THE

HERALD OF HEALTH.

DEVOTED TO

THE CULTURE OF BODY AND MIND,

ADVOCATES

A Higher Type of Manhood—Moral, Physical and Intellectual.

OLD SERIES—vols. 55, 56. NEW SERIES—vols. 21, 22.

M. L. HOLBROOK, M. D., Editor.

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THE HERALD OF HEALTH.—"Its law is progress; a point which yesterday was invisible is its goal to-day, and will be its starting point to-morrow."

"Is there anything better in a State than that both men, women and children be rendered the very best? There is not."—*Plato.*

"The glory of young men is their strength."—*Prov.* 20, 29.

"She girdeth her loins with strength."—*Solomon.*

"The right of a human being to seek enjoyment at the expense of his physicial well b we can never admit."—*Horace Greeley.*

Men and women need first of all to be better born, then all the rest will come easier.

Does it not appear that we are bound to take steps for the excision of the canker, ill health, and that those races and families who delay making the endeavor must ultimately fall behind in the battle of life?

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VOL. 21, No. 1.] NEW YORK, JANUARY 1873. [NEW SERIES.

PUBLISHED MONTHLY BY WOOD & HOLBROOK, 13 & 15 LAIGHT STREET.

REMARKABLE ESSAYS ON HEALTH AND MORALS,

By Ancient and Modern Writers.

Isocrates' Discourse to Demonicus on the Conduct of Life.

(B. C, 346.*)

WE are going, Demonicus, to discourse of things that will afford us an opportunity of distinguishing between the good and bad men, in reference to their sentiments. There's a world of difference between them, even in their conversation and behavior, for the one has only a regard to his friends when he is with them, the other loves them at never so remote a distance; the friendship of the one is destroyed in a little time, the other seems to be permanent and lasting. As it is natural then to think that they who are in pursuit of virtue and honor will take for their patterns the virtuous, rather than the wicked, I present you with this discourse as a distinguishing token of our mutual friendship, and a clear demonstration of the familiarity I had with Hipponicus; for children are not only entitled to their paternal estate, but also to the friendship and intimacy of their parent's acquaintance.

Now I have the comfort to see, not only fortune willing to favor our design, but opportunity likewise to declare itself for us. For you seem desirous of instruction, and I make profession of instructing. You are in pursuit of wisdom and philosophy, and I take upon me to guide and direct in those studies.

They who write to their friends exhortatory discourses, discharge a very good office and do a very good deed; but that, notwithstanding, is not the chief task of philosophy. For they who inform youth, not only how to attain to a powerful and persuading style, but how to correct their lives and manners, are by so much the more useful to their disciples than the others, that those teach them only how to speak, while these inform them how to live. We, therefore, not finding any real occasion for the first part, and having chiefly in view the latter, shall take upon us only to advise you in reference to those things to the prosecution of which youth ought to be spurred up and excited, and those which

* For biographical sketch see Editorial Department.

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they ought chiefly to decline and shun; and at the same time to describe what persons they ought to pitch upon for their conversation, and how they ought to dispose and economize their life; for they alone who have followed this track have been able truly to attain to virtue—than which there is not a more estimable, nor equally valuable good. As for beauty, it is either destroyed with time or impaired by sickness; and for wealth, 'tis more subservient to wickedness than honesty and virtue, for it not only promotes idleness, but enables youth to pursue their pleasures; and though strength governed by wisdom is a blessing of great use, yet without that it is more pernicious than beneficial; and as it may be said to be an ornament to wrestlers and other practitioners in that kind, so it may be said to hinder and obstruct the improvement of the mind; whereas, virtue alone—if it has taken due rooting and increase in our hearts—does accompany us even in our old age, is more profitable to us than riches, and more advantageous than birth and nobility, for she alone makes that compassable to her followers that all others find impossible; they undergoing with fortitude what appears terrible to the multitude; ranking laziness among those things we ought to blame, and labor and industry among those we ought to praise. This we may plainly learn from the mighty labors of Hercules, and from the great achievements of Thesus. The known virtue of these great men has stamped such a noble character upon their performances, that time itself can never impair it. If you do but reflect on your father's way of living, you'll find in that a noble and domestic instance of the truth of what I say, for he neither neglected virtue nor passed his days in idleness and sloth, but inured his body to labor and his mind to undergo perils and dangers; he had neither an inordinate nor unseasonable love for wealth, but enjoyed the present good as being mortal, and took care at the same time of his substance, as if he had been immortal. He did not live after a sneaking, niggardly manner, but honorably and magnificently, and was bountiful to his friends, preferring those that were diligent and serviceable to him, even to his relations by blood. He was of opinion, that in contracting a familiar friendship nature was to be considered preferably to law, morality before lineage, and a judicious choice before necessity. 'Twould be an endless work to relate all his actions; and we shall account for them exactly at another time.

We have here given you a copy of Hipponicus's natural disposition, which you ought to take for a rule in the regulating of your life; making his practice your law, and endeavoring to be a zealous emulator of your father's virtue.

'Twould be a shameful thing that painters should be able to come up to the perfectional beauties of animals, and that children should not make it their business to imitate the distinguishing virtues of their parents. Be convinced, therefore, that no athlete ought to prepare himself more against the encounter he is to have with his adversary, than you to strive to come up to a par with your father in his excellent study and endeavors. Now 'tis impossible you should execute this, unless your mind is filled with due preparatory instructions; for, as the strength of the body is increased by proportionable labor, so the soul is fortified by proper and virtuous discourses.

Wherefore, I shall endeavor, in a succinct and short manner, to lay before you the means by which you may, at the same time, not only attain to the most consummate virtue, but likewise gain the general applause of all mankind. Let this, then, be your first rule, not only to venerate God by worship, but to observe religiously your oaths; for as that implies a plentiful estate, this is a testimonial of real honor and virtue.

Be careful, then, constantly to pay your duty to God in private, but never omit it in the public worship.

Let your carriage and behavior to your parents be such as you would wish your children should be toward you.

Exercise your body, not to improve your strength, but so far forth as tends to the procuration of your health; you may propose to come up to this, if you moderate your labor so that you still are capable of doing more.

Neither applaud an impertinent laughter, nor close in with a rash discourse; for the one is foolish and the other madness.

Never think that can be spoke with decency that modesty is ashamed to act. Don't affect a demure or severe look, but always have a presence of mind; for by the one you will appear self-conceited, by the other always wise.

Esteem that most to become you which is decent, modest, just, and temperate; for in these chiefly consists the morality of youth. Never consent to do a shameful act by the hopes you may conceive that it may never be known, for though you conceal it from others you'll still be conscious of it to yourself.

Fear God, and honor your parents.

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Have a modest and due respect for your friends, but be obedient to the laws.

Pursue those pleasures only that are accompanied with honor and glory, for that pleasure that has virtue for its companion is a valuable good, whereas without it 'tis a detestable evil.

Be careful to avoid the occasions of being aspersed in your reputation, though you know they are lies you are charged with; for as a great many will be ignorant of the truth as to fact, so they'll be liable to be imposed upon by rumor and report.

In all you do, imagine everybody will know it; for admit you could keep it a mystery for a while, 'twill be at last unfolded and made public.

You'll gain a confirmed reputation if you are known to avoid those actions you censure and blame in others.

If you are a lover of learning you'll acquire great knowledge.

Those things you have attained the knowledge of must be retained by practice, and at the same time you must take care to inform yourself of those things you are ignorant of.

'Twould be as great a shame not to learn a useful discourse as not to receive a good present your friends should make you.

Spend your leisure hours in hearing good discourses. By so doing you'll learn with ease and facility what has cost others a great deal of labor and pains to find out.

Set a greater value on the having received many instructive and useful lessons, than on the possessing great store of wealth; for the one is a fleeting, perishable and transitory good, the other is durable, nay, everlasting. Among all the things this world affords us, the possession and enjoyment of wisdom alone is immortal.

Don't think much to take a long journey to hear those who make profession to teach useful and profitable things, for 'twould be a shameful and foul reflection that merchants should undertake such tedious voyages by sea for the lucre only of increasing their wealth, and that youth should repine at a little land journey to refine their notions and cultivate their minds.

As to your behavior, be affable and easy of access, and let your language be courteous and civil; the one requires you should take notice of those you meet, the other that you should speak obligingly to them. But be sure to carry it handsomely to all in general, though you converse familiarly but with the best; by which procedure you'll disoblige nobody, and be certain of the esteem and friendship of the men of merit.

Let not your visits be too frequent to the same persons, nor your discourse too long on the same subjects, for there's a satiety of all things.

Inure yourself to voluntary labor, that you may be the better able to undergo what necessity shall lay upon you.

Take special care to govern and suppress whatever can be the least blemish to a handsome mind, as sordid gain, anger, voluptuousness and grief.

You'll compass this if you esteem that the greatest gain that procures you a good reputation, rather than that which augments your wealth; you'll conquer anger if you behave yourself towards offenders as you would have others behave themselves to you, when you transgress; and you'll bid fair to get the better of pleasure if you frequently reflect how shameful it is to have the command over your servants and at the same time be a slave to your passions. And you'll master affliction if you seriously look into other men's misfortunes, and at the same time consider that the condition of man renders you liable to the same.

Be no less exact in keeping the secrets intrusted to you than you would be faithful in reference to deposits of the greatest value, for a good and virtuous man's morals should gain him more confidence than any oath.

As you ought to distrust the vicious, so you ought to believe the virtuous. Never reveal your secrets to any, except it is as much their interest to keep them as it is yours they should be kept. If an oath be tendered you, take it on two accounts, either to clear yourself from any crime laid to your charge, or else to free your friends from danger; but never for the sake of riches swear by any God, although you might do it with a safe conscience, for by so doing you'll be thought perjured by some, while others think you avaricious.

Never contract a friendship with anybody till you have first examined how he behaved himself to his former friends; for you'll have good reason to hope that he'll be the same to you as he was to them. Take a sufficient time before you profess yourself a friend, but that once done, endeavor to be always such; for it is equally shameful to have no friends at all, and to change them often.

Do not try your friends to your prejudice, and yet at the same time take care to know their disposition towards you; you'll easily do this if you put on necessity when you really don't want, and communicate things to them as

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secrets that, in fact, are not so; by which means you'll be sure to receive no damage from their infidelity, if they are false, and if they are faithful you'll thereby discover their integrity.

You may make a trial of your friends in the misfortunes that attend life, and by their sharing in your dangers; for as we try gold by the fire, so we distinguish our friends by adversity.

You'll discharge yourself best of your duty to your friends if you do not wait till they apply to you, but freely and of your own accord relieve and assist them when occasion requires.

Think it as dishonorable to be outdone by friends in good offices as to be overcome and worsted by the malice and evil practices of your enemies.

Do not reckon them only to be your friends who grieve at your misfortunes, but likewise those who do not envy your prosperity; for a great many will express concern when their friends are afflicted, that shall look with an invidious eye on the liberalities of an indulgent fortune.

Speak kindly of your absent friends to those that are present, that they may not think you are unmindful of themselves when they are absent.

Be decent in your apparel, but not foppish; now he that keeps up to decency may be splendid in his apparel, whereas the fop shall be extravagant and whimsical.

Do not covet a superfluity of riches, but the enjoyment of a competency; entertain a mean opinion of those who are continually heaping up wealth, and yet know not how to make use of what they have; for it fares with these men just as it does with those that possess a fine horse without having the skill to ride him.

Endeavor to acquire wealth, that it may be useful to you as well as possessed by you; now it is useful to those who relish the fruition thereof, whereas it is barely a possession to those who know not how to make a right use of it.

Set a due value on the riches you are master of, for two reasons; the one that you may be able to pay a large fine, if it be requisite, the other that you may have wherewith to relieve a friend in distress. As for the other regards of life, love them with moderation and not excess.

Be contented with what you have, and seek at the same time to make the best improvement of it you can.

Never upbraid any one for his misfortunes, for fortune is common to all, and nobody can see into futurity.

Do all the good you can to virtuous and good men, for a good office done to a man of worth and merit is a noble treasure.

If you oblige unworthy men you'll be requited as they are who feed other people's dogs; and as these bark as well at those that feed them as at strangers, so those are apt to injure as well their benefactors as their enemies. Be as much averse to flatterers as to sycophants and impostors, for both the one and the other are equally pernicious, if believed.

If you admit for friends those that gratify and encourage your wickedness, you'll dishearten any one from incurring your displeasure on the score of virtue.

Let your behavior toward them that approach you be familiar and obliging, and not stiff; they are very different personages; for the haughty carriage of the one can hardly be borne with, even by their own domestics, while the other's engaging way is pleasing to everybody. Now you'll show yourself courteous, and win the good will of every one, if you are not captious, quarrelsome and hard to be pleased by those you converse with, in order to which you must not oppose too roughly those that passion and anger shall hurry away, though at the same time they are altogether in the wrong; but, on the contrary, give way to their transports, and when they are calm take an opportunity to remind them of their error. Never put on a serious and grave countenance when the jest is going round, nor affect levity and airiness where gravity is required, for whatever is ill-timed and unseasonable is vexatious. Above all things take care not to do a good office after an ungraceful manner, as a great many do, who at the same time they serve their friends, do it disagreeably and disgustfully. Avoid wrangling, because 'tis odious; and shun censoriousness, because it is provoking.

Have a special care how you associate with men of the bottle, but be sure—if occasion makes you fall into such company—to withdraw before the liquor gets the better of you; for he whose mind is overpowered with wine is like the chariot whose driver is cast out of the box. This going at random for want of the hand to guide it, and the other running all manner of risks and dangers, for want of thought.

Have greatness of soul enough to relish immortality, and at the same time moderation enough to enjoy the transitory blessings heaven has bestowed upon you.

Make a right estimate of the advantage education has over ignorance; they who are pos-

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sessed of the one turn all to their advantage, while the others are generally mortified and afflicted. It frequently happening that they suffer in fact for what they have indiscreetly uttered.

Speak well of those you desire to make your friends before those you are sure will tell it them again; for commendation is the beginning of friendship, whereas slander and backbiting is the source of hatred and enmity.

In point of counsel and deliberation, take examples of the past for the future; for what is dark and mysterious becomes plain and easy by what has already happened.

Take time to deliberate and advise, but lose no time in executing your resolutions. It belongs to heaven to prosper our undertakings, but it is our business to consider what we do.

Those things you are ashamed to speak of, with reference to yourself, and at the same time would be glad to advise with friends about, relate them as if they concerned others and not you, by which means you'll know the sentiments of those you consult, without discovering yourself.

When you have a mind to advise with any one concerning your private affairs, examine well first how he has managed his own; for he that has been faulty in the administration of his own concerns will never be able to advise well with reference to those of others. You'll be most excited to consult and advise if you seriously look into the miscarriages of temerity and rashness, for we then take the greatest care of our health when the pains and tortures of our infirmities are fresh in our memory.

If you are placed in power take care to make use of no ill men in the administration thereof, for whatever they do amiss will be ascribed to you.

Do not make it your business to acquire vast riches in public employments. But take care to discharge them with so much integrity that when you leave them you may do it with honor and reputation, for the esteem and favor of the public is much more valuable than wealth.

Neither be present at any evil action, nor protect any that shall be guilty thereof; for you'll be thought yourself to act what you defend in patronizing others.

Procure to yourself as much power and interest as you can, and at the same time be contented to live upon the level with others, that you may appear to love and practice justice; not through want of power, but for the sake of decency and equity.

Prefer a just and honorable poverty to ill-gotten riches; for probity and justice are by so much preferable to wealth that this is only of use to us while we live, while those do us honor even after our death. Besides, the wicked may participate of that, while none but the virtuous can partake of these.

Do not rival those that thrive through wickedness, but rather approve and imitate them that suffer for the sake of justice; for the just have this advantage, at least, over the wicked—if no other—that they exceed them in good hopes and expectancy.

Have a necessary regard to all that relates to the support of life, but cultivate your mind as much as you can, for a handsome mind is a noble thing, though shut up in a human body.

Inure your body to labor and your mind to wisdom, that by the one you may be able to execute your resolutions and by the other determine what you ought to do for your advantage and interest.

Consider seriously with yourself whatever you are to speak, for it is the fault of a great many to let their tongue outrun their thoughts.

Imprint this maxim deeply in your mind, that there is nothing certain in this human and mortal state; by which means you'll shun being transported with prosperity and being dejected in adversity.

There are two seasonable times to speak, either on these subjects you know perfectly well, or on those that necessity puts upon you. Now it is in the latter that it is better to speak than be silent; in the other it is better to be silent than talk.

It is allowable to be pleased with good fortune, and to be moderately grieved at afflictions; but never manifest yourself either in the one or the other, for it is preposterous and ridiculous that we should take the utmost care to hinder our riches, and at the same time expose our mind.

Be more cautious in avoiding anything that is blameful and faulty, than of dangers and perils; for as the wicked ought to be afraid of death, so the virtuous and good ought to fear doing anything that is dishonorable.

Use your utmost endeavor to live securely, but if you are at any time obliged to hazard your person, then seek no other safety during the war than what is consistent with honor and glory, and not that which is attended with shame and infamy; for destiny has decreed all men should die, but to die well is the particular privilege of the virtuous and good. Do not wonder if a great deal of what I have said to you don't suit with your age, for I am not insensible of that myself. But I chose at one

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and same time to give you my advice concerning your present behavior, and leave you precepts and directions to guide you hereafter. You'll easily discover the utility of these things, but you'll find it a difficult matter to meet with a faithful counselor that shall advise you with tenderness and good will. Therefore, that you may not be necessitated to have recourse to others, but may here find—as in a magazine—what you have occasion for, I thought it convenient to omit nothing that I was able to instruct you in. I shall give God a great many thanks if I am not deceived in the hopes I have conceived of you. As it is the common practice of most to delight rather in that food which gratifies their palate than in that which is wholesome and salutary, so they seek the conversation of those friends that are copartners in their vice, rather than that of those who remind them of their faults. But I nowise doubt but you have resolved to do quite otherwise. I ground my judgment on your diligence and labor in your other studies, for it is reasonable to believe that he that enjoins himself the practice of what is most commendable and best, will courteously receive from others their exhortations to virtue. It will be a mighty incentive to your prosecuting what is virtuous and honorable, if you duly consider that the pleasure arising therefrom is genuine and unmixed. Sloth, idleness and luxury are followed close at the heels by vexations and trouble; whereas a laborious and strict adherence to virtue and a temperate, sober, and well regulated life renders our pleasures more solid and sincere; those afford us at first some sort of satisfaction, which is afterward succeeded by grief and sorrow; while the difficulties and uneasiness that accompany this is ever attended with delight. Now, in all our actions, when they are past, we are not so deeply affected with their beginning as we are sensibly touched with their conclusion and ending; for, generally speaking, the greatest part of the actions of our life are not transacted so much for their own sake as for the ensuing consequences thereof. Consider with yourself that the vicious and wicked are capable of doing anything, and stick at nothing—they having laid that as the ground and foundation of their way of living—but the honest and good cannot swerve from the rules of virtue, but they'll immediately be censured, and find a great many reprovers. We are not for most part so much incensed against transgressors and offenders, as we are against those that pretend to a more than ordinary virtue, and yet differ in nothing from the vulgar; and this with all the justice imaginable, for since we with reason blame those that are unfaithful in their word, and are given to lying, shall we scruple to condemn those who through the whole course of their lives have, under a specious appearance, practiced nothing but vice? We may justly say of such a cast of men, that they are not only injurious to themselves, but also that they are traitors to fortune, she having liberally bestowed upon them riches, honor, and friends, when at the same time they show themselves unworthy of her favors. If it be no crime for mortals to guess at the thoughts of the gods, I think they notify to us, by familiar examples, how differently they are disposed toward the wicked and the good. For Jupiter, having begged of both Hercules and Tantalus—as the mythologists tell us—he made the one immortal for his virtue, and adjudged the other to the greatest tortures. Now they that look into these examples ought thereby to be spurred up to the practice of what is virtuous, and not be contented with what we have said; but likewise learn the best things the poets have expressed, and read whatever the wise and learned have writ that is of any use. For, as we see the bee settle upon every flower, in order to extract from it the virtue and quintessence thereof, so ought they to do who covet to be informed and instructed. They must leave nothing unattempted, but gather from all parts what is for their use; for with all this care they'll find it difficult and hard enough to overcome the viciousness of nature.

Occupations of College Graduates.—The occupations are given of 622 Harvard graduates, of 570 Wesleyan graduates, of 1,772 Yale graduates, and 1,254 Dartmouth graduates. Of these 4,218 alumni there were about 26 per cent. clergymen, 33¼ per cent. lawyers, 13 per cent. physicians, 13¾ per cent, instructors, and the rest were engaged in various kinds of business—journalism, commerce, manufactures, etc. Nearly 45½ per cent. of the Wesleyan alumni were clergymen; more than 40½ per cent. of the Harvard alumni were lawyers. Of the Yale men 34⅓ per cent. were lawyers, and 27½ per cent. were clergymen. The medical alumni of Harvard outnumbered the clerical, and Dartmouth shows more of them than Yale.

Opportunity has hair in front, behind she is bald; if you seize her by the forelock you may hold her, but if suffered to escape, not Jupiter himself can catch her again.

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Stormy Days.

BY REV. HENRY WARD BEECHER.

THERE are two ways of looking at stormy days. One is to regard them in the light of our own personal convenience. We *must* so regard them. When men are administering a public trust, and storms intervene, they cannot regard them from an æsthetical point of view. They cannot stop to admire the clouds, or to enjoy the sweet influences of nature. The thought and the feeling must be low and personal under such circumstances. And we are apt to make them so at any time when the weather is such as to interfere with our ease, or comfort, or plans.

A wet day is a day of umbrellas and rubbers to us. We sink it and lose it in the merest, and, I may say, the meanest matters of personal convenience. It is a day of interruption to our pleasures. It is a day on which we must prorogue some joys which we have ordained for ourselves. So we are frequently filled with discontent while God is unrolling in panorama before us innumerable wonders, which our condition of mind unfits us for seeing, and which are to be seen but once.

