VOL. 21. AUGUST, 1886. No. 8.



# GOOD HEALTH

A JOURNAL OF HYGIENE

DEVOTED TO PHYSICAL, MENTAL AND MORAL CULTURE

A SOUND MIND IN A SOUND BODY

HEALTH IS WEALTH

PROPER CLOTHING ADEQUATE REST

AMPLE EXERCISE

CLEANLINESS NEXT TO GODLINESS

TEMPERANCE IN ALL THINGS

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|---|---|---|---|---|---|---|---|---|---|---|
| Gr. Rp. Dt. Ex. | Day Exp. | N. Y. Exp. | Atlantic Exp. | Night Exp. | | Pacific Exp. | Evening Exp. | Gr Rp Kal Exp. | Day Exp. | Chicago Exp. |
| a.m. | p.m. | p.m. | a.m. | a.m. | Ar. Dep. | p.m | p.m. | p.m. | a.m | p. m. |
| 11.45 | 6.45 | 11.15 | 6.10 | 8.00 | Detroit, | 9.15 | 8.00 | 4.00 | 9.10 | 1.30 |
| 10.25 | 5.30 | 10.09 | 4.35 | 6.40 | Ann Arbor, | 10.38 | 9.23 | 5.30 | 10.25 | 2.32 |
| 9.15 | 4.23 | 9.15 | 3.15 | 5.25 | Jackson, | 12.08 | 10.55 | 7.15 | 11.30 | 3.32 |
| 7.57 | 3.10 | 8.22 | 1.58 | 4.17 | Marshall, | 1.04 | 11.55 | 8.22 | 12.45 | 4.22 |
| 7.31 | 2.27 | 8.01 | 1.30 | 3.50 | Battle Creek, | 1.30 | 12.22 | 8.52 | 1.08 | 4.40 |
| 6.45 | 1.50 | 7.23 | 12.35 | 3.03 | Kalamazoo, | 2.35 | 1.12 | 9.45 | 1.50 | 5.15 |
| ..... | 12.15 | 6.14 | 11.14 | 1.20 | Niles, | 4.18 | 3.03 | ..... | 3.22 | 6.35 |
| ..... | 11.11 | 5.17 | 10.18 | 12.02 | Mich. City, | 5.40 | 4.35 | ..... | 4.35 | 7.32 |
| ..... | 9.00 | 3.30 | 8.15 | 9.55 | Chicago. | 8.05 | 7.00 | ..... | 6.40 | 9.30 |
| a.m. | a.m. | p.m. | p.m. | p.m | Dep. Arr | a.m. | a.m. | p.m. | p.m. | a. m. |

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| GOING WEST. | | | | | STATIONS. | GOING EAST | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Chico Pass. | Mail. | Day Exp. | Pacific Exp. | B.Crk Pass. | | Mail. | Limit Exp. | Atlte Exp. | Sun. Pass. | Pt H'n Pass. |
| ..... | am | am | pm | pm | Dep. Arr. | pm | am | am | | am |
| ..... | 6.15 | 7.15 | 8.45 | 4.10 | .....Port Huron ..... | 10.20 | 1.26 | 7.35 | ..... | 10.40 |
| ..... | 7.43 | 8.41 | 9.34 | 5.40 | .....Lapeer..... | 8.42 | 12.07 | 6.15 | ..... | 8.57 |
| ..... | 8.17 | 9.06 | 10.10 | 6.20 | .....Flint..... | 7.56 | 11.37 | 5.40 | ..... | 8.17 |
| ..... | 8.50 | 9.35 | 10.48 | 7.20 | .....Durand..... | 7.05 | 11.08 | 5.03 | ..... | 7.40 |
| ..... | 11.00 | 10.30 | 11.50 | 8.28 | .....Lansing..... | 5.20 | 10.14 | 4.00 | ..... | 6.09 |
| ..... | 10.40 | 11.00 | 12.25 | 9.07 | .....Charlotte..... | 4.42 | 9.43 | 3.25 | ..... | 5.32 |
| am | 11.35 | 11.45 | 1.20 | 10.10 | A BATTLE CREEK D | 3.45 | 9.00 | 2.35 | ..... | 4.35 |
| 8.40 | am | 12.05 | 1.25 | pm | D A | 2.45 | 8.55 | 2.30 | ..... | am |
| 9.45 | ..... | 12.45 | 2.21 | ——— | .....Vicksburg ..... | 1.50 | 8.15 | 1.43 | ..... | ——— |
| 9.55 | ——— | 12.55 | 2.32 | Vxt. | ....Schoolcraft..... | 1.35 | ..... | 1.27 | ..... | Vxt. |
| 10.40 | Sun. | 1.42 | 3.19 | Acc. | .....Cassopolis..... | 12.47 | 7.29 | 12.49 | ..... | Acc. |
| 11.40 | Pass. | 2.28 | 4.07 | ——— | .....South Bend..... | 12.00 | 6.52 | 12.01 | ..... | ——— |
| 1.02 | ——— | 3.43 | ..... | am | .....A Haskell's..... | 10.45 | 5.46 | ..... | pm | pm |
| 1.38 | 7.35 | 4.00 | 5.52 | 6.05 | .....Valparaiso..... | 10.30 | 5.32 | 10.20 | 3.40 | 8.00 |
| 4.05 | 10.00 | 6.30 | 8.10 | 8.40 | .....Chicago..... | 8.05 | 3.25 | 8.15 | 1.15 | 5.20 |
| pm | am | pm | am | am | Arr. Dep. | am | pm | pm | pm | pm |

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# GOOD HEALTH

A JOURNAL OF HYGIENE.

*MENS SANA IN CORPORE SANO.*

Volume XXI. BATTLE CREEK, MICH., AUGUST, 1886. Number 8.


## MODERN LIFE—HEIR AND PARENT OF INSANITY.*

BY FOSTER PRATT, M. D.

[THE following paragraphs from the pen of a physician of long experience and wide observation, are well worthy of thoughtful consideration.—ED.]

Modern life, as compared with the life of our own or of any other enlightened people a hundred years ago, is characterized by several marked features; but one broad generalization will sufficiently serve our present purpose; that is, *intensity*.

This is the age of rapid movement, of steam and electricity,—of steam-ships, steam-roads, and steam-machinery,—of telegraphs and telephones. One hundred years ago a trip of 1,000 miles, then seldom taken, required thirty days; now it is a common occurrence, and is done in thirty hours. News then requiring three months for transmission, comes to us in the morning paper only a few hours old. The errand up town that once occupied an hour or two, is telephoned in a minute or two. Cheap transportation for agricultural and mechanical products has opened more and larger markets, has increased demand, and, as a necessary consequence, has increased supply. Agricultural implements have cheapened farm products, and thereby have increased their consumption. Machinery, in a thousand ways, has multiplied and cheapened and enhanced the use of mechanical products. The printing-press and the stereotyped page have stimulated thought, and multiplied news, knowledge, and literature. Education and its advantages (such as they are) are made free to all. Political influence and public office, no longer the special privilege of a privileged class, are open to all. Science, even yet a pioneer, opens up almost daily new avenues of mental and physical activity. New lands and untold stores of mineral wealth invite the laborer and the speculator. Our thoughts girdle the earth on the wings of a thunderbolt, and we and our merchandise fly on the wings of the wind.

What is the mental result?—We read more, see more, hear more, do more, think more, know more, feel more, and worry more in ten years than our grandfathers did in thirty. Where does the strain of this intensity fall?—Not on our mere physical strength; for, with all we do, we do not labor as hard physically as our fathers did before us. No, *this strain of intensified life falls on the brain and the nervous system.* It exhausts our fountain of force in the brain, which must supply every muscle with power and every organ with ability to perform its function. The busy brain of our people exhausts, on its own work and worry, not only its own daily dividend of nervous force, but it steals part of that which belongs to the heart, lungs, stomach, liver, bowels, kidneys, and skin, and drives them to the feeble performance of their proper work. Right here, in this exhaustion of nervous force, and in the uncomfortable sensations which result from it, the practical thinker, true social reformer, and

* A portion of a paper read before a Sanitary Convention at Muskegon, Mich.

statesman will find the real cause of vicious habits of eating and drinking so dangerously prevalent. Right here, too, you will find why so many of our busiest and best men, who think themselves just ready to enjoy the fruits of their labors, drop suddenly of heart disease in the prime of their life; or their kidneys fail, and Bright's disease claims a victim; or dyspepsia fastens its fangs on their stomachs, and gnaws like a vulture at their vitals; or consumption or asthma invade the lungs; or apoplexy and paralysis resent the abuse of a willing servant; or insanity drives the mind to wander like an unhappy ghost amid its own ruins. Nor is this all; if they have an inherited mental taint, which by good fortune they may have personally escaped, such a life aggravates it, and makes it all the more sure to be the inheritance of their children, if, indeed, they have vitality enough to leave children at all.

Having thus briefly sketched, under the generalization of "intensity," the salient features of modern life and its effects on vital power and physical condition, we are prepared to go a step further, and consider *how* it is that this modern life, having inherited its portion of insanity from former conditions, now becomes the parent of insanity, not only under the general law of hereditary transmission, but by intensifying the original heredity, and also by creating new forms of nervous disease and new forms of mental aberration.

It will be convenient to consider existing forms of mental disease by referring to their causation. The causes, then, are twofold,—predisposing and exciting.

The predisposing, or hereditary, causes already touched upon, are those that have existed in our ancestry for one or more generations.

The exciting causes are those we acquire from an unwholesome environment, or create by unwise or vicious living, or which result from physical accident or injury. These exciting causes do not always produce insanity in those who generate them, but their effects descend, like our other personal properties, perfections and imperfections, to children, and children's children. Thus is started a new hereditary cause and a new career of insanity, to run on and on until—the family runs out. It is nature's conservative law that such families shall run out,—the law by which she maintains the vigor and the usefulness of the race.

Before dismissing entirely the topic of heredity, some attention should be given to certain considerations of personal policy and duty that connect themselves therewith. We date our life from the day of our birth. However truly this may mark the beginning of our independent existence, how untruly and how imperfectly it dates the origin of those physical and mental and moral traits that give us individuality and character, that make or mar our mental and physical health, and that determine our place and usefulness in life! Among our ancestry, were any given to drink, to opiates, or to table excesses? Was their blood innocently, willfully, or viciously tainted by cancer, consumption, gout, rheumatism, or sexual vice? Do we suffer the consequences? These are no idle questions. How many idiots and imbeciles are the product of a debauch! Blasted in conception by the poison of alcohol or of morphine, are they not truly born before birth? The insanity which consigns one, dearly loved, to a useless or a wretched existence, may have been born fifty years before birth, of the brain exhaustion and mental worry caused by a grandfather's business; or a life of nervous suffering of a delicate girl may have been born a year before birth, of the dissipated energies of a mother devoted to fashionable life and nervous excesses.

My friends, if we have sound brains in sound bodies, let us thank God for healthy parents! If we have not, if inherited disease and nervousness make us unhappy and cripple our usefulness, let us be patient, and carefully consider how best to mitigate or correct the evil at the fountain of our life. If we be parents, shall we not do well to consider whether our duties to our children do not begin before the day of their birth? If we be

conscientiously and intelligently contemplating marriage, its objects and its responsibilities, do not good morals and good sense combine to dictate a careful consideration of the possible results? Should your children all die in infancy or in early childhood, will you piously attribute your loss to the mysterious dispensation of a Divine Providence, or to the unhealthy, nervous organization transmitted by yourself, which renders them physically unable and unfit to live? How often, at a joyous wedding, the intelligent physician is moved by his knowledge to forbid the bans! He would not be heeded, perhaps; it would savor of meddlesomeness; it would be thought ungracious of him; but if he be the trusted family physician, why should he not forbid the bans? Twenty-five years ago the writer attended a marriage that he knew should not be consummated. His impulse was strong to protest, but he did not. To-day two children of that marriage are insane. What was his duty at the wedding? It is true, as may be said, nature has provided that men and women shall contract their own marriages; and nature has also provided, as the law of the race, that if their children be not fit to live, they shall die. But, on the other hand, I may ask, Is it not the one great purpose of experience to teach us how to avoid the avoidable evils? What is all your sanitary work for, if not for this? Surely, the avoidance of evil is better than to go on recklessly or blunderingly, in the blind belief that nature's laws will, in the long run, somehow correct our mistakes and rectify our blunders. There is an interesting and important conclusion lying around here somewhere.

We come now to the consideration of the exciting causes of insanity, which spring out of modern life. It should be borne in mind here that many exciting causes of insanity, such as injuries of the head, disappointed love, religious excitement, intemperance, etc., etc., are no more a part of modern than of older life. Our themes must be found exclusively in the life of to-day.

To begin at the beginning of these noxious influences, we will consider, first, the effect of modern life on the children, the most plastic of all human material, the objects of so much care, pride, and affection. They are sent to school too early; they have too many studies; their studies are not adapted with sufficient care to their individual peculiarities; they often study too many hours, especially if they are required to study at home; they are too little taught to be children, and too much, entirely too much, taught to be men and women. (To prevent misapprehension, permit me to say this is not a criticism of teachers, it is a criticism of a fashion and of a vicious school system. It is a physician's criticism of the educational policy of a fast age that compels a too rapid growth of a child's brain at the expense of its vital forces; and with a strong tendency to produce nervous and mental troubles, and lay the foundation of life-long evils.) Pope's familiar couplet has, by misinterpretation, done great mischief:—

> "'Tis education forms the common mind;
> Just as the twig is *bent*, the tree's inclined."

The twig, like the child's mind, generally inclines to grow *straight;* then why bend the twig at all? The child's mind and character often have a bent (in another sense) which should be respected, and perhaps encouraged, but seldom a diseased bent that can be improved by a straight-jacket, whether physical or educational.

Again, much the same general criticism is applicable to the effect of fashion and an educational system on our youth. They study too many things and too much, and, quite too often, they are forced to studies not well adapted to develop their best qualities. There is too much brain work and too little body work to secure a balanced development. Our college graduates too often enter on real life with a nervousness and listlessness born of an overworked brain that foretell either years of uselessness or a total failure in the great purposes of life. Our active men, our successful men, our leading men in business and in public life, are too often the men whose education has been found in the business of their life, and too seldom among those who have had the

boasted advantages of the schools, to make the comparative results a favorable commentary on our scholastic systems.

