveliness that we could but think, If human agency can create such a marvelously grand and beautiful structure as this, to what must the beauty of the "city not made with hands" be equal.

Directly under the lofty dome stands the "high altar" used only by the pope on high festivals. Above this altar, borne by four richly gilded, spiral columns, nearly one hundred feet high, is a colossal bronze canopy made from metal taken from the Pantheon. Beneath the high altar is a tomb said to be St. Peter's. Doors of gilded bronze close the niche containing the apostle's sarcophagus, and eighty-nine ever-burning lamps keep constant vigil before this most sacred shrine. In the tribune, which occupies the extreme end of the nave beyond the high altar, is kept, inclosed in a bronze covering of great beauty, the ancient wooden episcopal chair in which it is claimed St. Peter officiated as first pope. Gigantic statues of those four great Fathers of the church, Augustine, Ambrose, Chrysostom, and Athanasius, hover about the four posts of the chair, like bronze sentinels.

One of the objects th at attracted our attention was a statue in bronze—nearly twice life size, seated on a throne of white marble beneath an elegant canopy—which was once a heathen image of Jupiter, but which has been remolded and christened St. Peter. About this image a crowd of men, women, and children pressed at all hours, with apparently sincere adoration, bending the knee before it, and kissing the extended foot of the bronze saint. On festival days this statue is clothed in magnificent robes, a jeweled crown placed on its head, a guard stationed beside it, and pope, priest, and people alike do homage to it, and kiss its metal toe.

Confessional boxes for eleven different languages are provided at St. Peter's, so that persons of all nationalities who chance to visit Rome, and may desire to "unburden their hearts to a fellow-sinner behind the lattice," can be accommodated.

Beautiful works of art, masterpieces of celebrated painters and sculptors, abound on every hand, even the basins for "holy water" and the tombs of departed kings and popes are marvelous specimens of carving and sculpture. Here is the wonderful copy in mosaic of Raphael's masterpiece, *The Transfiguration; The Raising of Tabitha by Peter*, after Costanzi; The *Archangel* by Guido Reni and his *Crucifixion of Peter*. Michael Angelo's admirable *Pietà*, the Virgin Mary with the dead body of Christ on her knee, occupies a central place in one of the chapels. Hundreds of other lovely productions of art combine with the architectural symmetry and lavish splendor of its adornments to make St. Peter's a matchless monument of art and beauty.

SOMETIME.

BY MARY MARTIN.

"And still we walk the desert sands,
And still with trifles fill our hands,
While ever, just beyond our reach,
A fairer purpose shows to each
The deeds we have not done, but willed,
Remain to haunt us unfulfilled."

I was visiting a dear friend in her new home. She took me from room to room, and it was, indeed, a delight to see what wealth, good taste, and industry had wrought. Everything seemed a model, either of convenience or beauty. I was surprised, however, to see that she who had possessed much literary taste previous to marriage, now found it possible to exist simply upon externals—there were scarcely a half-dozen books in the house. I must have expressed the surprise I felt, for she apologized by saying, "Yes, I know, and sometime, when my children are older so they can appreciate books, I shall have them. There are so many

things to get now." Her children had already reached the age when they could attend and give parties, and in my simplicity I wondered when that "sometime" would come.

This is but a sample of many homes of wealth and refinement; many more where there is little surplus means, and a laudable ambition to secure a competence. The father is immersed in physical or mental labor necessary to secure the desired end, while the mother's time and life go into ruffles and tucks, Kensington and crotchet, pies, pickles, and preserves, that her children, her house, her table may not be eclipsed by those of some friend or neighbor. It is not only those who, with abundance of wealth, but limited education, speak of "going to the mountings next summer," and of the "statutes" they saw in Central Park, whose homes are an intellectual Sahara; but many who have an appreciation of the advantages of mental culture pursue a course that results in brain starvation to themselves and their families.

A bed of Madeira vines left to themselves, without suitable support, becomes a deformed, unsightly tangle; but skilfully trained, every curve is one of beauty, every leaf the perfection of nature's handiwork, and the wealth of delicate racemes feast the eye, and yield a perfume suggestive of their Edenic home. So with the little child. Its mind reaches out and up; but how often are the tendrils that have a right to cling to you rudely severed by impatient words, cool rebuffs, or unsatisfactory replies.

The following conversation, overheard on board a railway train, gives a fair likeness of the average young mother of to-day:—

Child: "Say, mother, what makes the cars go?"

Mother: "What?"

Child: "What makes the cars go?"

Mother: "Why, steam, of course."

Child: "Where is the steam?"

Silence.

Child: "Ma, where is the steam?"

Mother: "Out there."

Child: "Out where?"

Mother: "Why, in the engine."

Child: "Does it make the engine go?"

Mother: "Yes, I suppose so."

Child: "Well, ma, I don't see *how* it makes the engine go."

Mother: "Don't see what?"

Child: "I don't see how it makes the engine go; do you?"

Mother: "No, no, I don't; you do tire my head so I wish you would keep still."

The child, if a sensitive one, retreats within itself, mentally wondering what is the use of the world, itself, or anything else that cannot be comprehended, that it can find out nothing about. If he is well endowed with self-esteem, he pursues his investigation among the passengers in general, and some large-hearted, social man, with a coarse but kindly nature, furnishes replies to his interrogations in a very entertaining manner, leaving the child with admiration of his stamp of mind, having perchance received his first lesson in profanity. The mother, meanwhile, experiences a feeling of relief at being exempt from the care of the child, whom it should be her greatest pleasure to instruct, and shield from pernicious influences.

Many parents, estimating business and social engagements of paramount importance, allow these to debar them from their children's companionship, promising themselves that sometime, when they have accomplished this, that, or the other, then, secure from interruption, in the long hours of golden leisure, surrounded by circumstances conducive to intellectual development, they will give themselves to their families in a fuller social sense. Never was there a more fatal mistake. The past can never be retrieved. Now you have, in your children, plastic clay, which you can mold and fashion as you will; "sometime" it will be solid granite, and you will find that the influence which you might have had, which God designed you should have, has been forfeited by your own mistaken course.

"Alas! and bitter is the loss, the parents and the children,
Who, loving up and down the world, have missed each other's friendship."—*Tupper.*

It is well for the heart to hope, and rise above the difficulties and obstructions by the way, with a supreme faith that sometime all life's tangled threads will be strengthened, because there is an overruling Providence. It is the sheerest folly, however, to expect a rich harvest of golden grain from seed that has never been sown.

If the mind never soars above, or reaches beyond, what the hand can do, it becomes narrow. Many a mother's time and strength must all be employed in the home circle; but if she educates her sympathies to reach beyond these limits to those who are sick or sorrowing, her heart becomes enlarged, and she is better prepared to meet the wants of her own family. If some time be given to reading, if it be only a few sentences now and then, and afterward pondering upon them, the intellect will become enriched, and the mind take broader, truer, nobler views of life.

There is a story of a king who was told that there never came a *perfect day.* He was confident, however, that such a day would come to him, "and when it does," said he, "I will have the great bell in the tower ring out the announcement of its arrival, that all may know." The people watched and waited; fortune smiled upon the king, his subjects were loyal, and prosperity seemed to follow every footstep; but children grew to manhood and womanhood, the king's hair was silvered and his form bowed, and when his friend reminded him at intervals that the realm was awaiting the promised announcement of the arrival of the perfect day, he shook his head, and said, "Not yet." At last, when nearly all whom he had known had passed away, in the dull gray of an autumn morning, there rang out on the still air peal after peal from the great bell in the tower. Voices were hushed, and a smile lighted up the faces of aged pilgrims, as they said, "Oh, well!

the king's perfect day has come at last;" but ere the echoes had died away in the distance, word came that the king was dead.

As it was with him, so will it be with us each. The ideal combination of circumstances, when everything will conspire to make life's pathway smooth, when all that is most desirable will come without effort, and the days glide by with rhythmic flow, we never need hope for. All such promise is but a "will o' the wisp," that lures the credulous traveler on until too late to retrace the fatal steps that inevitably find a terminus in the quagmire of unavailing regret. Wealth lost may be regained, and to a thousand things there comes an afterward more propitious than the commencement; but only once can you have your children about you in their sweet innocence, with their life-tablets white and unsoiled, whereon you may make indellible imprints of whatsoever you will.

Sweetest among the recollections of the past is the memory of tranquil days in early summer, when the air was fragrant with apple blossoms, or when the ripening fruit lay thickly strewn beneath the trees; of a quiet, sweet-faced woman leading a boy and girl by either hand, out through the garden, down into the orchard, calling their attention to the songs of birds, the beauty of flowers, the wonders of nature, and telling them of nature's God. The old orchard is now deserted. The mother rests in dreamless sleep, unmindful of spring flowers or singing birds; but she, "being dead, yet speaketh." The passing years, with all their varied changes, have failed to erase the impressions then made. Success cannot unduly exalt, nor defeat depress; because of the lessons of humility and fortitude so early inculcated. Sweetly breathing through all the vicissitudes of life cometh an angel voice with these divine words, "He hath set the one over against the other," and "My grace is sufficient."

Weary or worldly mother, take courage and wisdom from the Infinite Source. Spend no day in folly or fretting, but sow the choicest seed "for the reaping by and by;" for

> "In the harvest of thy toil,
> Rejoicing thou shalt reap;
> Or o'er the wild, neglected soil,
> Go forth in shame to weep."