Storms never repeat themselves. There is something new in every storm. In every storm there are new designs and new developments. We lose these things often by looking in a peevish, selfish way at the diversities of the season and the weather.

Now, although it seems to us as if the perturbations of the seasons were interruptions, the year is harmoniously one. All calms, and shinings, and brightness, and storms, and ragings of the elements, are a part of the completed whole. Storms have just as much to do in nourishing the year as calms have. The seasons are not accidental. God provided for the winter as much as for the summer. There is as much evidence of divine wisdom in the winter as in the summer. Although we find more agreeable signs of the nourishing care of God in summer, yet there is a divine thoughtfulness, genial and kind and wise, even in winter, and in the stormiest days of winter.

As it is with nature, so it is with human life. It is not the best things (that is, the things which we call best) that make *men;* nor is it the pleasantest things; it is the rugged experiences, the tempests and trials of life. The discipline of life is here good and there evil, here joyful and there troublous, here rude and there smooth; and the alternations of the one and the other which necessitate adaptations, constitute a part of that education which makes a man a *man*, in distinction from an animal. Man is, unlike the animal, which has no reason and no moral sentiment, susceptible of unlimited development; and he advances as well in winter as in summer; as well in stormy days as in calm. Indeed, looking back upon life, I think stormy days, well borne, are better for us than days which require nothing but enjoying. The rough paths of our youth, the hard places of our manhood, the difficultie which we are called to overcome, those things which oblige us to put out all our strength, and keep it out; these, though they are less palatable than many other things, have the most to do with making us worthy men.

To what imaginings do the exhibitions of summer give rise in our minds! I am sorry for the man who looks on a cloud in its noble developments and sees nothing but a cloud. It was meant to work toward imagination, and to give a high moral impulse to the soul. It does, often, in men who do not know what ails them, and who have not words with which to express their feelings. All are more or less conscious of workings in them, which are occasioned by their contact with nature. And who has ever watched the movements of the clouds as they swept through the heavens in summer, or in winter, and not been affected by the spectacle?

In summer clouds look to me sometimes like fleets of ships, sometimes like caravans with dromedaries, making haste across a desert, and sometimes like the flying squadrons of an immense army gathering at some rendezvous.

In the stormy days of winter there is a murky sublimity and obscurity in the air; and when I see the snowflakes, that are filling the heavens, rush to and fro, it seems to me as though God was mustering his hosts to battle. To battle, indeed, are they mustered; for what else is more mighty than these little harmless snowflakes? If you put your finger on one of them it is annihilated, and yet enough of them will annihilate you. If you take up a handful of them it is nothing. But let handful after handful, for days and nights, be thrown down upon the earth, and they will cover your fields, and

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hide your fences, and bury your houses. And woe be to the travelers, the caravans or the armies that they overtake! When these inconspicuous nothings are aggregated, what a power do they exert! How do God's littlenesses tax the mightiness of man!

When I witness the phenomena of the heavens, which go steadily on, whether men look at them or not, I am struck with wonder and admiration. I go to the window and watch them for five minutes, and then go away and forget them for half an hour; and they go on when I am not looking at them just as much as when I am. I return, but they meet me with no smile and no greeting. There is no approbativeness in nature. She has no eye out for spectators, and no sense of the effect she produces on beholders.

We conceive of summer as a beautiful time of the year. It is. From the time of the first fragrant breath of spring, and of the first flock of birds, clear down to the days of November, when the trees are stripped of their foliage, there is not an hour in which the earth is not robed in beauty. We often hear people say, "Oh, the dreary days of November!" The days of November are never dreary, though men often are. There are things in November that make us sad, there are suggestions in November that lead us to serious thoughts, but November is not dreary. It makes me sad, but there is a sadness that is wholesome, and even pleasurable. There are some sorrows that are not painful, but that give piquancy and flavor to life; and such are the sorrows that November brings. That month, which sees the year disrobed, is not a dreary month. I like to see the trees with their clothes taken off. I like to see the anatomy of a tree. I like to see the preparation which God makes for winter. How everything is snugged and packed! How all nature gets ready for the cold season! How the leaves heap themselves up on the roots to protect them from frost! How all things that are tender are taken out of the way, and only things that are tough are left to stand the buffettings of winter! November is only sad to me, and it is a sweet sadness that it brings to my mind.

After that comes December, the month of beginning ice, the month in which the streams are shrouded, the month of snows begun.

And then come January and February, the months of beauty. Is there anything on earth so beautiful as the fallen snow? Yes, trees that are turned to crystal are just as beautiful. The rain that you heard pattering in the night froze as it fell, and every tree is sheathed and cased with ice. The glory of the sun is beaming through the branches, and a million glittering rays strike your eye; and with every movement of the wind and every change of your position the glory is wonderfully magnified. What are chandeliers, what is cut glass, what are the gew-gaw trinkets that human art can make, compared with this workmanship of God? And God makes it for nothing. No door-keeper stands to tax you for looking upon God's glory in the world. There is no stinginess in the heavens. The seasons are not niggardly. The earth is beautifully carpeted. It is robed in white. All the trees are magnificently appareled. No leaves or blossoms ever gave them such beauty as that in which they are arrayed. And on beholding them in the morning one seems translated to the heavenly land, and imagines that he stands on the sea of glass in that crystalline sphere. The illusion would be complete, if the contact did not bring one back again to the realities of this life.

But look at the organization of the snow. If you will take the trouble to examine it, it is enough to fill the soul with wonder and pleasure. The movements of it, too, and the shapes which it assumes as it drifts, are well worthy of notice. I think there are no such lines and curves in the world as those which are formed by the wind in the snow, which overlap and flow into each other in every conceivable manner, and which are often to be seen on the surface and along the overhanging edges of drifts. They are careless and graceful beyond all comparison, and are unsurpassed in beauty.

The details of snow-life are exquisite. One of the finest, though least noticed, exhibitions of winter, it seems to me, is that which consists of etchings. There are two forms in which I have noticed them. One is that which may be seen on sidewalks in the city. Sometimes it seems as though nature copied art, and sometimes as though art copied nature. These etchings resemble the arabesques in ancient art that we so much admire, of leaves and scrolls skilifully and wonderfully combined and intermixed. I think the first time I noticed them was one morning when I went to church. I came near forgetting my sermon. On every stone there were magnificent scrolls of large patterns, and great palm leaves with bold and noble curves; and they were so infinitely varied, and were combined with such carelessness, and yet with so little confusion, that I stopped at every step, and came near getting out of my doctrinal frame of mind into an artist frame of mind. If you

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came home some day and found that a painter had been in your dwelling and spread canvas all over your parlor floor, so that you could not move without stepping on beautiful landscapes, with trees and flowers worked out by a skillful and bold hand, you would start back with wonder. But see how God works! He goes into every street in the city, and wherever a man will give him a broad slope, he swings his hand around, and with a few strokes draws glorious pictures, and leaves them out of doors for men to look at, and for dogs to run over, and for human beings to walk over who do not care any more for such things than dogs. I sometimes wish I could take a sheet of paper and get an impression of these wonderful pieces of workmanship.

But they do not last long. In about an hour after daybreak the sun comes and licks them all up, The great Artist sends around a sponge, as it were, and wipes the tablets and cleans them for the next night, that He may try his hand again; and behold, the next morning they are covered all over once more. Yet you cannot find one single leaf such as you have seen before. The designs are all changed, This wondrous Worker in ice—how he etches!

There is something besides that. It is as if God had said: "As you cannot carry into the house these things which are so pleasant to you, and as your father and mother and children that are invalid and unable to go out of doors may want to see them, I will harvest them." And he covers every window with views of mountains, and lakes, and rivers, and forests, and vines, and flowers, and everything that man sees in nature. And they are not alike in any particular. No part of one is a reproduction of any part of another. The poor man's portfolio is his window, and the pictures that are painted there are unsurpassed. No etchings of ours can for a moment be compared with them. They do not last long, however. You must rise early if you would see them. Take your fill of them before the fire makes itself felt upon them. Your stoves do not like art any better than the sun does, and they are soon destroyed. You shall have a new set to-morrow. And they are all artist-proofs. There is only one of a sort, and you know nothing is prized so highly as that of which there is no copy in creation.

It is not often thought that we owe all our habits and institutions to winter. We do not bear in mind that the reason why northern nations are more manly than southern, is that there is winter in the north, and no winter in the south. Winter makes nations manly by driving men into social unities, and obliging them to live with each other, and devise ways for their amusement and instruction. In a mild climate where there is no necessity for men to dwell under a roof, they wander abroad, and in a great measure dispense with each other's society, so that although they may have a certain amount of cursory enjoyment, they are comparatively uninstructed. But in a severe climate like this, when the cold season shuts men out from the field, and they retreat from their ordinary avocations, and the days are short, and the evenings are long, the dwelling becomes a castle and a schoolhouse, and there must be not only labors, but conversations and readings. Under such circumstances the family is a center of knowledge; and, if there be any leaven in it, a center of christianization. The shortening of days and the lengthening of evenings make a great difference in the civilization of nations; and I think it may be said that New England and all the Northern states owe as much to the fact that they have a long winter, as to any of their laws or institutions; it gives rise to such household education, such domestic culture.

More than that, there is health and rugged strength in winter. Some men shrink under it, and are injured by it; but most men are renovated by it; for, I think, the human constitution, like nature, is largely refreshed in winter. The ground rests and the trees rest. There is what is called by vegetable physiologists a sleep of plants. They must have repose, and winter is the period in which it is provided for them. They are reinvigorated, not in the same way, but just as really, as man is by winter. A man who lives perpetually in summer is not usually half so vigorous as a man who spends a portion of the year amidst the rigors of winter.

During the whole of our winter a silent work is going on, which always fills me with pleasing surprise. Trees, all winter long, may be considered as mute workmen; because, except in the extremest cold weather, there is not a day in which there is not a slow and quiet suction of the roots and tissues by which the trees are gathering their fill of sap. That is one reason why, in high northern latitudes, where the winter is very long, the trees, when spring comes, burst out into vegetation almost in a day, and are full-robed almost as soon as the least degree of warmth touches them. And this image, which is very suggestive, may easily be applied to man in a moral point of view. Men who stand in the winter of trouble and are patient and enduring, are like trees in winter.

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They neither leave out nor show any great signs of growth; but inwardly they are being filled. Elements of manliness are developing in them. Blessed are those men who know how to bear the winter of trouble. By and by, when prosperity comes to them, they will blossom out all of a sudden, and most gloriously.

Ornament and Dress.

BY DR. MARY J. SAFFORD.

HERR TEUFELSDROKH, the hero of Carlyle's Sartor Resartus, says that the first want of clothes was not warmth nor decency, but ornament; that tattooing and painting preceded them, and that the first spiritual want of a barbarous people is decoration; as we see it still exhibited among savages in civilized countries.

From the earliest ages, and from the highest to the lowest grades of civilization, there has been shown a marked fondness for the adorning of the body. That imperious goddess, Fashion, at once trifling, affected, servile, despotic, fantastic and ambitious, guided by no rules of practicability, nor of fitness, has subjected the men, as well as the women, of all ages, of all nations and tribes, to a share in her follies.

See, for instance, the savages of our own country and time, tattooed and decked with the trophies of the scalping-knife and of the hunt. Among the wild tribes of Arabia beauty finds its culminating point in the gashing of the cheeks and the forehead, and in the introducing of salt under the skin to inflame it.

In the British Museum I saw the skulls of various African tribes that had been compressed and shaped in childhood to their ideal form of beauty. One tribe flattens the skull, another points it like a cone, and a third causes the posterior portion to protrude, somewhat resembling the *a la mode* false hair deformities that greet our eyes almost as frequently as they rest upon the head of a fashionably arrayed woman.

There are also specimens described and furnished by the African traveler, Livingstone, in which the upper incisor teeth are taken out, and others in which they are filed to a sharp point, like saw teeth; and others still, with blackened teeth, a custom prevailing also among the married women of China. Among the descriptions so graphically given by Sir S. Baker, is that of the ornamentation of the Central African women, whose lower lip is perforated and from it is suspended a huge ring, and from their ears—I need not describe that, since civilization has done for us what barbarism has for them. When one of the chiefs, who in the pride of his heart brought his ring-bedangled wives to show them to the white traveler, was asked why they mutilated themseives so, replied with no little surprise at the lack of appreciation that prompted the inquiry, "why to beautify them, of course."

Among the Hottentot women the posterior portion of the body is trained from childhood to project enormously, a deformity allied in appearance to the protuberance called a pannier. We have all had our righteous indignation aroused by the cruel crushing of the feet of the Chinese women, but alas! how very few, comparatively speaking, among us have deplored, to the extent of bringing about reform—the worse than cruel, the *life* and *health*-destroying compression of the vital organs of the women of our own land.

Now that we have briefly glanced at a few of the martyrizing influences exercised upon the body with a view to beautify it, we will note what clothes have done, and still do, for mankind. History tells us that the arts and sciences were turned to account to cover and adorn the body. There was weaving, and dyeing, and embroidering among the Egyptians and Hebrews.

A command was given the Israelites to make fringes on the bottom of their garments, the purple of Tyre and the embroidery of Sidon were sung about in the days of Homer. Rank, caste and position were closely defined by the dress and the material of which it was made. The hieroglyphic history of the Assyrians and Egyptians engraven upon stone, as found in their temples, gives us a most perfect insight into

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the style of dress of their time.. There one sees represented priest and warrior, slave and soldier, woman and goddess. The priest in long robe, with his sacred emblems, the artisan in short apron girded about the loins, the woman of rank in an ample tunic, reaching to the ancles, with broad, flowing sleeves.

Sculpture and painting have preserved for us national costumes; from them we learn the modes of the Medes, of the Persians and of the Greeks; we look still upon the toga of the Roman statesman, and the stola of the Roman matron.

The invading Norsemen introduced into Great Britain elegancies of costume before unknown. They made shirts, hats, gloves and shoes a part of the dress of the people, and from that time onward dates all that was most fantastic and absurd in the dress of men and women, and there is a correspondence of style and ludicrousness in the costume of both, down to the present century. All that was most peculiar in the freaks of fashion can often be traced as a covering to some deformity. Those abominations, wigs, were adopted by the Duke of Anjou to conceal a personal defect. Charles VII, of France, introduced long coats to hide his illy-shaped legs. The long pointed shoes, that ran into a length of two feet, were invented to hide an abnormity of the foot. The hoop-skirt, if not the invention of, was revived by Madame Montespan to conceal an oft-recurring change of form, that had its legitimate origin, it is believed, with Mother Eve.

The frivolities and exaggerations of dress, in former times, were limited to the court circles and the high born, which in being transmitted to us, we find much to be thankful for; since hateful, hurtful and deforming as the fashions often are, they, like disease, epidemics, have, with time, become less severe. The rage for false hair in the time of Queen Bess was so alarming that girls and women, endowed by nature with a luxuriant growth, dared not venture on the streets unattended, lest they be captured and shorn.

The Virgin Queen, whose fancy ran to red wigs, had 700, embracing all of the known shades of her favorite color. One thousand dollars per annum was not considered an extravagance with which to buy my ladies' hair.

At a later period, to make a short queen appear tall, the hair when dressed went up like a a steeple; and so extravagantly did it tower that an edict went forth forbidding it to extend above three feet, as it interfered with a view of the plays represented upon the stage.

The elaborateness of a head thus gotten up demanded so much time and skill, as to require the victim to maintain at night a reclining, bolstered position from one arranging to the other, often covering a space of from three to four weeks. A lost wardrobe, advertised in 1710, might, with some additions, pass for that of a modern belle: Three pairs of fashionable eyebrows, two sets of ivory teeth, one pair of boxwood hips for common use. As seen by the embroidered ruffs and puffs, perukes and feathers of the costumes of Henry VIII's time, men shared equally and fully the dress servitude of women.

It is recorded that a gallant knight of that time paid his devotion, on bended knee, to a fair queen, he was dressed *a la mode*, in close-fitting stays, with breeches two yards wide at the top, tapering close to the knee, where they were fastened by buckles; the enormous width above was filled out with bran. In his humble bendings a thread broke, a rent was made, and when he arose from her majesty's feet a peck of bran, piled in a heap, was all that told of his former rotund proportions.

In the picturesque Vandyke style of dress, men and women wore alike the wide collar of rich point lace, reaching to the shoulders; the men with long velvet and damask vests, the women with corresponding corsages; the men with coats of bright colors, and the women with skirts of the same. These modes, but slightly modified, extended to the time of our earliest history, and have become living to our memory by the portrayals of them by Hogarth and Reynolds.

Benjamin Franklin was the first American representative abroad who stepped out of this elaborate costume into a plain suit of black. With the French revolution arose a disgust for court usages and follies, and then came the *sans culottes* style; instead of the short and fancy breeches, the plain pantaloons, the simple waistcoat, plain collars and neck ties.

A heavy tax upon powdered hair caused the people to rebel against its use, and short, natural hair took the place of the flowing wig. Since that time, the fantastical in mens' clothing has been much less predeminant. They have, to be sure, suffered long and uncomplaining the martyrdom that comes with the wearing of stove-pipe hats, and they are subject to the Guillotine and Byronic collar epidemics; and their tailor moulds them now and then into pants so close fitting that the capillaries rebel against the pressure, and they share with the *fair sex* in having their hands squeezed to an al-

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most helpless condition by those exquisite Parisian luxuries called gloves, and in the persecution that tight boots and shoes give, they limp and hobble, and wish they had an *aid-de-camp*, like Frederick the Great, to wear their leather feet-casings till they would ride easy upon the knobby joints, the crushed toes and those perennial products, corns. But persecuted as they are they do not suffer as women do. We see them in almost as crippled a condition as are their Chinese sisters, perched upon high heel stilts, which serve to throw the center of gravity of the body out of its proper angle, thus interfering with an upright position and destroying all ease and grace of locomotion. The foot pressed forward into the shoe, becomes abnormal in many ways; there is no firmness of tread, the ancle is unsteady and liable to be turned at every step; it is strained and weakened till it becomes diseased, perhaps for a lifetime. Any one who has experienced it—and who has not?—cramped, as the foot usually is, into shoes with soles from two to three inches narrower than the foot, the misery that comes in attempting to walk an hour, the whole body is wearied more by it than by almost any discomfort that clothing can give. The venturesome Alpine climber, after much experimenting, finds that he can accomplish more, and with greater ease, in a low, heavy-soled shoe, with the ancle left entirely free.

Only a few years since there was much in dress met with in Europe that gave originality and interest to the people; now there is not a race on the globe that does not seem destined to lose its natural identities of costumes and habits before the invincible power of French fashion. It has done what Napoleon I aimed to do; it has subjugated all peoples, it has even penetrated to the huts of the South Sea savages. The belles of fashion there are found sitting under the shade of the banana tree, with crinoline external to their scanty covering. The crowded streets of Cairo and of Alexandria have become so Europeanized, that more of French than of Oriental style is seen. It is only here and there that is still found the beautiful and odd dress of the Italian peasant, or the national costumes of the Swiss, or relics of originality among the Germans.

The different modes of dressing children among different peoples I have found especially interesting. We all know of the peculiar way in which the Indian mother disposes of her papoose, how she binds it upon a board and fastens it upon her back, when she follows in the hunt or on the trail, and then how she hangs it up for safe keeping against the wall of her wigwam.

In the East, among the Arabs, Turks and Egyptians, only a single garment—a blue cotton slip—covers the children; and, removed from the haunts of cities, you not unfrequently find that their mothers have forgotten to complete their toilette with this single, simple article of clothing. And who dares offer an apology for this obliviousness to duty, since they have never, from the remotest ages down to the present moment, been accused of being *strong-minded*.

In Italy, until the child has reached the age that leads to stepping aspirations it is rolled closely in a bandage of many yards of linen, which gives it every appearance of a mummy; and all attempts at accompanying its screams with kicks are futile; these healthful movements, that naturally prepare the muscle for greater feats of strength and daring, being withheld. When the child is placed upon its feet, there is no strength corresponding with its growth, and the result is crooked legs, distorted spines, cripples and invalids for life.

Some years since the medical men of Italy took into consideration this deplorable state of affairs, and the necessity for reform, and petitioned the government to interfere in the matter; when the guardian priests of the mother church put in a plea against any change being made, as it would be an innovation upon memories the most sacred, since Mary, Christ and the apostles had been in like manner swaddled. There is much in the simplicity of the new-born Teuton's wardrobe to recommend it above the long-robed, much embroidered one of the American.

There is a long-sleeved cotton or linen apron, sufficiently long to cover the body, open behind, a string run into the hem about the neck to tie it; over this a corresponding one of calico. The little waif is laid upon a long pillow of down; this, when turned over, reaches to the chin, and thus there is down below, and down above; around all is wound a long, narrow bandage; not so closely adjusted, nor worn so long as the swaddlings in Italy, and yet the large amount of children and persons seen with bandy-legs, leads one to suspect that even this wrapping is somewhat responsible for it. While deploring the evils arising from improperly dressed children in other countries, we should not become so habituated to the errors of our own as to overlook them. I can but believe that one of the dreads connected with American motherhood lies in the extravagantly selected,

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wearily stitched, tucked, ruffled and embroidered wardrobe, that mothers conceive it a duty to prepare, to the exclusion generally of that much needed and greatly desired, out of door, healthful exercise. While superfluous yards of embroidered Nansook and flannel trail upon the floor, the arms—removed from the center of circulation—are left bare. The tender little body, with a pliable cartilaginous framework, is bandaged about with numerous bands; and these are often so snugly drawn, to give a trim appearance, as I have heard nurses say, that a free circulation and respiration are impeded. When the superabundant material gives place to short clothes, they are as much too short as the others were too long. The legs are left bare above and below the knees, just where, to induce an equlibrium of circulation, covering and warmth are most needed.