The customs, the fashions, and the nervous waste of modern life have also begotten in our youth too much fondness for dangerous forms of dissipation. The tobacco and the alcoholic stimuli, even though used in a moderate amount,—an amount that might not injure a matured man (?),—have and can have no good influence on the youthful nervous system. During the period of mental and physical development that intervenes between puberty and twenty-five years of age, such narcotics and stimulants are evil and only evil; and their use—even moderate use—at this period becomes the exciting cause, in some temperaments, of serious mental evils. This is a broad field, and time permits hints only; exhaustive discussion requires volumes.

Turning now to adult life, I call your attention to the fact that modern *business* life causes insanity in two directly opposite ways, one class does too few things, and another too many things. Does this seem to be paradox? Is it any more paradoxical than the similar effects of other extremes? Apply your tongue to iron of a temperature of 20 degrees below zero, the skin comes off; apply your tongue to the same iron heated to 212 degrees above zero, and you get the same result. The muscle unused wastes like muscle overstrained. We die of too little blood, and we die also of too much blood. But to proceed.

This is the age of division of labor, by which, in manufactures, we get cheaper and better results; but the man who for thirty years makes nothing but watch springs or a wagon wheel is greatly more liable to insanity than the man who makes a whole watch or a whole wagon. One part of his brain is injured by overuse, and the other parts dwindle and waste from want of use, brain balance being disturbed, mental balance being impaired. Take a physical example. Many, perhaps most of you, have seen or heard of what is called "pen paralysis." It comes to men who do nothing but write; copying clerks, reporters, and book-keepers are its victims. The nerves that control the muscles of the hand and forearm concerned in writing are ruined by overuse. The same trouble comes to telegraph operators, and to professional piano players, and is often met with in the blacksmith's right arm—that common illustration of developed strength. Dr. Winship, who went about the country exhibiting his lifting powers, and who lectured also on muscular development, dropped down dead in the streets of New York of a wasted heart,—a heart worn out by nourishing an unnatural development of muscle. Tom Sayers, the champion light weight of England, died at 36 of a similar trouble. John Heenan, the champion heavy weight of America, died at 38 of consumption, similarly induced. Now, just as undue or excessive use of one set of muscles causes dangerous physical results, just so does an undue concentration or overuse of one portion of the brain on one simple, monotonous process, tend to brain injury and mental disturbance.

But modern business life has another vicious tendency, that of inducing or driving men to do too much and too many things. While the former evil injures mainly the mechanic, the artisan, and the subordinate in the busy whirl of modern life, the latter finds its victims among capitalists, speculators, bankers, merchants, and manufacturers. The overwork of this class exhausts nervous force; and the care, anxiety, and worry of their business life too often prevents sleep,—

"Tired nature's sweet restorer, balmy sleep."

An overtaxed and never-rested brain revenges itself sooner or later by paralysis or some other equally fatal blow, and quite too often by insanity. So common have these consequences of overwork become, that we scarcely pick up a daily paper that does not record the break-down, by disease or by suicide, of some man prominent in political, financial, or business circles. This vicious feature of modern business life has added a formidable list of mental and nervous diseases to our medical vocabulary, which I cannot now enumerate, much less discuss.

When will men learn that the balanced use of *all* their powers, and the overuse of none, are essential to health and longevity?

## SCHOOL HYGIENE.

BY J. H. KELLOGG, M. D.

[THE following address was delivered by request at a recent annual meeting of the Wis. State Teachers' Association, held in the Assembly Room of the State Capitol.—ED.]

The subject upon which your President has asked me to address you, is one of immense importance to the rising generation, and one which, in its broader aspects, may be fairly considered as paramount to all others relating to the school life of the child.

Sanitation in relation to the school and to students, in its fullest meaning, comprehends all that relates to the physical, mental, and moral welfare of the individual during that period of life especially devoted to educational training. I cannot attempt, however, in this brief paper, to cover the whole of this broad and interesting field of thought, but shall ask your attention especially to those influences and conditions which have a direct relation to the *physical* well-being of students, fully believing that the terse motto which the ancients inscribed upon their temples of learning, "A sound mind in a sound body," is as thoroughly true in these degenerate days of high mental culture and low physical endurance, of morbid nervous activity and slow digestion, as in those remote days when the apostles of the doctrine of mental dependence upon physical conditions were setting examples for all time in physical prowess and personal bravery, solving some of the most difficult problems in science and philosophy, and chiseling those unapproachable masterpieces of art which have been the marvel of all succeeding ages.

This question has also an important moral bearing,—

1. In the obligation to preserve in their integrity these masterpieces of the Divine Artist, our bodies, and—

2. In the intimate interdependence of our physical, mental, and moral natures.

The teacher who considers that his work is done when he has maintained good order in his school, listened to the recitations of his pupils, and given them any needed assistance in their tasks, has a very narrow conception of his duties and obligations as a trainer of youth. The school-going period is the most important of an individual's life. It is that in which his body is being developed, and his character formed. The importance of surrounding the student with proper mental and moral influences is unquestioned; but the necessity of giving equal attention to physical conditions does not receive the attention which its importance deserves. One who is familiar with the results of modern biographical researches in the relation of mind and brain, and the intimate association of vital functions in the human body, will not question the statement that such conditions as affect the physical health of a child are equally as important in relation to his mental and moral welfare as to his constitutional vigor.

The duty of every teacher as regards school sanitation requires,—

1. That he shall use his best efforts to secure for his pupils the best possible hygienic conditions while in the school-room.

2. That he shall give them such instruction in individual hygiene as, if followed, will prevent a large share of those bodily ailments which seriously interfere with his intellectual advancement, and often lay the foundation for life-long physical debility.

In what I have to say this evening I shall not undertake to present a summary of what may be properly called school hygiene, or to prescribe methods of instruction; my purpose is to emphasize a few points which, though of vital consequence to the pupil, seldom receive adequate attention in the text-books.

In the performance of his duty as guardian of the pupils' health while in the school-room, let the teacher see that his study and recitation rooms are well ventilated.

An adequate supply of pure air is the first essential of vigorous, healthy life. A man may live weeks without food, and several days without water, but dies in a few mo-

ments when deprived of air. The natural instincts of a child crave an abundance of pure, untainted air. It is the stifling, overheated atmosphere of the school-room, filled with the poisonous products of respiration and skin exhalations, which leads many children to dread the confinement of the class-room. Often so keen is this repugnance that it quite overcomes every other consideration, and perhaps we are not doing more than justice to the student when we assign the physical longing for a breath of God's life-giving oxygen as a potent cause of truancy and absenteeism in young boys whose occasional holidays only serve to keep alive those natural instincts which a continuous life in the vitiated air of our stove-heated houses and crowded, unventilated school-rooms in time suffices to effectually quench.

Jean Paul, the honest champion of children's rights, used to sit by a knothole in the side of the crowded school-house where his education was begun, for the purpose of enjoying the luxury of an occasional whiff of unadulterated air; and he said that he sometimes contemplated an escapade with some wandering party of gypsies or woodcutters, from which he was only deferred by the fear that his sally for pure air would be misinterpreted as ingratitude toward his parents. He tells us how, to quote his own words, he longed for the opportunity of "fetching in cord-wood from the woods and splitting it into the nicest, handiest pieces, carrying messages over the snow-covered mountains and back in half the time any one else could make the trip, doing anything that would save me, not from my books, but from that glowing Moloch of a big stove, and that stifling, soul-stifling, smell of our dungeon."

The foreign professor who called the school-rooms in one of our large cities "child-pens," was not guilty of gross exaggeration. I have seen many school rooms in which the air space allowed each pupil was less than 200 cubic feet, only one-third the amount allowed the English soldier in barracks, and even less than that of crowded tenement houses of London. Without the most efficient ventilation, the air of such a room soon becomes exceedingly foul, and has a stupefying effect which renders clearness of perception and retentiveness of memory impossible, and inflicts as much actual damage upon the system as does indulgence in mild narcotics capable of producing a similar effect. What teacher has not observed the increased mental activity and brightness of students who have just come in from a few minutes' exercise in the open air after an hour and a half of confinement in the close atmosphere of the average school-room?

Several questions arise, respecting the air supply of the school-room, which we must consider:—

1. How much air is needed?
2. How may the needed air be obtained?
3. How can the obstacles presented by a building constructed without reference to ventilation, be overcome?

The first question we will answer by a little computation.

Let us suppose that we have a school-room 36 feet long, 30 feet wide, and 10 feet high. The cubic contents of such a room will be 10,800 feet. In a crowded school building we should probably find such a room seated for about sixty students. The question we wish to determine is this: How long can the air of such a school-room, occupied by sixty students, be used before it will need to be renewed? Before we can answer this question we must ask and answer another. How much air does each student require in a given time? There are many very erroneous notions held respecting the quantity of air required in rooms occupied by human beings to maintain healthful purity. Physiologists tell us that we breathe out and in our lungs with each respiration about twenty cubic inches of air. This quantity of air contains four cubic inches of oxygen, of which we use one at each breath, replacing the one cubic inch of oxygen used by nearly an equal quantity of carbonic acid gas. To suppose that we need only sufficient air to replace the one cubic inch of oxygen used, or even that a quantity of air equal to what we take into the lungs

at each breath will answer the demands of the system as regards air purity, is an error.

We need to employ means of ventilation, not simply for the purpose of replacing the air which we have used, but for the purpose of removing the air which we spoil. The cubic inch of carbonic acid gas which we breathe into the air with each breath has associated with it a certain amount of organic matter so poisonous and deleterious in character that the quantity contained in a single expired breath, is, according to some of our most eminent sanitary authorities, sufficient to contaminate to a degree which renders it unfit for breathing, three cubic feet of air. In other words, we spoil at each breath three cubic feet of air, which must be replaced by an equal quantity of pure air, to prevent air poisoning. If we wish to ascertain how much air is spoiled in any given time, we ascertain the number of respirations, and multiply it by three. The average number of respirations by pupils may be placed at twenty per minute. Multiplying twenty by three we have sixty, which represents the number of feet of pure air required by each pupil per minute. For an hour, sixty times this quantity, or 3,600 cubic feet of air, will be required. To obtain the amount required for any number of students in a given time, we simply multiply these figures by the given number of persons. In our school-room we have 10,800 cubic feet. If we wish to ascertain how long this air would last sixty pupils, we have to divide it by 3,600, which represents the amount used by sixty pupils in one minute; $10,800 \div 3,600 = 3$, which represents the number of minutes during which the air of a school-room of the dimensions named, occupied by sixty students, could be used before it had become unfit for longer use.

These statements may seem large, but I assure you they are based upon the results of careful experiments and observations made by distinguished workers in sanitary science. It would be fair to mention, however, that there is some division of opinion among authorities on this question. There are those who contend that so great a degree of purity as that contemplated by the figures named, is not absolutely necessary for health, especially for school-rooms, lecture rooms, and other audience and assembly rooms, which are not occupied more than an hour or two at a time. If we hold with the authorities last named, we may divide the amount of air required by two. With this estimate the air of such a school-room as we have described could be breathed six minutes instead of three minutes before becoming unfit for use. At the end of six minutes, however, it must certainly be changed, and it is necessary that means shall be provided which will secure a constant renewal of air with sufficient rapidity to make an entire change of the air contents of the room every six minutes.

Endeavor to imagine the condition of the atmosphere of such a school-room as we have been considering. After the first three minutes, the air is unfit to breathe, and continually becomes more so, until the transient opening of a door or window affords some relief. It may be said, If this is a correct representation, why do not more persons die from this cause? There are *thousands of deaths* occurring annually from this one cause. A great share of the colds, catarrhs, and consumptions originate in the breathing of air which has been rendered unfit to breathe by repeated respiration. According to the Vital Statistics Report of my own State, nearly 4,000 persons die in Michigan alone every year, of whom one-third are under twenty-five years of age. I cannot speak with entire assurance, and yet I doubt if there is any material difference between Michigan and Wisconsin in this respect. How much of this slaughter is attributable to badly ventilated school-rooms! The great anatomist, Langenbeck, who declared that he had "cut up more human beings than the old man of the mountain," claimed, as one of the results of his researches, that he had established the fact that the great cause of consumption is the breathing of impure air; and the worst kind of impure air is that which has been passed through the lungs of human beings or lower animals.

TO BE CONTINUED.

## THE RELIGION OF HEALTH.*

BY REV. J. S. JOSLIN.

No argument is necessary to show the sacredness of sanitary rules and obligations. All true science is but an interpretation of the unwritten law of God. Sanitary science unveils and proclaims that law in its application to the human body. So far as it does its work faithfully, it is a proclamation of statutes and ordinances made and provided by heaven's invincible King for the control of our physical being. Such laws are not subject to repeal or revision at our hands; nor do they need the help of human sanction. The duty of keeping them, when viewed from the religious standpoint, is as imperative as are those that hold sway in the higher realms of mental and moral being. And to this unwritten law revelation responds in clear and commanding accents, confirming that law, and declaring the sacredness of the body which it is designed to protect.

This view of the subject pervades the whole Christian system, revealing itself not only in its teaching, but in its legislation, in its formative stages as well as in its maturity, proclaimed alike by Moses and by Christ. No attentive reader of the Old Testament can fail to see the careful provision made for the education of the body. The God of the Hebrews understood sanitary science, and it was thoroughly incorporated into that system of training which was to fit them for their great mission to universal humanity. I will not enter into details here; it is enough to call to remembrance the strict regulations concerning cleanliness, both of person and surroundings; and even some of its sacred rites have evidently quite as much reference to the welfare of the body as to the soul.

And in the New Testament the same principle appears, regulated by the new law of liberty, and enforced by the most solemn sanction. "Let us cleanse ourselves from all filthiness of the flesh and spirit." "Glorify God in your body and in your spirit, which are God's." The body must not be neglected or degraded; for it is "the temple of the Holy Ghost." Now this exalted and ennobling view of the body is obtained only from the standpoint of a pure Christianity.

The system of philosophy and religion, which are the outgrowth of human wisdom and the yearnings of the human heart, are generally characterized by errors as fatal concerning the body as the soul. How strangely this wondrous piece of mechanism has been abused! Now it is everything; the sum total of our being, life, and thought is the product of its organism. All there is of life is to live; and the problem of life is how to compress into the narrow measure of this animal existence the greatest amount of happiness. In one system, that object is best secured by bringing the bodily appetites and passions under the control of reason and the laws of nature; in another, by their unrestrained indulgence. "Let us eat and drink, for to-morrow we die." Then, again, it is regarded as the source of evil; the germs of sin lie hidden in its constituent atoms, and these furnish the material for the growth of that deadly tree whose shadows rest on all the race of men. And certainly, under such a system, virtue is strengthened as the body is weakened. Such a perversion of nature and the Bible found a place even in the Christian church, manifesting itself in the monasticism and rigid asceticism of the Early Ages, and still finds a lurking place in darkened souls and systems.