—If you tell your troubles to God, you put them into the grave; they will never rise again when you have committed them to him. If you roll your burden anywhere else, it will roll back again like the stone of Sisyphus.—*Spurgeon.*

—The happiness of the human race in this world does not consist in our being devoid of passions, but in our learning to command them.

—When all else is lost, the future remains.

WHO WAS TO BLAME?

(Concluded.)

"WHERE is Jennie?" asks Mr. Chandler, between rapid mouthfuls, at dinner on the following day. "Seems to me she wasn't here at breakfast, was she?"

"No. She went to Jessie Maddock's last night. I have been expecting her home for some time. It is unusual for her to remain away so late in the day, unless it has been so understood before she went away."

"Sulky, probably," comments the father. "If she shows too much temper, I'll make her stay at home for a month, and go to bed at seven o'clock. It is time she was put under a little restraint," pushing back his chair, "she is getting altogether too high-and-mighty. You had better send Artie after her," he adds, standing, hat in hand, at the door, "or—never mind! I'll stop myself on my way down town. The sooner she understands that a new order of things is coming to pass, the better!"

And, indeed, a new order of things has already come to pass, a new order of things for which Mr. Chandler has made no calculations.

Jennie is not at Mr. Maddock's. She is not to be found with any of her acquaintances. To tell in a few commonplace words the heart-break of a life-time, Jennie has gone away with her lover; and in a distant city the words have already been spoken which bind together, for weal or woe, a silly, untaught, wayward girl, and a boy whose chief attractions are a black mustache and a jaunty manner. Mr. Chandler storms and—no not swears; he is a church member in good and regular standing, and prides himself upon fulfilling rigidly all the demands of morality and religion. But it is doubtful if any oaths could hold bitterer curses than are embodied in the strictly moral words with which he expresses his rage.

"She was always a selfish, undutiful child," he says. "Now let her suffer. She shall never darken my doors again, if she lives a hundred years. She has made her bed; let her lie in it! I will never lift my hand to help her, if she rots in the streets!" And so on. All good, old, time-honored phrases, and not a profane word to bring a blush to the cheek of the recording angel.

"Not that I don't blame you!" he remarks to his wife, by way of comfort,

"You should have made her stay at home evenings."

"Nothing was ever done to make our children like to stay at home."

The mother pours out a world of late remorse in these words. "You know how the boys always were!"

"Boys are different. They'll come out all right after awhile. And you talk as a woman always does. *Like* to stay at home, you say! If you had had good sense, you would have made her stay!"

Mrs. Chandler makes no reply. A dim, horrible sense of responsibility weighs her down, a vague comprehension of the truth that no rich harvest can come where no good seed has been sown. Her husband's reproaches rouse no angry resentment in her benumbed spirit; they can scarcely, she thinks drearily, even add to her pain.

Mr. Chandler is a man of great,—he calls it firmness, strength of character. "What I say, I stand by!" is a favorite remark of his. Returning at night from business, some weeks later, he lays an opened letter in his wife's lap. She takes it in tremulous haste, and reads:—

"DEAR MOTHER:—I know Fred and I have done wrong, but can't you forgive us? I am just *dying* with homesickness. O mother, I can hardly keep myself from starting out, on foot and alone, for the dear old home, but I don't know what father would say. We have rented a room, and Fred has been trying to find work. I think we shall not stay here much longer; Fred's money is almost gone, and he will be obliged to go where he can earn more. A man here offered him thirty dollars a month to take care of his horse and garden, but of course Fred would not do such hard, dirty work as that. And he wants to earn higher wages. I wish father could give him some employment. Dear mother, won't you please coax him? I don't know what we shall do if Fred does not find work pretty soon. I wish I could see Artie.

Your affectionate daughter,

JENNIE."

As Mrs. Chandler lifts her eyes, her husband smiles, if that can be called a smile which holds neither mirth nor tenderness, a simple contortion of the mouth, bringing out every hard and unyielding line which life has traced upon the countenance of a man who prides himself on being "set in his way." And his wife utters no word of entreaty. It is twenty-five years now since she learned the meaning of that smile.

"You need not write," he says to her the next day. "I will say all that is necessary."

"Need not" means that he will be bitterly angry if she does so; and Mrs. Chandler, who is no longer the active, energetic being of past years, but a wan-faced woman with fast-whitening hair, creeping about her household tasks in a tired, spiritless way, obeys.

* * * * * *

Last year a woman died at a hospital in one of our Western cities. Her years might have numbered twenty-five, and her worn, old-young face was not devoid of a certain delicate beauty. A city daily made mention of her death after this manner:—

"A SAD HISTORY.

"Your reporter made his way yesterday morning to St. Andrew's Hospital, for the purpose of interviewing the unfortunate young woman, of whose story some short mention was made in yesterday's *Trumpet*. She was lying almost at the point of death, but rational and able to answer questions satisfactorily, though she at first showed some reluctance to talk of her past history. But after replying to a few questions, this aversion gave way; the instinctive desire of the human heart for sympathy, combined with the weakness of approaching death, led her to talk freely, though feebly, of her sorrowful past. She came to this city about two months ago; is twenty-four years old. It appears that she made a runaway match at sixteen with a worthless boy, three or four years her senior. Her father, whose name she refused to give, as well as her own and that of her husband, disowned her in consequence of her rash act. Twice she wrote asking forgiveness, and begging to be allowed to return home,—once a few weeks after marriage, and again two years later, when her husband left her for two weeks alone and penniless just after the birth of a babe, but was on both occasions harshly repelled by her inhuman father. A year or two after this her husband left her, going, she thinks, to the far West, with gambling associates; and since then she has heard nothing from him. Her child sickened in the foul atmosphere to which she was driven in her destitution. 'He was all I had,' she said, 'and I could not let him go. I found a place to work in a cheap eating-house, and had to leave my boy all day. He could creep and I used to tie him to the stove leg,—it was in the summer. After a while he got so weak that I could lay him on the straw, and he would stay there all day. Every time I went home, I thought I should find him dead. One of the regular customers of the restaurant offered just then to take care of me and my baby. He was a married man, but I did not know it then. He took us to another town, where I passed as his wife. But my baby died only a week after I went to live with him, and I felt that I had given all and gained nothing. I hated him, and after a year or two he left me. But there was something good about him. He worked at the carpenter's trade all of the time we lived together, and when he went away, he left fifty dollars in my pocket and a note, saying that he would have stood by me as long as we lived, if I had been good to him. Just after he went away, I heard somehow, and I think it

was true, that my father was dead, and my mother was searching for me, but it was too late then. I would have thrown myself into the river sooner than to go back *so!* Well, since then I have sewed some, and starved more. I tried housework because I coughed so hard when I sewed long, but I was n't strong enough, and then I did n't know how very well besides. The last year I can't tell anything about. I am glad the end has come at last. I wish I had died when I was a little baby.'

"At the time your reporter left her bedside, she showed symptoms of the rapid approach of the 'King of Terrors.'

"We learn that the unfortunate woman died at 6:30 P. M. Nothing about her gave any clue to her identity, though a small handkerchief tied about her neck bore the embroidered name, 'Jennie.'"

So black-robed Sisters of Mercy prepare for burial all that is mortal of Jennie Chandler, while in a distant home an old woman, older in heart than in years, watches forever for one who shall come no more.

She takes Kate's little girl on her knee, stroking her hair with trembling, toil-misshapen hands.

"Mother, you spoil that child!" says Kate, bustling about her work in anxious haste.

"Children are not spoiled in this way," replies Mrs. Chandler, leaning her thin cheek against the golden head. "Never mind the stove, Kate, Jamie is calling you to come and see his kite go up. Don't tell him you have n't time."—*Woman at Work.*

Popular Science.

—Experiments and investigations have shown that an animal body, when submerged in water or in a water-saturated soil, may be partially converted into adipocere in so short a time as six weeks.

—A French physicist, M'de La Croix, has calculated from observations of the Krakatoa volcanic eruption last August, that the velocity of the molecular disturbance through the water of the ocean was 550 meters per second, higher than the recognized velocity of sound in air.

Obscuring Glass.—There are many ways of accomplishing this, some of the plans making the glass permanently frosted, others only temporarily so. For permanence, take a flat piece of marble, dip it into glass-cutter's sharp sand, moistened with water; rub over the glass, dipping frequently in sand and water. If the frosting is required very fine, finish off with emery and water. As a temporary frosting for windows, mix together a strong, hot solution of Epsom salts and a clear solution of gum arabic; apply warm. Or use a strong solution of sulphate of soda, warm; and when cool wash with gum water. Or dab the glass with a lump of glazier's putty, carefully and uniformly, until the surface is equally covered. This is an excellent imitation of ground glass, and is not disturbed by rain or damp.—*Scientific American.*

COMETS.

THE comet of 1843 was remarkable for the dimensions of its tail and for its close approach to the sun. The tail of this comet stretched half way across the sky in March, 1843. Its real length was two hundred million miles *at least*, for the end of the tail was lost to view through the excessive faintness of its light. So near did this comet pass to the sun, that many astronomers did not expect ever to see the comet again. But, after all but grazing the sun (sweeping round him at a distance of less than one-tenth of his diameter), the comet escaped, and passed back again into space.