The little feet that first essay tottering steps, like over-stuffed pin balls, are compressed into slippers whose straps cut into the flesh till it rebels with redness, and even with soreness, as I have had the occasion to observe. And not only about the feet do we see this unnatural pressure, elastic bands worn to keep the stockings up are alike injurious.

It may be said that the Scotch and English children, with their bare legs exposed, are among the healthiest and ruggedest; but of these same, so called robust little ones, forty per cent. die under five years of age. I don't believe in attributing a lack of physical power, a puny constitution and an early death, to an especial visitation of Providence; but as the direct or indirect result of violated physical laws.

Following up the benefits and burdens that dress impose from childhood on through youth and age, let us see how equally they are distributed to boys and girls, men and women. What we observe holds good in Great Britain and on the Continent, as well as in America. Boys are dressed so there is given the most perfect freedom to every joint and muscle; the material of which their clothes is made is usually of so substantial a kind that they can run, climb and jump with impunity. In winter, whatever the weather is, their feet and legs are so protected with heavy, long boots, with warm under and outer garments, that they find their greatest joy in measuring their height in snow drifts, and in breaking snow paths, instead of following in those already made. How is it with our young miss? She has a heart sending out its vital fluid to all parts of the body, by a like process that directs the ebb and flow of the lad's blood. Her lungs perform the same function in oxygenizing it, and so with her liver, spleen, muscles and nerves. With all of its subtle pryings into the covered secrets of nature, the microscope has yet to discover any difference of cell development in the boy or girl; to desire and expect equal mental and physical development, we must accord to one the same chances of growth that is given the other.

In our next we shall see how it fares with young Miss.

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Dr. Sandford's Prescription.

BY FRANCES ETTYNGE.

"HOW do you feel to-day, Henrietta?" inquired Mr. Wardle, as he entered his pleasant sitting-room on his return from business.

"Miserably," responded his daughter, lying languidly on the lounge, while the novel she had been reading dropped from her hands. "Miserably," she repeated, with emphasis.

"Been out to-day?" said her father, cheerily, depositing his overcoat on one chair and his hat on another.

"No!" was the somewhat feeble answer. "The wind blew too hard—it was too chilly."

"Chilly! Why I thought it was a magnificent spring-like day. It made me feel like a new silver dollar fresh from the mint, and brought my strength back after these first warm days we have been having."

Henrietta did not apparently have strength enough to make any reply, and resumed her reading, while Mr. Wardle wended his way to the kitchen to tell "mother" that he thought Henrietta was "running down, and very poorly."

Mrs. Wardle muttered something to herself about "lazy folks," and then said aloud, as she gave the napkin she was folding an energetic

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twist into the goblet, "perhaps you had better speak to Dr. Sandford."

Mr. Wardle concluded that his wife's advice was generally about right, so he stepped into Dr. Sandford's office the next day and asked for that gentleman's company home.

The Wardles had been city people until the previous year, when reverses in business had forced Mr. Wardle to give up his large city house and move a few miles out to a country town, where he was able to live well and comfortably on his reduced means. Mr. Wardle was delighted at the change of residence, and Mrs. Wardle was one of those energetic women who are happy anywhere where there is enough to do. Henrietta and a younger sister, Lizzie, were the remaining members of the family, and it was hard for them to give up their city friends and amusements. Lizzie was a lovable, sensible girl, and soon was happy as a bird among the flowers and birds, going nutting, hunting violets, or skating on the pond, according to the season. Henrietta had come to the country with resolutions to do the same, but omitted from her plans all such contingencies as mud, wind, bugs, etc. Her first expedition after violets resulted in the sight of a small snake, which glided away the moment it spied her; but she experienced such a fright that she could not again be tempted to hunt for anything on the ground. She took regular walks for a few days and then was driven into the house on account of mud and cold winds. Winter came and she could not be induced to skate, because the pond was some distance off, and there was no house where she could warm herself every fifteen minutes; for Henrietta could not skate well enough to keep herself warm.

Driven into the house by these various causes, she naturally felt the cold exceedingly, and shrank away from every crack and crevice, and sat half of the time before the fire bundled up in a shawl. The result of this treatment was that whenever she did go out to make a call, or visit a friend, she took cold. So the winter passed away, and while Lizzie was going in and out, getting rosier and rosier every day, Henrietta was shut up in the house with a cold; and when the first warm days came they found her weak and languid. She was in her usual corner of the lounge when Dr. Sandford came in with her father the day following the previous conversation. She liked him, as everybody did, for he was kind and cheerful—occasionally humorous, at the proper time—and, above all, sympathetic. She had, too, the highest respect for his medical ability. He was a shrewd observer of men and things, and very accurate in his judgment.

Henrietta roused up more than was usual with her to greet him, and poured forth the history of her troubles and tribulations in a few moments.

The Doctor felt of her pulse, looked at her tongue, asked about her headache, and sat down with an "humph." Then he talked with Mr. Wardle, all the while busily thinking about the case before him. He had made a pretty accurate guess, and treated his patient accordingly.

"You've got a strawberry bed?" he inquired suddenly of Mr. Wardle.

"Yes, of course," answered that gentleman, wonderingly.

"Now, Miss Henrietta, observe what I say. That strawberry bed of your father's you are to keep entirely free from weeds this spring and summer. You are to work in it every day at present, until I come again, which will be just two weeks—every day, unless it actually rains—you understand. If it is muddy, put on rubbers. That is all I have to say to you."

Henrietta and her father were so much surprised that neither of them knew what to say. Henrietta was provoked to think he had come away from the city to tell her that. No medicine! nothing but that ridiculous strawberry bed. Never was anything so nonsensical! She looked at the doctor's face, thinking he must be making fun of her; but he was serious enough, as he adjusted his spectacles at the proper angle over his nose.

"Doctor, I am not strong enough, it will kill my back to stoop over so."

"You'll get stronger in two or three days," was the quiet response.

"Then there are the worms—ugh, how I hate them!—and no end of bugs and dirt! Oh, dear, I think you're a hateful doctor—there—I do!"

So saying, she walked out of the room, and went to tell Lizzie what the doctor said.

Doctor Sandford was not in the least disturbed by this outburst, for he expected it; so he smiled a little and turned to Mr. Wardle. The two gentlemen conversed until train time, when the doctor was obliged to leave.

The next morning Henrietta was awakened by hearing Lizzie singing in the garden underneath her window, while the birds kept her company, and made all around merry with their music. Henrietta looked out too, and certainly the scene was beautiful enough to woo any sleeper from dream land.

The sun was half an hour high, and the gold-

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en light shone upon every blade and leaf, and made all nature smile. Then just below was Lizzie, with her garden hat on, and trowel in hand, digging a little here, and pulling up a weed there, giving life and animation to the scene. Driver, too, their pet dog, kept her company and helped her dig, and then looked up at her with such a comical ring of dirt around his nose that she couldn't help laughing at him.

Retta looked, and thought about Dr. Sandford's prescription. Should she overcome her drowsiness and join Lizzie, or take her novel and read a little. Laziness having had the upper hand all winter would not be subdued now, so she took her book. Somehow she could not read. She could not keep her mind on her book, it would wander off to the pleasant scene without.

Presently she threw it down in disgust and went down stairs. To say that she created a commotion by appearing thus early in the lower regions of the house would be expressing it in the mildest terms imaginable. Mrs. Wardle stopped in the midst of the cake she was making and stared at her in astonishment, but had the good sense to make no remarks. So Retta reached the garden, and after watching Lizzie a few moments bravely went to work in the strawberry bed. Of course she was tired in a few minutes, but Driver was there, and she played with him while she rested. By the time breakfast was ready quite a respectable pile of weeds were pulled, and Retta ate with a heartiness that surprised herself as well as everybody else.

So she worked for some days, and became much interested in it. Lizzie was very glad of her company, and was quite willing to take care of all the worms they encountered. To be sure Henrietta was occasionally driven into the house by a wasp or bumble-bee, and sometimes she did not feel like working until late in the day—then again she would not go out at all for a day or two.

But with all these discouragements her cheeks began to recover their wonted color, and she visibly improved in every way.

To Dr. Sandford's surprise, when the two weeks were over, he found her in the garden weeding not only the strawberries, but the flower-beds, and doing it with a zest which surprised as much as it pleased him.

"My prescription seems to have worked wonders," he said, as they exchanged greetings.

Retta blushed, for she was obliged to offer him her left hand, her right having been in the dirt, and said gaily, "haven't you another of the same kind?"

He watched her while she finished her work, and they returned together to the house. On the table stood a beautiful vase of flowers, which Retta gracefully presented to the doctor, and informed him that she had gathered them on purpose for him, *before breakfast*. She was as much amused as she was gratified at his surprise.

Henrietta continued her work all summer, and it seemed to effect a change in her whole being. Interest in nature, and weeding her garden, gave rise to an interest in all human kind, and led her to take care of the weeds in her own heart's garden. When winter came, and there was no garden to work in, she had her window plants to care for, and her daily walks to amuse her. She learned to make home pleasant, to care for the sick and erring, and to live a noble life.

Mr. and Mrs. Wardle looked on gratefully as they noticed her improvement, and in after years, when their daughter was called to a wider sphere of action, and had a home and family of her own, they never ceased to bless Dr. Sandford's "prescription."

The doctor, too, had a certain easy chair always ready for him by Retta's fireside, and was one of her chosen friends and welcome guests. Many a time has he amused her by telling her how comical she looked, all bundled up on the sofa that pleasant spring day.

Turning Chance to Account.

LORD LYTTON, in "Caxtoniana," relates the story of two gardeners, one of which was a man of science and had charge of the grounds of a rich nobleman; the other an uneducated but practical man, gardener to a small squire, whose grounds covered but half an acre. The rich nobleman chancing to call one day on the squire, was greatly struck with the brilliant colors of his neighbor's flowers.

"Aye, my Lord, the flowers are well enough,"

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said the squire; "permit me to show you my grapes."

Conducted into a small, old-fashioned greenhouse, my lord gazed with astonishment and envy on grapes twice as large as his own.

"My friend," said the lord, "you must have a jewel of a gardener; may I see him."

The gardener was called. He was a plain, simple, uneducated young man. The lord complimented him on his flowers and grapes, told him he must have been a profound student of horticulture, and asked him to tell the secret by which he produced such wonderful results.

"Please your lordship," said the man, I haven't much education, I beant no scholar; but as to the flowers and the grapes, the secret as to treating them came to me by chance."

"By chance! Please explain?"

"Well, my lord, three years ago I went to Lunnon on business; it came on a rain, when I took shelter in a mews, and there were two gentlemen took shelter there too, and they were talking about charcoal, and how it was valuable in preventing the spread of cholera. I took a note of it in my mind, for we'd had cholera in our village, and I guessed the gentlemen were two doctors and knew what they were about."

"I dare say they did; but what has cholera and charcoal to do with vines and flowers and grapes?" said the lord. "They don't have the cholera, do they?"

"No, my lord, but they have complaints of their own; and one of the gentlemen went on to say that charcoal had a special good effect upon all vegetable life, and told a story of a vine-dresser, in Germany, I think, who had made a very sickly, poor vineyard, one of the best in all those parts simply by charcoal dressings. So I naturally pricked up my ears at that, for our vines were in so bad a way that master thought of doing away with them altogether. 'Ay,' said the other gentleman, 'and see how a little sprinkling of charcoal will brighten up a flower bed.' The rain was now over, and the gentlemen left the mews; and I thought—'Well, but before I try the charcoal upon my plants I'd best make some inquiries of them as aren't doctors but gardeners;' so I went to our nurseryman, who has a deal of book learning, and I asked him if he'd ever heard of charcoal dressing being good for vines; and he said he had read in a book that it was so, but had never tried it. He kindly lent me the book, which was translated from some forren one. And, after I had picked out of it all I could, I tried the charcoal in the way the book told me to try it, and that's how the grapes and the flower-beds came to please you, my lord. It's a lucky chance that ever I heard those gentlemen talking in the mews, please your lordship."

"Chance happens to all," answered the peer, sententiously; but to turn it to account is the gift of few."

His lordship, returning home, gazed gloomily on the hues of his vast parterres; he visited his vineries, and scouted at the clusters; he summoned his head gardener—a gentleman of the highest repute for science, and who never spoke of a cowslip except by its name in Latin. To this learned personage my lord communicated what he had heard aad seen of the benignant effects of charcoal, and produced in proof a magnificent bunch of grapes, which he had brought from the squire's.

"My lord," said the gardener, scarcely glancing at the grapes, "Squire ——'s gardener must be a poor ignorant creature to fancy he had discovered a secret in what is so well known to every professed horticulturist. Professor Liebig, my lord, has treated of the good effect of charcoal dressing to vines especially; and it is to be explained on these chemical principles"—therewith the wise man entered into a profound dissertation, of which his lordship did not understand a word.

"Well then," said the peer, cutting short the harangue, since you know so well that charcoal dressing is good for vines and flowers, have you ever tried it on mine?"

"I can't say I have, my lord; it did not chance to come into my head."

"Nay," replied the peer, "chance put it into your head, but thought never took it out of your head."

This is a long story to get to the point of the last sentence, but it very happily illustrates the difference that exists in human beings. Some seize knowledge as it comes to them from observation, and use it to great advantage, while others may know ten times as much, but not be able to do anything with it. All such should be trained early in life to put their knowledge, whether of health, of business, of law, medicine, or agriculture, to use. The habit once formed, would aid them all through life. Parents, see to it that your boys and girls do not gather knowledge from these pages this year only to possess, but to put to the test. It is an excellent thing to make every thought valuable in our pursuits of life. Then only is it of real value to us.

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Eating and Drinking.

BY THE EDITOR.

NEXT to air, the getting of which is an involuntary effort that in the main takes care of itself, food is of most importance of any of the wants of the body. The first we must have every moment of our lives, the latter we must provide for, at short and regular intervals. In the early history of mankind, when human life was worth less than now, people paid little attention to the quality of their food, being content to eat what they could get, and be satisfied if the quantity was sufficient. In many parts of the world this is the case still, as in Africa, where Bushmen and Hottentots, while they live, in the main, simply enough, do not object to gormandizing on dead elephants, snakes, and most disgusting carrion, if they can find such food. The same is true of the Esquimaux. The demands of their climate are only satisfied by food rich in oil and fat, by which animal heat is supported. Civilization, however, has peculiar wants, and civilized people are not content to live like the savage—indeed, could not. They demand, not only better clothing, education, and houses, but better food, in order that civilization may go on rapidly and with the least friction and loss. That there may be the least loss of life, and that the physical and mental development of the race may be equal to the demands of the age, it is necessary that the quantity and quality of the food be the very best possible, and such as is adapted to the wants of the body. The wants of an Esquimaux are few. Their great want is warmth. Their food gives it to them. The wants of the civilized man is not only warmth, but strength of body, flexibility of limb, beauty of person, and power to think and feel. He cannot get all these in high degree from blubber, or meager food. He requires abundance of the very best. A few only secure this. A vast majority of the people on the globe live meagerly, poorly. In our country, which produces a great profusion of the best food, three-fourths of the people live little better than Caffres, or Hottentots. Why is this? Mainly because the true value of good food is not yet well understood.

FUNCTIONS OF FOOD.

Why do we eat at all? Why do all the animals on the globe, from the most simple worm to the highest, most civilized man, depend for life on food and drink? Why is a child hungry, and if deprived of food for an hour beyond the allotted time, ravenous for something to eat? Why does a hard-working man enjoy his food so well, and want so much of it? Why do great men and powerful thinkers want to eat so abundantly? It would seem as if a large part of the work of the world is to supply food for the people? Why so many millions of acres of land devoted to agriculture and horticulture? Why so many more farmers producing food than people of any or all other occupations? Simply because food is so important, and its functions in the body are so necessary to life and health. What then is the great office that food performs for us? Let us see. Food performs these functions:

1. It furnishes material with which to construct the body. To the child this is very necessary. It would forever remain a babe, in stature, if this was not so. The food it imbibes from its mother's breast increases the child's bulk; and if properly fed till maturity, a large, powerful body is the result. Farmers increase or diminish the size of their domestic animals, within a certain limit, by increasing or diminishing the amount of food supplied to them. The size, within constitutional limits, to which a child may attain is, to a great extent, dependent on the supply of wholesome food it can digest. Abundance of food, coupled with plenty of air, exercise and sleep, and the size and development is far greater than when the food is scanty. Farmers sometimes, by feeding, produce enormous development of the bodies of oxen, sheep and other animals. This abnormal development, however, is not desirable in human beings, and should not be sought for; but a normal development is desirable, and is the legitimate aim of every parent for his child, and person for himself.

2. Still another function of food is to supply the waste that goes on in the body from its daily wear and tear. This varies greatly with different persons, and with the amount of work done. Great workers wear out and use up every day several pounds of the blood and tissues of the body. New food is demanded to take its place, to make good this loss. Those

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who work but little require less food. A month of sickness sometimes wastes away a third of the weight of the body. The patient becomes thin, emaciated and bony. But a hearty appetite and plenty of food soon restores it to its full size. There are some men of powerful frames who, if they do a hard day's work, waste many pounds of their avoirdupois, and must eat as much to make it up. Small workers, and lazy, idle people, eat less; and there are a few, mainly corseted and inactive young women, and foppish, idle young men, who waste very little of the tissue of the body by effort, and consequently eat but little. It is, then, no bad sign to see healthy people eat heartily—they must do it to work and live.

3. Still another function of food is to maintain animal heat. So important a function is this, that it has been computed that four-fifths of the food of the body is used to maintain its temperature of nearly one hundred degrees. If any one would appreciate the heat-producing power of his food, let him go without eating in cold weather for a day, and still continue exposing himself to the weather, and he will learn that a good meal will do more to warm his body than clothing, or fire. It furnishes the fuel which, consumed or burned in the body, maintains a comfortable temperature.

4. The last and most wonderful property of food is to furnish to the body strength. Strength comes in no other way. When plants grow they store up the energy of the sunshine, and when we consume these plants, that energy is transferred to our bodies. It manifests itself in many ways. First, in the form of motion, the ability to move from place to place, or to move other things from one place to another. Then in the form of sensation, feeling, seeing, hearing and thinking. The ability to do any or all of these things is conferred by our food. Thought, motion, heat, as manifested in the body, is all conferred by food. The body has the peculiar power of abstracting these things from bread and meat. Go without food, and all these functions of the body gradually die away, and life becomes extinct. Perhaps this point may be made more clear by an illustration. You give your child a good hickory bow and arrow. He bends the bow on its string, adjusts the arrow and pulls the string back a few inches. Now what has he done? Why simply stored up in the bow a part of the strength of his arm. Now how did he get that strength? The sunshine of last summer stored it up in the bread, meat and potatoes he ate for breakfast. His body has the power to unfasten this force and apply it to bending the bow. When he lets go the string the arrow flies away, and the force is, so far as he is concerned, lost. The food we eat does for us what the coal does for the engine on the railroad train, it furnishes the motive power, only the body is a living machine and can think and feel, which the engine cannot do.

Now we see why we eat. It is, first, to increase the size of the body; second, to supply the waste or loss by the daily wear and tear; third, to maintain a proper degree of warmth for the body, and; fourth, to supply the energy by which we move, think and feel.

In our next article we shall go still further into the subject.

On the Town.

BY RICHARD HENRY STODDARD.

THE lamps are lighted, the streets are full,
For, coming and going, like waves of the sea,
Thousands are out this beautiful night;
They jostle each other, and shrink from me.
Men hurry by with a stealthy glance,
Women pass with their eyes cast down;
Even the children seem to know
The shameless girl of the town.

Hated and shunned, I walk the street,
Hunting—for what?—for my prey 'tis said;
I look at it though in a different light,

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For this mighty shame is my daily bread—
My food, my shelter, the clothes I wear,
Only for this I might starve or drown;
The world has disowned me—what can I do
But live and die on the town!

The world is cruel. It may be right
To crush the harlot; but, granted so,
What made her the guilty thing she is?
For she was innocent once, you know.
'Twas love!—that terrible word tells all!
She loved a man, and blindly believed
His vows, his kisses, his crocodile tears—
Of course the fool was deceived!

What had I to gain by a moment's sin,
To weigh in the scale with my innocent years,
My womanly shame, my ruined name,
My father's curses, my mother's tears?
The love of a man!—It was something to give.
Was it worth it? The price was a soul paid down—
Did I get a soul, *his* soul in exchange?
Behold me here on the town!

"Your guilt was heavy," the world will say,
And heavy, heavy your doom must be;
For to pity and pardon woman's fall
Is to set no value on chastity.
You undervalue the virgin's crown,
The spotless honor that makes her dear."
But I ought to know what the bauble is worth,
When the loss of it brings me here.

But pity and pardon? Who are you
To talk of pardon, pity to me?
What I ask is justice, justice, sir—
Let both be punished, or both go free.
If it be in woman a dreadful thing,
What is it in man, now? Come, be just;
(Remember she falls through her love for him,
He through his selfish lust!)

Tell me what is done to the wretch
Who tempts and riots in woman's fall?
His father curses, and casts him off?
His friends forsake? He is scorned by all?
Not he; his judges are men like himself,
Or thoughtless women, who humor their whim:
"Young blood," "Wild oats," "Better hush it up;"
They soon forget it—in him!

Even his mother, who ought to know
The woman nature, and how it is won,
Frames a thousand excuses for him,
Because, forsooth, the man is her son!
You have daughters, Madam, (he told me so,)
Fair, innocent daughters—"Woman, what then?"
Some mother may have a son like yours.
Bid them beware of men!

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I saw his coach in the street to-day,
  Dashing along on the sunny side,
With a liveried driver on the box.
  Lolling back in her listless pride,
The wife of his bosom took the air.
  She was bought in the mart where hearts are sold;
I 'gave myself away for his love,
  She sold herself for his gold!