But Christianity teaches, that soul and body are to dwell together in sweet and holy companionship; that each is to serve the other; that the body must yield obedience to the higher nature; that the soul must respect and tenderly care for the wants of its feebler companion. All human experience is in harmony with these fundamental truths of nature and scripture, and most impressively confirms the concurring testimony of these unimpeachable witnesses to the fact of a mutual dependence and connection between the laws respectively of our physical and spiritual being; of the relation of sanitary science to the science of salvation. For

* Read at a Sanitary Convention at Howell, Mich.

it shows by the resistless logic of facts, that while the health and vigor of the body depend upon its conformity to the dictates of reason and the conscience, on the other hand, bodily vigor or decay have a most potent influence upon the moral and mental powers. Indeed, sanitary principles can only be properly valued when seen in the light of spiritual and eternal relations.

In this light let us consider the subject a moment longer,—a light clear, steady, and strong, in which alone all things belonging to this life come out in all the fullness of their meaning. Now the work of redemption is a work of restitution, of restoring to their primal condition the enfeebled powers, of invigorating and developing, not merely certain emotions, but the whole soul,—the intellect, the sensibilities, the will. But the progress of this work in the soul will be helped or hindered as the laws of the body are regarded or ignored. Apply this principle to the intellect. It is humiliating that powers so God-like in their nature, so vast in their range, sweeping over the fields of immensity, exploring the realm of thought, reading the secrets of the stars, gazing upon seas and landscape spread out in the morning mists of creation, or looking along the track of the coming ages,—that such powers shall be dependent upon an animal organism. But so it is; and instead of complaining that the soul is chained down to a base partner, we should seek to comprehend the facts of our compound nature.

There is no doubting the essential connection between mental phenomena and various outward conditions. The general condition of the physical system, nutrition, the varying states of the atmosphere, etc., not only determine to some extent the measure of mental activity, but the quality of thought. Clearness of mental perception and power of prolonged mental exertion are possible only as a rule, when the body is in a good state of health. It is well known that food, climatic influences, physical features of the country, and other material conditions, having a causal connection with bodily vigor and development, are important factors in determining national characteristics. And who can doubt that peculiarities of religious belief, partial and distorted views of the Divine Being and of providence, are explainable, in some measure at least, upon the same principle. It is certain that the contemplation of that higher order of truth which is vitally related to eternal interests, demands the exercise of a sound mind, which rarely if ever dwells in an unsound body.

From the same standpoint let us consider the relation of the physical organism to that department of our mental being we vaguely call the feelings. Of the nature of that relation we have daily and almost hourly experience. Indigestion, a disordered nervous system, a diseased liver, and general debility are invariably associated with corresponding morbid sensibilities,—depression of spirits, gloomy forebodings, and even a settled state of melancholy and despair. A particular organ of the body failing to perform its appointed functions may shroud this world in sadness, and project a shadow over the world to come. It is the extreme of absurdity to assert that what we call distinctively the religious feelings are independent of outward conditions. That the facts of Christian experience have an essential connection with the laws of the external world, is not only in harmony with Scripture, but is confirmed by all experience. The "law of life in Christ" does not annul or ordinarily suspend the law impressed by the Creator upon our physical and intellectual nature. The correctness of the familiar words, "When I am happy in Him, December's as pleasant as May," depends largely upon the quality of the December weather. Faith struggles at times, but vainly, to free itself from the dominion of "cold, material laws." A fretful temper, religious dejection, a weak and wavering will, are indeed blemishes upon the garments of the Christian; but these things are not always proof of unfaithfulness, but are evidence of a struggle with bodily infirmity. These discordant notes do not necessarily prove that there is no music in the performer, but that the instrument is out of tune.

There are many cases exceedingly perplexing to the Christian minister, which could be easily disposed of by the intelligent physician. Indeed, a better knowledge of that wonderful organism by which the soul holds communion with the outer world, of the reciprocal influence of mind and body, and a careful observance of nature's laws, would greatly aid in the progress of religious truth; for on one hand, many instances of despondency and irritability would be traced to physical causes, and relieved by proper treatment; and on the other, still more numerous examples of temporary religion and enthusiasm would be referred to the same origin. Those who have carefully noted the phenomena of revivals, know perfectly well that very much of the supposed religious fervor is but the glow of a highly excited nervous system, under the stimulus of influences which appeal mainly to the sensuous nature.

There is another view of the subject at once appalling and instructive. I refer to the system of penalties connected with these laws of our physical being. The inflexible severity with which such penalties follow the neglect or violation of those laws, furnishes a palpable and impressive proof of their supreme importance in the estimation of the great Lawgiver. On every hand these direful consequences are visible in defects and deformities, in vitiated constitutions, in an endless variety of suffering, in premature decay and death. And in addition to these common and mild inflictions are the exceptional and terrible instances, in which the wrath of God is revealed from heaven against those who yield up their bodies to become the instruments of debasing passion. What ghastly spectacles we are compelled to look upon almost daily!—those whose very persons are labeled with the marks of vice and misery, repulsive and pitiable examples of nature's broken law. Nor do these penalties relate to the physical being merely; they invade in all their fury the domain of the soul. Idiocy and insanity are undoubtedly, in a majority of instances, traceable to physical causes, sins against nature committed by the sufferer himself or his ancestry.

### *SAGO PALM CAKES.*

A SINGULAR tree grows in the island of Ceram, called the sago palm, the trunk of which provides most excellent food after passing through a process of beating and washing, which dissolves the pith from the trunk. Water is then poured on the pith, which is kneaded and pressed against a strainer till the starch is dissolved and has passed through, when the fibrous refuse is thrown away. The water, charged with sago starch, passes on to a trough, with a depression in the center, where the sediment is deposited, the surplus water trickling off by a shallow outlet. The sago thus gathered is taken out of the trough, and dried into cylinders of about thirty pounds' weight. It makes excellent bread and delicious cakes, particularly when eaten with butter and a little sugar.

It is truly an extraordinary sight to witness a whole tree-trunk, perhaps twenty feet long and four or five in circumference, converted into food with so little labor and preparation. A good-sized tree will produce thirty tomans, or bundles, of thirty pounds each, and each toman will make sixty cakes of three to the pound. Two of these cakes are as much as a man can eat at one meal, and five are considered a full day's allowance; so that reckoning a tree to produce 1800 cakes, weighing 600 pounds, it will supply a man with food for a whole year. The labor to produce this is very moderate. Two men will finish a tree in five days, and two women will bake the whole into cakes in five days more; but the raw sago will keep very well, and can be baked as wanted, so that we may estimate that in ten days a man may produce food for the whole year. This is on the supposition that he possesses sago trees of his own, for they are now all private property. If he does not, he has to pay about two dollars for one; and as labor here is ten cents a day, the total cost of a year's food for one man is about three dollars. The effect of this cheapness of food is decidedly prejudicial, for the inhabitants of the sago country are never so well off as those where rice is cultivated. Many of these people have neither vegetables nor fruit, but live

almost entirely on sago and a little fish. Having few occupations at home, they wander about on petty trading or fishing expeditions to the neighboring islands; and as far as the comforts of life are concerned, are much inferior to the wild Hill Dyaks of Borneo, or to many of the more barbarous tribes of the Archipelago.—*The World's Wonders.*

### ACADIAN SIMPLICITY.

In a recent article in *Harper's* C. H. Farnham says: "It is worth while to visit a civilized people that still grinds grain by hand between two stones; for doubtless we may find among them bread of the primeval flavor, and men and women that are racy and strong."

And it is true that flour is still made by the hand quern in Cape Breton, near as that island is to the pushing civilization of the New World centers. The population of Cape Breton is at least five-eighths Scotch, and nearly all originally came from the North of Scotland, the Hebrides, and Skye, Mull, Barra, etc. This will doubtless account for the use of the quern, for it has not yet been entirely abandoned in parts of Scotland and Ireland. Gaelic is still largely spoken in Cape Breton, which, with its 55,000 Gaels, 15,000 Acadians, and 1,200 Indians, its hand querns and its bare smattering of English, seems more like a foreign country than a part of the New World.—*American Miller.*

—An Englishman attributes his freedom from gout to the fact that he sleeps on a bedstead which is insolated by the bottoms of glass bottles broken off for the purpose. A newspaper mentioning the fact, remarks that many a fellow could cure his gout if he would break off the bottoms of glass bottles soon enough.

—The grandest thing in this world is to know what is right, and have the courage to stick to it.

# TEMPERANCE AND MISCELLANY.

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

*CONDUCTED BY MRS. E. E. KELLOGG, A. M.*

### SIMPLE JOYS.

YES! let the rich deride, the proud disdain,
These simple blessings of the lowly train;
To me more dear, congenial to my heart,
One native charm, than all the gloss of art.
Spontaneous joys, where nature has its play,
The soul adopts, and owns their first-born sway;
Lightly they frolic o'er the vacant mind,
Unenvied, unmolested, unconfined:
But the long pomp, the midnight masquerade,
With all the freaks of wanton wealth arrayed,—
In these, ere triflers half their wish obtain,
The toiling pleasure sickens into pain;
And, e'en while fashion's brightest arts decoy,
The heart, distrusting, asks if this be joy.

—*Goldsmith's Deserted Village.*

## MRS. RAYNOR'S NEW NURSE-MAID.

BY MRS. C. M. LIVINGSTON.

JANET MCGREGOR'S bit of a room was neat and clean as hands could make it, but it was a gloomy place. Its one window looked into a passage way, and the only view from it was a brick wall. Here she sat day after day, and worked on coarse shirts at starving prices. She must keep very busy, or she could not pay the rent of even that poor place. But Janet was a thankful soul. She was very grateful that, by putting her face close to the window and stretching her neck up, she could get a peep at the blue sky; and that for two hours in the morning the sun cast a slanting ray into her room. She always hurried up her housework, so that she might be ready to sit down and enjoy that time. She moved her rocker so that the sun would shine full upon her, and drew a pale little geranium, that somebody had given her, into its kindly beams. Then she gently rocked and sewed, casting occasional encouraging glances at the poor little plant, while she hummed an old Psalm tune:—

"When all thy mercies, O my God,
My rising soul surveys,
Transported with the view, I'm lost
In wonder, love, and praise."

An unbeliever would have sneered at the thought of her "mercies,"—the barest necessities of life; but that would be because he was not in the secret. How could he know about the treasured Bible and the sweet communion, the peace of heart, and, Janet would have added, her rocking-chair, the bit of blue sky, the brief sunshine, and her one plant? For the poor plant was as near to a living pet as she could compass. She would have liked a cat or a bird, but they must needs eat, and there was not a penny to spare. The plant was company, and was satisfied with water.

Nobody, though, can expect continued prosperity in this changing world. Work had been dull for some time back, and for the last two weeks Janet had had none. The firm gave no hope of any more for several weeks. She had limped about and searched for it elsewhere in vain. She had a little money ahead, a very little. As long as it lasted she should not apply to any one for help. So she waited and trusted, often tempted to despair. This very afternoon, while Mrs. Raynor was on her way to her, Janet sat, after busying herself as long as possible about her room, with folded hands, no work for her in this busy world. She had mended all her own clothes, and patched and darned, in the kindness of her heart, for one of her poor neighbors, who had a flock of children. She swayed herself back and forth now in her splint-bottomed rocking-chair, striving to cheer her old soul and bolster up her faith by softly singing Wesley's song in Olmutz's inspiring strains,—

"Give to the winds thy fears,
Hope and be undismayed;
God hears thy sighs and counts thy tears;
God shall lift up thy head.

"Through waves, and clouds, and storms
He gently clears thy way;
Wait thou his time; so shall this night
Soon end in joyous day."

It would have made a musician smile to have heard those trembling, discordant notes termed singing, but it was that to Janet and to God. Her

heart went out and up, and her faith took hold on him anew in these strong, trustful words.

So far had she got in her hymn when there came a light tap on her door, and—God had heard.

"Oh! but his ways are wonderful," said Janet, after Mrs. Raynor had made her proposition, and she had joyfully accepted it. "Many's the time I've wished I could take care of somebody's dear baby, but I thought my lameness was against it. And here it is all planned out so nice; just what I always wanted, handed right out to me. He's so kind."

Stephen Raynor had always considered himself a sagacious young man, but he discovered no deeply-laid plot when his wife told him that evening that her troubles had vanished, as she had prevailed upon Janet McGregor to come and take care of Mabel.

"Isn't she too old for such work, my dear?" he asked.

"Oh, no. She is worth a dozen young things with no experience. Old ladies are the greatest comforts in the world where there is a baby. The little things love them. Their ways are so gentle and skillful. They never jerk or twitch them about, or scratch them with pins, and they understand each other; they really do. I've noticed that when an old lady takes a fretting baby, it always cuddles down in her soft arms, as if now it had got to a nice place."

Stephen listened and laughed, a laugh that had a caress in it. And the artful little mother proceeded to display a very new little white tooth in baby's mouth, just through, which served to engage the delighted father's attention so that he forbore further questioning as to the fitness of the nurse. He did not forget, though, as he took up his newspaper, to remark: "I told you it would come out all right, little wife." And Helen hid her face in baby's neck to conceal the laugh, and blushed as she wondered what he would say if he only knew just how it was to come right.

When Janet was fairly established in Mrs. Raynor's large sunny nursery, with the baby to love, a basket of stockings to darn, and her young mistress's bright face flitting in and out, she could but exclaim, "The lines are fallen unto me in pleasant places." And the satisfaction was mutual. Mrs. Raynor made unnecessary visits to the nursery, just for the pleasure of seeing Janet's ample form, enveloped in the cleanest of checked aprons, sitting in the old home rocking-chair, her face beaming, her voice cheery, and she and Mabel so well pleased with each other. There was no end of comfort in the thought that she could trust her absolutely. Her skillful needle, too, was most convenient, always ready to replace a button or repair a rent.—*Interior.*

TO BE CONTINUED.

## HOW TO MAKE LIFE A SUCCESS.

HALF the bad failures in life are due to a want of practical ability, of that combination of traits of character which enables a person to discriminate between useful things and those which are of no consequence; between things of great import and those of trivial importance; to determine promptly what is best to be done in emergencies, and to be able to adapt one's self with readiness to changing circumstances. The visionary dreamer never succeeds, because his whole energies are devoted to the elaboration of schemes which can never be carried out, and which, if they could, would be of little or no practical value to the world.