When we see the tail of a comet occupying a volume thousands of times greater than that of the sun itself, the question naturally suggests itself, "How does it happen that so vast a body can sweep through the solar system without deranging the motion of every planet?" We know, however, that no such effects are produced. The length of our year did not change by a single second, showing that our earth had been neither hastened nor retarded in its steady motion round the sun. Thus we are forced to admit that the actual substance of the comet was inconceivably rare. A jarful of air would probably have outweighed hundreds of cubic miles of that vast appendage which blazed across our skies, to the terror of the ignorant and superstitious.

The dread of the possible evils which might accrue if the earth encountered a comet, will possibly be diminished by the consideration of the extreme tenuity of these objects. But the feeling may still remain that influences, other than those due to the mere weight or mass, might be exerted upon terrestrial races in the course of such an encounter. The subtle breath of some mephitic vapor might penetrate our atmosphere, and, if it did not bring immediate destruction, might leave dire forms of plague and pestilence to work their evil will upon the human race. This fear is not, perhaps, wholly unreasonable, though the positive information we now have does *not* favor the supposition that the tail, at any rate of a comet, is likely to exercise such destructive effects. And it is only the tail of comets that we have much chance of meeting. On account of their enormous volume, it is not so utterly improbable that we should encounter them as that we should meet the comparative minute nuclei. In fact, there is reason for supposing that the earth actually did pass through the tail of the comet of 1861. About the hour when it was calculated that the encounter should have taken place, a strange *auroral glare* was seen in the atmosphere, but beyond this no effect was perceptible.—*Proctor.*

GOOD HEALTH.

BATTLE CREEK, MICH., JUNE, 1884.

J. H. KELLOGG, M. D., EDITOR. TERMS, $1.00 A YEAR.

A HYGIENIST ABROAD.

WATER IN VENICE.

THE "Queen of the Adriatic" abounds in water; boats take the place of wagons and carts, and the graceful gondola, with its deft and merry oarsman, replaces the broughams, hansoms, and carriages of every description which abound in other cities. Not a horse is to be seen in all Venice. The main street of the city is a grand canal; and the side streets, lanes, and alleys are contributary ditches. But all the water possesses the bitter, saline taste of the sea. All the water used for drinking and cooking purposes is brought in boats from the main land, a long distance. In every large open space where there is sufficient room, cisterns have been made by the city authorities, to which the people resort at certain hours of the day. We spent a half-hour in watching the throng of sturdy women coming for water, each with a pair of copper buckets suspended from a wooden yoke placed upon the shoulders. Children also came with their little pails, and all waited patiently for the great bronze man on the top of the clock tower near St. Mark's to strike the hour of three, when all were at liberty to help themselves for an hour.

A traveler on the streets who wishes a drink must purchase it as he would a glass of milk or lemonade in other cities. He does not need to look far for an opportunity, as men with little wooden stands holding a pitcher and glasses may be found at almost every corner in the principal streets. If you wish to drink, the vender pours out a glass, and sprinkles into the water a few drops from a bottle containing a solution of anise-seed oil, or some mild acid, which may be vinegar. The price per glass is five centimes, or one cent.

TWO MONSTROUS MESSES.

A PHYSICIAN who has been investigating the matter of food adulteration gives the following description of two very common commodities which may be of interest to some of our new subscribers:—

TOMATO CATSUP.—Of all the vile messes that progression has invented for the gastronomical amusement of the stomach, tomato catsup is the vilest. The following account of the mode of manufacture may not be appetizing information to the indiscriminate lover of this delicacy, but it is true, and therefore has a proper place here: During the summer season, when the canners are busy in putting up tomatoes, they select the finest fruit for that purpose, throwing aside that which is bruised and rotten for conversion into catsup. They also use the skins taken from the tomatoes in the process of canning, and these are all boiled up together, placed in barrels, and then exposed to the sun to ferment. I have seen hundreds of barrels of this mixture in the yard and on the pavement in front of a factory, with the bungs out; and every day, sometimes twice a day, men would go over these barrels, inserting sticks or poles for the purpose of stirring up the contents, and thus give the fermentation a chance. This treatment is continued for several weeks, or until the mixture has passed into acetic fermenta-

tion, and in this case it does not need any vinegar. It is then converted into catsup by boiling, and adding the necessary spices. And this is the tomato catsup of commerce. I had almost forgotten to mention that the bungs are never placed in the barrels, and consequently the catsup is exposed to all kinds of weather, dust and rain, and to the pranks of mischievous boys.

MINCED-MEAT.—Boarding-house keepers, restaurants, and some hotel keepers, as well as housekeepers, all want a cheap minced-meat, and, of course, the manufacturer is to be found who will give it to them. The worst meat, and that often in a state of putrefaction, is bought for a few cents a pound, and this, with adulterated spices, the commonest raisins and currants, flavored with bad whisky, go to make up the delicate compound.

Here are a few of the materials in a sample of modern minced-meat: sulphurous acid, lime, vinegar (these comprising the preservation mixture, wine, brandy, and cider being too expensive), apples, neither peeled nor cored, those with white skins being used, as the red would betray themselves. To pare the apples is an operation entailing expense, and is, in the eye of the thrifty manufacturer, a waste. So the fruit is thrown into the chopper; and skins, cores, and rot swell the bulk, and add their quota to the indigestibility of the compound.

POISONED SLEEP.

THE almost universal custom among physicians of administering chloral, bromide of potassium, or some similar drug for the purpose of producing sleep in insomnia is one which cannot be too strongly condemned. When a patient cannot sleep, there is some disturbing cause which must be sought out and removed. The administration of some drug which benumbs or stupefies the nerves is by no means a proper course. The insensibility thus produced is not refreshing, physiological sleep, during which every part of the body rests; but is a period of unconsciousness due to a poisoning of the nerve centers, a week of which is not equivalent to a single night's healthful sleep. A person afflicted with wakefulness should be better content with one hour of normal rest than with eight hours of poisoned sleep.

We are glad to quote the following remarks on this subject from so able and eminent a medical authority as the *Lancet*:—

"The death of a medical man, Dr. John Middleton, late Surgeon-major in the 2d Life Guards, but at the time of his decease a practitioner at Stockton, will again draw attention to the mischievous, and, as we believe, wholly indefensible practice of giving and taking such depressing narcotics as chloral and bromide of potassium as a remedy for sleeplessness. Sleeplessness is always wakefulness in one or more of its multitudinous forms, and the recourse to narcotic poisons for its relief is utterly unscientific and deplorable from a therapeutical point of view. It is as clumsy in theory—in so far as it can be said to have a theory—as knocking a man down because he needs rest. What is it that prevents the natural and physiological rest of the body at rhythmical periods? The brain is as truly a part of the body as the stomach, and it is as much a fault of the organs of the mind to prevent sleep by mental worry or wakefulness as it is a fault of the stomach to render sleep impossible by bad digestion. No intelligent practitioner dreams of narcotizing the nerves of the gastric organ to promote sleep. Why, in the name of common sense, should any medical man for an instant think it legitimate to narcotize the brain because *it* exhibits some disturbing irregularity in its functions?

"Sleep is not a special prerogative of the brain. Every organ sleeps, and general sleep is the aggregate of many sleeps. It is time to protest against this clumsy procedure. If we do so warmly, it is because we feel that the mistake is of common making. It is so much easier to write a

prescription, or make up a bottle of medicine or a box of pills with one of the rank poisons that mimic sleep, and, as they do so, deprave cerebral and nerve tissue, than it would be to search out the real and active cause of wakefulness. When will the progress of professional enlightenment reach that point at which all those cloaks for ignorance that depend for their significance on the negative *in*, are ostracized from our nomenclature? Dr. Clifford Allbutt has just pleaded forcibly and eloquently for the discarding of that wondrously silly word, 'indigestion.' Will no spirited scientist help to exorcise the haunting folly that clings to the term 'insomnia'? All terms with *in*, negative, imply ignorance on the part of those who frame and use them; and, what is worse, are content with the state of knowledge arrived at, or are too indolent to extend and improve it. Who shall sound the depths or measure the range of the stupendous unknown over which the audacity of a specialty and the apathy of a profession conspire to cast the veil of 'insanity'? There are more than a score and a half of *known* causes or forms of sleeplessness, each one requiring direct and specific treatment; and yet, as by common consent, the profession sanctions the abuse of such drugs as chloral and bromide as 'poisoned sleep' producers. No medical man is justified in undertaking the treatment of his own maladies. It is impossible that he should so far step out of himself as to be able to form a reasonable judgment of his case *objectively*; and no practitioner has the justification of science for the recourse to narcotics as remedies for sleeplessness, except when an exceptional pain is the accidental disturber of a sleep function, or a habit of wakefulness may be broken by an occasional dose of the stupefier."

—"Well, madam, how's your husband to-day?" "Doctor, he's no better." "Did you get the leeches?" "Yes, doctor; but he could only take three of them raw; I had to fry the rest."

PARENCHYMATOUS INFLAMMATION.