He lives, they say, in a princely way,'
  Flattered and feasted. One dark night
Some devil led me to pass his house;
  I saw the windows a blaze of light,
The music whirled in a maddening round,
  I heard the fall of the dancers' feet;
Bitter, bitter the thoughts I had
  Standing there in the street!

Back to my gaudy den I went,
  Marched to my room in grim despair,
Dried my eyes, painted my cheeks,
  And fixed a flower or two in my hair.
Corks were popping, wine was flowing,
  I seized a bumper and tossed it down;
One must do something to kill the time,
  And fit one's self for the town.

I meet his boy in the park sometimes,
  And my heart runs over toward the child;
A frank little fellow, with fearless eyes,
  He smiles at me as his father smiled!
I hate the man, but I love the boy,
  For I think what my own, had he lived, would be
Perhaps it is *he* who comes from the dead—
  To his father, alas! not me!

But I stand too long in the shadow here;
  Let me out in the light again.
Now for insults, blows, perhaps;
  And, bitterer still, my own disdain.
I take my place in the crowded street,
  Not like the simple women I see—
You may cheat them, men, as much as you please,
  You wear no masks with me!

I know ye! Under your honeyed words
  There lurks a serpent; your oaths are lies;
There's lustful fire in your hungry hearts,
  I see it flaming up in your eyes!
Cling to them, ladies, and shrink from me,
  Or rail at my boldness. Well, have you done?
Madam, your husband knows me well.
  Mother, I know your son.

But go your ways, and I'll go mine;
  Call me opprobrious names if you will;
The truth is bitter—think I have lied;
  "A harlot?" Yes! but a woman still!
  God said of old to a woman like me,

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"Go, sin no more," or your Bibles lie;
But you, you mangle His merciful words
To "go and sin till you die!"

Die!—the word has a pleasant sound,
The sweetest I've heard this many a year.
It seems to promise an end to pain;
Anyway, it will end it here!]
Suppose I throw myself in the street?
Before the horses would trample me down,
Some would-be friend might snatch me up,
And thrust me back on the town!

But look—the river! From where I stand
I see it, I almost hear it flow,
Down on the dark and lonely pier—
It is but a step—I can end my woe!
A plunge, a splash, and all will be o'er,
The death-black waters will drag me down,
God knows where! But no matter where,
So I am off the town!

[We publish this touching poem by the special request of several of our subscribers, who are anxious to preserve it in convenient form. It was first printed in the *Golden Age* nearly two years ago. —EDITOR.]

Tobacco—Its Effects on the Human Constitution, Physical, Intellectual and Moral.

BY JAMES COULTER LAYARD, M. D.

"Tobacco is an Indian weed,
Which from the devil doth proceed,
It picks your pockets, burns your clothes,
And makes a chimney of your nose."
Old Rhyme.

THERE is a plant which is instinctively avoided by every member of the brute creation. The horse will not pasture on it, the ox will not graze on it. the ass will not feed upon it, the goat will not browse on it, the mule—that eats briars and thistles—will not eat this, the hog will not root about it, even the birds will not light upon it; no animal but man will even touch it. Yet this plant, which is so universally shunned by every member of the animal kingdom but man, is by him esteemed a luxury, and is a daily solace to thousands, yea, to millions of the human family, all over the world—from the Laplander, amid arctic snows, to "the naked negro panting on the Line;" from the birthplace of the human race in the East to the uttermost limits of civilization in the West—nay, farther; for its kingdom is not bounded by civilization, it is used alike by civilized and by savage, by the European and the Hottentot, the peer and the peasant; its sway is only limited by the limits of the species, and its empire is co-extensive with the human family itself.

That plant is tobacco. We might have said that *weed*, but that is a term unknown to Botany. It is an appellation indicative of reproach, contempt and disgust. Just as when we wish to speak of a man in terms of contempt, we call him a *fellow*. And if there is any one member of the vegetable kingdom more hateful and disgusting than another, that one is tobacco—of which, says a talented and popular divine of our own times: "If there ever was a weed whose roots went down till they drew sap from below, that weed is tobacco." And there are those—members of the anti-tobacco league, too—who object to this term as a misnomer. "For," say they, "it was created by God, and hence must be very good." The particular purpose it serves in the economy of creation we cannot, perhaps, very satisfactorily

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explain." Neither can we tell why briars and thorns were created, nor the deadly upas tree, nor snakes and toads; but we may rest assured that it was never intended that we should use any of these things to our hurt.

HISTORY OF TOBACCO.

Attempts have been made to prove that tobacco was known to the ancients. And this from the fact that mention is made in ancient history of the operations of smoking and snuffing. This, though it proves that man—ever prone to evil—did, at an early period, as he has done since, resort to the smoking of narcotic herbs for the purpose of procuring sensual enjoyment; yet there is no evidence to show that any of the herbs so employed was tobacco. The snuff used was not the snuff of tobacco, but sneezing powders, otherwise called *sternutatories;* which were employed—at first, at least—medicinally.

No, tobacco is a native of our own America. How long before the discovery of this country by Columbus it was in use among the natives we have no means of knowing; but we know that very soon thereafter, it was carried through the agency of commerce to all parts of the known world. "As the discovery of America cursed Europe with tobacco," says a noted English statesman, "who can tell whether the discovery has been more of a blessing or a curse?"

The history of the introduction of tobacco into common use affords a striking illustration of the impotency of human laws to control the inclinations of mankind. In most countries its introduction was signalized by the passage of rigorous laws interdicting its use. In some it was classed with adultery, and treated as felony. In others, separate tribunals were appointed for the trials of offenders in tobacco. And in all, punishments the most ignominious and severe were awarded to the culprit. In Constantinople any Turk caught in the act of smoking was placed upon an ass, with his face toward the animal's tail, and his nose transfixed with a pipe, and thus conducted through the streets. In Russia the penalty was—for the first offence—the knout; for the second, *death*. In Papal countries excommunication was the penalty, and the offender was *anathema maranatha*.

Yet these measures, severe as they were, all failed of their intended effect, and tobacco triumphed over its enemies at last. It is now cultivated wherever it can be grown with profit, and consumed wherever it can be obtained; occupying in its production land equal in extent to whole kingdoms, and employing in its cultivation, manufacture and sale armies of men and women, and untold millions of capital; and, worst of all, destroying to an incalculable extent the health and lives of its votaries.

EXTENT OF ITS USE.

Various estimates have been made as to what proportion of the inhabitants of our globe, relatively, use tobacco, opium, haschish, and other things of that nature; but as these differ widely in their results, we give none of their figures. It is all speculation at best—mere guess-work. But however much authorities may differ in this matter, upon one point they all agree, and that is, that of all the various substances resorted to by mankind for the purpose of procuring sensual gratification, tobacco is by far the most extensively employed—to an extent greater, in fact, than that of all the rest combined. Turkey and China have their opium, India and Persia have their haschish, the Eastern Archipelago has its betel nut, Siberia its fungus, New Grenada its thorn apple, Bolivia and Peru have their cocoa, and the islands of the Pacific their hava; but all the world has tobacco.

These facts, taken in connection with another fact, namely, the almost universal prevalence in individuals of all nations, both civilized and savage, of a craving for intoxicating beverages of some kind, have led some to argue the existence of an instinct, a natural appetite for these things, which makes their use, therefore, a necessity, and their moderate employment an advantage. We can only see in them, however, an additional evidence of the depravity of human nature, and of man's estrangement from his God. Man was created pure and holy, but he has sought out many inventions, the only tendency of which has been to degrade him from his high estate; and of these, the use of rum and tobacco are prominent examples.

The amount of tobacco consumed throughout the world is astonishingly large, and what is more, it is increasing, and in a ratio far exceeding the increase in population. As to the amount consumed in our own country we cannot give it precisely in pounds, as to do so would involve an elaborate calculation from certain statistics of the tobacco trade, which we have up to this time failed to obtain; but we can say that the lowest estimate we have yet seen of its value is $50,000,000. The quantity consumed in Great Britain is 24,000,000 pounds, producing a revenue of of over £1,000,000. In France it is 44,000,000 pounds; in Austria,

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81,000,000 pounds, etc. It is a principal source of revenue to every continental state. In 1865 Austria smoked 1,900,000,000 of cigars, nearly. Russia raises 25,000,000 pounds of tobacco for home consumption.

We may give our readers some slight idea of the quantity of tobacco used in this country by stating that a single firm in the city of New York paid to the government for the month of September (1867) a revenue tax of $123,000. Its average monthly tax for internal revenue is over $100,000. The shipments of snuff by this house to one town in North Carolina amount to 100 barrels a month, or 1,200 barrels annually. And this is but a tithe of the *snuff* merely sold by one firm. The wonder is, what becomes of it all?

In the North the snuffing is said to be done mostly by foreigners and old women. In the South it is used for the purpose of *dipping*. As this is a practice which is confined, for the most part, to the Southern section of the Union, and is, therefore, comparatively unknown to Northern readers—we dare say wholly so to many of them—it is proper that we should in this place give a more extended notice of it, as it exists in the late slave States. Of all the methods of using tobacco, this is at once the most filthy and disgusting. Confined to the female sex, "God's best gift to man," this fact seems, to a sensitive and refined mind, to give it added loathsomeness.

The *dipper* seats herself with her box, or bottle of the precious stuff, and her swab-stick—usually a green twig, three or four inches in length, well chewed at one end, in order that the snuff may the more readily adhere—this, ever and anon, she dips into her box, and thus conveys to her mouth the filthy dust, rubbing well her gums and the inside of her cheeks at the same time. If in company with a friend, she then passes to her the bottle and mop that she may do likewise. This is considered a delicate act of courtesy; the same as when one old toper asks another to take a drink out of his whisky bottle.

Sometimes the ladies of a neighborhood meet together and hold circles for the purpose of enjoying in company a social *dip*, and discussing the affairs of their neighbors at the same time, the same as at an old-fashioned tea party. Married ladies and bright young girls, each lovely belle with her snuff-box and swab-stick—sometimes all use a common snuff-box—dipping snuff and retailing tit-bits of scandal.

We have said that snuff-dipping was mostly confined to the women of the South. Yet it is not wholly so. Although one of the peculiar institutions of that section of our country, and having its origin there, the practice has spread outside its original domain, and within the last fifteen or twenty years has come to be somewhat common in some parts of the North, especially in the city of New York, and adjacent portions of New Jersey, where it is indulged in, not by the poor and ignorant alone, but, as we are informed—in New York at least—by genteel and high-bred ladies in the fashionable walks of life. In New York it is known by the euphonious appellation of snuff-*digging*. In New Jersey it is known as snuff-*rubbing*. In the latter region the practice, as it exists, is in all essential particulars the same as at the South. But in the city of New York, instead of meeting with others to indulge in the disgusting practice, the snuff-taker retires to the privacy of her own chamber to enjoy the sensual delight in secret. The filthy powder is deposited on the inside of the lower lip by means of a peculiarly shaped horn or silver spoon. The article of snuff used is one manufactured expressly for diggers' use; and is a mixture of high toast Scotch and other snuffs, to which is added a certain proportion of salt, pearlash and other pungent ingredients, with a view to enhancing its stimulating qualities. Its exact composition is a secret, and known only to the trade. As to the quantity sold in New York for this especial purpose we cannot very well tell the aggregate amount; but one shop in the Bowery sells 100 pounds a week, and another on Broadway sells three times as much. Each digger consumes from a quarter of a pound to a pound per week.

(To be Continued.)

LET US HAVE LIGHT.—It is easy to prove that light is a vital stimulant, and absolutely essential to healthy life. Give a plant all the conditions of growth—a proper soil, temperature, moisture, and air, but withhold light, and though it lives for a time, it becomes pale, feeble, loses function, and finally dies; under these circumstances its reproductive powers are always lost. Place a man or animal in similar conditions, and we shall have similar results. A gross injustice is done to criminals, and frequently to the insane, by depriving them of light. No one can be reformed by darkness. If the poor of our cities are to be elevated in the scale of humanity, the first step is to open broad ways for the admission of sunlight into our tenement houses, and construct windows so that direct sunlight may reach every portion of the rooms:

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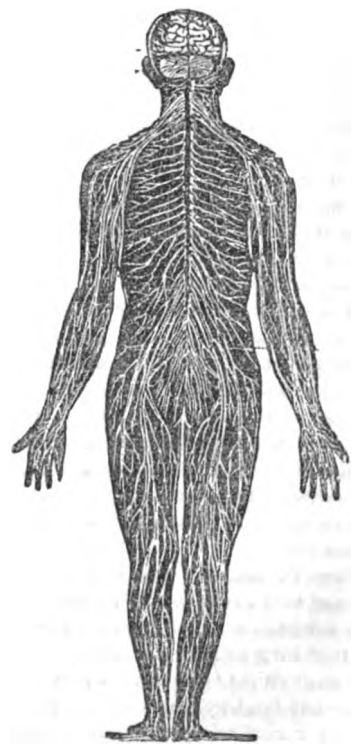
LESSONS FOR THE CHILDREN.

BY THE EDITOR.

LESSON XIII.

Now, children, for another lesson. I did not tell you last month what it was to be about. You see it was my busy month, and I had no time to think about it. I was thinking all the while about what I should get other people to say in the HERALD this year, and wondering how I could get new subscribers, and such other things an editor has to do. As none of you are editors yet, I don't believe you know how much we who are, have to think about our work. It would be very easy for us to cut pieces out of other papers and journals to fill up our pages; but it is not so easy to think of all the things that ought to be said, or left unsaid. It is work that must be done conscientiously. Otherwise we might print matter not only worthless, but untrue. I picked up a health journal the other day, edited in a sort of slap-dash way, and found a most curious ignorance on the part of its editor about many things. For instance, he printed an article in which he said that foods were divided into three kinds; one kind he said was the carbonates, another kind was the nitrates, and the third kind was the phosphates. You may never see this table; but if you do, let me tell you that there is not one word of truth in it. And yet many papers have printed it, and one or two writers have put it into books. Let us see about it for a moment. What sort of a food would a nitrate be? Saltpetre is a nitrate, and this table said that wheat contained some fourteen per cent. of nitrates. If it did you could not eat a mouthful of wheat bread. It also said that some kinds of food contained sixty or seventy per cent. of carbonates. Now marble and limestones are carbonates, but as much of it as this in the food would lie rather heavy on the stomach—don't you think so? If you learn such nonsense as this you will have to unlearn it again, and this will be a great loss of time.

This lesson will be about the brain and nerves. Take a looking-glass and look at your head. What do you see? Eyes, ears, the forehead and a mass of hair. But what do you suppose is inside of the head? It is not empty, but full. Suppose you were to cut through the hard bone that goes all over the head, what would you find?—an empty cavity. By no means, but a large mass of matter, called brain. The next time you have a chance to see a fish or chicken killed, try and get the brain out and see how it looks. Now here let me tell you, that the most wonderful work done in the body is performed by the organ which lies out of your sight; so closely hidden away in the cavity of the skull. The stomach digests food, the lungs take in the air, the heart circulates blood, the muscles move the body from place to place; but the brain thinks and feels. It is the king that rules and governs the rest of the body. What other organs do, is in the end done for the brain. The brain and its nerves hold all the other organs to their work, and make them act in unison and harmony, instead of in disorder. Perhaps you do not know that you have two brains, or that this organ is double; but it is so. The two halves lie side by side in the skull.



THIS PICTURE SHOWS THE BRAIN AND NERVES THAT PROCEED FROM IT.

Now what does the brain do that is so wonderful? Let us see. Perhaps one of the most curious

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things it does is to *remember*. Yesterday you played marbles with your cousin and were badly beaten; to-day you remember all about it and prefer to play with somebody else. Last week you went to see your Aunt Mary, and ate too much chicken pie, and was sick, and will never forget it. Last year you had all the sweet pears you wanted, for the first time in your life, and will remember it as long as you live. A year or two ago you learned how to read, and now you remember how, and take great pleasure in it. Memory is very necessary to all of us. A tree does not need to remember, for all it has to do is to stick to the soil, and grow and bear fruit. It does these things because it cannot help it; but if a tree had to learn to read or write, or go on errands, as you do, then memory would be as necessary as to you. Suppose you were to learn to read one day, and could not remember it till the next, what a trouble it would be. It makes your mother a great deal of trouble now, sometimes, because you forget where you put your hats or thimbles, and keep her hunting them for you more than she likes. Memory can be cultivated and improved so it will remember almost everything, or allowed to languish so it is worth almost nothing. There is a man in Ohio somewhere who can remember what kind of weather they had where he lived every day back for over thirty years, and what work he did on any particular day. For instance, if you were to ask him what he was doing on the 27th of October, 1849, he would say whether that day was Friday or Monday, and that he was husking corn or digging potatoes, and be right about it, too. When the brain is injured memory is injured. One of the first symptoms of injury is a loss of memory. Healthy people remember better than sickly ones; so keep well. Another thing the brain does is to *form judgments* of things. Even a child can do this. Let me show you how. You have before you two pictures; now tell me which is the best one? This, do you say? Well, you are right; you judged correctly. It is a great thing to have good judgment, so as to decide which course it is best to take. Everybody must be a judge, more or less. Suppose you owned a handsome dog and another boy wanted to buy it of you, and offered you a dollar for him. Would you take it? You would have to judge whether the dog or the dollar was worth the most. Suppose you sold the dog for the dollar without asking your father's opinion; and then when he found it out he should tell you the dog cost fifty dollars. Then I should say your judgment was poor. Suppose one of you girls was to go to the store to buy a bonnet, could you judge as to the quality and fitness of it so as to buy one your mother should approve of. You remember the story of Franklin, who paid too much money for a whistle, don't you? It is a good thing to have a good judgment. You will be obliged to use it a great deal in the course of your lives.

Another thing the brain does is to *reason* Reason compares one cause with another and forms a conclusion. You are walking through a field and see a hole in the ground. How did it come there? You begin to reason about it, and find out. Was it made by a squirrel, or a wood-chuck; or dug by a boy, a man, or dog? You must collect the facts and reason it out. Suppose in going through your father's garden you should find a box of toys. You would begin to wonder how they came there; and suppose, in reasoning it out, you should come to the conclusion it fell down from the sky. That would be poor reasoning. Such a thing could not be. It would be much more likely that some boy laid them down to pick a flower, or fruit; or watch the bees gather honey, and then went off and forgot them. It is a good thing to know how to reason well. Reason and judgment go together, and help each other. There are a great many other things the brain does, which I will not tell you about now.

The brain is a very large organ, and in a full grown man weighs between three and four pounds. It is held in a thick, bony cavity, called the skull, and cannot be easily injured by blows from without. It takes a great deal of blood to keep it in action; just as a saw-mill needs a great deal of water to turn the wheel. It is the business of the stomach to prepare material to make this blood; and if you eat enough of the best kind of food it will keep the brain supplied with blood, and you can remember, judge and reason much better than when the blood is poor and thin.

Take good care of your brain and nerves; avoid all bad habits, all secret vices that sap the strength of this organ; for it is the pride, the glory of manhood. With a good brain and a good body you can make your way through the world most royally; without them—especially the brain—you will be the sport of knaves and sharpers, jostled this way and that in the battle of life, and at last come out at the little end of the horn.

QUESTIONS.

1. Where is the brain?
2. Why is it hidden from sight and held in a bony cavity?

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3. What does the brain do?
4. How many brains have you?
5. What part of the body remembers?
6. What part judges?
7. What part reasons?
8. What happens when the brain is injured?
9. What is meant by judgment?
10. What by reason?
11. What does the brain weigh?
12. Does it take much blood to make it go?
13. What about the care of the brain?

How to Exercise.

THE philosophy of exercise is summed up in a sentence. It is the art of keeping well.

In the country means of exercise are always available. Moreover, country people are not subjected to the hurry, the pinch for time which makes minutes worth a price in gold, that so breaks up the healthy habits and breaks down the constitutions of city people. In our cities and large towns the practical difficulty has been to find an exercise which shall be cheap, accessible, and complete enough to meet all the needs of the system, and at the same time require but a small portion of each day for its practice. The gymnasium has failed because, however excellent it may be, it requires two hours to get an exercise which shall reach and call into play every muscle and fiber and joint of the whole body; and men who had but ten minutes to bolt their dinner in cannot afford to take even an hour of the best time in the day to swing Indian clubs, and knock dumb bells together, and swing in a ring and leap upon a mattress. The bowling alley is good, but only partial in its effects, while its accessories are usually objectionable. Horseback riding is doubtless better than most methods of exercise yet devised, if not the best of all; but it is practically unavailable to three-quarters of the people who need extra exercise most. We cannot help envying the man who can quit his business at four or five in the afternoon and ride on his horse through the fifty miles of the Central Park, and over the fine roads of Westchester or of Kings; but only one man out of fifty can have that privilege, and that is unavailable in stormy days. The outside of a horse may be the best thing for the inside of a man, as Theodore Parker used to say; but the horse is a luxury that only the few can hope to own, and none but fools will hire at our city prices.

We have tried almost every kind of exercise yet invented, but have found no single method which combines so many important advantages as the Butler Health Lift. After a year's trial we are satisfied that it is the nearest approach yet made to a method of exercise which is suited to all wants, and adapted to all circumstances and constitutions. It requires, at the longest, but half an hour of time. It may be graduated to the condition and needs of any person at the time he takes it. It calls every joint and sinew and fiber of the whole body into play. It gathers up and re-distributes the blood through the veinous system until its quickened circulation is felt to the finger-tips. It leaves the system in a refreshed and heightened condition. It tends to accumulate strength, and steadily builds up the body in new vigor and elasticity. It increases working capital, and the ability to endure the strains incident to the exposures and vicissitudes of business and professional life. It is the most convenient, concentrated, complete and perfectly satisfactory method of exercise yet discovered or devised; and after a year's trial of it, with marked advantage, we are only too happy to commend it to business men, and ministers, and women, as an invention admirably calculated to prevent those lapses and derangements of the system to which we are so liable, and from which we suffer so much, and to keep it at the highest working point. The machine itself is exceedingly simple of construction, and can be easily operated, and it can be used in the counting-room or at home. And a half hour of exercise wisely taken in this way will be equivalent to two hours of walking or practising in an ordinary gymnasium. What we urge is that exercise, of some sort is a necessity, and where the occupations of life afford but little vigorous exercise it must be sought elsewhere, in artificial ways. Those who want to live the most while they live, and do their utmost in the easiest way, and for the longest time, will most exercise their wits in learning how best to exercise their limbs.—*Rev. W. T. Clarke in Golden Age.*

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EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

HALLUCINATION.