In the patent offices at Washington may be seen many thousands of ingenious mechanical devices, not one in a hundred of which has ever been put to any practical use, and never will be seen outside the rooms where they are stored for exhibition. Most of these are the result of days, months, and even years of labor on the part of men whose inventive faculties ought to have enabled them to render valuable service to their fellow-men; but which, unfortunately, not being balanced by the necessary qualities to render them of practical value, have been squandered in the invention and construction of machines for doing what nobody ever cares to have done, or what can be accomplished by much simpler and better means. Every neighborhood has its perpetual-motion maniac, who ought to serve as a living example to all to whom he is known, of the futility and folly of spending time and efforts in trying to accomplish impossibilities.

The term usually applied to practical ability is "common sense." Every one is supposed to have a share of common sense; but our experience with the world has led us to the belief that this is of all mental qualities the rarest, and would be more properly termed "*un*common sense." Fortunately, it is a

quality which can be developed, though the man must be considered fortunate indeed who inherits a large share of this element in his mental make-up. Persons who have common sense, always reason about things. They never act without considering the why and wherefore of what they are about to do, and are continually inquiring the reasons for what they see transpiring about them. A large fund of common sense is of vastly more value to any man than the most finished course of instruction at a university; and one who is lacking in this essential quality will find that no amount of "book learning" is a substitute for it.

All persons, even the wisest and most cautious of men, will sometimes make mistakes, but the wise man takes care that he does not frequently repeat the same error; while the man who is lacking in the quality which we have termed common sense, goes on committing the same blunder again and again, utterly regardless of the consequences which his experience has told him will invariably follow. A philosopher once said, "Experience keeps a dear school, but fools will learn in no other." Unfortunately, there are those who will not learn even by experience. When we find that we have made a blunder, we should carefully consider the causes which have led to the calamity; and when these are discovered, they should be carefully noted in our minds, and due care should be observed that we do not fall into the same error a second time.

Many things we may learn and must learn by personal experience. Some, perhaps, cannot be so well learned in any other way; but life is too short to enable us to try every experiment possible, and we can ill afford to suffer the loss which would result by the constantly recurring blunders of a life wholly devoted to original experiment. Hence it is wise for us to profit, as far as possible, by the experience of others whose lives may have fallen in the range of our observation. He is certainly a wise man who will appropriate to himself, so far as possible, the experience of his fellows and his predecessors; and thus equipped with the accumulated knowledge of the world, he will be able to accomplish vastly more, and do his work far better, than one who trusts simply to the uncertain results of his own individual experience.

How often do we hear the remark, "He was a genius," "He was bound to succeed," or "What a lucky man he was!" It is a mischievous popular error that genius and luck are the two magic influences which have enabled the majority of successful men to rise so far above their fellows in the particular lines in which they have attained eminence. It is not to be denied that some men are specially adapted for certain walks in life. Then it is certainly a matter of importance that each one should, if practicable, occupy the position to which he is best adapted, and in which he is most likely to succeed; but those who have given the greatest amount of study and thought to this question, are unanimous in the opinion that the qualities which constitute genius are by no means uniformly extraodinary brilliancy of intellect, but far more commonly consist in an unusual ability and disposition for close and continual application. A man of genius succeeds where another man fails, not simply because he has greater intellectual powers, but because he applies his mind to the subject which he has in hand with greater intensity, and pursues it with greater perseverance and more searching, penetrating thought than his unsuccessful colleague.

So with luck. So-called luck rarely consists simply in the occurrence of favorable circumstances; but far more frequently the secret consists in the fact that when the particular circumstance occurred which was thought to bring the fortunate man luck, he was prepared to embrace the opportunity, and make the most of it, while his unsuccessful rival was engaged in a preliminary preparation without which he could not avail himself of the opportunity offered. The lucky man is not the man who, like "Micawber," is waiting listlessly for "something to turn up," but the man who is industriously preparing himself for anything that may turn up, and persistently working to turn something

up whereby he may succeed in accomplishing the purposes at which he aims.—*Dr. Kellogg, in "Man, the Masterpiece."*

TO BE CONTINUED.

## THE SHELF IN THE ATTIC.

WHEN Kate Holden entered the sitting-room to greet a stylish caller, a glance revealed the disorderly condition of the room that had been made tidy by her own hands but a few hours before. Three pairs of overshoes lay before the polished grate; a waterproof covered the best chair; slates and books nearly concealed the pretty table-cover; several dolls with ample wardrobe occupied the sofa; while fragments of bread, doughnuts, and apples told of a lunch suddenly interrupted. Poor Kate could not conceal her annoyance, and the cloud that rested upon her usually sunny face deepened as she parted from her friend and returned to her mother's room. It was not a new trial; Kate's wisdom and patience had been sorely taxed during the protracted illness of her mother, and the five active children, missing the mother's restraining hand, were rapidly getting beyond her control.

Mrs. Holden listened patiently to Kate's oft-repeated story of thoughtlessness on the part of the children, and realized that something must be done to assist her in enforcing habits of order. Kate's ingenuity soon developed a plan, and the decree went forth that all mislaid articles would be speedily transferred to a certain broad shelf in the attic, from which none but the owner might remove them. The novelty of the plan interested the children; while the father, Kate, and even Bridget, promised to submit to its conditions; and Kate, sanguine of success, made haste to appoint a place for everything, and to put everything in its appropriate place.

For a few days order reigned in the house. Mary's dolls were carefully returned to the drawer; the boys' hats were hung upon their allotted pegs; Jenny's aprons and ribbons were no longer sown broadcast throughout the house; and even little Charley's blocks and toys were carefully guarded from threatened exile. But careless habits had too long prevailed to be overcome at once, and the first rainy day sent a water-proof and umbrella to the broad shelf. The same evening, as the children gathered about the table to prepare lessons, Harry's books could not be found.

"Where did you leave them?" asked one.

"I know where you will find them," said Jenny; and amid peals of laughter, Harry, with more than necessary energy ascended the attic stairs. This was a valuable reminder to the other children, but soon Mary's dolls disappeared from the sofa; Jenny's paint box from the dining table; even Charley's soldiers exchanged their camping ground in mamma's room for the greater seclusion of the broad shelf in the attic. The children usually submitted cheerfully, Jenny sometimes pettishly complained of the inconvenience of a dressing-room at the top of the house, and John, when time pressed, preferred to do without cuffs and gloves.

"It is n't all fun," said Mary one evening, as she timidly entered the dusky room in search of her composition book, "but if we can only catch Kate I'll not complain."

An opportunity occurred at length. Kate, preparing for a drive, sought in vain for her muff. She hurried from closet to drawer in search of the missing article that no one had seen, while her escort restrained the impatient horses at the gate.

"Charley must have taken it," she said fretfully, and finding him in the kitchen, she repeated her question.

"Yes," said the little rogue, "I found it on mamma's bed, and Bridget and I put it away on the attic shelf, where she found my blocks."

Bridget suddenly disappeared, and Kate sought the attic shelf, followed by the children's shouts of triumph.

Mr. Holden's turn came at last.

"Children," he asked hurriedly, one morning, "have any of you seen my driving gloves?"

"Yes, papa dear," replied Mary sweetly, "I saw them last night in the attic on the broad shelf."

A look of astonishment, not unmingled with displeasure, passed over his face as he repeated, "In the attic!"

Mary saw the half-frightened looks of the children, the cloud upon her father's face; and, fearing she had ventured too far, quickly sprang up, saying: "Forgive me, papa. I will go and get them."

"No, no," said Mr. Holden. "I had quite forgotten the new law, but if I have broken it, I will pay the penalty." As his heavy steps ascended the stairs, the repressed mirth of the children gave way to merry laughter, in which he heartily joined. Quiet was scarcely restored when Bridget was heard anxiously inquiring for a lost broom.

"You will find it on the broad shelf in the attic," shouted Harry; "the piazza is not the proper place for a broom."

Bridget also mounted the stairs.

"She is the very last," said Jenny; "it is doing us lots of good, and I don't mind going every day for the fun of seeing others go."

She did not go every day, however, for orderly habits were becoming fixed in the Holden family. Kate's tasks were greatly lightened, and when Mrs. Holden was able to resume her place in the family, she found the law, like many another, unnecessary, being seldom transgressed.—*Golden Rule.*

### A TRIFLING THING.

ONE has said, "It is hard telling what a trifle means." Everything in nature seems to be closely connected with everything else. An undue preponderance of one force sets in motion all other forces. The eddying of a few particles of air may give rise to a tornado. A step may start an avalanche. The prick of a pin in a balloon may destroy it. Another writer has put the thought in a still stronger light: "There is no such thing as a trifle." Any person who has lived many years and been engaged in the transactions of daily life, will certainly appreciate this quotation. A useless expense of a few cents daily, to a laboring man, will amount to no small sum in a series of years; while a judicious expenditure of the same will be exhibited in a few years in the general appearance of thrift all around such a man. To know how to do things in the best possible manner involves a knowledge of a thousand little things needful to insure success.—*Sel.*

***An Intellectual Feast.***—The late Professor Louis Agassiz, in his early manhood visited Germany to consult with Oken, the transcendentalist in zoological classification. "After I had delivered to him my letter of introduction," he once said to a friend, "Oken asked me to dine with him, and you may suppose with what joy I accepted the invitation. The dinner consisted only of potatoes, boiled and roasted; but it was the best dinner I ever ate; for there was Oken. He unfolded to me, during the hours of a long afternoon, the principles of his system more completely than I could have obtained them from his books. There never was such a feast! Never before were such potatoes grown on this planet; for the mind of the man seemed to enter into what we ate sociably together, and I devoured his intellect while munching his potatoes. I repeat it, I never ate such a dinner before or since."

—Says Miss Frances Willard: "Whatever standard women steadfastly insist upon, with power to enforce that insistence, men will attain. In practical life, this greatest of reforms will work itself out on this wise: Whenever the young women of this nation, or any other, able to earn their own living, ready for an independent life, yet sweetly drawn by the eloquent persuasions of their hearts to the old and sacred pathways of love, marriage, and home,—whenever they can say to the young men, 'You must choose between tobacco and me,' 'You must choose between strong drink and me,' 'You must choose between an immoral life and me,' then, and not till then, these sensual indulgences will be relinquished by young men; then, and not till then, the cause of social purity will grandly triumph."

—God helps those who keep themselves

### CULTURE A NEED OF THE CHILD-TRAINER.

PERHAPS some day the community may come to perceive that woman requires for her vocation what the teacher, the preacher, the lawyer, and the physician require for theirs; namely, special preparation and general culture. The first, because every vocation demands special preparation; the second, because, to satisfy the requirements of young minds, she will need to draw from almost every kind of knowledge. And we must remember here that the advantages derived from culture are not wholly an intellectual gain. We get from books and other sources of culture not merely what informs the mind, but that which warms the heart, quickens the sympathies, strengthens the understanding; we get clearness and breadth of vision, refining and ennobling influences, wisdom in its truest and most comprehensive sense; and all of these, the last more than all, a mother needs for her high calling. That it is a high calling, we have high authority to show. Dr. Channing says, "No office can compare in importance with that of training a child." Yet the office is assumed without preparation.

Herbert Spencer asks, in view of this omission, "What is to be expected when one of the most intricate of problems is undertaken by those who have given scarcely a thought as to the principles on which its solution depends? Is the unfolding of a human being so simple a process that any one may superintend and regulate it with no preparation whatever?.... Is it not madness to make no provision for such a task?"

Horace Mann speaks out plainly, and straight to the point: "If she is to prepare a refection of cakes, she fails not to examine some cookery book or some manuscript receipt, lest she should convert her rich ingredients into unpalatable compounds; but without ever having read one book upon the subject of education, without ever having sought one conversation with an intelligent person upon it, she undertakes to mingle the earthly and celestial elements of instruction for that child's soul that he shall be fitted to discharge all duties below, and to enjoy all blessings above." And again, "Influences imperceptible in childhood, work out more and more broadly into beauty or deformity in after life. No unskillful hand should ever play upon a harp where the tones are left forever in the strings."

In a newspaper I find this amusingly significant sentence: "Truthfully, indeed, do the Papists boast that the Episcopal Church is training-ground for Rome. The female mind is frequently enticed by display of vestments and music; and if the Ritualists can pervert the mothers, they know that the next generation is theirs." This is significant, because it signifies that, however weak and easy of enticement the "female mind" may be, it has a mighty power to influence the young.

But we can show not only opinions and prophecies, but the results of actual scientific experiments. A recent number of the *Popular Science Monthly* contains an account of experiments made in Jamaica upon the mental capacity for learning of the different races there existing. The experimenter found, he says, "unequal speed," but saw "nothing which can be unmistakably referred to difference of race. The rate of improvement is due almost entirely to the relative elevation of the home circle in which the children live. Those who are restricted to the narrowest gauge of intellectual exercise, live in such a material and coarse medium that their mental faculties remain slumbering; while those who at home hear of many things, and are brought up to intellectual employments, show a corresponding proficiency in learning."

This, and the editor's comments, bear directly on our side, that is to say, the culture side. The editor says it is inevitable "that the medium in which the child is habitually immersed, and by which it is continually and unconsciously impressed, should have much greater value in the formation of mental character than the mere lesson experiences of school. Home education is, after all, the great fact; and it is domestic influences by which the characters of children are formed. When men are exhausted by busi-

ness, and women are exhausted by society, (or other means), we may be pretty sure that but little can be done to shape and conduct the home with reference to the higher mental needs of the children who live in it."