THIS outlandish term, which will remind some of our readers of the days when they ransacked the dictionaries for orthographic puzzles with which to confound their schoolmates at spelling matches, has a significance which is admirably elucidated by Dr. Fothergill, one of the most instructive of modern medical writers, in the following extract from "A Brief Treatise on Therapeutics":—

"Of great importance is it to remember the lessons taught by pathology in those chronic modifications of nutrition now called parenchymatous inflammation. 'Habitual use or overstimulation of a part, by producing determination of the blood to it, may readily drive it into inflammation,' writes Erichsen. The knowledge of this fact teaches us to lessen that demand upon the part which is driving it to inflammatory changes, and so avert the danger. This is often more efficient than medical treatment. 'The whole origin and course of the parenchymatous inflammation must be subjected to a bird's-eye view, and then each part of the whole seen in its true light. The large use of animal food, by supplying an excess of nitrogenized material, produces an excited state of the muscular system, indicated by a full, quick pulse, giving rise to danger when the heart is called upon to make sustained severe efforts, and thus throw strain upon the aortic valves; indeed, it is not a very rare thing to find an aortic cusp actually ruptured by severe effort. It also occurs in gouty conditions with an hypertrophied left ventricle and a tense, incompressible pulse, where the aortic valves are closed violently by the high blood pressure in the elastic arteries. The dust of fine-hewing irritates the lungs, as does flour in millers and bakers, fine dust in dry grinding, as in needle grinding, and in other occupations where mechanical irritants are inhaled. Alcohol worries the liver into cirrhosis. Too much nitrogenized material (flesh diet) excites a growth of connective tissue in the kidneys—'the gouty

kidney.' In all these cases our kowledge of the 'natural history of the disease' should guide us as to prevention, and the avoidance of the provoking cause of mischief.

"In those chronic modifications of nutrition in the joints found in the strumous, rest is all important. The thick epiphyses of struma are easily provoked by slight external causes to take on changes of nutrition and growth. Instead of a moderate production of healthy cells, imperfect cells are produced in abnormal quantities; there is an increase of quantity with a decrease of quality, until this may reach the production of pus, or suppuration. To rest the part is as important as to improve the nutrition; while 'diseased tissues need the baptism of healthy blood for regeneration,' they also equally need rest for repair. If a knee, it should be put at rest with a leather case well fitted on, so as to abolish movement. If the hip joint is the seat of disease, take off the weight of the body by an appropriate splint; or if the patient is in bed, keep the head of the femur and the cup of the pelvis apart if possible, as pressure will lead to ulceration. If the spine is weak, take off the weight of the head and shoulders from the spine, by an external skeleton resting on the iliac crests, and supporting the head and shoulders. Relieved from the superincumbent weight, repair is favored in the spinal column, which, when handicapped by that burden, must have got worse. What the surgical measures, Sayre's jacket, or what should be, it is scarcely my province to say."

TYPHOID FEVER AND MILK.

REPORTS have frequently appeared in English medical and sanitary journals respecting epidemics of typhoid fever, the cause of which is traced to a contaminated milk supply. That the danger from this source is not confined to England is shown by the following account of an epidemic which recently occurred in Alleghany City:—

"There are, in all, forty cases scattered through three different wards. The physicians were at first disposed to attribute the cause of the disease to foul emanations from dumping grounds in the vicinity, but it was finally suggested that every family in which typhoid fever had occurred was supplied by the same milkman. When this fact was made known to the physician of the Board of Health of the city, he at once inspected the premises of the milkman, and found the following state of affairs. The dwelling and stable were on the side of a hill, the well from which the water for his family as well as for his cows was obtained being about fifty feet from the privy vault, which was higher up the hill than the well. The privy vault was full. There was at the time of the investigation, and had been for several weeks, a case of typhoid fever in the house. Examination of the well-water showed that it was contaminated with organic matter of animal origin and many living organisms. There would seem to be little doubt, therefore, that the typhoid infection was spread by the milk."

SAWDUST SOAP IN DRINKING WATER.

A FEW years ago we made an investigation for the purpose of ascertaining the relation to health of sawdust and decomposing wood. We found unmistakable evidence of the malign influence of this source of germs and foul gases, and believe that in lumber districts where large quantities of sawdust frequently accumulate, its gradual decomposition is a cause of much sickness and even death. Prof. R. C. Kedzie, M. D., of the Agricultural college, has recently made an investigation of the relation of sawdust to drinking water, by request of a citizen of Grand Haven. The latter, with others, observed that the well-water of that city, when boiled, gave rise to a peculiar scum in large quantities. A portion of the substance was sent to Prof. Kedzie, who states the results as follows:—

"The sample of scum that rises on Grand Haven water is a light brown

powder, insoluble in water. It burns with a bright, smoky flame like resin, and gives a very marked odor of resin during combustion. The proportion of resinous and combustible matter is 88.64 per cent, leaving 11.36 per cent of ash, which consists almost entirely of lime and oxide of iron. *The material is an insoluble, resinous soap, with lime for its chief base.*

"The fact that the soil water of Grand Haven contains a natural resin soap, which becomes insoluble and separates on boiling the water, is very surprising. But the large quantity of pine sawdust and mill waste rotting in your city, seems a cause of this surprising appearance. It naturally sets one to thinking about the influence of such water on the public health. Are other sawdust cities drinking an infusion of sawdust soap in their well-water?

"It may be a sanitary practice to 'wash thee with nitre (soda), and take thee much soap,' but it is hardly the thing to take the soap in daily drink!"

Persons residing in lumbering districts will do well to investigate the matter, and see whether they are drinking *aquæ pura*, or a solution of sawdust soap.

An Unexpected Compliment.—We are most unexpectedly the recipient of a polite invitation from the manufacturer of "Warner's Safe Liver and Kidney Cure" to visit the astronomical observatory established by that gentleman as a very cute advertising scheme for giving publicity to his name and his patent nostrums. A free ticket is tendered us, and a delicate hint that an editorial notice would be agreeable. So here it is. If this unexpected favor had not placed us under obligations to the great nostrum vender, we should like to have said that we have investigated his cure, and are convinced that it is one of the most shameless frauds of the age, not even excepting "Wizard Oil" and "Compound Oxygen;" but under the circumstances, we forbear.

"Big at the Bottom."—A traveler in Siberia, some years since, spent considerable time among the Koraks, an untutored tribe of that polar land. He observes that written thought is to many of them an impossible conception. The seamen of whaling vessels sometimes give them copies of illustrated newspapers. Some of them they recognize as representations of things with which they are familiar; but the greater part are as incomprehensible to them as the hieroglyphics of the Aztecs. This traveler says:—

"I remember that once a Korak brought me an old tattered fashion-plate from *Frank Leslie's Illustrated Newspaper*, containing three or four full-length figures of imaginary ladies, in the widest expansion of crinoline which fashion at that time prescribed. The poor Korak said he had often wondered what those curious objects could be; and now, as I was an American, perhaps I could tell him. He evidently had not the most remote suspicion that they were intended to represent human beings. I told him that those curious objects, as he called them, were American women. He burst out into a 'tyee-ē-ē-ē' of amazement, and asked, with a wondering look, 'Are *all* the women in your country as big as that at the bottom?' It was a severe reflection upon the dress of our country women, and I did not venture to tell him that the bigness was artificial, but merely replied sadly that they were. He looked curiously down at my feet, and then at the picture, and then again at my feet, as if he were trying to trace some resemblance between the American man and the American woman; but he failed to do it, and wisely concluded that they must be of widely different species."

—"Sir," said a hypochondriacal patient, while describing his symptoms to his family physician, "I feel a terrible pain in my side when I put my hand up to my head." "Then, sir," exclaimed the mild physician, "why the deuce do you put your hand to your head?"

Lead in Bread.—The *Continental Gazette* gives an account of a mysterious illness which has been disturbing a small community in France. One member after another sank, while presenting the usual appearance of lead-poisoning, without any apparent cause. The doctors who were called in could not make much of the symptoms except that they seemed to proceed from some food which had been taken. By a process of inductive reasoning, and by exhausting the causes which were found out to have operated upon all the sufferers, suspicion at last fell upon the bread. An examination was accordingly held at the bakers' premises; but they having been found blameless, the inquisitors next proceeded to attack the miller, and here, at last, a diligent inquiry brought to light the cause of all the mischief. Finding that his millstones had cracked in some places, and that the purchase of new stones would be somewhat costly, the miller had adopted the plan of filling up the chinks with melted lead. The lead had, in the course of grinding, naturally been mixed with the flour, and had so found its way at last into the loaves distributed to the population. The tale is interesting as showing the pertinacity of particles of lead in clinging to any substance with which they may get mixed. It is still more noteworthy than the case of lead-poisoning which occurred in Paris not long ago, when it was found that a baker had warmed his oven with old wooden boards that had been painted with white lead, and the residue of the lead lying in the oven had penetrated into the crusts of the loaves.

Kidney Pads in Court.—A druggist recently bought a quantity of "kidney pads" of the Star Kidney Pad Company, but finding them unsalable, returned them to the company, who refused to accept them, and sued the purchaser for the amount charged for the pads. The druggist, in defense, claims that the pads were valueless and worthless, and brought as witnesses persons who had tested them and found them of no service. It was also shown by the examination that the contents of the pad were such as could not be absorbed by the body. Yet there are thousands of people wearing these worthless bags of miscellaneous rubbish, and imagining that they are benefited thereby.

A New Remedy for Rheumatism.—The constant advent of new panaceas for rheumatism and other painful maladies, all of which are warranted as "sure cures," and backed up by any number of "testimonials," has attracted the attention of the "funny man" of a Western journal, who publishes a newly discovered remedy which is undoubtedly as meritorious as the average nostrum, and may not be more expensive, as a man might as well have a broken leg or a dislocated shoulder as a demoralized stomach, or a used-up liver.