I. Do children ever become hallucinated, and what is a hallucination?

ANSWER.—Hallucination is from the Latin word *hallucinari*, which means "to be deceived." It is a morbid error of one of the senses. It is the seeing of things that do not exist; seeing them in the imagination only, and depends on disordered perception. Nervous children are liable to suffer from it; and so are healthy ones, too, for all that. We once had a patient, a most cultivated and beautiful woman, who was hallucinated and saw all manner of beautiful forms and creatures about her. When a child she would amuse herself by the hour in playing with invisible children. Few, however, suffer so severely as this; but multitudes of children have a mild form of hallucination in the night, and think they see things in the dark when they do not. It results from large cautiousness and error in judgment. A child may wake up in the night, and the merest speck between the edges of the eyelids may be magnified to a monster, a white cloth on a chair be thought a ghost, and a creak of the bed be magnified into the tread of a fiend. It requires great good sense on the part of parents to assure such children that it is nothing. Such hallucinations often result from the stories children hear about ghosts and hobgoblins. It is a shame that parents or nurses ever tell them to children. It is said that the mother of Dr. Livingstone, the famous African traveler, never told him any ghost or spook stories, and that he attributes his fearlessness among the African tribes mainly that as a child he never knew fear. Sometimes hallucinations are the result of going to schools where the hot-house pressure system is in vogue. Dr. Knight gives a case in point, but it is only one in a million.

"A frail, delicate girl at school had ten studies! A system of marking was rigidly enforced, 100 being the maximum of good recitations, or perfection in recitation. A monthly report was sent home. All institution and social influences were brought to bear to stimulate perfection. This girl was obliged to send home one report in which it was announced to the parents that she lacked 2-100ths of perfection in one or two studies. She accompanied it wit a letter of regret and self-condemnation, and expressed her determination to send better returns in the future. Alas! before the next month disease had claimed its legitimate victim, and that poor, overtasked brain was enjoying such a period of rest as only the delirium of fever affords.

"What unparalleled outrage or unmitigated humbug attends much of this so-called education of our youth!

"Our children need to receive 'that sound education which should consist in the literal educing of the faculties of the mind, of a counteracting agency to the instincts; one which coordinates the faculties of the mind, which gives exercise to reason and judgment, at the same time that it represses without ignoring the instinctive part of our nature.' Precocity is an actual danger, and should not be fostered as a wonderful evidence of talent."

A PERFECT MARRIAGE.

II. Is there such a thing as a perfect marriage?

ANS.—There are few perfect things in this world. There are few perfect marriages; but still there must be some so near perfect that we may properly call them so. Theodore Parker says that a perfect and complete marriage is, perhaps, as rare as perfect personal beauty. Men and women are married fractionally; now a small fraction, then a large fraction. Very few are married totally, and they only after some forty or fifty years of gradual approach and experiment. Such a large and sweet fruit is a complete marriage, that it needs a very long summer to ripen in, and then a long winter to mellow and season it. But a real happy marriage of love and judgment, between a noble man and woman, is one of the things so very handsome that if the sun were, as the Greek poets fabled, a god, he might stop the world in order to feast his eyes with such a spectacle.

WASTE OF LIFE.

III. Is not the waste of life in war greatly to be dreaded, and on this account should not health reformers be opposed to war?

ANS.—The Earl of Derby says, "People talk very loudly about the waste of lives in war, I wonder to how many people it has occurred what is the waste of lives in peace? I doubt if the most sanguinary battle that was ever fought, in

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ancient or modern history, has carried off nearly as many human beings as die in England in every one year, from purely preventable causes. Now that is the state of things around us. Of course we cannot change it in a day, but we can modify it. This institution, of course, can do but little; it is only one among many, but it is one of a thousand agencies which earnest and philanthropic men are bringing to bear for the purpose of remedying this great evil."

LABOR AND HAPPINESS.

IV. A subscriber writes, "How can we who labor ever be happy? If I had leisure I could be, but I am sure I never can enjoy life while I must work every day I live for bread and clothing. Can you solve the problem for me?"

ANS.—We know a few persons who have nothing to do. They don't like it. We advise you to exchange places with them. It is wonderful to what an extent people believe happiness depends on not being obliged to labor. Honest, hearty, contented labor is the only source of happiness, as well as the only guarantee of life. The gloom of misanthropy is not only a great destroyer of happiness we might have, but it tends to destroy life itself. Idleness and luxury produce premature decay much faster than many trades regarded as the most fatal to longevity. Labor in general, instead of shortening the term of life, actually increases it. It is the lack of occupation that annually destroys so many of the wealthy, who, having nothing to do, play the part of drones; and, like them, make a speedy exit, while the busy bee fills out its day in usefulness and honor.

CHESTNUTS.

V. Will you tell me whether you consider chestnuts wholesome or not?

ANS.—We consider them quite wholesome. In New York they are mainly eaten roasted or boiled, but where the teeth are sound, so they can be masticated thoroughly, they may be eaten raw if preferred. The Food Journal says: "This abundant fruit may claim a place, not equal to that of the haricot certainly, but still an important place amongst the substitutes for potatoes. The roasted chestnut is well known in England, but in France and other countries it is an important article of consumption. There are two kinds of chestnuts in general use, the wild variety, known in France as the *chataigne des bois*, and the great cultivated nut called *marron*. The former are small, but very cheap, while the latter are large and highly nutritive. The sale of roasted chestnuts in Paris is enormous, and is principally carried on by Savoyards, who come from their mountains for several months to roast and sell what are amusingly called by the Parisians *winter swallows*. But the chestnut enters regularly into the French *cuisine;* it is used to make stuffing for turkey, and from it is made a *puree*, named after the great Condé, who was a famous *gourmet* as well as a general, which is eaten with many dishes in place of mashed potatoes, and is much liked by those who relish a certain amount of sweetness in such preparations. Boiled chestnuts are also eaten largely in some districts; connoisseurs adding a little butter to them when cut open, but utterly repudiating salt with them. In Corsica they form a large part of the food of the country, and in the south of France and in Spain they are largely consumed. The chestnut certainly ranks among the most wholesome and nutritious fruits, and deserves more consideration than it receives in English houses."

We may add, that the French chestnuts do not at all compare with the American in sweetness.

SPECTACLES.

VI. Are spectacles of recent invention?

ANS.—The following answers this question: On a tombstone in Florence is this inscription, "Here lies Salvino Armato d'Armati, of Florence, the inventor of spectacles. May God pardon his sins. The year 1318."

WELLS NEAR GRAVEYARDS.

VII. If a well is near a graveyard, is the water injured by it?

ANS.—This depends on the character of the soil. If it is gravelly or porous, it might be. If clay intervenes there would be little danger, unless the well is very near. In no case should it be within 500 feet of any yard.

CONSUMPTION.

VIII. Is consumption catching?

ANS.—This is an interesting question. It has been best answered by Dr. Richard Payne Cotton. He states that the Consumption Hospital of Brompton, with which he is connected, was opened in 1846, with ninety beds, which, ten years later, were increased to two hundred. These have been constantly occupied. During this long period but one nurse has died of phthisis, and she was a poor creature, whose husband had deserted her, and who had long endured from other causes, also, much anxiety

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and physical exhaustion. The services of the nurses have generally been unusually prolonged, and their health, as a rule, remarkably good. Of those now resident, two have served in the hospital seventeen years, one thirteen, etc. The two oldest nurses have recently died of old age and general decay, after having been long superannuated.

The gallery maids, engineer, dispensers and others, all show a like record of freedom from phthisis. Of the staff of physicians and assistant physicians—nineteen in number—only one has been affected with phthisis, and he was a young man of delicate and phthisical aspect.

The writer does not believe in the contagiousness of consumption, though he admits that cases now and then occur in which the disease has been developed in widowers or widows under circumstances apparently favoring the doctrine of contagion. The cases he has met have chiefly occurred among women. They do not, in the opinion of the author, support the theory of contagion. The union of husband and wife is not only a religious and social, but also a *physiological* one. It has often been remarked, for example, that after a variable period of married intercourse, the one person is seen to resemble the other, not only in manner and habit, but in features and expression. The offspring, too, of second marriages have been often observed to resemble in feature and character the husband or wife of the previous union. If certain natural and healthy peculiarities can be imparted from husband to wife, or *vice versa*, there is every reason to believe that morbid diseases, peculiarities and tendencies may be equally imparted. There is another and less obscure way, in which we may fairly conclude that phthisis may be conveyed from husband to wife. A phthisical father may communicate to the *fœtus in utero* a consumptive taint, which may thus be transmitted to the mother, just as we know is often the case with secondary syphilis. It may be due to such circumstances that phthisis, arising apparently from contagion, occurs more frequently in women than in men. Dr. Cotton believes, therefore, that in one or the other of these ways—either by transmission through offspring, or by a mysterious and inexplicable connection between husband and wife, phthisis may sometimes be developed in either of them, and that we need not resort to zymotic influences in explanation of such an occurrence.

In view of the hospital statistics above referred to, Dr. Cotton asks, "Must it not appear to all believers in the doctrine of phthisis originating in a special and contagious poison, that a residence in the Consumption Hospital, and long continued working in its wards, is a very good way, indeed, *not to catch the disease?*

TEA DRUNKARDS.

IX. Do people ever get drunk on tea?

Ans.—Yes, in one sense they do. Dr. Arlidge, one of the Pottery Inspectors in Staffordshire, has put forth a very sensible protest against a very pernicious custom, which rarely receives sufficient attention either from the medical profession or the general public. He says that the women of the working classes make tea a principal article of diet, instead of an occasional beverage. They drink it several times a day, and the result is a lamentable amount of sickness. This is no doubt the case, and as Dr. Arlidge remarks, a portion of the reforming zeal directed against intoxication might be wisely diverted to the repression of this very serious evil of tea tippling. Tea in anything beyond moderate quantities is as distinctly a narcotic poison as is opium or alcohol. It is capable of ruining the digestion, of enfeebling and disordering the heart's action, and of generally shattering the nerves. And it must be remembered that not merely is it a question of narcotic excess, but the enormous amount of hot water which tea bibbers necessarily drink is exceedingly prejudicial both to digestion and nutrition. In short, without pretending to place this evil on a par as to general effect with those caused by alcoholic drinks, one may well insist that our teetotal reformers have overlooked, and even to no small extent, encouraged a form of animal indulgence which is as distinctly sensual, extravagant and pernicious as any beer-drinking or gin-swilling in the world.

PEPSIN.

X. What is pepsin made from, and is it a poison?

Ans.—The pepsin of commerce is obtained from the stomach of the pig, by scraping the mucous membrane of the fresh stomach with a blunt instrument after it has been roughly cleaned of its contents, the resulting mixture is mucus and gastric juice being dried and pulverized.

It is said that the pigs are kept for some time without food, until their appetites are ravenous, when they are placed where the most savory meal is steaming under their snouts, but are prevented by mechanical obstacles from

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getting at it. Not only do their "mouths water," but a secretion of gastric juice takes place in consequence of the mental impression, and it is during this condition that they are killed. The gastric juice being free from food, is thus obtained in a purer state and, it may be, in larger quantity than if taken from a stomach containing food.

Pepsin is not a poison, but a good article, and may be considered a hygienic or physiological remedy, pepsin being really the principal agent in stomach digestion.

A MOTHER'S INQUIRY.

XI. A mother anxious about her son, whom she has just sent off to college, asks: "What can I do to inspire him to take care of his body as well as his mind?

Ans.—Send him only to those institutions of learning where physical as well as mental development are looked after. See to it that his boarding-house is a good one, and that he has good food in abundance. The student needs a more nutritious diet than the common day laborer. His brain cannot be sustained in vigor on a meager diet. He must decarbonize his blood by free exercise in the open air. He must secure regular relaxation, and have eight hours good sleep. The brain demands rest more than the muscles, and the expended forces can be recuperated by rest alone. Above all, he must avoid all unnatural stimulants, and shun all dissipation and excess. If he exercises prudence in these matters he may be physically strong, healthy, clear-headed, and mentally sound. If he is imprudent he will be sickly, mentally feeble, and a failure all round.

TOBACCO STATISTICS.

XII. I expect to discuss the tobacco question this winter. Please give me all the important facts you can in a brief space.

Ans.—The following statement compiled by a man who has given much attention to the subject, comprises probably about what you want: "It is estimated that nearly 300,000,000, or about one-fourth of the entire human family, use tobacco. It is used by men of every nation, civilized and uncivilized, old and young, learned and unlearned, rich and poor, saint and sinner, Christian, Turk, and heathen. No pope, prince, president or king wields a scepter over so wide an empire. It is computed that the whole number of smokers, snuffers and chewers consume 500,000 tons of tobacco annually, or 1,000,000,000 of pounds weight. The expenditure of time, labor and money laid out, one way and another, for tobacco, is prodigious. The aggregate of all these that enter into the raising of the weed; the making of it into plugs, snuff and cigars; the transportation, the buying and selling, and using, is a problem for mathematicians that know how to compute figures that rise beyond millions.

The time spent by a single individual in taking chews, and lighting and puffing pipes, would, if properly improved, in many instances, be sufficient to acquire a thorough knowledge of several useful sciences. Multiply this by the whole number of tobacco-users, and it will amount to centuries of precious time consumed, not only in useless, but hurtful and degrading practices. The labor in producing tobacco and preparing it for use is amazing. Five and a half millions of acres are cultivated for this soil-impoverishing crop throughout the world. In one great tobacco factory in Seville, Spain, 5,000 young girls are employed in a single room. In the city of Hamburg 10,000 persons, many of them women and children, are engaged in the manufacture of cigars. A printing press is occupied entirely in printing labels for the boxes of cigars and other matters connected with the immense tobacco business of that city.

HYGIENE FOR POULTRY.

XIII. J. B. wishes to know how to rid his poultry house of insects, and to keep his fowls from growing sickly.

Ans.—There is but one method, and that is by perfect cleanliness. The use of carbolic acid will enable you to kill the parasites. Wash the walls with carbolic acid and water, and sprinkle it over the floors. One part of acid to twenty of water, is the best proportion.

Dr. Emerson gives recipes for preparing this powder for disinfecting and other purposes. As a whitewash for walls, for protection against insects, bugs, etc., he says: "Put three ounces of carbolic acid in twelve quarts of lime water, and whitewash the walls of the poultry house well with this wash, and no living parasite will then be seen—their death is inevitable. A weak solution may be made to wash fowls in: one part of the acid to sixty parts of warm water, let it cool and then dip the fowls in until the feathers become thoroughly wet and the solution reaches every part of the body. Afterward place the fowls on clean, dry straw, where the sun will reach them, until they are

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dry. Another form in which it is recommended to use it is a soap. These soaps are for sale by various manufacturers, and have a high reputation for cleansing animals and the cure of skin diseases. A mode of making this soap is as follows: Dissolve three pounds of common bar soap in hot water, add two to four ounces of carbolic acid, according to the strength desired. Allow to cool, as usual in making hard soap. As these preparations may be bought ready prepared, and as carbolic acid is by no means a safe article to keep about the house, we would advise persons to buy rather than attempt to make them, except in the case of whitewash, when they must get the pure article and dilute it.

INFANT MORTALITY.

XIV. In what city in America is infant mortality most excessive?

Ans.—Chicago. In the year 1843 the death rate of children under five years was only 29 per cent. of all the deaths; but it has slowly risen till, in 1869, it had risen to 63 per cent. Next to Chicago stands St. Louis, where last year the death rate of children under five years was 51 per cent. of the entire mortality. New York city is almost the same as St. Louis, and in the year 1871 it was greater, that being an exceptional year, and amounting to over 77 per cent. Next to New York stands Baltimore, with a percentage of fifty per cent., and then Cincinnati and Philadelphia with forty-six per cent., and New Orleans with forty-three per cent. Providence, R. I., shows only thirty-seven per cent., but that city has made sanitary knowledge a specialty, and in that way done much to make child life more safe. What can our friends from the small country towns report us on this subject?

BAD AIR IN ROOMS.

Does an ordinary gas burner or candle pollute the air very much?

Ans.—Yes. It has long been settled that the leading cause of the frequently unhealthy condition of air in our houses, even where the facilities for ventilation are ordinarily good, has been the over-abundant generation of carbonic acid gas. To the sources of this generation little attention has been paid in this country, though in Europe, and in Germany particularly, it has been made the subject of repeated experiments. One point especially has been developed by these investigations, namely, that the light produced by coal gas exerts an injurious influence on the air to a greater extent than is generally supposed; which suggests the fact that the brighter the illumination—that is, the more numerous the gas burners, the worse the air must be in a given apartment.

From experiments made by Dr. Zoch, an able scientific man, it follows that the quantity of carbonic acid gas in a room of the capacity of 2,540 cubic feet, with a single gas flame of ordinary brightness, may rise to the proportion of three parts to the thousand. Strange as it may seem, it was supposed that this quantity was possible only in hospitals, prisons and garrisons, and other crowded, or badly ventilated habitations. Though the quantity of carbonic acid may be taken as an indication of the impurity of the atmosphere, it is not to be left out of sight that in ordinary illumination two other gases—carbureted hydrogen and carbonic oxide—although in much smaller quantity, are produced, which are even more poisonous than carbonic acid. If one single flame is sufficient to impregnate an atmosphere with three parts per thousand of carbonic acid gas, what then shall be said when it is considered that, in an ordinary parlor as many as three burners are kept constantly lighted for five and six hours, and that with an inferior quality of gas? To what else shall we attribute the impediment to breathing, the dry heat in the throat, the tickling in the larynx, and the dry, fatiguing cough to which individuals are liable when compelled to remain for a great length of time in brilliantly lighted rooms?

Be it said here, that the new system of illumination—with supplying the gas jets artificially with the oxygen required, is free from these objections. In the first place, the air is not robbed of its oxygen, which is so essential to respiration; secondly, there is as much light produced by one burner as otherwise with five; the quantity of carbonic acid formed is, therefore, less in the same proportion. Thirdly, combustion being more perfect, there can be no escape for either carbureted hydrogen or carbonic oxide. We may add, in conclusion, that by the latest improvements of Mr. Tessié du Mothay, the products of combustion consist merely of watery vapor; so that, in a sanitary point of view, this system may unreservedly be pronounced superior to any now in use.

He who receives a good turn should never forget it; he who does one should never remember it.

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

THE TWO THIEVES.

A Sicilian Story.

In Sicily, the story goes,
Two rogues espied a simpleton
Leading his asses to a fair,
In a long line, tied one by one.

And this the way in which they went:
The halter of each quadruped,
Tied to the tail of one in front,
With open mouth, the rustic led.

The bolder robber slipped the noose
From the last ass, and took his place;
As they had planned, he followed on
With heltered neck and woeful face

The younger robber, by the ears
The stolen ass led quick aside;
Of cords a halter soon was made,
And then the thief began to ride!

When he was fairly out of sight,
The haltered robber gave a groan.
The peasant turned. "Ho! Where's my ass!
What are you doing there alone!"

"Hush!" said the rogue, "I *was* your ass!
For my ill deeds, St. Anthony
For three long years condemned me so!
My time is up just now, you see."

The peasant gaped. "For three long years
You've been an ass! Then get you gone!"
"Thanks," said the robber. "I will try
To mend the mischief I have done."

Reaching the fair, the peasant saw
His stolen ass, without a doubt.
The thief had got him there for sale,
Taking a course more roundabout.

Close to the ass the rustic drew,
And whispered through his half-closed hand:
"Ah, ha! Some other deviltry
You've done again, I understand."

Then turning to the thief, he said;
Look out and sell him when you can;
But not to me. I know too much!
He seems an ass, but is a man!"

A crowd soon gathered, and he told
How his whole trouble came to pass.
They heard him through, then jeering cried:
"You seem a man, but are an ass!"

Richard S. Greenough.

LOVE'S LESSON.

I.

Quoth I unto Love, "Not now,
I have other work to do;
Men who battle in the world
Can have little work for you.
When my ingots all are stored,
And my ships are come from sea,
I will lay aside my toil
And make company with thee."

II.

"Ah" Love answered me, full strong,
With its unabashed, pure eyes,
"Sure this life is not so long;
Take your chance before it flies.
Some one pines, all patiently,
For my treasures true and dear:
It is just a woman's heart
You have vowed to keep, sincere."

III.

"True," quoth I, "my friend, but life
Calls for sterner stuff than this;
And I have no time just now
For woman's constant kiss.
But the years will come, I ween,
When we two, beside the hearth,
Will be lovers, all the same
With no stint, or loss, or dearth.

IV.

So I wrestled long with life,
Till it brought its gold to me;
In the offing, fair and blue,
All my ships came home from sea.
But, alas! I sat alone,
And the earth was black and bare;
There was naught to share my gain
But a woman's empty chair!

V.

And the lips, neglected thus,
Are no longer there to kiss;
There is nothing left to me.
But a little head to miss,
And I sit and sadly say,
All ships might sink at sea,
Life might strip all else away,
If it gave *her* back to me.

Bertha Scranton Pool.

UNWEDDED.

Her friends are good women and faithful men,
Who seek for the true and uphold the right;
And who shall proclaim her the weaker, when
Her very presence puts sin to flight?

She reads the hereafter by the here,
A beautiful Now and a better To Be;
In life is all sweetness, in death no fear—
You waste your pity on such as she.