Now, who, more than any one, "shapes and conducts the home"? Who creates these "domestic influences," this "medium in which the child is habitually immersed"? —Woman. In the name of common sense, then, throw open to woman every avenue of knowledge. Surround her with all that will elevate and refine. Give her the highest, broadest, truest culture. Give her chances to draw inspiration from the beautiful in nature and in art. And, above all, insure her some respite from labor, and some tranquillity. Unless these conditions are observed, "but little can be done to shape and conduct the home with reference to the higher men tal needs of the children who live in it."—*Mrs. Diaz.*

***The Blessing of Labor.***—One of the greatest safeguards against evil is plenty to do. When men sin against the law of their country, where do the police detectives go to find them? Not amid the dust of factories, not among those who have on their "overalls;" but among those who stand with their hands in their pockets around the doors of saloons and restaurants and taverns. Active employment is one of the greatest sureties for a pure and upright life. There are but very few men with character stalwart enough to endure continuous idleness. I see a pool of water in the country, and I say: "Thou slimy, fetid thing—what does all this mean?" "Oh," says the pool of water, "I am just stopping here." I say to the pool of water: "Did n't I see you dance in the shower?" "Oh, yes," says the water, "I came down from God shining like an angel." I say to that water: "Did n't you drop like a beautiful gem into a casket of other gems as you tumbled over the rock?" "Oh, yes," says the water, "I sang all the way down from the cliffs to the meadow." I say again: "Did n't I see you playing with those shuttles and turning that grist-mill?" "Oh, yes," says the water, "I used to earn my living." I say again: "Then what makes you look so sick? Why are you covered with this green scum? Why is your breath so vile?" "Oh," says the water, "I have nothing to do. I am disgusted with shuttles and wheels. I am going to spend my whole lifetime here, and while yonder stream sings on its way down the mountain-side, here I am left to fester and die, accursed of God because I have nothing to do." Sin is an old pirate that bears down on vessels whose sails are flapping idly in the wind. The arrow of sin has hard work to puncture the leather of an old working-apron. Be encouraged by the fact that your shops, your rising walls, your anvils, are fortresses in which you may hide, and from which you may fight against the temptations of your life. Morning, noon, and night, thank God for plenty to do.—*Talmage.*

—A Friends Society in an Eastern State recently went on an excursion. There were nearly two hundred passengers on the train. The R. R. Co. furnished a smoking car, as usual, but as not a single person used it, it was left by the way on a siding. There are very few other religious bodies that can make so good a showing as this as regards the tobacco habit. The example of the Friends is worthy of imitation; may their tribe increase.

—"I am just as much opposed to intemperance as any body," said Smith, "but, nevertheless, liquor rightly used is a blessing to humanity. When I was ill last year, I really believe it *saved my life.*" "Very likely," said Brown, "but how does that prove that liquor is a *blessing to humanity?*"

—We lead but one life here on earth. We must make that beautiful. And to do this, health and elasticity of mind are needful; and whatever endangers or impedes these, must be avoided.—*Longfellow.*

—"How can I expand my chest?" asked a strong fellow of a physician. "By carrying a larger heart in it," said he.

# POPULAR SCIENCE.

—A statue was quite recently discovered near Abonkir which has been identified by Mr. Wilbour, the well-known antiquarian and Egyptologist, as that of Rameses II., the Pharaoh during whose reign Moses was born. It is of red granite, about ten and a half feet in hight, and covered with hieroglyphics on the front, back, and left side.

**Luminous Printing.**—An Italian has recently invented a printing ink which possesses the remarkable property of being luminous in the dark. By the aid of this invention it will be possible for invalids who are obliged to be shut up in a dark room, to relieve the tedium of their confinement by the perusal of books and papers specially prepared for their use. The invention, if proven by experience to be of practical use, will serve to lessen the dependence upon gas, and size of gas bills, and will be a wonderful convenience for travelers, especially European tourists, who soon tire of paying for tallow dips at the rate of a franc apiece.

**The Mound-Builders.**—Throughout a large proportion of the Mississippi Valley, the remains of a former race of inhabitants are found, of whose origin and history we have no record, and who are only known to us by the relics that are found in the tumuli (mounds) which they have left. The mound-builders were a numerous people, entirely distinct from the North American Indians, and they lived so long before the latter that they are not known to them even by tradition. They were industrious and domestic in their habits, and the finding of large sea-shells, which must have been brought from the Gulf of Mexico, if not from more distant shores, proves that they had communication and trade with other tribes. Perhaps the most interesting fact connected with this ancient people is, that they had a written language. This is proved by some inscribed tablets that have been discovered in mounds, the most important of which belongs to the Davenport Academy of Sciences. These tablets have attracted great attention from archeologists, and it is thought that they will some day prove of great value as records of the people who wrote them. It is still uncertain whether the language was understood by the mound-builders, or whether it was confined to a few persons of high rank.—*Sel.*

**Metempsychosis.**—According to a physician who writes to a Scottish medical journal, the doctrine of metempsychosis, or transmigration of souls, is to be found in some out of the way places where one would scarcely expect to encounter this antiquated belief. When traveling in Africa, he was greatly disturbed on a certain night by the horrible howling of hyenas. In retaliation for his loss of sleep, he shot one of the scavenger beasts. The next day he found himself in serious trouble; one of the members of the native tribe with whom he happened to be stopping, charged him with having murdered his grandmother. He was accordingly arrested, tried, and found guilty. He escaped severe punishment only by the payment of a heavy fine.

**A Tree-Climbing Fish.**—Of all land-frequenting fish, by far the most famous is the so-called climbing-perch of India, which not only walks bodily out of the water, but even climbs trees by means of special spines near the head and tail, so arranged as to stick into the bark, and enable it to wriggle its way up awkwardly, something after the same fashion as the "looping" of caterpillars. The tree-climber is a small, scaly fish, seldom more than seven inches long; but it has developed a special breathing apparatus to enable it to keep up the stock of oxygen on its terrestrial excursions. which may be regarded to some extent as the exact converse of the means employed by divers to supply themselves with air under water. Just above the gills, which form, of course, its natural hereditary breathing apparatus, the climbing perch has invented a new and wholly original water-chamber, containing within it a frilled bony organ, which enables it to extract oxygen from the stored-up water during the course of its aërial peregrinations. While on shore, it picks up small insects, worms, and grubs; but it also has vegetarian tastes of its own, and does not despise fruits and berries. The Indian jugglers tame the climbing-perches, and carry them about with them as part of their stock in trade; their ability to live for a long time out of the water makes them useful confederates in many small tricks which seem very wonderful to people accustomed to believe that fish die almost at once when taken out of their native element.—*Popular Science Monthly.*

—The wood of the "jarrah" tree, an Australian product growing principally in the western section, is stated to be about the next thing to everlasting. It appears to defy all ordinary forms of decay under the most trying circumstances, is left alone by the white ants, and ships built of it do not require to be coppered.

GOOD HEALTH.

BATTLE CREEK, MICH., AUGUST, 1886.

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

### THE SLEEPING HABIT.

THE ability to sleep well is one of the most excellent qualifications which can be possessed by a hard worker in any sphere of life. Sleeping is very much a matter of habit, and there is no doubt that the taking of sleep at regular hours is one of the most excellent means of preserving the health; but there are many professions and positions in life which do not admit of absolute regularity in respect to rest or sleep. Physicians, and in fact professional men generally, are called upon to discharge duties which necessitate long periods of severe labor and insufficient and irregular sleep. Such persons may to a large degree atone for the transgression of the physical law requiring regularity of sleep, by acquiring the habit of sleeping whenever opportunity affords, even though the hour may not be the one usually devoted to rest. Napoleon and Wellington have often been quoted as persons who took little sleep. It is said of both these men that they rarely slept more than four hours at night. This is unquestionably an insufficient amount to maintain the wear and tear of an active body, and numerous anecdotes support the belief that both Napoleon and Wellington really secured a much larger amount of sleep than is generally supposed.

For instance, it was reported of Wellington that it was not an infrequent thing for him to fall asleep at the dinner table in the midst of a meal. In one instance he fell into a profound slumber in the midst of a repast to which a number of his friends had been invited. Out of deference to the Iron Duke, all the guests suspended eating, and maintained the utmost silence until he awakened. On another occasion his son, while riding with him, was astonished to discover that his father was sound asleep. The horse, a fast trotter, was going at a high rate of speed, and the Duke held the lines. His son was obliged to awaken him to save a disastrous collision, but received no other recognition for his service than the angry exclamation, "Mind your own business, young man!"

Napoleon was famous for "taking forty winks" when riding in his carriage, or whenever opportunity afforded. Both of these men probably managed to get nearly the average amount of sleep. For a man whose habits must necessarily be irregular, it is a valuable acquisition to be able to fall asleep at almost any time when opportunity affords,—when riding on the cars, waiting in a railway station, or at any other time when necessarily disengaged, to improve the chance to put in the time in sleeping, providing nature has been defrauded of the necessary amount of time for repair and recuperation. By this means, one who would otherwise break down under a constant strain of mental activity, may be enabled to prolong his usefulness, when otherwise he might meet the expectations of his friends in a complete physical break-down.

*A Royal Example.*—Emperor William governs a nation of smokers, but himself never smokes, snuffs, or uses tobacco in any form. His habits of life are most simple. He is nearly ninety years of age, but does not habitually wear glasses.

### PRISON REFORM.

To any person familiar with the usual conditions of prison life as they exist in this country, our prisons must be looked upon as in no sense of the word reformatories, but simply places where punishment for crime is meted out, without special reference to the future good of the individual. In other words, they are simply means which society takes of getting even with the criminal for his misdeeds. This method of prison administration is wholly inconsistent with the character of an enlightened and Christian civilization. Unquestionably, bad physical conditions and an unhealthy state of the body have much to do with the production of crime and immorality.

Some time ago the writer, in company with a number of other persons, was visiting a large house of correction in which several hundred men were confined for crimes varying in gravity from a petty theft to burglary or highway robbery. We were examining the bread produced by the convict bakers. One lady remarked that the bread was rather inferior in quality, to which another lady replied, "Better than they deserve." A gentleman standing near, turning to the last speaker, said, "Madam, it is possible that bad bread may have been the means of bringing some of these poor fellows here." The remark was not only a mild rebuke to the lady's thoughtless expression, but was an utterance in harmony with sound moral philosophy,—not the sort of moral philosophy taught a thousand years ago, but that which is based upon the results of modern biological researches, particularly those which have established upon a scientific foundation the intimate relation between mind and matter within the human system.

A prison ought not to be simply a criminal pen, or place where the transgressors of law may expiate their sins by hard labor and hard fare; but it should be a genuine reformatory, from which the criminal, who enters with a disordered body and perverted moral instincts, should issue a renovated man, having undergone a process of physical and mental regeneration, which will give to society the best possible guarantee of his future good behavior.

According to a French writer, the canton of Neufchâtel, in Switzerland, has introduced the custom of teaching each prisoner a good trade. "All who are well behaved are, after a period, placed with a master of the trade which they have learned, under the oversight of the police and of a member of a voluntary committee, who is called a patron. The prisoner thus provisionally liberated has to present himself every week to his patron, who receives the reports of his master and of the police. The patron sends an abstract of these reports to the governor of the prison, and in this way, if his conduct remains good, the man's liberty is gradually restored, and he regains his position in society, with the additional advantages of experience of discipline and knowledge of a trade. A few customs similar to this lead the French observer to remark that a Swiss canton is in some things a century in advance of the rest of the world."

### HEALTHY HOMES.

At a Sanitary Convention recently held at Kalamazoo, Michigan, an interesting paper on Healthy Homes was read by Prof. V. C. Vaughn, M. D., of Ann Arbor, Michigan. It was devoted mainly to the homes of the working classes, but the principles stated were of interest to all classes. The following is an extract:—

"A cottage may be as healthy as a palace, but it must stand on soil in which there is no animal, and not much vegetable matter. A house on damp ground breeds consumption. A layer of cement, impermeable by gases, should be placed beneath the floor. The cellar should have windows hung on hinges, kept open when practicable. Use no arsenical wall-paper. A good druggist can make the arsenic test at small expense. Make the floors of hard wood, and have tight joints. Rugs are preferable to carpets. Do not shut out the sun; faded carpets are not so bad as faded cheeks. Have the living rooms on the sunny side of the house. The kitchen is the most important room in the house; if it is

filthy and unhealthy, all else is vain. It should have a window on two sides, and an independent ventilating shaft. Have both window sashes movable in all the rooms. Houses built without ventilation can be partially ventilated by a short board, put under the lower sash, thus leaving a space where the sashes join. A room heated by a stove can have a good air supply brought into the room by a pipe, opening into a jacket around the stove. Ventilation can be had by a pipe leading from near the floor to the chimney, but a chimney should have one flue for smoke, and another for foul air. Water is a great source of disease. When a cistern is filled from the roof, it should be arranged so that the first washings of the roof in a storm can be turned off from the cistern. Build the cistern so that the soakage from the surrounding surface is impossible. With regard to the disposition of excreta, the dry-earth system is preferable, the accumulations being removed semi-monthly. It costs less than $5 a year, and does not admit of contamination. Garbage should be burned. Cess-pools should be water-tight, ventilated, and emptied once a month."

### AN ERROR ABOUT HONEY ADULTERATION.

SOME years ago we found in the *Popular Science Monthly*, a statement by a reputable chemist to the effect that comb honey was sometimes produced by artificial means. The statement was copied into this journal, and the supposed facts were used in other works by the editor. Through the kindness of the editor of the *Bee Keeper's Journal* we have received the following correction of the statement, written by Prof. Cook, of the Agricultural College at Lansing, Mich.:—

"I am surprised to note the following response to an inquiry in the Farmers' Club of a late *Rural New Yorker:* 'It is probably true that men, without the aid of bees, now make and sell comb honey in which neither wax nor honey is used, and that the comb is made of paraffine, and filled with a substance like honey.' Now, Mr. Editor, I wish to say that the above is not only not probably true, but that it is utterly absurd, mischievously false, and entirely impossible. No such thing has ever been done, and it is very certain that no such thing ever can be done. Only Nature's deft and delicate fingers can fashion the beautiful comb honey. Comb honey is one thing that fraud cannot counterfeit. Whoever purchases the beautiful, white, incomparable comb honey, may be sure that he has nature's product, pure and genuine. A few years ago, Prof. H. W. Wiley, now Chemist of the Agricultural Department at Washington, published an interesting article on sugar, in the *Popular Science Monthly*, in which he made the above statement, apparently in all soberness. Afterward, when Prof. Wiley was called upon for proof of what was palpably absurd to any one who knows of the real nature of comb honey, a substance which is clearly inimitable,—he replied: 'I only wrote it as a scientific pleasantry.' This statement was apparently as candid and earnest as any part of the article, and so was widely copied by the press of the country, and now, like all untruthful statements, it is ever and anon lifting its ungracious head only to do mischief."

### PREVENTION OF HYDROPHOBIA.

THE remarkable researches of M. Pasteur respecting the nature of rabies, or hydrophobia, and methods of preventing the disease, have attracted world-wide attention. It seems now to be established beyond serious question that the French *savant* has really discovered a method by which this remarkable malady may be effectually prevented.

His plan is to inoculate rabbits with a portion of the spinal cord of a dog which has died of hydrophobia. On the death of the first rabbit, a second rabbit is inoculated with a portion of its spinal cord, and so on until a number of rabbits have been successfully inoculated. Portions of the spinal cord of the last rabbit are then placed in beef broth.