"The number of people who will tell you of a sure cure for rheumatism is only limited by the population. All have remedies, and all are sure cures, only they don't cure. However, Mr. Lord, the Sun's business manager, has a cure that is best of all. He had been suffering for some time with rheumatism, which seemed to hang on remarkably. After being laid up for several days, he concluded to go down town, though he was badly stiffened. He ordered a covered sleigh, and while going down Grand avenue, the team started to run away. The rheumatic patient saw that it was no place for a sick man, so he got up and jumped out, rolling over in the mud a dozen times. He supposed he was killed, and watched the team tear down street, and hoped the team would be killed also. Finally he thought he would get up out of the mud, and did so, the pain being all gone, and he could walk splendid. He is now ready to engage in a foot-race, or walking-match, and can confidentially recommend the runaway as a positive cure, if taken in time. How often such discoveries, that result in good to the human race, are made by the merest accident."

Cess-Pool Gas.—People sometimes smile incredulously at the earnest talk of sanitarians about the poisonous gases and deadly germs which emanate from sewers and cess-pools, and think that a great fuss is made about "a little bad smell;" but the following paragraph shows clearly enough that cess-pool gas is at least not the most salutary sort of an atmosphere to breathe:—

"The cleaning out of a cess-pool cost the lives of three men in Newark last week. A foul stench had been coming from the cess-pool for some time, which decided the owners to clean it out. A man named Patrick Thompson descended a ladder, was overcome by the gases, and fell into the pool. A second person, rushing down to save Thompson, met the same fate, and then a third lost his life in an attempt to save the other two."

Thousands of houses are constantly contaminated through connection with cess-pools; and though sudden death seldom results, as in the above case, there can be no doubt that thousands of cases of illness, and hundreds of deaths annually result from this cause.

A Non-Salt-Eating Nation.—A correspondent of the Philadelphia *Times* describes a native feast on the island of Upolu, one of the Samoan group, mentioning as one of the peculiar features of the cookery that no salt was used, little or none being used by the natives. The remarkable physical development possessed by this people, as well as their great longevity and seemingly perfect health at the time the island was visited by Captain Cook, is sufficient evidence that too much importance is attached to the use of this condiment by most people. Its free use is certainly productive of disease.

—Emerson says, "The first wealth is health," and Gail Hamilton declares that "a young woman of twenty should be as much ashamed of being dyspeptic as of being drunk."

Bad Baking Powders.—Some baking powders contain more unwholesome ingredients than others, but all are bad, and should be wholly discarded by all who consider good digestion and good health of any value. We heartily endorse the following remarks on this subject by a writer in a recent number of the *Journal of the American Medical Association*:—

"To make the matter clear, it may be stated that the average baking powder is composed of bicarbonate of soda, cream tartar, and starch, with a possible admixture of other things. The continued use of even this purest baking powder will effect the system seriously, commencing with only a slight derangement of the digestive organs, which gradually becomes chronic, changing the secretions of the stomach necessary for digestion (muriatic acid): in fact, altering the whole chemistry of the human stomach.

"The continued use of alkalies in any form injures the health. Look at the alkali country west of us, where the alkali is found in the *drinking water*. The same dangers will arise from the persistent alkaline medication of our *daily bread*. The various forms of dyspepsia, bladder troubles, Brights disease, consumption,—the newest researches speak about a wrong proportion of the alkalies in this disease,—are only too often caused by this modern substitute for the old, time-honored, common sense practice of using yeast."

Potted Meats.—Recent investigations show that the meat used by parties engaged in potting meats of various kinds is often tainted or even putrescent when put up. This accounts for the frequent cases of illness reported as occurring from the use of potted meats. This class of articles ought to be avoided as wholly unfit for food.

—A whole family is sick with trichinosis at a mining town in Pa. The mother is dead, and the remaining members of the family are not expected to live.

DOMESTIC MEDICINE.

NASAL CATARRH.

Treatment.—We have now come to the most important and practical part of this subject. The treatment of nasal catarrh has afforded a rich field for quacks, and has been a source of almost infinite annoyance to physicians. It is only in recent years, and since the subject has been taken up by scientific specialists, that the disease has been managed in anything like a successful manner. We have no universal panacea. The disease is one which possesses individual peculiarities to a very large extent, and can be successfully treated only by a careful adaptation of remedies to individual cases. In the first place, we must condemn utterly the use of any of the popular catarrh specifics, inhalants, etc. These remedies are usually such as have proven successful in a few instances, and will benefit a certain proportion of cases, but are quite as likely to do harm to a larger number. The various popular nostrums advertised for the cure of catarrh are composed of substances which have been well known to the medical profession for years, and possess no such mysterious specific virtues as are attributed to them.

We shall notice the treatment of the various forms of catarrh in the same order in which they have been described, beginning with the simplest form, an acute catarrh, or "cold in the head."

How to Treat a "Cold in the Head."—To be successful, the treatment must be begun almost as soon as the cold is contracted. When an acute catarrh has already existed for two or three days, it is of no use to attempt abortive treatment, for the disease must run its course, although proper treatment will abridge the natural course of the disease, which is from three to six weeks.

If by exposure to cold air or a draught while the body is in a state of perspiration, by wetting the feet, or by similar means, the circulation has been disturbed, producing sneezing, snuffles, a stuffed feeling in the head, "watering" of the eyes, and a watery discharge from the nose (the usual symptoms of coryza). The patient must at once resort to some means to restore the circulation, and produce a proper activity of the skin, so as to withdraw the excess of blood from the mucous membrane of the nasal passages. An alcohol sweat, a vapor bath, a wet-sheet pack, a Turkish or Russian bath, or even a hot full bath, or any means by which vigorous activity of the skin may be induced, will be effective.

After taking treatment of this sort, however, it should be recollected that considerable danger is incurred, since the disturbed condition of the system, which involves the nervous system as well as the circulatory apparatus, renders the person much more liable to make large accessions to the cold already contracted, than the liability to take a cold in the first place. The following plan is one well suited to home treatment:—

Within an hour or two of the time the first symptoms of the cold appear, let the patient drink copiously of some hot drink, which may be simply hot water, or weak hot lemonade, or diluted infusions of catnip, peppermint, or almost any one of the numerous domestic remedies used for this purpose. From two to three pints of hot water should be taken in the course of an hour. During the water drinking, some one of the various forms of hot bath mentioned should be taken, so as to produce vigorous perspiration, which will be aided by the hot-water drinking. After the bath, the patient should immediately go to bed, covering up warm with woolen blankets, so as to continue the activity of the skin in a moderate degree for several hours. If the bath is taken at night, the patient should receive the next morning a salt-rub, which consists in rubbing the whole surface of the body with common salt, mixed with water to the consistency of mush.

After the rub, the body should be sponged with tepid water so as to remove the salt, and then rubbed dry. The delightful softness of the skin which is produced by this means will be sufficient inducement to repeat the bath at sufficiently frequent intervals to overcome the susceptibility to chilling. The body should now be rubbed with olive or cocoanut oil. Vaseline may be used in the absence of anything better. When a full sweating bath cannot be taken, a thorough sweat can sometimes be produced by a hot foot-bath, and hot-water drink-

ing, followed by a few hours in bed, wrapped in warm blankets.

The unpleasant sensations in the nose and head can be best relieved by sponging or bathing the face with hot water, applying hot fomentations to the forehead or back of the head when there is pain in these parts, and snuffing up the nostrils a solution of common salt in water, a teaspoonful to the pint. The temperature of the water should be at least 105° or 110°, or as hot as can be borne without discomfort. When the throat is sore, hot fomentations or hot sponging should be applied to the throat, to be followed by a cold throat pack to be worn all night.

When the cold has continued two or three days, so that there is a thick, yellow discharge from the nose, and dropping at the back of the throat, the treatment must be such as will be recommended for simple chronic catarrh, which will be described in the next number.

TREATMENT OF HEMORRHAGES FROM THE LUNGS.

REST in bed, with the head and shoulders elevated. Mental and physical quiet. Restrain cough as much as possible, as it greatly aggravates the hemorrhage. Give patient iced water to drink and small bits of ice to swallow. Apply ice compresses over chest, and every fifteen minutes make hot application between the shoulders by means of hot bricks, fomentations, or hot bags. Take care to keep the trunk and limbs dry, and apply heat to the extremities. Frozen compresses may be applied thus: Mix, in an ordinary large milk-pan, equal parts of pounded ice and salt at least two inches deep. Mix quickly and cover. Place the pan upon a compress of cotton or linen of four or five thicknesses wrung out of iced water as dry as possible. In a few seconds the compress will be frozen. Apply at once, and cover with a dry flannel. A good means of applying continuous cold is by means of the syphon syringe, as shown in the figure. The upper vessel is filled with water containing two or three pounds of salt to the gallon, and a quantity of ice. The current of the ice-cold mixture is started by means of the tabs on the sides of the bag, the stop-cock on the lower tube being closed. When the bag is full enough, the stop-cock is opened sufficiently to allow the fluid in the bag to pass out at the same rate that it runs in. When the water has nearly run out of the upper vessel, that which has run into the lower vessel should be put into the upper one, and a new supply of ice, or ice and salt, added. By this means an intense degree of cold may be kept up for hours without wetting the patient or giving him any inconvenience whatever. Good results are also obtained by employing cold enemas. The temperature should be as low as the patient will bear. It is customary to add a little vinegar to the rectal injections, though we think the addition is unnecessary. Common salt is a remedy popularly reputed to be of value in these cases. The usual dose is a teaspoonful of finely-powdered salt taken dry. The most useful internal remedy, however, is the inhalation of a solution of alum and tannin. The proportion should be 5 to 10 grains to the ounce of water, and the solution should be inhaled by the use of an atomizer.