Lucy Larcom.

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EDITORIAL DEPARTMENT.



NEW YORK, JANUARY, 1873.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

☞ THE PUBLISHERS *do not hold themselves as indorsing every article which may appear in* THE HERALD. *They will allow the largest liberty of expression, believing that by so doing this magazine will prove to be more useful and acceptable to its patrons.*

☞ *Exchanges are at liberty to copy from this magazine by giving due credit to* THE HERALD OF HEALTH AND JOURNAL OF PHYSICAL CULTURE.

TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

NEW YEAR'S COMPLIMENTS.—With each recurring New Year's Day it has for ages been the custom for friends and neighbors in every civilized and, for ought we know, in savage countries, to address each other in terms of mutual good wishing. It has long been the practice of the editors and publishers of THE HERALD OF HEALTH to adopt this beautiful custom, and extend their kindest greetings to hosts of readers in every part of the world. Why should we not? We are, though we may never have met, not strangers but friends. An editor and publisher always feel themselves on friendly terms with their readers, and our "Happy New Year" is addressed to friends, not strangers. There are those who think it sinful to be happy, but the originator of "I wish you a happy new year," did not think so. He believed at least in a happy new year, if not in a happy year. For our part, while we think happiness not the great end of life, it is important enough to warrant our doing something to attain it. Happiness is the product of the right action of all the faculties of body and mind. There is a low order of pleasure that comes from dissipation, but happiness does not come from it. Happiness comes from the highest development and unfolding of all the faculties of the body and mind, and the perfectly happy man, if such can be found, will, we think, be the good man. It is just as laudable, then, to seek happiness as goodness; for the former is the result of the latter. As ours is a Herald of Health, we may be excused if we state our conviction that one of the most direct ways to attain happiness is to maintain physical health. It is after all a very great satisfaction to be healthy. Though health alone will not insure happiness, it is the foundation of it. Even a very slight departure from health makes people unhappy. Last night you did not sleep well; to-day you are morose, and you speak harshly to your child and unkindly to husband or wife. The night before you slept eight hours, and how kindly you felt all the next day toward every human being—how happy every moment. Your little boy has a cold; how unhappy he is, and peevish and cross. You have the toothache, or indigestion and happiness comes not near you. The surest way, then, to be happy is to keep well; and the way to keep well is to obey the laws of health; and if you have not already done so, what better time can there be than on New Year's Day to begin to be happy by keeping your body in the best condition?

MARRIAGE AND LONGEVITY.—THE HERALD OF HEALTH has always maintained, and emi-

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nent men have apparently proved it by facts, that married people on the whole live longer than unmarried ones. Herbert Spencer, however, (Mr. Spencer is an unmarried man) has written an article against the theory. He says that, "Clearly as the figures seem to furnish proof of some direct casual relation between marriage and longevity, they really furnish no proof whatever. There may be such a relation; but the evidence assigned forms no warrant for inferring it. We have but to consider a little the circumstances which in many cases determine marriage, and those which in other cases prevent marriage, to see that the connection which the figures apparently imply is not the real connection. Where attachments exist, what more frequently decides the question for or against marriage? The possession of adequate means. While some are so reckless as to marry without means, yet it is undeniable that in very many instances marriage is delayed by the man, or forbidden by the parents, or not assented to by the woman, until there is reasonable evidence of abitity to meet the responsibilities. Of those men whose marriages depend on getting the needful income, which are the most likely to get the needful income? Those who are best, physically and mentally—the strong, the intellectually capable, the morally well balanced. Often bodily vigor achieves a success, and therefore a revenue, which bodily weakness, unable to bear the stress of competition, cannot achieve. Often superior intelligence brings promotion and increase of salary, while stupidity lags behind, in ill-paid posts. Often caution, self-control, and a far-seeing sacrifice of present to future, secure remunerative offices that are never given to the impulsive or the reckless. But what are the effects of bodily vigor, of intelligence, of prudence, on longevity, when compared with the effects of feebleness, of stupidity, of deficient self-control? Obviously the first further the maintenance of life, and the second tend toward premature death. That is the qualities which, on the average of cases, give a man an advantage in getting the means of marrying, are the qualities which make him likely to be a long liver; and conversely.'

Mr. Spencer is a clear-headed man, and his arguments have force. They are all summed up in these words: The healthier people are the ones who marry, and of course they will live longer than the unhealthy ones. Mr. Spencer, why did you not let the world know about this before? We are inclined to believe there are two sides to this question. Sickly people probably live longer single than they would married, if marriage brings with it all the cares and responsibilities it usually brings. Healthy people however long they might live unmarried, live longer in pairs. It is natural they should, with perhaps rare exceptions. If you don't believe it reader, try it.

THE HOT SAND BATH.—A correspondent of the Medical Times and Gazette says, "Fresh from the enjoyment of a delicious therapeutical novelty, and being, as I believe, the *corpus vile* on whom the first experiment has been made in London, I beg to call the attention of my professional brethren to the hot sand bath which has been established by Dr. Conradi, at 22 Aberdeen place, Maida hill.

"The patient is introduced into a warm, comfortable room, in which is a bath, fenced round with curtains, filled with sand heated to about 100° to 120°. In this a longitudinal groove (I will not say grave) is scooped to receive the patient, who is wrapped in a sheet, and so protected from contact with the sand. There is a comfortable pillow for the head.

"Then the bath operator gradually covers up feet, legs, arms and trunk with the warm sand. A bucket of hotter and one of cooler sand are at hand, so that the temperature can be adjusted with the greatest nicety. The feeling of warmth is very agreeable, and the weight of the sand is just enough to cause a pleasant sense of compression and support. After an hour's delightful repose, the patient rises, is refreshed by a sluicing of hot water, and goes away refreshed.

"The effect is very different from that of hot water, and still more from that of hot air or

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steam. There was absolutely no commotion of the heart, nor any of the grilling effect on the windpipe which I have experienced in other baths. Altogether, it seems a good thing when we want to produce measured perspiration and relieve congestion of the internal organs."

SICK POTATOES.—During the winter and spring potatoes begin to grow old and decay, when they become particularly unwholesome. Never eat one of these. If there is any taint about them, any bad taste or smell, never put them in your stomach. People in the country do not suffer so much from inability to get good potatoes as people in the city do. In the city they are exposed so much to cold, and heat and light, and get so bruised that they are never so good as when they come from the farmer's cellar. While on this subject we will give our readers a receipt for raising wholesome and delicious potatoes. Choose a soil that is dry and sandy, loam if possible; but any soil will do except where it is positively wet. With a plow mark out your furrows three and a half feet apart, and eight or ten inches deep. Now fill this furrow four inches deep with thoroughly rotten oak tan bark, or chip manure, on which is a good sprinkling of salt. Over this spread the soil half an inch thick, and plant the best varieties of potatoes. Strictly follow this rule, and nutritious and delicious potatoes will be the result. Try it and you will be richly repaid for subscribing for our journal for 1873, if you should not learn another thing.

WORK FOR SCIENCE TO DO.—We wish all our men and women of science would stop, if only for one single year (though we think ten years would be better), hunting for new comets, strange fish, undiscovered specimens of fossil animals and plants that it matters little whether they ever see the light or not, and try and discover and teach the laws of health and wholesome living. We need more eminent names in this department of labor, more intellect, more of the scientific spirit. We sometimes think that the department of hygiene is too much in the hands of men who don't know anything about it, with here and there exceptions. Very few people, educated or ignorant, know how to eat and drink and bathe and dress to the best advantage. Suppose Agassiz, for example, should let the fish alone for a few years (I am sure they would be glad) and devote his splendid talents to showing people which are the best foods to eat to give us the most strength. Suppose Tyndall should give up discussing the prayer guage, and show us how to guage our drink. Suppose Huxley should let comparative anatomy alone for a year, and find out all he can, and tell us about the rearing of children, and so on till all our men of science were busy; what a revolution would be wrought in our ways of life! They won't do it, however; they are wedded to their idols. Let them go. With another generation we shall have more and better laborers in this field. And the time will come when every man and woman will know what are the laws of health as well as how to say the multiplication table.

ARTIFICIAL IVORY.—William M. Welling's patent for the manufacture of artificial ivory has lately been extended by the Commissioner of Patents for seven years. The article is composed of ten ounces of white shellac, four and a half ounces acetate of lead, eight ounces of ivory dust, and five ounces of camphor. The ingredients are reduced to powder, heated and mixed, then pressed in heated molds into sheets or other desired forms.—*American Chemist.*

TOO MUCH MEDCINE.—The New Bedford (Mass.) Mercury says the medicine-chest of one of the abandoned Arctic whalers was broken open by some of the natives, who thinking they had found a prize, proceeded to swallow the contents of all the bottles. The survivors described the result as startling, for the doses were too large for the constitution of even an Esquimaux. Several of the partakers died, and others wanted to, but couldn't.

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PAINLESSNESS IN CHILDBIRTH. — Dr. J. Steinback Wilson, of Atlanta, Ga., publishes in The Medical and Surgical Journal an essay read before the Georgia State Medical Association last year—on Parturition not neccssarily a Painful Process—and cites many cases in point where the patient has followed a hygienic method of living, and nearly or quite escaped suffering. We are glad that Dr. Wilson has brought this question before the physicians, for it is one that, in most cases, they know very little about. His methods are those which any woman can follow out for herself, if she has the disposition, by the aid of a kind husband. They consist mainly in proper dress, diet, exercise, rest and the propor use of the bath—especially the sitz bath. Those who wish to see this subject fully discussed will find Dr. Wilson's paper timely and useful.

DEATH OF HORACE GREELEY. — Long before this number of THE HERALD OF HEALTH reaches our readers the tragic story of the death of Horace Greeley will be read, and re-read, in every cottage and hamlet, in every factory and shop from one end of the land to the other. It seems almost useless for us to add to the kindly, the touching words that have fell from the lips of eloquent speakers, or flown from the pens of gifted writers. Probably no living American was so well known. His name was a familiar word among the poorest as among the greatest. He had been the greatest of teachers, and there are but few who do not owe him something for the aid, the valuable help he gave in the formation of their characters. He was, perhaps, the most industrious man living. In almost every field of thought he was a vigorous worker. As an advocate of temperance he had few equals. Agriculture owes him more than it will acknowledge. As an editor he was chief among the thousands. New and liberal thoughts found in him a ready champion as soon, sometimes before they possessed sufficient maturity to produce their best results. He was a great and a good man. Not the greatest, for, thank God, there is no greatest man, none who in all respects towers above his fellow men; but he was a great man, and greatest in his goodness. He is gone. We shall all miss him. There is none to fill his place, not one. The nation mourns his loss. And yet we must not grieve too sadly, for the world moves on even when her greatest sons die. Thrones and principalities pass away, but progress never. The lesson of the life of Horace Greeley is a grand one. It has, and will still inspire young men and young women to brave words and deeds for justice, kindness, and brotherly love; but shall we learn no lesson in his death? Was it not a premature death? His parents lived to be ninety. His own frame was magnificent, and his health splendid. His habits, too, were simple and pure. He ought to have lived to be four score, at least. Why did he not? Did the doctors kill him? Did he die of grief, of disappointment; of excessive strain of the nervous system? Who can tell? We know this, at least, that he returned from his Western tour, where he spoke almost continuously for ten days to throngs of people, making in one day seventeen addresses. It is true, they were short, but into them he threw an immense amount of feeling. And who does not know that pure, intense feeling uses up life faster, and brings on nervous prostration more surely than cold, vigorous thought? It is dangerous to feel intensely too long, and too deeply at a time. Human nature cannot bear it. Then, as he returned to New York, to his everlasting credit be it ever said, he went to the bedside of his dying wife, over whom he tenderly and lovingly watched night and day for four weeks more; sleeping but little during all this time. And then, immediately after this, the anxiety of the pending election and the defeat. The inability to sleep during this long period of watching became chronic. The brain gave way, and life soon departed. It was an accumulation of causes, coming one after another in quick succession, any of which alone could and would easily have been borne. We know nothing of the treatment he received. It may have been good or bad. We certainly shall not condemn

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it without knowing what it was. There was enough without it. And here is the great lesson we would urge on our readers. No man, however gifted physically, can bear such herculean strain. Mr. Greeley's brain was immense. His hat would go over the ears of most men. And it was an active brain, too, and not a dull and sluggish one, that could not take on excitement. Men with great heads and active nervous systems, must not so live but that sleep will come daily to repair the great waste of the over-taxed body. Is it possible for great men, men with such responsibilities on them, to do this? Many think not. Perhaps they are right; but, except in rare instances, we think they are wrong. At any rate, the world has lost a man it can ill afford to lose, because the laws of life and health were not, perhaps could not, be obeyed. Let no one who has learned noble lessons of life from the living Horace Greeley, forget also to learn a lesson in his lamented death.

QUERY.—"There is a question I would like to have answered through the medium of your journal. I have long been an advocate of abstaining from meat eating, believing that we can not partake of the healthiest meat without taking into our systems the impurities of the animal—the worn-out, effete particles of matter, all the constituents of perspiration that have not been eliminated from the system, but are every moment of their lives working their way out through the tissues. And, believing further, that tissues of our bodies would be healthier and longer lived when made from grains, vegetables, etc., 'first handed from the earth,' than when made up of material, a portion of which is already partly worn out by the animal in his own flesh, together with the hydrocarbonaceous products of disintegration which all flesh contains.

"Now vegetables flourish well, grow strong, and even rank, from soil fertilized with guano, manufactured from pig-pens, or human excrements.

"The question I would ask is this: While all flesh contains the impurities which are daily being eliminated in the form of perspiration, do plants, vegetables, tubers or grains derive impurities from fertilizers used on the soil, or from anything by which the atmosphere may be charged? If they do, are these impurities rendered innoxious by any change effected by the plant, or do we receive them as we do those contained in flesh? R. C. S., M. D."

ANSWER.—Plants live on those substances that are poisonous to man. Carbonic acid, for instance, is a dangerous and deadly gas for a human being to breathe, but plants thrive on it. So of most other effete matter, the result of the destruction and refuse of animal life. This, however, is true—crude, highly concentrated manures do not produce the most healthy plants. Fertilizers should, therefore, be composted and thoroughly decayed before using them upon plants designed for food. A miller of large experience remarked to us the other day that he could always tell, even in the dark, when grinding wheat from a certain township. It had a peculiar odor, the result of peculiar soil. This is not an uncommon experience. In France, where a great deal of human excrement is used for fertilizing purposes, there is, we believe, a law prohibiting its use for this purpose unless it is properly decomposed and composted with muck, or other earth, and allowed to remain several months.

HOW TO MEASURE THE CHEST.—The person to be examined should stand in an unconstrained position before the physician, breathing with his mouth shut, and should raise both arms, stretching them out horizontally. A tape, not broader than one Cm. (about three-eighths of an inch), should be placed round the chest directly under the inferior angles of the scapula behind and the nipples in front, and should then be read off, first, after the deepest inspiration, and then after the deepest expiration, and both data recorded. The author then sums up the results which he has obtained by this method of observation, of which some of the more important are as follows: The aver-

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age circumference of the chest measured in seven hundred and twenty-five healthy men, twenty years of age, was, after deepest inspiration, eighty-five Cm. (about thirty-five inches); and after deepest expiration, eighty-two Cm. (about thirty-two and one-quarter inches), the average play of the chest being thus seven Cm. A circumference of only seventy-five Cm. (twenty-nine and one-half inches), indicates what the doctor calls an unripe chest, and should exclude the person from military service. A circumference of seven hundred and fifty Mm. to seven hundred and fifty-nine Mm. should only under exceptional circumstances be considered sufficient for military service; but when it reaches seven hundred and sixty Mm. (thirty inches), it ought to suffice.—*Dr. H. Frolich, in Virchow's Archiv.*

Isocrates.—Many readers will naturally inquire, who was Isocrates? We will briefly tell them. He was a most distinguished Grecian oratorical writer, born in Athens 436 years before Christ. He treated all moral and political questions by a regard for virtue, and a great aversion to meanness. He was a friend of Plato and Socrates. He was distinguished by a polished style, and, it is said, received a sum equal to $2,000 for a single course of his instructions as an oratorical teacher.

The address which we publish was translated into English by John Digby, about 200 years ago, and is a most remarkable production. His greatest work is his celebrated "Panegyrical" oration, on which he spent ten years in perfecting. He lived ninety-eight years, and there are now twenty-one orations known to have been written by him. This one was addressed to Demonicus, a son of one of the highest citizens of Athens. It may be interesting to know that Isocrates, though a great oratorical writer, had a very weak voice, and was so timid that he never, except on one occasion, delivered his own orations, but sent them to the parties to whom addressed, or had them read by others. Once when complaint was made at the high charges for his instruction, he replied that he would gladly pay a sum equivalent to $20,000 of our money to any one who should impart to him that confidence necessary to a public orator.

The oration which we give this month to the public is full of most valuable advice, and we are sure will delight all who read it.

Hanging a Man. — In Brooklyn yesterday a man was hung. He had killed a policeman in attempting to escape from his grasp. To-day the papers are full of graphic and disgusting accounts of it. These accounts we believe have a very bad effect on morals, and upon the health of delicate invalids, and upon the susceptible brains of children. They do no good whatever. Now if men are to lose their lives for murder, we say let it be done as decently as possible. If society decides that the murderer cannot be safely kept alive on the globe, for fear he will do more injury, let it take him out of the way without shocking sensitive wives and delicate invalids, and tender-hearted children with a brutal exhibition. How can this be done? We would not even have the prisoner know it himself. Within a few years a method of butchering animals has been invented, in which they suffer no pain. Their brains are deliriouly intoxicated by a peculiar anæsthetic, and nothing can hurt them. Such an anæsthetic might be silently passed into the prisoner's cell while he slept, and the work would be done. Would not the ends of justice be quite as well met? Would not the public be saved from a most disgusting spectacle, and the papers that deal in such news betake themselves to some other means of gratifying the public ear more in accordance with public sentiment?

Aerated Milk.—The animal heat and odor from milk may all be removed, by forcing through it cold air just after it comes fresh from the cow. By this means it is greatly improved. Such milk, from healthy, well-fed cows, is now supplied to customers in New York.

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RECIPES FOR MOST WHOLESOME AND NUTRITIOUS BREAD.

[For the benefit of new subscribers we print these receipts. They are the best that can be given on this subject.]

The most perfect bread is made without fermentation. Dr. F. Sanger, in The London Lancet, says: "Bread made in the usual way, with yeast or leaven, has the first principles of fermentation, decomposition and putrescence, commenced in it; and when taken into a stomach in which, from disease, or the weakness of infancy, the gastric juices are not sufficiently powerful to arrest the fermentative process, it becomes a source of discomfort, flatulence, diarrhea, etc. On the contrary, the aerated bread, being vesiculated or lightened by the mechanical action of the fixed air, or carbonic acid gas, has none of the putrefactive elements in its composition. It is, therefore, easily digested and assimilated, and may be eaten quite new by the dyspeptic without feeling any of the discomfort which new leavened bread generally produces on all but the most vigorous stomachs."

And there are a very large number of persons who are of the same opinion.

Dr. Danglish, in The London Medical Times, says: "Private gentlemen have often sought interviews with him to record the history of their recovery from painful diseases of many years' standing, simply by substituting aerated, unleavened bread for the ordinary raised bread. Children that have been liable to convulsive attacks from an irritable condition of the alimentary canal and nervous system, have been entirely free after substituting unfermented for fermented bread."

Various Methods of Making Bread.

MRS. JENKINS'S RECIPES.

Wheat-meal Unleavened Cakes (Gems).—To one quart of soft, cold water, add by degrees three pints of coarsely ground wheat meal. Stir rapidly with a large spoon three or four minutes, so as to incorporate a large amount of atmosphere. Dip out into iron baking-molds, which have been heated hot and oiled. Bake immediately in an oven as hot as it can be and not burn, for twenty or twenty-five minutes. Diminish the heat after fifteen minutes.

Iron molds are better than tin. The small size, about three inches in length and one and a half in width, is better than the larger ones. The proportions of water and meal in this formula are for white wheat. For red wheat a little more meal is necessary. One-sixth corn meal is an improvement; in which case it needs a heaping measure of meal to the water.

Corn-meal Breakfast Cake.—For two baking tins, take one and a half pints of coarsely ground corn meal. Add water nearly boiling, but not enough to wet quite all of the corn meal; add cold water, a little at a time, stirring thoroughly between whiles, until you have it so thin that it has a tendency to settle as you pour it into your pie-tins. It should not be more than half an inch deep in the tins, and it should bake quickly in a hot oven.

Brown Bread.—The sweetest bread ever made.—Take three pints of coarse yellow corn meal, scald it with three pints and a half of boiling water, add two pints of coarse rye meal after the corn has cooled. Knead thoroughly with the hands. Take it out into a stoneware crock, or pot, which is a little larger at the top. The quantity here given will take a vessel which holds five or six quarts. Place it immediately in the oven after smoothing over the top with a spoon frequently dipped in cold water. Cover with a stone or iron plate, and have but little heat in the oven. It should take three hours to begin to bake, then bake slowly four hours. Leave the loaf in until the oven cools off, if it is several hours longer. It should be dark colored, light and firm, with a good soft crust. A round bottomed iron kettle will do to bake in. (Try it.)

F. W. EVANS'S (SHAKER) RECIPE.

F. W. Evans, of the Shaker settlement, Mt. Lebanon, a place where purity of food is made a special subject of attention, and where a healthful table is always found, sends us the following. We think the bread thus made is baked in small loaves:

"Good Unleavened Bread.—Take half the flour you intend using and pour on boiling milk (be sure it boils), and have it about the consistency of batter that you would have for making pancakes; let this stand till cool enough to work, then knead in the rest of your flour just sufficiently stiff to mold on a board. One hour in a middling hot oven is sufficient for baking."