When a person is to be inoculated for hydrophobia, a preparation of the virus which is two weeks old is first used, a few drops being injected under the skin with a hypodermic syringe. The next day a virus twelve

or thirteen days old is used. On each subsequent day, the age of the virus is lessened by one day, until a virus only one day old is used, when the patient is supposed to be perfectly protected.

One of the remarkable features of M. Pasteur's discovery is, that by passing through a long series of rabbits, it is possible to obtain a virus which will develop the disease in just one week; whereas the virus obtained through the bite of a mad dog requires a much longer time for its development. This fact makes it possible to secure protection from the disease by inoculation by modified virus, even after a person has been bitten by a rabid animal.

The illness produced by inoculation is very slight, the system being gradually accustomed to the virus through successive inoculations by this method. It is reported that nearly one thousand inoculations have been performed, among which only five cases of hydrophobia have occurred. Only one of these was from the bite of a mad dog, the other four being from the bites of wolves, and the patients very badly torn. Pasteur asserts that the proportion of deaths from persons bitten by mad dogs amounts to about one in six. In the case of wolves, the percentage of deaths is fully one-half.

### POISONING BY DECAYED FOOD.

It is well known that food in which decomposition has taken place is a frequent cause of severe illness, and yet the public are not as wide-awake to the gravity of this source of danger to life and health as they should be. At this season of the year, food will often decompose in a few hours, if not kept constantly at a low temperature in a refrigerator or an ice-box. The poisonous properties of decomposing food were formerly not understood, but are now known to be due to certain peculiar poisons called *ptomaines*. The following interesting facts concerning ptomaines we quote from a recent scientific journal:—

"The action of the ptomaines is more virulent when they are introduced into the circulation through wounds than when they are brought into the stomach. Cuts and other wounds received while dissecting corpses have often caused blood-poisoning, ending in death. The savages of the New Hebrides are not only acquainted with the properties of poison of this kind, but make use of it in their wars. They plunge the points of their arrows, which are made of human bones and provided with grooves, into a corpse about a week old, and then coat them with the sap of a certain creeping plant. Before discharging the arrow, they dip it into water. A serious wound caused by such an arrow is inevitably followed by death in from three to five days. Report as to a similar practice comes from the Narrinjeris, inhabitants of South Australia. They are said to wound their enemies by splinters of bones previously plunged into corpses undergoing putrefaction.

"Jacob Doepler, in his 'Theatrum Pœnarum,' mentions a method of poisoning wells, the account of which was formerly discredited, but has become plausible in the light of modern researches. He states that people suffering from leprosy took of their blood, mixed it with herbs and toad-spawn, formed little pellets of the mixture, and threw the pellets weighted with stones into the wells. Many people who drank from these wells were taken with the same disease, and some of them died. This happened in the reign of Philip V., of France, who caused all lepers cognizant of the outrage to be burned, and the Jews, who were accused of being the instigators of the crime, to be persecuted.

"That many who drank of such water should become leprous seems likely, inasmuch as the partaking of spoiled food causes eruption of the skin, nettle-rash, etc., in many persons; chiefly are these symptoms to be noticed after eating spoiled fish. Of course the effects are more serious with some persons than with others. Some people are so sensitive that partaking of fish, seemingly fresh, will cause them inconvenience; others are liable to suffer from a peculiar eruption of the skin after eating crabs or lobsters. Pos-

sibly the meat of these animals, even when in the normal condition, contains neurine sufficient to exert its influence on persons susceptible to it, while it may not affect others at all. In the maize porridge which is called 'polenta,' and which is the chief food of a certain class of Italian working-men, there is formed, by putrefaction, during the hot months, a poison which causes 'pellagra.' This is an eruption of the skin, resembling erysipelas, which grows worse in time, and finally induces death. . . .

"In every-day life, too, the ptomaines very often give proof of their presence. Heretofore, however, such cases have not always been well understood. The frequent inflammations of the fingers of persons engaged in washing dishes, etc., are due to this cause. The poisons of putrefaction, so easily formed, need only enter into a scratch or abrasion of the skin, and they will cause a slight poisoning. This is commonly termed having a 'sore finger,' and is rather unpleasant, but generally is soon cured. The best remedy for the evil is washing with soap, which acts like a mild disinfectant."

Food which is dangerous from the presence of parasites or diseased germs may be rendered comparatively innocuous by thorough cooking, but this is not true as regards food which has been rendered poisonous by putrefactive decomposition. Neither roasting nor boiling nor any other form of cooking will destroy the activity of the poisonous ptomaines; and the readiness with which animal food becomes so imminent a danger to life and health, is another argument against the use of this class of foods, at least during the hot months, when putrefactive decomposition is likely to occur.

***Milk from City Cows a Cause of Consumption.***—The Council of Health of Paris, after a careful investigation of the matter, has requested the authorities to expel all dairy cows from the city of Paris. They claim to have found that the 5,000 cows in the French capital are very many of them suffering with consumption, and that human beings frequently contract the disease from this source. Examination of the milk of many of the cows showed it to contain a great number of Koch's vacilli. It is claimed that one cause of the great increase of consumption among cows is the practice of in-and-in breeding. A similar investigation might be made with profit in many of our large cities.

### *THE DEATH OF DR. DIO LEWIS.*

For nearly half a century, Dr. Dio Lewis has been prominent before the American public as an advocate of numerous hygienic and temperance reforms, and probably has done more than any other man of the present generation to popularize ideas relating to common sense living. All who have an interest in hygienic reform, have experienced the pain of a personal bereavement in the death of Dr. Lewis; and those who had the honor of a personal acquaintance with him, feel that they have sustained a loss which is wholly irreparable. We quote the following brief sketch of the life of Dr. Lewis from the *Boston Transcript*, of May 22:—

"Dr. Dio Lewis, the author and reformer, died at his home in Yonkers, N. Y., at eight o'clock this morning, from erysipelas, after an illness of two or three days. Dr. Lewis was born at Auburn, N. Y., in 1823, studied medicine with Dr. Briggs, of that city, took his medical course in the Harvard Medical School, Boston, began the practice of his profession in his native place in 1845, and two years later removed to Buffalo, where he practiced from 1847 to 1852. During his residence in Buffalo he wrote a number of papers on the causes and treatment of cholera, which ravaged that city during 1849 and 1851. These papers attracted much attention, and were afterward printed in book form. Since 1855 he has been engaged in lecturing and writing on the subject of public and personal hygiene. With the exception of two visits to Europe and three summers of saddle life in the mountains of California, he has been unceasingly occupied with the 'ounce of prevention.'

"During four years he lectured almost every night, giving his days to the invention of his new system of gymnastics. In 1860, having completed his system, he abandoned the platform and settled in Boston, Mass., to establish his Normal School for Physical Training. Obtaining an act of incorporation from the Massachusetts Legislature, he

placed his scheme before the celebrated Dr. Walter Channing, Dr. Thomas Hoskins, and other well-known medical men. The two gentlemen named, and others, entered heartily into the work. Dr. Channing and Dr. Hoskins both became active teachers or professors in Dr. Lewis's school. Within seven years, more than four hundred persons were graduated from the Boston Normal School, bearing its diploma, with the name of Dio Lewis as its president.

"Another interesting phase of Dr. Lewis's work is found in the great seminary which he established at Lexington, Mass. His object was to illustrate the possibilities in the physical development of girls during their school life. His buildings, accommodating two hundred persons, were placed upon the first battle-field of the Revolutionary war. A large corps of teachers in mathematics, the sciences, languages, *belles-lettres*, and music were engaged, and the opening announced. The school soon grew to one hundred and fifty young women, gathered from all parts of the country, including the Pacific Coast, Central America, and the West Indies. In the course of his twenty-two years' residence in Boston, Dr. Lewis published nine volumes on the various aspects of the health of the human body, some of which, like 'Our Girls,' 'Our Digestion,' and 'Weak Lungs,' have had enormous sales. His latest venture was the establishment in New York of a monthly magazine, called *Dio Lewis's Monthly*, devoted to sanitary and social science."

The following letter recently received by the editor from Mrs. Dio Lewis gives additional facts respecting the immediate circumstances of his death, which have not been published:—

YONKERS, N. Y., July 20, 1886.

J. H. KELLOGG, M. D.,
*Battle Creek, Mich.*

Dear Sir,—There have been no full particulars published of my husband's sickness and death. His life will be written as soon as possible, with all particulars.

He was thrown from his horse last February, slightly wounding his left shin and skinning a small place, which we treated with simple remedies, but it did not heal. On the 11th of May, after a very long walk, a slight chill came on, followed by slight fever and pain in this leg. The next day it was much swollen and was very painful. It was evident that erysipelas had set in, which the Doctor saw, and said at once, "This is my last sickness. I never was so sick before, I am sick all over. Well, I am willing to die. It is a comfort to feel that I have not lived *entirely* in vain." When assured by four physicians that they saw no reason why he should not get well, he said: "Gentlemen,—I know myself better than you do, and I see that it is impossible for me to recover. I have overworked for years, and broken down repeatedly till the whole system is compromised, and cannot rally from this last attack." He made all the arrangements possible about his business, and finally dictated the arrangements for his funeral and the cremation of his body. He said, "Although I am averse to the somewhat unpleasant notoriety which, as yet, cremation involves, my very strong conviction is, that it is the right disposition of the dead. I leave directions with the full assent of my wife, that my body shall be cremated, and that the ashes shall not be placed in an urn, but in the earth, over which my wife will lovingly plant forget-me-nots; and when she may move, the forget-me-nots and the ashes may be removed to her new place of residence. I direct also, with my dear wife's assent, that all funeral parade and expense shall be avoided, and that my remains be placed in a plain pine casket, for removal to the crematory. I desire, also, that no flowers be sent by my friends."

His convictions were very strong in regard to cremation. I hope his example may be followed by many.

I never heard him speak with more power or energy than he did the evening before he was taken sick, when addressing the women operatives of the carpet factories of Yonkers. It is pleasant to know that his last public work was for the benefit of poor women, in whose welfare he felt such a warm interest. His mind was clear to the last.

Very truly yours, MRS. DIO LEWIS.

***A New Source of Consumption Discovered.***—A Danish physician has recently discovered that cows' udders are subject to a tubercular disease which may communicate consumption to human beings. He says that "tuberculosis of the udder of milch-cows is by no means a rare affection, and is characterized by a diffused, painless swelling of one, rarely of two portions of the udder, proceeding without any constitutional implication. A gland thus affected furnishes in the beginning an apparently perfectly normal milk, while in a simple non-tubercular inflammation the milk is at once materially and conspicuously altered. The diagnosis is corroborated by the swelling of the supra-mammary lymphatic gland. This milk contains a large number of tubercle-bacilli. Experiments resulted in the infection of several animals. Boiling he found would destroy the bacillus; hence it is but prudent to resort to this process with every doubtful sample of milk."

# DOMESTIC MEDICINE.

**What to Do with the Slops.**—The editor has recently received the following letter from a Salt Lake City correspondent:—

"In your writings, and those of other sanitarians I find many excellent remarks against cess-pools; but I have failed to notice any plan suggested, except sewerage, for the disposal of soapy water and other household slops, that would make it possible to dispense with the objectionable hole in the ground. It is quite probable that you, and others, have elaborated plans of that character, but I have not yet seen them, and as the subject is undoubtedly important to others situated similarly to myself, I respectfully request you to favor us with some information relating thereto, through the columns of GOOD HEALTH.

"There is no sewerage in this city of 30,000 inhabitants, and not a large supply of water. The city covers quite a large area, embracing ninety miles of extremely wide streets, and blocks ten acres square, therefore a system of sewerage would be too enormously expensive for us, at present. Many of the lots, like mine, are quite small, including but a few rods of ground in addition to the house, barely sufficient for a flower garden in front and a back door-yard. The conundrum is, how to get rid of clothes-washing water, dish-washing water, floor-scrubbing water, bath water, etc., without running it into a cess-pool. If water from the sources named was thrown into the back yard, it would make a continuous foul-smelling mud puddle, and, for similar reasons, the little garden should not be converted into a slop depository.

"I will be greatly pleased to read your valued suggestions about this matter."

In cases like that described by our correspondent, there is evidently but one thing to be done. The slops cannot be disposed of upon the premises by evaporation, as the garden area is not sufficiently large to allow of such free distribution of the liquids as will insure complete and immediate evaporation. It is evident that the slops must be in some way removed from the premises. There is no general system of sewerage by which this can be done. There is left but one alternative,—they must be received in some form of water-tight receptacle, and periodically removed by the scavenger. This method has been satisfactorily employed in many cities, and undoubtedly might be introduced into Salt Lake City with eminent advantage. The receptacle may be constructed in the ground, of brick laid in Portland cement, and lined with a thick layer of coal tar or asphaltum, or may be made of boiler iron. The first form of cistern described is superior to one made of iron; and where good brick can be obtained at a moderate price, it is also cheaper.

**Bather's Cramp.**—The return of the bathing season is an appropriate time for a few words on the subject of the "cramp" therewith associated. If the nature and causes of this dangerous affection were more generally known, it is probable that many deaths from drowning in the summer might be prevented. Cramp is a painful and tonic muscular spasm. It may occur in any part of the body, but it is especially apt to take place in the lower extremities, and in its mildest forms it is limited to a single muscle. Pain is severe, and the contracted muscles are hard and exquisitely tender. In a few minutes the spasm and pain cease, leaving a local sensation of fatigue and soreness.

When cramp affects only one extremity, no swimmer or bather endowed with average presence of mind need drown; but when cramp seizes the whole of the voluntary muscular system, as it probably does in the worst cases, nothing in the absence of prompt and efficient extraneous assistance can save the individual from drowning.

Persons of middle age suffer most from the affection, and men more than women, and the robust and vigorous more than the weakly. Neither can there be any doubt that the shock occasioned by cold applied to the surface of the body, especially when the body is unduly heated, is the commonest determining cause of the worst and most extensive form of bather's cramp. On this fact is founded the common prejudice against bathing when the body is much heated.

Many fatal cases have illustrated this point. Last summer a robust man, who was an expert swimmer, rowed in a boat one sultry evening to a deep pool. With his body glowing with muscular exertion, he plunged into the water, when he was immediately seized with general muscular cramp, and at once drowned. The most powerful and

most avoidable cause of serious cramp is the sudden immersion of the body, when highly heated, in water of a relatively low temperature.—*Popular Science News.*

**Cause of Short Life.**—Dr. Hitchcock, the eminent professor of physical culture at Amherst, believes that the reason why the average length of life is only forty years, is that men and women live too fast. Their heads are prematurely bankrupt; their stomachs are worn out; their hearts, kidneys, and muscles are overworked. If the use of tobacco increases during the next as it has during the past twenty-five years, we shall not only know of sudden death from heart and brain injuries consequent upon it, but we shall see in the Anglo-Saxon race, men emasculated and sorely deficient in muscular strength. A lack of control over our bodily and mental functions is one reason why we live forty instead of seventy years.