Inhalation of the Vapor of Turpentine.—The vapor of turpentine may be inhaled by means of an inhaling bottle, which can be easily made by the aid of a large-mouthed bottle and a couple of glass tubes, or obtained from any druggist; or the turpentine may be placed in a tea-cup, set in a basin of warm water, and the whole covered with a cone of stiff paper made with an opening at the top, which should be placed to the nose and mouth, so that the vapor given out by the turpentine may be inhaled.

Hydropathic Treatment of Cholera.—The following is a description of the method of preventing and treating cholera recommended and said to have been very successfully employed by Priessnitz, of Graefenberg, the founder of hydropathy:—

"As a preventive against cholera, it is good to wear a cold, wet bandage, and to cover it with a dry bandage, that it may the better become warm, and to renew it as often as it becomes dry. Let the individual, morning and evening, wash himself all over with cold water, that the skin may retain its activity. In the morning, fasting; and at every meal, one or two glasses of water should be drunk, whereby relaxation of the stomach and bowels will be prevented. Let not food and drink be avoided.

"One or two rubbings down with a great, dripping-wet linen cloth; then, if there exist great pain in the abdomen, a clyster of entirely cold water, a sitz-bath of 45° to 50° Fahr., together with very much drinking, in order that the patient may vomit; and he must remain in the sitz-bath, and have the spine and abdomen rubbed therein until the vomiting and diarrhea are quieted. If there be much cramp present, several rubbings down, five minutes wet and five

minutes dry, must follow. If the patient is unable to stand, he is laid upon a mattress, and rubbed. Then a wet bandage is bound round the body, and the patient lays himself in bed. On awaking, the patient takes a tepid bath of from 54° to 59° for some minutes, during which the body is rubbed."

Health for the Hair.—To keep the hair soft and lustrous, the scalp should be well brushed daily with a moderately stiff brush. This will also promote its growth. Of the various remedies recommended to stimulate the growth of the hair, tincture of cantharides is the base in nearly all cases. We do not recommend it, but those who *will have* something of the kind may use the following with advantage, in place of the numerous uncertain and in some instances dangerous remedies advertised in the newspapers:—

℞. Tinc. Cantharides, . . ½ oz.
Glycerine, ... ½ oz.
Aquæ Rosacea, ... 2 oz.
Apply twice a day. M.

Remedy for Warts.—Those who have not faith sufficient to utilize any of the numerous magical methods of curing these annoying blemishes, may try the following:—

℞. Iodine (crystals), . . ½ dr.
Acid Carbolic (crystals), . 2 dr.
Alcohol, ... 24 drops.
M.

Scrape the wart as much as possible without causing it to bleed, then apply the remedy carefully by means of a pointed stick. Scrape again, and so repeat as long as possible. Nearly the entire excrescence may be gotten rid of at a single sitting in most cases.

To Cure Acne, or Face Pimples.—If the pimples are inflamed and red, bathe the face with hot water two or three times a day. The water should be hot as can be borne. If the gland ducts are obstructed, causing what is erroneously termed "skin worms," squeeze out the contents by pressure with a watch-key or similar instrument, and apply a lotion containing two or three grains of sulphate of zinc to the ounce of water.

—The Indians of the pampas of the La Plata in South America have a curious remedy for constipation, to which they are much subject on account of their almost exclusive meat diet. The remedy consists in standing half an hour up to the waist in the cold water of a bayou.

The Gum Lancet.—Undoubtedly, the gum lancet is the most abused of all surgical instruments. Some insist that its use is never demanded. Certain it is that there is a great amount of cutting in children's mouths for which there is no necessity. Frequently, lancing of the gums results in the hardening of the tissue of the gum, which makes it much more difficult for the tooth to cut through. The use of the lancet is seldom or never required.

Lemon Juice in Profuse Menstruation.—Sucking the juice of one or two lemons is a simple measure which often proves effective in checking a profuse menstrual flow. This remedy, coupled with the employment of the hot douche, will afford relief in ordinary cases of this sort.

To Relieve Cramp.—Grasp the affected portion, as the calf of the leg, and press it firmly. Persons subject to this unpleasant affection should carry with them a strap which may be buckled tightly about the cramping muscle.

Question Box.

All questions which are sent for answer in this department must be accompanied by the name and post-office address of the person sending the question. Otherwise they will receive no attention. It is necessary to insist upon the observance of this rule, as questions are sometimes received which should be answered, but cannot properly be noticed in these columns.

Test of Death—Should Tobacco-Users Marry?—An old subscriber inquires as follows: 1. Are not people sometimes buried alive? How may we be certain that death has certainly done its work? 2. Ought not persons who use tobacco to live a single life? Are such persons capable, as a general thing, of begetting children their equals mentally and physically? 3. On looking around us, do we not see evidence everywhere of special degeneracy in families where one or more of the parents use tobacco?

Ans. 1. Yes. This unhappy accident undoubtedly sometimes occurs, though fortunately, we think with far less frequency than is generally supposed. In one city of Europe which we visited last summer, the bodies of those who die are kept under observation, in places arranged for the purpose, until decomposition begins. This custom has prevailed for a hundred years or more, and yet only one or two instances have occurred in which people have shown signs of life after death was supposed to have taken place. Death may be recognized with almost absolute certainty by the application of a blister. The raising of a

blister is a vital process, and will not occur after a person is dead.

2 If all women would take our advice, no male devotee of tobacco would get a chance to marry. Certainly, a tobacco-user is not fit to be either a husband or a father.

3. It is perhaps not possible to say that in every family in which the father uses tobacco there are marks of special degeneracy; but it is safe to say that there are, on the whole, evidences of degeneracy in the families of tobacco-users which are unmistakable. A tobacco-using father may beget sons who are his equals, at least in one thing, the love of tobacco.

Saline and Oil Baths, etc.—A reader makes several inquiries as follows: 1. How is it that a salt-and-water bath will stimulate the nutrition, and how does it act on the digestive organs? 2. Is the above bath best taken hot or cold, and how much salt should be used? 3. What virtue is there in an oil bath? Does not the oil clog up the pores of the skin, and thereby throw extra work on the lungs, which would be injurious for a person with weak lungs? 4. Is not bathing taken with no other end in view than to clean and open the pores of the skin, and thereby give less work to the lungs? 5. I bathe every morning with cold water and a little ammonia in it. Do you approve of this, or would you advise an occasional salt-and-water or oil bath?

Ans. 1. We are not at all certain that a saline bath affects the general system in any other way than a water bath of the same temperature, except that the slight stimulating influence of the salt has a tendency to produce a strong reaction on the skin, bringing the blood to the surface more thoroughly, and thus decreasing the liability to take cold. It has no influence upon the digestion, except as other baths have. The salt is not absorbed into the system.

2. When taken for general tonic purposes, the temperature of the bath should be about 75° or 80°. Persons who have strong power of reaction may employ a temperature a few degrees lower. A teaspoonful of salt to the pint of water is about the right proportion.

3. The oil bath is useful in two ways: (1.) It facilitates the rubbing of the surface; and (2.) it restores to the skin the oily covering to which it is accustomed. When a person takes a thorough bath, the oily, non-conducting material which covers the surface and prevents rapid radiation of heat, is removed, which accounts for the liability to take cold easily after a bath. The application of oil prevents this, and is not in any way productive of harm.

4. By no means. The bath has many purposes, only one of which is cleanliness. The influence of the bath upon the circulation and the nervous system are its chief uses, when employed for remedial purposes.

5. Ammonia is an alkali, and may be usefully added to water used for bathing purposes in lieu of soap; but it is not required daily, and is not useful for the same purpose as the saline bath.

School Hygiene.—A lady physician inquires as follows: "Our schools here are crowded and most illy-ventilated, with the cramming process of studies in full operation, and no recess after reaching the grammar schools. There is complaint of headache, and a growing tendency to put on glasses for aid in the school work, as most of the work is done from blackboards. Now please tell me what, in your opinion, is best for children. Ought they to have a recess, for their best physical and mental development? and if so, how long?

Ans. There is abundant evidence that our present school system is productive of a vast amount of injury to the rising generation. The common methods of instruction are such as to stimulate the brain and nervous system to the highest degree, while dwarfing the physical development, and producing general diseases of nutrition, such as anæmia, scrofula, tuberculosis, and various constitutional disorders. The effect upon the eyes of protracted study hours in poorly-lighted and illy-ventilated rooms is in the highest degree disastrous. In some of our large schools, it has been shown that the number of students who require glasses, increases with each year of school life. No student should be confined in an ordinary school more than an hour and a half or two hours at a time, and small children should be allowed recess not less frequently than once an hour. Five minutes' space for breathing fresh air and exercising the muscles, may be employed with advantage after each recitation hour. The regular recesses should be not less than fifteen minutes in length.

Bleeding Lungs.—A. B. suffers with frequent hemorrhages from the lungs, as the result of exposure to cold and other slight causes, sometimes without reasonable cause, and wishes to know how to overcome the difficulty.