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MRS. HYDE'S GEM RECIPE.

The process as described in the "Hygienic Cook Book," by Mrs. M. M. Hyde, is as follows: "In cold water stir flour sufficient to make a batter a trifle thicker than used for ordinary griddle cakes. Bake in a hot oven, in small tin patty-pans two inches square and three-fouths of an inch deep."

NOTE.—This makes delicious bread. No definite rule as to the proportion of flour and water can be given, owing to the difference in the absorbing properties of various brands of flour. Of some kinds, the batter will require to be made considerably stiffer than the consistency above mentioned. A little experience will enable any person to approximate the right proportions with considerable exactness. The flour should be stirred into the water very slowly, in the same manner as in making mush. No more stirring is necessary after the flour is all added. If hard water is used in making them they are apt to be slightly tough. A small quantity of milk will remedy this defect. Many persons have failed of success in making this bread from neglecting one very essential requisite, the size of the pans in which it is baked. If they are larger than the dimensions given the bread will be heavy, if smaller it will be dry and hard. But made this size and filled full, if the flour is properly ground, the batter the right consistency, and the oven hot (a hot oven being absolutely indispensable to success), it will rise one-half, and be almost as light and porous as sponge cake.

MRS. JOHNSON'S BEST BREAD.

The following method we find in the "Laws of Life," by Mrs. F. B. Johnson:

"The first requisite is good white winter wheat, such as is raised abundantly in the Middle, Western and Southern states. At least enough is raised to furnish all the bread-making material for which there is demand. If any families are unable to procure this, we know by trial that very good bread, that tastes quite as well, though it is not so nice can be made from spring wheat, such as is raised in New England and in many localities not considered favorable to wheat-growing.

"The second requisite is good grinding, by a mill that will clean the grain well and cut the bran fine. The grain should be ground as fine as it is for bolting, and it should be done often, as the freshness of the flour has much to do with the sweetness of the loaf.

"The third requisite is a good hot oven, and the fourth, pure water.

"It is well to bake the cakes early in the morning, or just after the stove has been cleaned of ashes; as then less wood and less heat in the room will make the oven hot. Enough baked beans of the right form should be procured to fill the floor of the oven, so as to economize heat and time. All things being in readiness, flour may be either sifted from the hand into cold water and mixed with it with a spoon until the batter is of a consistence a little firmer than for griddle cakes, or so firm as can be just poured from the spoon. Or the flour may be put dry into the mixing-pan and water poured to it. The baking-pans should be heated on the stove and the cups rubbed smooth with a swab dipped in clean, unsalted grease—olive oil, butter, or beef or mutton tallow—then filled even full with the batter and put immediately in the hot oven. About twenty minutes will suffice to brown them nicely, when they should be taken out of the cups, carefully set so as not to touch each other, on a plate or board to cool, when they are ready for the table. Whoever has any appreciation of good food, and has once become accustomed to this light, sweet, unfermented, nutritious bread, will deem it indispensable.

"This mode of making has an advantage readily apprehended by the cook, in that it requires so little apparatus to be got about, and does not require the hand in the dough."

LIZZIE R. BRONSON'S RECIPES.

CRACKED WHEAT.—For a pint of the cracked grain have two quarts of water boiling in a smooth iron pot over a quick fire, stir in the wheat slowly, boil fast and stir constantly for the first half hour of cooking, or until it begins to thicken and "pop up." Then lift from the quick fire and place the pot where the wheat will cook slowly for an hour longer. Keep it covered closely, stir now and then, and be careful not to let it burn at the bottom.

Wheat cooked thus is much sweeter and richer than when left to soak and simmer for hours, as many think necessary. White wheat cooks the easiest. When ready to dish out, have your molds moistened with cold water, cover lightly and set in a cool place. A handful of raisins added with the wheat is nice. Eat warm or cold, with milk and sugar.

TO MAKE GEMS.—See that your oven is hot enough to bake potatoes, and that your small oblong iron or tin pans are hot and greased with olive oil. Now mix wheat meal or Graham flour with cold water, or milk and water, if preferred, to the consistency of corn bread

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batter with the greatest possible rapidity, and put instantly into the pans and bake twenty-five or thirty minutes. Success depends upon the speed of the whole process. Gems may be eaten while warm, but not while hot enough to melt butter.

ANOTHER BROWN BREAD RECIPE.

Take one-half Indian meal, the other half rye or wheat meal (not fine flour), mix with warm water and a pinch of salt; make the batter a little too stiff to pour; raise with a cup of sweet yeast. Some add a cup of molasses, with about a quarter of a teaspoonful of soda, stirred to a foam. It will rise in about two hours. A loaf of four quarts would require four hours baking or steaming. Bake in an iron vessel with an iron cover and slow fire—that is to say, not a scorching fire. Let the corn and wheat meal be freshly ground.

DR. BELLOWS'S IDEAL LOAF.

Dr. Bellows, in his work, "Philosophy of Eating," gives what he considers the true method: "My 'ideal loaf' is made from wheat perfectly fair, and free from smut or other disease, not having been wet or molded before or after grinding, carefully kept clean after being properly ground, so as to need no sifting; and not being bolted it retains every part that belongs to it, needing no addition except cold water."

APPLE BREAD RECIPE.

Weigh one pound of fresh, juicy apples, peel, core and stew them to a pulp, being careful to use a porcelain kettle of a stone jar, placed inside an ordinary sauce-pan of boiling water; otherwise the fruit will become discolored; mix the pulp with two pounds of the best flour; put in the same quantity of yeast you would use for common bread, and as much water as will make it a fine, smooth dough; put into an iron pan and place it in a warm place to rise, and let it remain for twelve hours, at least. Form it into rather long-shaped loaves, and bake in a quick oven.

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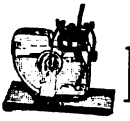
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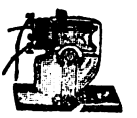
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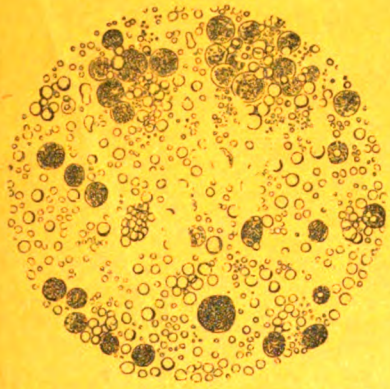
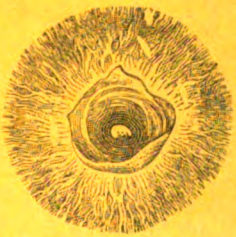



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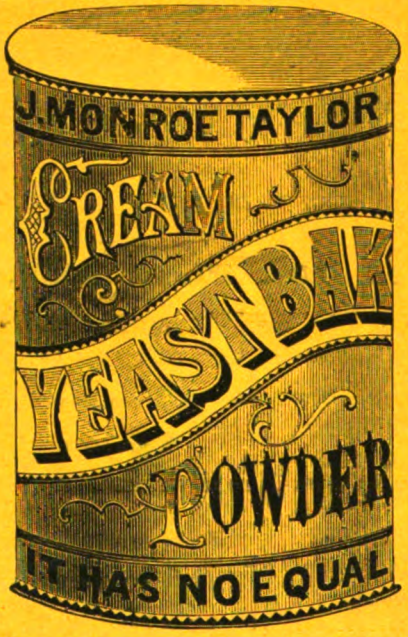
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VOL. 21, No. 2.] NEW YORK, FEBRUARY 1873. [NEW SERIES.

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REMARKABLE ESSAYS ON HEALTH AND MORALS,

By Ancient and Modern Writers.

Hygiene and Physiology of Marriage.

BY A. DEBAY.

(*Translated from the French by E. P. Le Prohon.*)

FROM the remotest period of antiquity it has been known that children inherited the constitution of their parents, their morbid dispositions, their vices, and their good qualities; but the law which governs the nature of transmissions was scarcely understood until of recent date. Hereditary transmission is not an invariable phenomenon, because children do not always resemble their parents. Were it a constant rule, the races of mankind living now would be only the faithful reproduction of races gone by; such uniformity is not, however, the case, because resemblances and aptitudes are not always transmitted. The law of hereditary transmission is likewise governed by a power which tends to restrain it and destroy it. The influence of the father and the mother, from each of whom the individual takes a portion of his identity, is forcibly diminished the one by the other. External occurrences, the climate, the birthplace, will also give a new feature to a descendant, etc.; all these circumstances tend to modify the law of transmission. The birthplace is one of the chief causes which exercise the most constant influence upon the individuality transmitted by parents. Upon the choice of the birthplace do breeders of animals almost always depend in order to obtain a breed totally different from the one *sui generis*. They choose from a certain number of subjects the particular individuals possessing the qualities required to be propagated, they are united together, and in thus repeating the same operation several times upon the descendants, breeders succeed in obtaining the desired race. It is thus that animals may be obtained carrying either an excess of flesh, or fat, at the will of the breeder; horses with a large or small chest, birds with any color of feather desired, etc. Dr. Donnecy goes further still, by taking rabbits for his experiments, from which are procreated individuals all of whose extremities will present such variety of monstrosity as is determined before reproduction.

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If now we examine the different physical and moral conditions to which mankind is liable to become heir, we see that very few indeed escape the law of hereditary transmission. Two modes of transmission are known:

1. The permanent, or invariable mode;

2. The variable mode.

The permanent mode, being based upon an immutable law of Nature, manifests itself in the reproduction of the same species of the race, of the particular kind, etc. etc. Thus, man procreates man; the horse, the dog, and all other beings, whether from the animal or vegetable kingdom, reproduce beings similar to themselves.

The variable mode manifests itself in the moral and physical qualities of parents—good or bad. This faculty of transmission is, however, subject to numerous irregularities, such as augmenting or decreasing; showing also intermittences, using restrictions, and at last disappearing altogether.

Thus we see how the perfections and vices of parents, the moral degradations, the monstrosities, the sad and frightful catalogue of numberless diseases, etc., may be transmitted or not; the law of hereditary transmission in this mode not being well understood, and being subject to variations without number. Dr. P. Lucas, the author of a learned treatise on this subject, acknowledges that true representation of type comes:

1. From both father and mother, which is the direct mode of hereditary transmission;

2. From the collateral parents, which is the indirect mode of hereditary transmission;

3. From the ancestors of father and mother, which is called "atavism," or transmission of ancestors' resemblance;

4. From the anterior husband or wife, which is the transmission of hereditary influence.

The direct mode of transmission is seen everywhere in children, resembling sometimes their father and sometimes their mother.

The indirect mode is seen with children who possess none of the features and dispositions of their father and mother, but bear a striking resemblance to other contemporaneous relatives.

Atavism, or transmission of the features of ancestors, is seen in children who do not resemble the authors of their existence, but take their features from their grandparents; this hereditary step, taken from one generation to another, and going back sometimes three or four generations, is more particularly remarkable with mongrels issuing from both black and white races.

Transmission of hereditary influence is the most extraordinary phenomenon of Nature; the child resembles neither its father nor mother, but takes its resemblance from the man who was the first husband to its mother. A woman is married a second time, say three years after the death of her first husband; she brings forth children resembling her first husband, but bearing no resemblance whatever to the second husband. This is hereditary influence, and an extraordinary phenomenon of Nature, although not so common with mankind as it is with animals. Dr. Harvey, professor at Aberdeen, unmistakably proves the influence of the first husband over a chaste woman; his influence being transmitted during two or three generations, although the woman may have subsequently been married to other husbands. Other physiologists have observed instances of the same kind happening in some families, and cases are cited where widows, having married a second time, have brought forth children whose resemblance could be traced only to the first husband. Hereditary transmission is evidently based upon authenticated facts, and establishes a law in the organic tissue of living beings.

PHYSICAL TRANSMISSION

Is the most general and the least variable of hereditary transmissions; for instance, the physical type, or exterior formation, the features of the face; the size, the form, the color, etc. etc., from which national, family and parental resemblances almost always follow. Next come the structure of organs, the different systems of the economy, the modes of reproduction, the anomalies, the general characteristics of the organism—usually described under the names of constitutions, temperament, idiosyncrasy—bearing within themselves certain conditions pointing to the duration of a long or short life. Thus children issuing from parents whose progenitors have reached an advanced age, possess chances of longevity. Those, on the contrary, whose ancestors and progenitors have enjoyed but delicate health, or whose mothers have tampered with their wombs, possess chances of an opposite nature, and their lives will be of short duration. Death will soon cut them off, and if a small number escapes the dreadful law it is due to hygienic precautions, from the great care of which they should never be deterred. Breeders of horses know well that two animals of an inferior race will never

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produce a race-horse—such is, strictly speaking, the law for man—debilitated husbands and wives, or wide disproportion of ages in marriage, will never produce robust children. If all marriages were contracted upon this simple truth, how much misery and early death would be avoided! In considering the degeneration of mankind so plainly in the great centers of modern civilization, we find that man is truly accountable for his unpardonable errors. If one so often meets in large cities, indeed everywhere, numberless pitiful, sickly, lean, counterfeit human beings, this physical degradation is to be laid to the excesses of young men of the day; it can be traced to the enfeebled constitutions of parents, to the intemperance of fathers and mothers, to voluntary abortion, and to the disproportion of ages between parties who contract marriage. It is a wonder that men have become so civilized, and yet remain blind to these facts. The people of Lacedæmonia condemned their king Archidamas to pay a fine for having married a delicate and small woman, giving for reason that she could only give a puny king to the Spartans. The greatest care was given in Greece to perpetuate the beauty of faces and of forms in some families. The handsomest man of all Greece, Alcibiades, was a descendant of ancestors who were remarkable for their beauty. The fact is known to every one that the regularity or irregularity of features, with their peculiar charms or ugliness, are all hereditary. In Rome, although several generations of noted families have passed away, yet their descendants are as well known to-day, by the length of their noses and the thickness of their lips, as they are by their proper names. Aquiline noses have been during centuries, and are still hereditary in the royal house of the Bourbons and the Borromeos of Milan. The low foreheads, the double chins, the small eyes, the large mouths, are perpetuated in a great many families. The form the size, the length of the neck, of the bust and extremities are transmitted with the greatest fidelity. In some families it is the large head which parents transmit to their progeny; in some others, the smallest of heads. With the latter, a long bust and short legs, with small feet and hands, are usually the accompaniment; in the former, hands and feet are enormous. Thus it is with every part of the human body, forms and dimensions being transmitted with facility and regularity. The most common hereditary transmission is the stature of man. The union of small statures as well as the union of large statures produce offspring similar to themseves. Upon this principle did the father of Frederick the Great form a regiment of giant soldiers. This celebrated king would not allow any soldier of his body-guard to be married unless it were with a woman of about his own size. An English paper relates a fact which demonstrates clearly enough the transmission of statures. A man of six feet six inches, weighing four hundred and sixty-two pounds, was summoned before a court to answer to the accusation of a fraudulent transaction; the questions put to him on the occasion revealed the fact that his father was six feet and three inches and his mother six feet; his brother and sisters, to the number of four, adding their length together, produced twenty-five feet eight inches. Venette relates the case of a woman who lost her life at her third accouchement, in consequence of the impossibility of delivering her of a child who had inherited the wide shoulders of his father. She had barely escaped with her life from the difficult labor of two previous accouchements owing to this hereditary cause. Husbands with broad shoulders married to women with narrow pelves cannot, therefore, inspire the accoucheur with the hope of a spontaneous accouchement.

Corpulency, or polysarcia, is another mode of inheritance which degrades the human form, and is transmitted from one generation to another. Idleness, no doubt accompanied with an over-abundance of succulent food and want of physical exercise, may be among the causes which sometimes bring on corpulency, but it will be found, upon careful examination, that the true cause is hereditary transmission.

With all the various species of living beings, the color is also faithfully transmitted as well as the stature. In each race it is transmitted with a remarkable degree of constancy, and is hereditary in some families. Horticulturists, ornithologists and agriculturists know well how to take advantage of the mixture from different families belonging to the same species, in order to obtain the most varigated colors. The mixtures of the colored race with the white race have given birth in the human family to a variety of colors, which is well understood in the South. A mixture of pure black with white produces the mulatto, the white with the mulatto produces the terceroon, the white and terceroon beget the quadroon; this last color mixed with white produces the quinteroon, and so on until, from degradation to degradation, the color of the *métis* has assumed its original type. From the transmission of color—true type of the species—if we pass to the different shades

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of color seen in the skin of the white race, we behold those various shades transmitted in some families with more or less accuracy. Thus in marriages where the complexion of both parties is fair, the children are fair; those of dark complexion produce the like; but if fair and dark complexions are united together the children will be nearly of an auburn color.

The law of hereditary transmission governs equally the liquids and solids which enter into the composition of the human body. The predominance of organic systems, from which arise the sanguine, the bilious, the nervous and lymphatic temperaments, follows also the law of hereditary transmission, although liable to certain changes. The cross of a certain temperament with another produces an idiosyncrasy or modification of temperament generally favorable to the offspring, so that marriages contracted by parties of opposite temperaments will produce the handsomest fruit.

The aptitude for reproduction is hereditary, and is manifested to a greater or lesser degree according as the organs of generation are left to perform their action without stint. Osiander relates the case of a country woman who was confined ten times in fifteen years, and gave birth to twins and triplets, producing altogether twenty-eight children. Her last accouchement consisted of three girls, who lived, married and gave birth, the first to thirty-six children, the second to thirty-one and the third to twenty-seven. Burdach's Physiology mentions a woman who gave birth to twenty-four boys and six girls; the six girls procreated seventy-six children, of whom sixty were males. This fecundity was certainly hereditary.

By a contrary rule sterility strikes in some families, which run out and becomes extinct. Sterility, or the impossiblity of perpetuating one's own blood and flesh, is not so common with men as it is with women. This infirmity was considered as a curse among the ancients, and their laws not only granted but obliged a divorce to be decreed for unfruitful marriages, because in those times the great object of marriage was to increase and not to decrease, as it is in our own day. The purer the morals of a people are, the more women desire fecundity and child-bearing. It is only in periods of corruption and degration that women fear the hallowed name of mother. In India and Egypt sterile women were looked upon as unfortunate, and to be pitied. Sterility among the Hebrews was considered as a shameful affliction, and women accepted it as a punishment from God.

Nobody contests the fact that long life is hereditary in some families. Thomas Parr saw ten kings and queens on the throne of England, and died at one hundred and fifty-two, leaving a grandson who lived one hundred and thirty years.

Transmission of malformations and indescribable monstrosities come to us with facility; sadder still to relate it, idiocy and feeble-mindedness are more common now than in olden times. It is also undoubtedly true that man is heir to vicious conformations of the body, to anomalous organizations, deformities, mutilations, idiocy, etc.; all these infirmities cannot be escaped wholly, but are transmitted as well as other maladies. Pliny relates that Caius Horatius transmitted to his daughters only his supernumerary fingers. Van Derbach mentions a Spanish family, forty members of which had inherited supernumerary fingers. Dr. Marc knew a family where, for three consecutive generations, umbilical hernias were transmitted only to the male children. Harelip is transmitted with the greatest facility; blindness, deafness, loss of smell, stuttering, etc., all these obstinately pursue some families, and quit them only after a long series of generations.

We often see or read of cases of humped-backs, lame, or otherwise deformed, from whom children inherit their infirmity; sometimes one generation escaping, the same again appearing in the succeeding generation. Hereditary power is so deeply laid within the blood that moral and physical modifications, which appeared perfectly extinct in one family, return again after several generations have passed away, and may be perpetuated for several generations to come.

Accidental mutilations experienced by parents are seldom transmitted to children; never theless, several cases of these transmissions have been recorded, and one or two are mentioned by Boerhaave and Blumenbach.

A laborer who lost the left forefinger by the cut of an ax, begot two children showing the same mutilation. His wife having died, the good laborer took unto himself a second wife, from whom one boy and two girls were born, each minus the left forefinger.

Tulpius states that while a young woman was amusing herself by applying a child of five years to her breast, it was seized with a fit, suddenly closing its mouth and biting off her nipple—the girls who were born from this woman were each deprived of one nipple, the only difference between them being that in one the left nipple, and in the other the right, was wanting.

In a family where lameness was hereditary

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one of its members who escaped this deformity was married; two boys were born escaping the lameness, but his only daughter became heiress to the deformity. One of the two sons who married, afterward begot a son and daughter, the former was lame only to a slight degree, while the latter could scarcely walk.

Certain vices and certain misfortunes are also frequently seen; thus, anosmia, or loss of smell, myopia, amaurosis, deafness, blindness, nervous twitchings, aversions, antipathies, are also hereditary.

King James I of England could not behold an unsheathed sword without shuddering and fainting, because his mother, Mary Stuart, being *enceinte*, had seen Scotch noblemen murder her secretary with a similar weapon, from which she received a few slight wounds. Many have read the story of the young man whose mother had such a strong aversion to enemas that the sight of the smallest syringe caused her to faint, in consequence of the torture which she had endured from an injection of boiling water. Her son, to whom this invincible aversion had been transmitted, having been suddenly taken ill, was carried to the hospital, where an injection was prescribed. In spite of his remonstrances, his yells, and all his efforts to the contrary, the injection was administered to him, but a few minutes afterward the unfortunate young man died!

Thus are transmitted to our descendants intemperance, drunkenness, hatred, anger, jealousy, as well as other evils of our nature, which are more or less overcome by moral and religious education in schools and academies.

MORAL TRANSMISSION.

The law of hereditary transmissions does not confine itself to physical organizations only; it also follows man in his moral and instinctive faculties. Intelligent and observing hunters recognize the truth of the French proverb, "*Bon chien chasse de race*," to express the requisite qualities of the young dog, which depend upon those of his father and mother. So it is with man.