**The Hygiene of Babies' Eyes.**—The two muscles, a set for each eye, act in perfect correlation, and enable the organ in an instant of time to cover an infinite range of vision. No fine adjustment of the telescope, no system of lenses and prisms, can accomplish this feat in an instant of time.

The utmost caution is therefore imperatively demanded of every person to whom is consigned the care of the young child, from infancy to perhaps the third year of life. It is during this time that damage to the muscular apparatus of the eye may be done. The mother or nurse is eager to have baby see everything from the nursery-window, or from a carriage or car. How many tired heads, languid eyes, and disordered tempers result from this mistake! How often is loss of accommodative power, or enlarged pupil, or cross-eye the consequence! Worms, "inward fits," sour stomach, flea-bites, and bad temper are some of the morbid and moral posers which the mother and the family doctor ponder over.

An indication of the delicate and undeveloped muscular apparatus of the eyeball within the first two months of life is found in the ease with which some infants look cross-eyed. It is well known that in sleep the eyes are turned upward under the brows, and inward, and that a true crossed condition of the optical axes occurs during this state. An occasional temporary crossing of the eyes of an infant about two months of age should be carefully investigated.

The child should be handled lightly; it should not be played with too much; it ought to lie or roll on its back in preference to sitting on the lap or in a chair. Any unequal size of the pupils should be carefully noted. It may be either the sign of some internal trouble or a simple local affection of the muscular tissues controlling the pupil. —*Health.*

# QUESTION BOX.

**Rattle-Snake Bite.**—A "Kansas Emigrant" asks:—

1. Is there any reliable antidote for rattle-snake poisoning?

2. What treatment would you recommend if the patient was not reached until some hours after he had been bitten?

ANS.—1. No.

2. The first thing to do is to extract the poison. This may be efficiently done by sucking the wound, taking care not to swallow any of the blood drawn out. Hot fomentations should be applied to the limb if any symptoms of inflammation appear.

The prostration arising from the wound may be antagonized by alternate hot and cold applications to the spine.

When a person is bitten through the clothing, generally little or no virus is injected into the wound, as it is usually wiped off by the clothing before the skin is reached. It is customary to use whisky or some strong alcoholic drink in cases of this sort, and there is a popular belief that the remedy is efficacious. We can say nothing upon this point from personal experience, but would not hesitate to give a stimulant in case it was likely to be of any service to the patient.

**Bread without Baking-Powders.**—Mrs. J. C. R., of Ill., writes: We note you class all baking-powders as "unwholesome and unnecessary." Will you kindly tell us what we may use as a substitute? What will produce the effect desired without the injury to the stomach, to which you referred in June GOOD HEALTH?

ANS.—There are several methods of making wholesome and toothsome bread without baking-powders. Gems or rolls of wheat flour can be made as wholesome and toothsome as can be desired, with the addition of nothing but water. For gems, a rather stiff batter is made, which must be beaten vigorously for ten or fifteen minutes, to incorporate as much air as possible. Place the batter in gem jars previously heated very hot, and bake in a quick oven. It takes a little time to learn the knack of doing the thing just right; but when properly made, water gems are a very toothsome bread. For rolls, a stiff dough is made. tI

must be cooked a long time, and sufficient flour worked in so it will not stick to the board. Cut into sticks an inch wide and half an inch thick, and bake in a quick oven until slightly browned. They are exceedingly delicate and toothsome.

Beaten biscuit are made in the same way, only the dough is made as stiff as possible, and pounded a long time with a mallet instead of being kneaded.

The famous hoe cakes of the South contain only corn meal, water, and a little salt. Mrs. Kellogg's "Cook Book" contains dozens of recipes for bread without baking-powders.

**Eczema, or Salt Rheum.**—A Western subscriber writes:—

"My mother has been afflicted for a great many years with a humor which breaks out on her face and neck, and sometimes on the body. It is attended by intense burning. Some pronounce it salt-rheum. Can it be cured? If so, what remedies should be used?"

ANS.—Salt-rheum, when persistent for many years, is usually dependent upon some morbid constitutional condition, the improvement of which is necessary for a permanent cure. Disturbances of digestion, an inactive condition of the liver, and an impoverished condition of the blood are among the most common causes of this condition. Local applications are very useful. Among the best are the following:—

Bathe the parts for ten or fifteen minutes two or three times a day. The water should be as hot as can be borne without discomfort. After bathing, apply zinc ointment, a preparation which can be obtained at any drug store. If the skin is much thickened by the disease, apply instead of zinc ointment, equal parts of zinc and tar ointment. It should be applied daily and thoroughly rubbed in. Sometimes the itching may be relieved by bathing the parts with an alkaline solution consisting of a dram of soda to a pint of water.

**Reading at Meals—Frogs.**—A correspondent inquires: 1. Does reading at meal-time impede or promote digestion? 2. Are frogs desirable in spring-water used for household purposes?

ANS.—1. The mind is likely to be occupied in some way at all times during the waking hours; and it is hardly to be supposed that the reading of a newspaper, or some other form of light literature, will tax the brain to any greater extent than conversation, or even thought without conversation. Exciting reading, or any form of mental exercise requiring a high degree of brain activity, should of course be avoided during meals, as likely to interfere with the digestive processes.

2. No. Water used for household purposes should be pure as possible. Water containing frogs, fish, or other forms of animal life, will necessarily be more or less contaminated. Spring-water should always be boiled before being used for drinking purposes, as intestinal parasites of various kinds undoubtedly most frequently find their way into the human system through this channel.

**Maggots in the Ear.**—Children having a discharge in the ear as the result of scarlet fever, or inflammation of the middle ear, sometimes have an enormous increase of suffering as the result of maggots developed in the ear. Flies, being attracted by the odor, lay their eggs in the ear when the child is asleep or at play, giving rise to a large number of maggots, which in some instances have destroyed the whole middle ear, producing deafness. A year or two ago a case came under the writer's care of an elderly man who had suffered extremely for several days from this cause. A week or so before, he had observed a fly buzzing about his ear. The insect doubtless succeeded in depositing its eggs, which gave rise to a numerous family of larvæ. Occurrences of this sort emphasize the importance of giving proper attention to discharges from the ear, which may usually be readily cured by a proper course of treatment. Scrupulous cleanliness maintained by daily washing of the ear would materially lessen the liability to an accident of the sort mentioned, by keeping the ear in a wholesome condition and free from odor.

**Diet and Work.**—S. L. inquires: "Which needs the most and richest food, a muscle worker, or one who uses his brain chiefly?"

ANS.—Physiologists long ago established the fact that a given amount of severe brain labor is more exhausting than twice the amount of work of a purely muscular character. It should be taken into account, however, that many times a person uses brain and muscles simultaneously. In fact, all active muscular labor is accompanied by a greater or less degree of brain and nerve activity. It may be said, briefly, that the intense brain worker requires a more liberal and nourishing diet than the man engaged in muscular labor who does very little active brain work. But the man who requires the most nourishing diet of all is he who labors vigorously with both brain and muscles.

**Nausea.**—Mrs. C. N. T. inquires what to do for a child in whom riding in a sleigh produces nausea and vomiting.

ANS.—If the occurrence is constant, that is, if riding always makes the child sick at the stomach, there must be something radically wrong with its nervous system, which will be likely to be improved only by improvement of the general health.

# SCIENCE IN THE HOUSEHOLD.

CONDUCTED BY MRS. E. E. KELLOGG.

## SUGGESTIONS FOR CANNING FRUIT.

CANNING fruit is a very efficient means of preserving it in a wholesome condition. It consists in sealing up fruit, which has been previously scalded, in air-tight cans or jars. It is a very simple process; but like most other culinary processes, requires careful management to make it a success. The results of painstaking efforts in this direction are, however, so generally satisfactory that it is well worth all the trouble, and the canning of fruit need not be considered a difficult undertaking if the following details are carefully attended to :—

1. Select good cans. Glass self-sealing cans, of some good variety, are always to be preferred. Tin cans are much more troublesome to fill and seal, are liable to injure the flavor of the fruit, and if not manufactured from the best of material, they will injure the wholesomeness of the fruit. Glass cans can be used much longer than tin ones, and are in the end the most economical. Those with glass covers or porcelain-lined screw covers, are the best. Take care that the cans are whole, and perfect in every respect, with good rubbers, and covers that fit closely. Thoroughly rinse the covers and rubbers in hot water, and dry before using. If the cans are some which have been previously used, examine them with special care to see that both cans and covers have been carefully cleaned and scalded, and fitted with new rubbers if necessary.

2. Select only the best of fruit, such as is perfect in flavor, and neither green nor over-ripe. Poor fruit will not be improved by canning; over-ripe fruit will be insipid and mushy; and though the cooking process will soften hard, green fruit, it cannot impart to it the delicate flavors which belong to fruit when used in its prime. Fruit should be perfectly ripe, but the larger varieties should not be soft enough to be ready for eating, and should be put up as soon after picking as possible. The fruit should be picked on a dry day while the sun is shining on it, and, if possible, should be done up on the same day. In gathering the fruit and preparing it for use, it should be handled as little as possible, as this is injurious to most fruits. If possible, keep it clean enough to avoid the necessity of washing. If necessary to pare, use a silver knife, as steel is apt to discolor the fruit.

3. Stew the fruit *slowly* in a porcelain-lined or granite-ware kettle, adding as little water as possible. Steaming may be employed instead of stewing, and is preferable when the fruit is at all soft and apt to fall to pieces. To do this, fill the cans as carefully as possible with the fresh fruit, cover in such a manner that the water cannot boil into the can, but not so tightly but that the steam can escape, and set the cans on muffin rings, straw, flat stones, or something to keep the cans from resting on the bottom, in a boiler of water, and boil until the fruit is steamed tender.

The fruit should not be cooked so much as to fall to pieces, and taste flat and insipid; but it must be so thoroughly scalded that every part of it will have been subjected to that high degree of heat at which the germs from which fermentation originates will be destroyed. Simply heating is not sufficient, though after the fruit has reached boiling heat, it should be cooked just the least possible that will insure its being tender and palatable.

The length of time required for cooking the various fruits varies about as follows :—

Whortleberries and cherries, 5 minutes. Raspberries, blackberries, ripe currants, 6 to 8 minutes. Halved peaches, gooseberries, and grapes, 8 to 10 minutes. Whole peaches, 15 minutes. Strawberries, 10 to 15 minutes. Halved pears (common varieties), quince, sliced pineapple, 15 to 20 minutes. Whole pears, 30 minutes. Siberian crabs (whole), 25 minutes.

If the fruit is stewed in a kettle, do not attempt to cook a very large quantity at a time.

4. Use none but the best of sugar, if any at all. Berries and small fruits are thought to retain their flavor best when canned without sugar, adding the necessary amount when the fruit is opened for use. If sugar is used, one tablespoonful to the quart of fruit is a good proportion for most berries and peaches. Plums, cherries, and currants require from five to eight tablespoonfuls of sugar to the quart of fruit.

*Have the sugar hot, and do not add it until the fruit is boiling.*

Large fruits, like pears, peaches, apples, etc., which contain a much smaller quantity of juice than berries, are considered best canned in a prepared syrup.

In making the syrup, as little heat as possible should be employed, since a solution of water and sugar, even when kept at the temperature of boiling water, undergoes slow decomposition. It is best to pour the water cold on the sugar, letting it stand until entirely dissolved, stirring occasionally, if need be, and when needed for canning, heat to a boiling temperature, and use at once.

5. While the fruit is cooking, prepare the cans in which it is to be placed. Pint and quart jars are most convenient for a small family, as fruit that has been canned does not keep well long after having been opened. Various methods can be employed to prevent the can from breaking when the hot fruit is put in it.

Some wrap the cans in a towel wrung out of hot water, and keep a silver spoon inside while it is being filled. Others apply dry heat by keeping the cans in a moderately hot oven while the fruit is cooking; while others wrap each can in a thick towel wet in cold water, folded around and under the can so as to exclude all air, dropping a silver spoon inside before filling. In our own experience we have found the following plan a most efficient one: Fill a large dish-pan nearly full of scalding hot water (it should not, however, be boiling hot) Take each can, introduce it gradually into the water, roll it over and over, then dip full of water and set it right side up in the pan with the water in and around it. Repeat the process with other cans until there are four or five ready in the pan, which is as much fruit as can be well cooked at a time. Put the covers likewise into a basin of hot water. Have ready a granite-ware funnel and dipper, also in hot water, a cloth for drying the juice from the tops and the water from the cans, a silver fork or spoon, a dish for emptyings, and a broad shallow pan half filled with hot water to set the can in while being filled. E. E. K.

TO BE CONCLUDED NEXT MONTH.

**Soap.**—Soap, as a detergent for washing purposes, is of great antiquity. In the ruins of Pompeii a complete soap manufactory was found, and the utensils and some soap were in a tolerable state of preservation. The first distinct mention of soap, now extant, is by Pliny, who speaks of it as the invention of the Gauls. The Gallic soap, eighteen centuries back, was prepared from fat and wood ashes, particularly the ashes from beechwood, this wood being very common in France as well as in England. Soap is spoken of by writers from the second century down, but the Saracens were the first people to bring it into general use as an external cleansing medium.—*Sel.*

**Oil Stoves and Health.**—A writer in a recent number of the *Sanitary News* remarks as follows upon the unhealthfulness of that modern convenience, "the oil stove":—

"In many households, kerosene oil-stoves take the place of kitchen ranges during the summer, for cooking and laundry uses. The absence of heat, which is one of the strongest claims made for the convenient little oil-stoves, is not so great an advantage as it is made to appear. No house which remains through the damp, close weather of dog-days without heat from stove or grate, can be a suitable or healthful dwelling-place. Heat is the surest purifier of a moist and disease-laden atmosphere; and in many a house the kitchen fire, which is the only one lighted from spring to fall, has been the salvation of the inmates. People will never live rationally in this variable climate, where the mercury runs up and down the tube of the thermometer with a freedom and rapidity which is consistently Western, until they learn to regulate fires and clothing, not by the month or season, but by the actual temperature, and their own individual needs. There is another danger in the use of oil-stoves, which should be seriously considered. Unless the greatest care is taken in trimming the wicks and keeping the stove clean, it will certainly smoke, and this smoke, besides being very penetrating and disagreeable, is extremely irritating to delicate throats. For the same reason, a kerosene lamp should not be kept burning dimly in a sleeping-room at night. If it must be used, it should be allowed to burn clearly and brightly, and a constant supply of outside air should be admitted into the room."