Ans. You ought to have a careful investigation of your case made by a competent physician, for the purpose of determining the source of the hemorrhage. The seat of the trouble may be the throat, the larynx, the trachea, the bronchial tubes, or the deeper portions of the lungs. It is probable that the hemorrhage comes from the upper air passages, and is due to a chronic irritation there, which maintains a congested and irritable state, so that only a slight irritation is required to occasion a rupture of the small blood-vessels, resulting in the hemorrhage. We would recommend, as most likely to give relief, an inhalation of astringent liquids with a steam atomizer. Tannic acid, sulphate of iron, ferric alum, or sulphate of zinc may be employed. One drachm of the solution should be used to the pint of water. The inhalation should be taken two or three times a day, one-half ounce each time. The wearing of a wet compress over the chest is also frequently effective in affording relief.

THE COOKING SCHOOL.

Conducted by MRS. E. E. KELLOGG.

A DINNER OF EIGHT COURSES.

VEGETABLES.

FOOD, in order to perfectly supply the needs of the vital economy, must contain a certain amount of fluid matter, as well as nutritive elements; and while the vegetables are generally lacking in a high percentage of nutritive material, they are dietetically of great value, because they furnish a large amount of organic fluids. They are also of much use to the system in supplying bulk to our food, which is a matter of no little importance. However, an exclusive diet of vegetables would give too great a bulk of food, and at the same time fail to supply the proper amount of nutrition; hence, the only wise arrangement is to use them in combination with such other articles of diet—grains, whole-wheat bread, etc.—as shall supplement the qualities lacking in the vegetables.

Vegetables admit of the use of a variety of methods in their preparation for the table, and are usually considered as requiring the least culinary skill of any article of diet. This we believe to be a great mistake. Though the processes generally employed for rendering vegetables palatable are very simple, yet a great many cooks convert some of the most nutritious of them into dishes almost worthless as food, and next to impossible of digestion, either from a lack of knowledge respecting the nature and composition of the vegetable, or because of ignorance as to their dietetic value, and the constituents of true food.

A general rule, applicable to all vegetables to be prepared by boiling or stewing, is to cook them in just as little water as possible, so that there will be left little or none to drain off, when the food is sufficiently tender. The nutrient juices of the vegetable are lost in the water in which it is cooked; and if the quantity of water used is considerable, the amount of nutriment thus wasted often amounts to almost the entire nutritive value of the vegetable, so that many cooks throw away in the water the real richness of the food, while they serve the "husks" only on the family table. Condiments and seasonings may perhaps cover up the insipid taste, but they cannot supply the lost nutriment. In boiling vegetables, the process of cooking should be continuous, and gentle heat is best. Remember that when water is boiling, it cannot be rendered any hotter, no matter how much the fire may be urged. Keep the cooking utensil closely covered during the boiling. If any water need be added during the cooking, let it always be *boiling* hot. Let the vegetables cook till just done, no longer, and do not scorch in finishing. A scorched vegetable has forever lost its sweetness and savor.

Unless the greatest care is observed to cook vegetables in such a quantity of water as shall preserve most of their juices intact, steaming or baking is preferable for most of them; because their fine flavors are more easily retained, and because their food value suffers less diminution.

In preparing potatoes and similar tubers, it should be known that the most nutritious part of the vegetable lies next the outer covering, and consequently much care should be taken to pare very thinly, that as little as possible of this best portion be wasted.

All vegetables are best cooked in soft or filtered water, and they should be put in at the first boil of the water. Water that has boiled long has lost much of its goodness.

The length of time required for cooking will depend much upon the age and freshness of the vegetable.

Creamed Potatoes.—Take small, new potatoes, wash well; taking each one in a coarse cloth, rub off all the skin; cut in halves only, unless quite large, when they should be quartered. Put a pint of divided potatoes into a broad-bottomed, shallow saucepan, pour over them a cup of thin sweet cream, add salt if desired. Heat just to the boiling point, then only allow them to simmer gently till perfectly tender, tossing them occasionally in the stewpan to prevent their burning on the bottom. Serve hot.

Scalloped Potatoes.—Pare the potatoes, and slice thin; put them into an earthen pudding dish, dredge very lightly with flour, add salt, and pour over just enough good rich milk to cover them. Fit a cover over the dish, and bake in the oven till the potatoes are tender, removing the cover just long enough before the potatoes are done to brown them nicely over the top. If preferred, a little less milk may be used, and a cup of thin cream added when the potatoes are nearly done.

Mashed Potatoes.—Peel and slice two quarts of potatoes, and drop into boiling water. When tender, drain, add salt to taste, turn into an earthen dish, and set in the oven for a few moments to dry. Break up the potatoes with a silver fork, add nearly a cup of cream, and beat hard five minutes or more with the fork, till light and creamy. Serve at once, or they will become heavy.

Asparagus with Cream Sauce.—Put the asparagus into cold water for an hour before boiling. Then tie in small bunches with a soft

tape, and throw into boiling water. Boil till perfectly tender, which will take about thirty minutes if the stalks are of ordinary size. Drain thoroughly, untie the bunches, place the stalks all the same way upon a hot plate, and send to the table at once, to be served with a dressing prepared as follows: Let a pint of thin sweet cream (that about six hours old is preferable), come just to the boiling point, and stir into it salt to taste, and a level tablespoonful of flour braided with a little of the cream. Boil till the flour is perfectly cooked, and then strain through a fine wire strainer.

Asparagus on Toast.—Prepare the asparagus as for the preceding, and when tender, drain and place on slices of nicely browned toast moistened in the asparagus liquor, and turn over all a cream sauce prepared as above.

Asparagus with Egg Sauce.—Prepare and tie the asparagus into bunches, and drop it in at the first boil of the water, which may be slightly salted. When tender, drain thoroughly, and serve on a hot dish, or on slices of nicely browned toast, with a sauce prepared in the following manner: Heat a half-cup of cream to boiling, add salt, and turn into it very gradually, stirring constantly at the same time, the well-beaten yolk of an egg. Let the whole just thicken, and remove from the fire at once.

Stewed Cabbage.—Chop nice cabbage quite fine, and put it into boiling water. Let it boil twenty minutes. Turn into a colander, and drain thoroughly. Return to the kettle, cover with milk, and let it boil till perfectly tender. Add salt if desired, and season to taste with cream.

Cabbage Salad.—Take one pint of finely chopped cabbage, turn over it a dressing made of three tablespoonfuls of lemon juice, two tablespoonfuls of sugar, and a half-cup of whipped cream, thoroughly beaten together.

Cabbage Hash.—Chop fine equal parts of cold boiled potatoes and boiled cabbage, salt to taste. To each quart of the mixture add one-half or three-fourths of a cup of cream. Mix well, and boil all together for a few minutes till well heated.

Scalloped Vegetable Oysters.—Boil two quarts of sliced oysters, well washed and scraped, in two quarts of water until very tender. If desired to give an especial oyster flavor, boil a piece of salt codfish about two inches square with the oysters, and remove it when they are done. Skim out the oysters when tender, and put a layer of them in the bottom of a pudding dish, and cover with a layer of bread crumbs; then add another layer of oysters. Fill the dish with alternate layers of oysters and bread crumbs, having a layer of crumbs for the top. To the water in which the oysters were boiled add a pint and a half of thin cream, salt to taste, boil up, and thicken with a heaping tablespoonful or two of flour rubbed smooth in a little cream. Turn this over the oysters and crumbs, and bake a half-hour. If there is not enough juice thus prepared to cover all well, add more cream or milk. Stewed tomatoes is a very nice accompaniment for scalloped vegetable oysters.

Stewed Corn and Tomatoes.—Boil dried or fresh corn until perfectly tender, add to each cup of corn two cups of stewed, strained tomatoes, either canned or freshly cooked. Salt to taste, boil together for five or ten minutes, and serve either plain or with a little cream added.

Parsnips with Egg Sauce.—Scrape, wash, and slice thinly, enough parsnips for three pints. Either steam or boil them until very tender. If boiled, when tender, turn into a colander and and drain well. Have ready an egg sauce prepared in the following manner: Heat a pint of very rich milk or thin cream to boiling, and stir into it a level tablespoonful of flour, rubbed smooth with a little milk. Let this boil a few minutes, stirring constantly until the flour is well cooked and the sauce thickened; then add the well-beaten yolk of one egg, turning the egg in slowly, and stirring rapidly so that it shall be well mingled with the whole; add salt to taste; let it boil up once only, turn over the parsnips, and serve at once. The sauce should be of the consistency of thick cream.

Carrots with Egg Sauce.—Wash and scrape the carrots well. Slice and throw into salted boiling water. When tender, drain thoroughly, and pour over them a sauce prepared the same as for parsnips, with the addition of a tablespoonful of sugar. Let them boil up once, and serve.

Baked Parsnips.—Wash thoroughly, but do not scrape the roots. Bake the same as potatoes. When tender, remove the skins, slice, and serve with egg sauce or cream. They are also very nice mashed and seasoned with cream. Baked and steamed parsnips are far sweeter than when boiled.

Parsnips with Cream Sauce.—Bake the parsnips as in the foregoing recipe. When tender, slice and turn over them a cream sauce, made according to the recipe given for asparagus with cream sauce. Let all boil up together once, and serve.

Mashed Parsnips.—Scrape the parsnips, and put at once into cold water to prevent discoloration. Slice them into quite thin pieces, and steam in a steamer over a kettle of boiling water until very tender. When done, mash very thoroughly, add salt to taste, and a few spoonfuls of thick, sweet cream, and serve.

Beets.—Wash, clean, and boil until tender. When tender, skin and slice them, and serve hot with lemon juice poured over them.

Baked Beets.—Beets are far better baked than boiled, though they require a long time to bake properly. French cooks bake them slowly six hours in a covered dish the bottom of which is covered with well moistened rye straw. They

are very nice served with a sauce made with equal quantities of lemon juice, whipped cream, and a little salt.

Beet Salad.—Cold boiled or baked beets chopped fine make a nice salad when served with a dressing of lemon juice and whipped cream.

Errata.—In the recipe given in the last number for canning apples, the sentence, "Care must be taken to cook those of the same degree of hardness together, and for that reason it is better to soak the apples before preparing them," should read *sort* instead of *soak*.

Literary Notices.

THE NORTH AMERICAN REVIEW for June opens with an article on "Harboring Conspiracy," by Prof. Henry Wade Rogers, who examines, in the light of international law, the diplomatic history of the United States and the national Constitution, the question as to how far our Government may and must go in suppressing plots against governments with which we are at peace. Henry D. Loyd, in the same number of the Review, shows how every branch of production is coming under the control of "Lords of Industry," corporations, and monopolies. Elizabeth Stuart Phelps has an article marked by rare philosophic force upon the "Struggle for Immortality." Other articles of not less importance are: "Sociological Fallacies," by Prof. W. G. Sumner; "The Rise and Fall of Authority," by President J. C. Welling; "Walt Whitman," by Walker Kennedy; and a symposium on "Expert Testimony," by Rossiter Johnson, Dr. W. W. Godding, T. O'Conor Sloane, and Dr. Charles L. Dana.

We are in receipt of a little pamphlet entitled, HOW TO GROW FINE CELERY. A new method, by Mrs. H. M. Crider. The writer has deduced her theory from a study of the natural habits of the plant during several years of experience in celery raising, and the suggestions she offers to the public in this little pamphlet are excellent and worthy of thorough trial. Price 25 cents. Published by H. M. Crider, York, Pa.

THE MINNEHAHAN is a monthly of much merit, published at Minneapolis, Minn., by W. R. Dobbyn, and now in its second volume. Besides a goodly number of most readable articles on general topics, it contains each month a department of health and hygiene, full of excellent and valuable things. Subscription price $2.00 a year.

THE CULTIVATOR AND COUNTRY GENTLEMAN is one of the oldest agricultural papers in the country, as well as one of the best. All departments of agriculture are represented in its pages. Entomology, bee-keeping, poultry-raising, dairying, horticulture, and stock-raising all receive a share of attention. Neither are the farmers' wives forgotten; for a fireside department contains many valuable hints and interesting papers especially for their reading. Issued weekly at $2.50 per year. Published at Albany, N. Y.

The June POPULAR SCIENCE MONTHLY is a number of special excellence. The series of articles from that first of sociologists, Herbert Spencer, is continued by a paper on the "Sins of Legislators." "Evolution and Dissolusion of the Nervous System," by Dr. J. Hughiings Jackson, and "Physiology versus Metaphysics," by Walter H. Walshe, M. D., are both excellent articles. Professor Williams continues his instructive papers on the "Chemistry of Cooking," and devotes the present one to the culinary transformations of starch, and the value of farinaceous aliments. Many other instructive articles on timely topics make the present issue one of much value to the reading public. Subscription price $5.00 per annum. D. Appleton and Co. publishers, 1, 3, and 5 Bond St., New York.

A PHYSICIAN'S SERMON TO YOUNG MEN. By Dr. William Pratt, N. Y. M. L. Holbrook, Publisher. Price 25 cts.

This little pamphlet of 48 pages treats in a most delicate and truthful manner of the physical habits and sins which beset the pathway of so many of the youth of to-day, and gives most valuable advice and information which should commend it to the attention of all parents and teachers who have charge of the young.

THE LAW AND ORDER ADVOCATE.—We have received the first number of a new journal bearing the above title, and, as the prospectus states, devoted to law, order, theology, temperance, general literature, science, farming, and news of the day. Its field of usefulness is certainly comprehensive enough so that every one can find something of special interest in its pages. The number before us contains many good things. Published at Belleville, Ont. Price $1.00 per year.

THE SANITARIAN.—A. N. Bell, M. D., editor; 113 Fulton St., New York.

This excellent journal, which is always filled with good things on health and sanitary topics; has been recently enlarged, and converted into a monthly, so that while it makes its appearance less frequently than formerly, it does not present a less quantity of valuable information. Subscription price $4.00 per year.

THE HOUSEKEEPER'S NEW COOK BOOK: Mast, Crowell, and Kirkpatrick publishers, Springfield, O.

This is a compilation of nearly one thousand recipes for cooking, together with many practical suggestions in regard to methods and the utensils to be used, by Mrs. T. J. Kirkpatrick, assisted by the well-known writer, "Christie Irving." The suggestions are valuable, and the recipes practical, in that they come within the range of the average housekeeper.

Publisher's Page.

☞ We observe that one of our exchanges occasionally relieves the dreary waste of its original department by an article from our editorial columns. We, of course, feel highly complimented, but should feel that we had not done our duty by an erring brother if we failed at least to suggest that an occasional credit would be in better "form."

☞ On May 8, the International Health Exhibition was opened at South Kensington, London, in the buildings occupied last year by the mammoth Fisheries Exhibition. There was a large attendance, both of the common people and of government officials, among whom were Mr. Gladstone and the Home Secretary, besides many distinguished dukes and lords. The exhibit is undoubtedly the largest of its kind ever held, and will be a powerful means of educating the people in matters relating to health.

☞ The Normal of Hygiene and Heredity, held at Washington, D. C., May 5 to 7 inclusive, was a decided success. We have not space for an extended notice of the normal, but will quote the following from the Baltimore *American:*—

A normal institute of hygiene and heredity, under the auspices of the Woman's Christian Temperance Union of the District of Columbia, was held in Washington, May 5 to 7 inclusive. Delegates from other States were invited to attend. An address on "The Human Mechanism," by Prof. Elliot Coues, of Columbian University, was a feature of the opening session. This was followed by an interesting paper on "The Relation of Hygiene to Temperance," by Mrs. Dr. Kellogg, of Michigan, whose life is one of devotion to the uplifting of humanity. The second session was given to "The Hygiene of Respiration and Ventilation," by Dr. J. H. Kellogg, of Michigan. This, an illustrative lesson, was most ably presented. The injurious effects of a deficiency of pure air, from a scientific standpoint, were dwelt upon, and proper methods of ventilation explained and demonstrated. Dr. Corr, of Illinois, spoke of the evils of the present fashions in woman's dress, corsets, heavy skirts, etc. Agnes Kemp, M. D., of Harrisburg, Pa., read a most interesting paper, "What is Life?" replete with valuable truths most forcibly presented. At the young ladies' meeting a bright, sparkling, informal address, by "A girl who wants to speak to girls" (a young lady of Philadelphia), was enjoyed by all who had the privilege of hearing it, and cannot fail to be productive of much good. This girl is one of four young ladies who originated a club for the purpose of studying physiology, hygiene, and kindred subjects. The club now numbers about thirty-four members, all of whom, with one exception, have become convinced of the evils of one of the abominations of woman's dress—the corset—and, in the language of the speaker, have "given it up." Would that all of our girls would follow their example! Dr. Stevenson, a well-known lady physician of Chicago, also addressed the institute. The "Question Box," with its replies so full of information to those desiring a knowledge of better things in physical life, formed a most interesting feature of two of the sessions. "The Wonderful Problem of Digestion" was treated in a most interesting manner. A lecture by Dr. Kellogg on the "Nervous System" was in the order of exercises for the last session of the institute. Mrs. Hannah Whithall Smith, of Philadelphia, gave two of her interesting and helpful Bible-readings in connection with the meetings of the institute. This institute is the second of the kind held by the Woman's Christian Temperance Union, the first having met in Battle Creek, Mich., in January of the present year. That much good will ultimately result from such meetings there is not the least doubt. That there is great need of the information imparted there, is evident on every side, and that such topics are not accorded the first importance in the curriculum of the schools is one of the marvels of this wonderful age.

☞ Gideon Hunt, Plainfield, Ind., wishes to secure the services of a hygienic cook for a small family. Qualifications required are, good moral character, and willingness to assist in elevating the art of cookery to meet the wants of true Christianity.

☞ Mr. F. P. Doremus, 499 Carlton Ave., Brooklyn, N. Y., is interested in the formation of a Food Reform Society in America. An organization of this kind has existed for some time in England, and has effected excellent results by way of molding public opinion in favor of the much needed reform in diet.

Errata.—As a usual thing, the proprietors of this journal take special pride in its general appearance, and particularly its typographical accuracy. The editor of course supervises all the pages, and all medical terms and phrases, which a stenographer or proof-reader might not at once understand, are thus made right. But last month the editor was absent when a part of the magazine went to press, and unfortunately several errors slipped in at which both editor and publishers feel chagrined. We will not refer to these errata in detail, as some of them are so palpable that the good sense of the reader has doubtless already corrected them. As most of the editorial articles are dictated to a stenographer, it requires very careful supervision of the proofs to eliminate errors liable to occur through similarity of sounds and signs.