—A carpet merchant in Vienna has a curious collection of ancient woolen and linen cloths, including more than 300 specimens. Many of them have been taken from tombs, and are stretched on folios of cardboard to preserve them. Some of the fragments are only a foot square, but the larger ones make up an entire Roman toga, which is said to be the only one in the world. There are a great many embroidered dresses and a deal of knitting and crewel work. Double chain stitch seems to have been as familiar to the Egyptian seamstress, sewing with bone needles, as it is to modern women. There are some very quaint and unusual designs in the old collection of cloths, but there are also some very common things. It is curious to find that the common blue check pattern of

our dusters and workhouse aprons was in general use among the Egyptians more than a thousand years ago.—*Boston Journal of Commerce.*

**To Remove Milk and Coffee Stains from Silk and Woolen Goods.**—These stains are very difficult to remove, especially from light colored and finely finished fabrics. From mixed woolen goods they can be removed by moistening with a mixture of one part glycerine, nine parts water, and one half part aqua ammonia. Apply this mixture by means of a brush, and allow it to remain twelve hours, moistening occasionally as necessary. Afterward press the stained pieces between cloth, and rub with a clean rag. Drying, and, if possible, a little steaming, is usually sufficient to entirely remove the stains.

For silk garments use five parts glycerine, five parts water, and one quarter part ammonia. Try the mixture, before using, on a small bit of the same goods to see if it will change the color. If such is the case, the ammonia must be omitted. Apply with a soft brush, allowing it to remain on the stains for six or eight hours, then rub with a clean cloth. The remaining dry substance should be carefully taken off by means of a knife. Brush the spots over with clean water, press between cloths, and dry. If this does not entirely remove the stain, rubbing with a little bread will complete the cleaning. To restore the finish, a thin solution of gum arabic may be brushed on, dried, and the goods carefully ironed.

**Glossy Starch.**—Take two ounces of white gum arabic, put it in a pitcher and pour over it a pint of water, cover to keep from dust, and let it stand all night. In the morning filter carefully into a clean bottle, cork it and keep for use. One tablespoonful of the gum water to one pint of clear starch in which a piece of white wax has been melted will give a fine gloss to shirt bosoms, collars, and cuffs when a polishing iron is used.

—To darn well, long stitches should be worked one way across the hole to be darned so as to completely cover it, then begin sideways, and take up every other one of these long stitches, so that the hole may be filled with a kind of basket work of thread. Great care must be taken not to draw the hole in any smaller so that it will not lie flat and even.

—To stone raisins easily, place them in a colander, and turn hot water over them. This will soften them, and make it easy to remove the stones.

—The *Laundry* says that the reason blankets are hard and harsh after washing is the use of soap containing rosin. A small piece of borax dissolved in water and added to the suds will greatly improve the softness of the blankets.

—Wooden ware is best cleaned with cold water and sand.

# LITERARY NOTICES.

THE PHILANTHROPIST: The Philanthropist, P. O. Box 2554, New York City, N. Y. Price, post paid, 10 cts. a dozen, 50 cts. a hundred.

Two new leaflets of this Series have just been published, and are ready for distribution, No. 5, "The Sacredness of Motherhood," by Mrs. Elizabeth Powell Bond; and No. 6, "The White Cross," by the Rt. Rev. Henry C. Potter, D. D., Assistant Bishop of New York. Both are of great interest, and valuable for circulation.

BABYHOOD: 5 Beekman St., New York City, N. Y. $1.50 per year.

The July number contains much of value and instruction to the mothers of the land. "The Value of Water in Early Life," by H. D. Chapin, M. D., is an extremely simple and practical presentation of the subject. An illustrated article on the "Care of Children's Feet" is equally instructive. The department of "Nursery Problems" contains much of timely interest, and there are the usual useful hints all through the magazine, notably one by Miss Juliet Corson, the well-known instructor in cookery, on the importance of water filtration; also *Babyhood's* prize article on "Protracted Crying Spells."

THE POPULAR SCIENCE MONTHLY: *D. Appleton & Co. Publishers, New York City.* Subscription price $5.00 per year.

The August number of this popular magazine opens with an illustrated article on "Woods and their Destructive Fungi," by P. H. Dudley, C. E. The series of articles entitled "An Economic Study of Mexico," by Hon. David A. Wells, is concluded in the present issue. Prox. Huxley has a valuable paper on "The Extension of Scientific Teaching." "A Canadian Chapter in Agrarian Agitation," by George Iles; "Genius and Precocity," by James Sully, M. A.; "Causes of the Present Commercial Crisis," by Paul Leroy-Beaulieu; "Mineral Springs of Eastern France," by Titus M. Coan, M. D.; "Good Tune, and its Ascertainment," by Prof. Isaac Sharples; "Recent Progress in Chemistry," by Prof. H. C. Bolton; "The Prediction of Natural Phenomena," by Dr. A. Schaff, and a sketch of Oswald Heer, with portrait, serve to make the number a most interesting and instructive one.

# PUBLISHER'S PAGE.

☞ Every week brings to the office of the journal, a large number of new subscribers, not only from all parts of the United States, but from various foreign countries, from various parts of England, Canada, South America, and even from Australia, New Zealand, the Hawaiian Islands, and distant India. GOOD HEALTH has found its way to every part of the globe where the English language is spoken.

☞ The summer season thus far in Michigan, with the exception of four or five warm days, has been pleasantly cool, and the air most of the time delightfully exhilarating. Diseases of all sorts are so scarce that there is a general complaint among physicians of hard times. The patients of the Sanitarium are never tired of complimenting the institution for its pure air and delightful surroundings.

☞ The Sanitarium patients, to the number of nearly two hundred, spent a day very pleasantly at Goguac Lake a week or two ago. The street railroad runs direct from the Sanitarium to the Lake, a distance of about two miles. Once in two weeks during the summer months, the managers give the patients a picnic at the Lake, with a steam-boat ride, and other entertainments. On such occasions the street car company provide a number of extra cars, which are formed in line in front of the Sanitarium, and are quickly loaded with patients and a sufficient number of attendants to secure the proper care of all, and such aid for feeble ones as is necessary to enable them to thoroughly enjoy themselves.

☞ The Sanitarium gymnasium has just received a valuable accession to its facilities by the addition of the most valuable of Prof. Sargent's appliances, which have been developed and perfected in the renowned Hemenway Gymnasium of Harvard University. The system of physical culture carried out for patients in this institution is not to be found in any other medical establishment in the world.

☞ The Sanitarium is now brilliantly illuminated by the "Edison Incandescent Electric Light," which has far more than met the expectations of the managers, who assert that they would not exchange the light for gas, even if it were furnished gratis. The light is brilliant, but soft, and not painful to the eyes. One advantage of this light, which the physicians value very highly, is the use of the same current which furnishes the light, for medical and surgical purposes, thus enabling them to dispense with the old-fashioned and exceedingly troublesome cautery batteries.

☞ The large and elegant addition to the Battle Creek College, which has been in progress of construction during the season, is now nearly completed, and will doubtless be ready for occupancy at the opening of the next school year. The light and airy basement of the new structure is to be used for a gymnasium. The first floor will be divided into class rooms, and the second floor will be used for a chapel and assembly room. This room will have a seating capacity to accommodate five hundred students. Battle Creek College has attained an enviable reputation as a school in which young men and women can receive excellent educational advantages, from a literary and scientific standpoint, and at the same time be surrounded by moral influences of an exceptionally excellent character. Few schools of this kind give any attention to the physical training of students, but the managers of this College fully appreciate the need of physical as well as mental and moral training, and have established a manual training department with special reference to this much neglected branch of educational training. The gymnasium, which has now been added, will prove a valuable supplement to the manual training department, as it will give an opportunity for those varied exercises which are necessary to secure a symmetrical development of the body.

Taking it all together, we know of no school to which parents can send their sons and daughters with such entire confidence that their interests, physically, mentally, and morally, will be so thoroughly and conscientiously cared for as at the Battle Creek College.

The annual catalogue containing announcements for the next school year, may be obtaining by addressing Battle Creek College, Battle Creek, Mich.

☞ A new enterprise has been inaugurated in this in this State, which ought to receive the cordial support of sanitarians everywhere. We refer to the manufacture of patent earth closets, which has been undertaken by a company who are doing business under the name of Heap's Patent Earth Closet Co. The editor of this journal has carefully examined the appliance manufactured by this company, and pronounces it the best thing in the line which he has ever seen. The introduction of the earth closet in place of the abominable vault system, would almost annihilate typhoid fever and cholera. Those who wish to investigate this subject further, will do well to correspond with Heap's Patent Earth Closet Co., Muskegon, Mich.

## A FEW WORDS FROM OLD SUBSCRIBERS.

Mrs. L. F., of Indiana, says:—

"Having taken up a GOOD HEALTH printed in 1881, and finding so much good in it, I thought I would write you and see if it is still published. We took it one year, and liked it very much. Often friends who came to see us would ask for the GOOD HEALTH, and every one that read it liked it. I hope it is still published and heralding forth its precious truths."

Mrs. J. C., of Colorado, writes:—

"I have just received the February number of your journal, with which I am *very much* pleased indeed."

J. M. B., of California, says:—

"Please continue sending my journal. I do not want to miss a single number."

S. B., of Illinois, renews his subscription and says:—

"We feel so much pleased with the journal, we scarcely know how to do without it."

C. L. W., of Mass., has received the GOOD HEALTH, and is "greatly pleased with it."

S. T. A., of Kansas, writes:—

"I had thought that I would try to do without GOOD HEALTH this year, but I find it indispensable; so inclosed find one dollar for the same."

E. S., of New York, sends one dollar for renewing her subscription for a third year, and "would not do without it."

T. H. R., of New York, sends one dollar for renewing his subscription to GOOD HEALTH, and remarks:—

"Your journal is an old friend, and perhaps the best way to express my appreciation of it is to say that I have taken it every year but one since it began to be published."

Mrs. P. O., of Michigan, writes:—

"I have been one of your subscribers for about eighteen years, and rely a great deal upon the valuable information received from your journal, and have come to feel that I could not do without it; so I gladly renew my subscription for another year, and wish you continued success."

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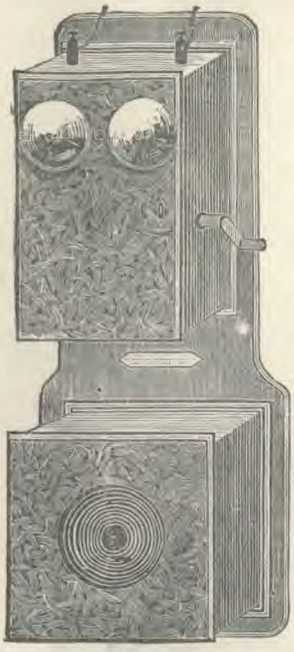

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## By J. H. KELLOGG, M. D.

AFTER a careful study for several years of the PHYSICAL EFFECTS OF ALCOHOL AND TOBACCO upon the human body, with unusually favorable opportunities for observation through post-mortem examinations, chemical analyses, and microscopical investigations, the author has prepared, by the aid of the best artists to be secured, a series of

## TEN COLORED PLATES,

Which depict in the most graphic manner possible, the ravages of alcohol among the delicate structures of the human body. The following is a list of what is exhibited by the several Charts:—

*PLATE 1. The Alcohol Family.*

" *2. A Healthy Stomach.*

" *3. Stomach of a Moderate Drinker.*

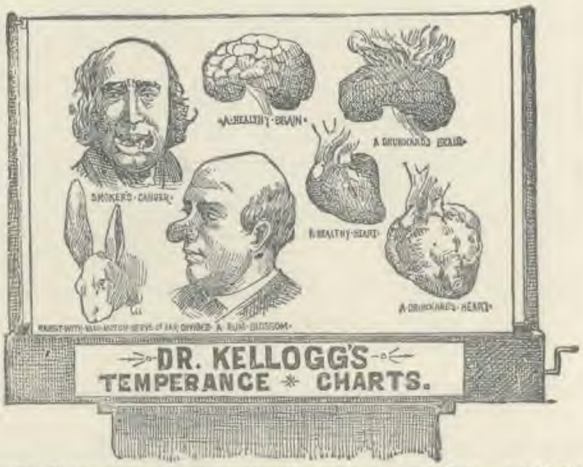
" *4. Stomach of a Hard Drinker.*

" *5. Stomach in Delirium Tremens.*

" *6. Cancer of the Stomach.*

" *7. A. Healthy Nerve Cells. B. Fatty Degeneration of Nerve Cells. C. Healthy Blood. D. Blood of an Habitual Smoker. E. Blood of a Drunkard. F. Blood Destroyed by Alcohol. G. The Drunkard's Ring. H. Healthy Nerve Fibres. I. Fatty Degeneration of Nerve Fibres. J. Healthy Muscle Fibres. K. Fatty Degeneration of Muscle Fibre.*

" *8. Smoker's Cancer. A Rum Blossom. A Healthy Brain. A Drunkard's Brain. A Healthy Heart. A Drunkard's Heart.*




" *9. A. A Healthy Lung. B. Drunkard's Consumption. D. A Healthy Kidney. E. Enlarged Fatty Kidney of Beer Drinker. F. Atrophied Kidney of Gin Drinker. G Healthy Liver. H. Liver of Drunkard showing Nutmeg Degeneration. I. Magnified Section of Fatty Liver of Drunkard. J. View of an Eye diseased from the Use of Tobacco and Whisky. K. View of the Interior of a Healthy Eye.*

" *10. ALCOHOLIC DRINKS, showing the percentage of Alcohol contained in the common Alcoholic Beverages. ADULTERANTS OF ALCOHOLIC DRINKS, showing a list of the various poisons used in adulterating the various liquors. SPHYGMOGRAPHIC TRACINGS OF THE PULSE, showing the effects of alcohol and tobacco upon the pulse. A. Pulse of a Healthy Person. B. Pulse of a Moderate Drinker. C. Pulse of a Drunkard. D. Pulse of an Old Tobacco User. E. Pulse of a Young Smoker.*

*STATISTICS OF STIMULANTS AND NARCOTICS. A diagram exhibiting in a graphic way the fact that the annual cost of alcoholic drinks, tobacco, rum, tea, and coffee, exceeds the cost of bread, meat, clothing, education, and missions.*

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