The transmission of intellect seems to be a logical consequence of physical transmission, because if transmission of the features, the bodily ailments and health, the constitution, the cerebral conformation, are transmissible, the moral faculties and dispositions must also be transmissible, since they are, beyond doubt, the result of physical organization. Physical identity implies moral identity; that is, the peculiar form of the body indicates the quality of the character, and children will reflect more correctly the qualities of their father and mother according as their bodily resemblance to them shall be more striking. Education joined with surrounding influences may, in some degree, vary this rule, but it will be found that similar tastes and inclinations to those of the progenitors, still exist after all.

Transmission of intellect, of moral force, or of moral weakness, cannot be contested more than other qualities. Parents with a vigorous cerebral organization, with a soul cultivated by a liberal education, will generally procreate children of intelligence and ability; while parents plunged in total darkness must give birth to beings who are more or less stupid and vicious. History points out families whose children, from one generation to another, have inherited the highest degree of intellectual worth and capacity. It also points out others inheriting narrow-mindedness, brutishness, idiocy, imbecility, transmitted from mother to son and from father to daughter. Thus the family of Miltiades produced heroes; that of Pericles, profound politicians.

The wonderful fecundity of illustrious men produced by the Pépin family is historical, and after several generations of distinguished kings, the immortal Charlemagne appears as the highest and noblest expression of genius in that family.

History points out also the crimes and debaucheries transmitted in some royal houses; the Viscontis, despots of Milan, transmitted, for several generations, their ardent thirst for torture. Behold Luchino setting his dogs upon men, to have them devoured; Barnabas, his nephew, inventing atrocious tortures to gratify his own eyes; Galeas, brother of the preceding, making a display of his abominable nature by inventing the forty days' torture! A sense of horror chills the soul of him who reads such cruelties. With the Medicis the thirst for power was transmitted; with the Stuarts, stubborness, bigotry and pride; with the Valois, an exaggeration of all the passions. William Pitt and Mirabeau are hereditary types of exalted heads with a combination of strange defects, vices and whims.

As a general rule, it is only where parents impair their own health by some physical or moral cause, or the training of their offspring is turned away from its natural channel, that transmission of hereditary intellect is weakened, or else ceases altogether. Objections may be made to this rule, for it is well known that

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intelligent parents have procreated beings of a very ordinary calibre. That such cases are often seen in our own times, can easily be accounted for.

Let a child be born with the best model of cerebral conformation, however promising his intellectual powers may be, if this same child has an unnatural mother, is assailed with sickness, if in its youth some diabolical habit is practiced, his superior intelligence will soon be impaired of its natural force.

It is said, with truth, that the most illustrious men of ancient and modern times, such as Socrates, Plato, Julius Cæsar, Napoleon I., have not transmitted their wonderful intellectual power to their progeny, but let us pause one moment and remember that those great men were gifted with more than extraordinary intellects. The great Creator gave them genius, and genius is not transmissible; the birth of a genius requires an extraordinary effort of Nature; and then follows a long space of time before an effort of the same nature can take place. Divine Providence knows best why such men appear and disappear once in a few hundred years.

Intermission is the strangest phenomenon of hereditary transmission. When a suspension of the active organs of our economy takes place, be it of a short or long duration, according to the state of health or disease in which the body may be, it is termed intermittence. Thus, rest is the suspension of action, sleep is the interruption of wakefulness, the state of calm between two paroxysms of tertiary fever, or periodical neuralgia, are intermittences. The same interruptions and intermittences also occur in hereditary transmission; one generation may escape, but it is sure to reach the next one. It may even be in a state of repose for several generations, but sooner or later it appears again, with all its force, and the long interruption which took place appears as a pleasant dream when the evil again returns, which seemed at first to be lost forever.

THE MYSTERY.

Fathers and mothers are represented under different aspects in their progeny; for example, the father transmits the shape of the head, the frame of the thorax and upper extremities, to his daughters, while the shape of the pelvis, of the abdomen and inferior extremities, are transmitted by the mother. It is the reverse with sons, they take after their mother in the conformation of the head and upper extremities, while the trunk of the body and lower extremities are from the father. The results of this mode of transmission establish the general rule, that the boys of an intellectual mother will also be intelligent, and daughters procreated by a father of talent will also inherit his capacities.

Linne, Sinclair, Burdach and Muller believe the mother's influence bears more directly upon the plasticity of the embryo, while the father's bears upon the vitality. Results of numerous observations made by distinguished physicians and physiologists establish the general rule, that the mother transmits her moral qualities to her sons and the father to his daughters. It is the simple truth when it is said that mothers who tamper with their wombs, or whose whole thoughts are directed to carnal pleasures, bring forth sons who are a curse to parents and a disgrace to the community. Observe children issuing from mothers who curtail the number of their family as they would domestic expenses, and the truth will be confirmed in the majority of cases.

Examples could be multiplied showing positively the direct transmission from father to daughter and from mother to son, and wherever this mode of transmission is not followed, in some cases it will be found, by ascending the ladder of ancestry, to have existed in the grandfather or the great-grandfather, and so on.

Many illustrious men, distinguished alike in arts and sciences, have not descended from remarkable parents; but it only requires on the part of forefathers to have been wise, temperate, intellectually and physically sound, to furnish all the necessary materials, from one generation to another, for future greatness; and not unlike the unpolished diamond, only waiting for the skiliful hand to render it bright and sparkling. Many distinguished men begin a glorious career, and it ends with them. Some of the greatest men have left consummate fools after them, but in vain will we search for an example of silly parents procreating children of high intellectual powers.

MORBID TRANSMISSION, OR TRANSMISSION OF DISEASE.

Among the numerous diseases by the fatal inheritance of which a mark is left upon the offspring, are contagious diseases, scrofulous diathesis, diseases of the skin, syphilis, cancer, etc.; also defects of organization, affections of the urinary organs, consumption, apoplexy, etc.; nervous diseases, and all forms of neuralgia, a disordered mind, idiocy, insanity—alas! all these terrible maladies are more frequently and reg-

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ularly transmitted than the good qualities of parents. This transmission of disorders of the intellect follows the general rule, from father to daughter and from mother to son. In a family where the father or grandfather has been struck with insanity, reasonable fears may be entertained that the daughters will inherit the disease, and *vice versa*. Human nature is thus not only subject to an endless variety of physical infirmities, but it is also liable to become heir to the most abject moral degradations, such as insanity, mania, etc.

History points to us the truth of hereditary proclivities toward the commission of the vilest crimes, and that theft, suicide, assassination, etc., are but cruel instincts transmitted from father to son; the latter only repeating the criminal acts which had already been perpetrated by some of his forefathers. In our own times *La Gazette des Tribunaux* (the Police Gazette), discloses every day to its readers shocking dramas committed by some unfortunate sons, and when the judges push their investigation to the forefathers of the accused they find out that either a father or grandfather or great-grandfather has been the author of criminal acts.

Hammer, the historian, admits the hereditary instincts of crime, and exclaims thus: "In the same generation, feticide and infanticide are closely followed by parricide, and the dagger which has assassinated the grandfather is revenged by the grandson upon the father." These observations are sad to relate; they are nevertheless true, and prove most conclusively the law of hereditary transmissions. Without reckoning ourselves among those who behold in the son of an assassin "a budding assassin," yet there is no harm done to guard one's self against individuals whose forefathers have violated the laws of Nature, as well as those of honor. It is simply an act of prudence, which may be of some utility.

It will be observed that from its earliest outset morbid transmission has its predilections, its irregularities of growth, and its limits. All the members of one family are seldom affected, especially where they are numerous, nor is the course followed always direct. Sometimes it follows an uninterrupted line, at another time one generation escapes, while the succeeding one is struck. Again, one sex may be spared, while the opposite receives the whole charge. It forsakes the maternal branch and attacks the collateral one. A father and mother issued from consumptive parents may enjoy good health, while their own children may be carried off by phthisis, which cuts off so many thousands every year. An epileptic father transmits his evil to his daughter, and this one transmits it to her son. Gout and rheumatism may disappear for awhile in some families, but they return again among distant nephews. Hereditary transmissions may again disappear altogether; thus becoming mysterious, inexplicable, and remaining hidden to the researches of the man of science.

CONCLUSION.

The best means to oppose hereditary transmissions consists in the interdiction of marriage between parties who inherit incurable maladies, and who will infallibly transmit them to their progeny.

The strangest anomaly exists in our days with regard to the propagation of man and domestic animals. Society is silent upon the evils likely to be transmitted by parents to their offspring, while the greatest care is taken that the race horse, the milk-cow, the hunting-dog, are propagated without the slightest taint of ordinary breed. It is truly surprising that the brute, in this respect, has the advantage over man. Such is, however, the state of civilization in the nineteenth century; money regulates everything.

Families who desire to have their children married take the greatest care to conceal the incurable evils which they inherit, and they unite in marriage a scrofulous, leucorrhœic, nervopathic, hysterical daughter, to a young man who believes her to be perfectly sound. If there exist laws to annul the sale of an unsound horse, how much more reasonable to annul a marriage from which sickly children must be born!

Would any young woman consent to marry a young man who is epileptic, impotent, or syphilitic, if she had a previous knowledge of his secret disease? In the same category are persons affected with deafness, partial blindness, hallucinations, latent insanity, furious passions, etc. To unite in marriage such individuals, and make a secret of their constitutional taint, is a monstrous piece of imposition, which requires a release from the civil contract of marriage. Marriages between parties where consanguinity exists should also be interdicted, because such unions produce bad fruit, besides increasing all the infirmities which already exist in families coming from the same source. History points to aristocratic families recruiting themselves within their own bosom, who

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besides degrading themselves, bring on imbecility, and finally disappear altogether.

From the code of laws among the Chinese and Hindoos relating to marriages we read the following: "If a father gives away in marriage a daughter afflicted with some capital ailment without having previously informed the intended husband, the marriage may be annulled."

Accouplement with the same blood, no matter how remote, produces bad fruit; and when persisted in the same line, the species, the race, vigor, health, fecundity, both in man and in animals, are degraded, and disappear at last.

The foregoing remarks establish conclusively the importance of choosing a mate whose physical qualities supersede everything else, and thus avoid the daily occurrence of beholding children launched into the world with an endless variety of hereditary diseases. Morbid transmissions do not constantly show themselves at the birth of the offspring; very often a descendant may be struck only at an advanced period of life. Thus a child born from epileptic parents has equal chances for insanity and paralysis. Precocious marriages, as well as late marriages, produce puny children. Upon the choice of locality the act of reproduction also depends, and this recommendation is not destitute of reason. Physiologists consider the locality as exercising considerable influence upon fecundation, and, consequently, upon the future constitution of children. Parents who have some fears of transmitting to their children scrofula, phthisis, organic debility, arch-lymphatic constitutions, etc., should abandon low lands, damp houses, deprived of pure air and the light of the sun, for a locality free from such drawbacks. The simple change from one street to another, or from one town to another, suffices to lessen the liability to the transmission of hereditary diseases in the child not yet born.

Among the best means to prevent and combat hereditary transmissions, the first and most important is to place the subject in a combination of circumstances totally opposed to the evil which is likely to develop the germ of disease, or even threatens to modify predisposed organs. Thus, if the subject is threatened with scrofula, the cold climate, low and damp places should be abandoned, to live in warm climates and dry lands. The principal food should consist of roast meats, vegetables in small quantities, with tonic drinks, combined with exercise of the body, gymnastics, etc.

The only security—the one which is generally crowned with success— is in matrimonial associations. Everybody knows, and experience teaches it, that the races of domestic animals may be ameliorated or degraded by the choice of subjects connected together. Now the same rule is applicable to man. The union of two debilitated beings, one of whom bears any morbid transmission, will undoubtedly produce pitiful and miserable children. A robust constitution united to one of a feeble temperament will make up, in a measure, the deficiencies of the latter, and the fruit derived from such a union will be found satisfactory in the first generation; and if the matrimonial association is continued according to this rule, at the second generation progeny will then be sound. Thus the union of a lymphatic temperament with a dry, bilious temperament seems to be the best accouplement to modify or destroy the scrofulous taint in one of the parties.

Les contraires se guerissent par les contraires. If this axiom were applied in matrimonial alliances it would be found to be the only remedy efficacious to oppose hereditary diseases which cause so much destruction in modern society. To a young girl of leucorrhœic habits and to another predisposed to phthisis, give husbands who are robust, sound, with a rich, sanguine temperament; to a young man who is weak, delicate, threatened with nervous affections, give a strong girl, of a rich organization, full of sap and health, then the result will be the extinction of morbid transmission—nay, more, a healthy progeny will appear, which can be perpetuated from one generation to another.

In view of these facts, families afflicted with hereditary diseases must see the necessity of enlarging the circle of their acquaintances, and even seek in other climates, if possible, husbands for their daughters and wives for their sons.

The leading branch of education for children afflicted with hereditary diseases, such as scrofula, rachitis, malformation, etc., is medical gymnastics. It is astonishing to see the efficacy of a physical education in vicious organizations, especially when directed by physicians who make it a special study.

Not unlike the seeds of vegetables waiting for the season assigned to them by the laws of Nature for germination, in the same manner does the germ of morbid transmission only wait, according to its nature, for the favorable age to show itself, and then strike its victim. Rachitism manifests itself during infancy, diseases of the heart and lungs during youth; rheumatism, gout, calculi, uterine affections, hæmorrhoids, hypochondria, manias, etc., during mid-

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dle age; finally scirrhus, apoplexy, etc. follow. Predisposed individuals should scrupulously observe and submit to a prophylactic treatment, according as they draw near the age which should serve them as a warning, while they consider the record of their ancestry.

From the foregoing remarks it is evident that no part of the physical and moral organization of man can escape hereditary transmission, and, morever, the influence of this incomprehensible power perpetuates itself thorugh several generations. In a social point of view these facts deserve the utmost extent of publicity, because were the knowledge of them more widely spread in the community families would be less eager to seek after a name or a fortune than after the physical and moral qualities of man, which after all must constitute the only solid basis for health and real happiness in this world.

Tobacco—Its Effects on the Human Constitution, Physical, Intellectual and Moral.

BY JAMES COULTER LAYARD, M. D.

POISONOUS PROPERTIES OF TOBACCO.

BY a chemical process we extract from tobacco a colorless liquid alkaloid. This is the principle to which chemists have given the name, *nicotine*. It is acrid to the taste and smell, forms neutral compounds with acids, and is intensely poisonous in minute quantities. By distillation we obtain from tobacco a volatile oil, which has been called *nicotianine*, and which is equally poisonous with the above. One drop of this oil rubbed on the tongue of a cat will cause the death of the animal in five minutes. A puncture made in the nose of a dog with a needle dipped in this oil caused its death in six minutes.

Every man who uses tobacco is constantly introducing into his system a portion of this deadly poison. If its disastrous effects are not at once apparent it is because the system has become accustomed to its presence. A practiced opium-eater will consume eight or ten grains of morphine daily, while for the uninitiated from an eighth to a quarter of a grain is a full dose, and from one to two grains will cause death. That the quantity of this virulent poison taken into the system of the habitual user of tobacco is not so inconsiderable as some might be led to suppose, the effects on the neophyte of his first chew sufficiently demonstrate.

In addition to the above, there is in tobacco another principle still more deadly, which is obtained by distilling the leaves at a temperature above that of boiling water; that is, by *destructive distillation*. It is also developed by burning the weed. Smokers, therefore, get the especial benefit of it. We refer to the *empyreumatic oil of tobacco*. Lest any one should think that smoking is a form of using the weed less deleterious than the others, we would here state that one drop of this oil placed upon the tongue of a cat caused the death of the animal in *two minutes* with convulsions. A drop brought in contact with the protruding tongue of a serpent killed it like a stroke of lightning.

Smokers get this extremely poisonous principle in addition to the others, which chewers and snuffers get. The sole reason why smoking does not seem to be so harmful as the other forms of using the weed is because this habit is not so steadily and persistently indulged in as the others. A man can chew tobacco and attend to other business at the same time. A tobacco chewer can—most of them do—carry a quid in his cheek during the whole of his waking hours. But when a man smokes other business has to be for the most part laid aside. Therefore the votaries of the pipe and the cigar can indulge in their favorite pastime only at intervals.

We all know how smoke of any kind will blacken a whited wall, or the glass in the windows. This it does by depositing thereon the fine particles of which it consists. Chemical analysis shows the smoke of tobacco to be composed of salts of ammonia, nicotianine, empyreumatic oil and several gases. Now the lungs consist of millions of air vesicles, which if spread out would cover a surface equal in extent to the external surface of the body. Every inhalation of the smoke of tobacco taken leaves

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some of its particles in the lungs. From them it is absorbed into the blood, and circulates with it through every part of the system, permeating every tissue, and poisoning its every fiber.

That tobacco does lodge in the tissues is evident from the following fact. The hydropathists have among thir processes one which they call the *wet sheet pack*. The patient is enveloped first in a wet sheet, and then—over this—in blankets. By this process they claim that through the operation of the principles of *endosmose* and *exosmose*, the water of the sheet is made to enter the body, while at the same time impurities are withdrawn therefrom. Now let the habitual user of tobacco be subjected for an hour to this process. When, at the expiration of that time, his envelopments are taken off, the odor of tobacco coming from his body, and from the sheet in which he has lain, will be as perceptible to every one present as though a cigar had just been smoked in the room.

We might suppose that the constant introduction into the system by chewing, smoking, snuffing, etc., of so powerful a poison would have a great influence in the production and development of numerous diseases. That such is the fact we have the testimony of physicians of the highest eminence in their profession, both in this country and in Europe, and also the recorded experience and observation of other men of note in every part of the civilized world.

Dr. Shew enumerates eighty-seven distinct diseases which are produced by the use of tobacco. We have room to mention only a few, and that of those which physicians are most generally agreed are either wholly caused, or if they otherwise exist, have their symptoms aggravated by its use. Tobacco, as do all narcotics, especially affects the nervous system. In speaking, therefore, of its agency in the production of various diseases, we will place those of the nervous system at the head of the list.

NERVOUSNESS, AND TREMORS OF THE NERVES.

That tobacco produces nervousness, and also aggravates this affection where it already exists, is a matter of observation to almost every one. Sir John Pringle, who was an inveterate snuff taker, suffered greatly from nervous tremors, and also from loss of memory, until at the request of Dr. Franklin, while in Paris, he noticed the frequency of tremors among those who took snuff. He was thus induced to abandon the habit. The result was that in a short time thereafter his tremors left him, and at the same time his memory was perfectly restored.

PARALYSIS,

At least that species of it denominated *paralysis agitans*, or shaking palsy, which in its most prominent symptoms may be regarded as an increased degree of the affection first noticed, is frequently caused by the excessive use of tobacco. Dr. Shew mentions a case as occurring in his practice. General Clinton, of revolutionary fame, died of this disease under fifty years of age, brought on by the excessive use of snuff. At least such was the opinion of his brother, Governor George Clinton.

NEURALGIA.

This most painful of all diseases is, in many cases, caused solely by the use of tobacco. Professor Wood, of the University of Pennsylvania, and author of "Wood's Practice of Medicine," enumerates it among the causes of this disease. So does Dr. Johnson, of England. In all cases it aggravates the complaint, and renders all measures for its relief abortive while the habit is continued.

DELIRIUM TREMENS.

Professor Chapman, of the University of Pennsylvania, reports that he had seen several cases of undoubted delirium tremens produced by the excessive use of tobacco. Dr. Williams, of Coxsackie, N. Y., informs us of four cases that occurred under his immediate notice in that village and vicinity within a recent period. Dr. Jackson, of Dansville, N. Y., says he has seen and treated such cases. He was once a tobacco chewer himself, and in a tract which he has published on tobacco he thus vividly describes his own condition, into which he had been brought by the tobacco fiend: "My blood played through my veins as if it were in a sea surge. I saw all invisible things that were ugly and demon-like—devils in the shape of old women, haggish and witch-like, danced around me." If that is not delirium tremens, what is it?

BRONCHITIS.

Habitual users of tobacco are peculiarly liable to affections of the air passages, accompanied with loss sometimes of voice. Dr. Allen, of Maine says that tobacco has the effect to make the voice harsh, thick and husky. The testimony of Dr. Rush, whose investigations concerning the human voice were more extensive than those of any other man perhaps who ever lived, and who is consequently the highest authority we could give, is substantially the same. Dr. Woodward asserts that loss of voice in public speakers is a frequent effect of using tobacco.

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CONSUMPTION.

Non-medical readers may not readily understand why many of the diseases mentioned in this paper should be caused by the use of tobacco, but we think almost any one can see how it may cause consumption. The lungs depend for the proper performance of their functions upon the purity of the air which we breathe. When a man smokes tobacco, or goes into a room where others are smoking, how is it possible for his lungs to get their requisite supply of pure air? The breath is the life, but when a man breathes into his lungs an atmosphere laden with tobacco smoke he takes in only death and destruction. That smoking causes consumption, we have the testimony of the most eminent physicians. Dr. Rush mentions a case he once had of consumption produced by smoking, and from which the patient died. Dr. Trall, of New York, says he has seen a score of such cases. He reports one as occurring in his own practice, in which the habit being abandoned for a time the disease was arrested, but upon its resumption the disease returned and the patient died. Other cases and other authorities might be cited, but want of space forbids.

DYSPEPSIA.

When we witness the astonishing amount of saliva poured out by inveterate tobacco chewers and smokers, we need not wonder that so many of them have dyspepsia. The salivary fluid is one of the necessary secretions required for the digestion of our food. By some physiologists it is considered just as essential as the gastric juice. It is a most powerful agent, the active principle of which, when diluted to the proper degree to bring it into contact with every part, some chemists say, is capable of dissolving a thousand times its own weight of any nutriment that is appropriate to the system. To supply the enormous quantity wasted by the tobacco user, the salivary glands are taxed to their utmost capacity, *almost worked to death;* and then are only able to furnish a fluid deteriorated in quality, and vitiated saliva must impair digestion. Dr. Good gives it as his opinion that great evil results from the conveyance to the stomach of tobacco which is mixed with the saliva. Dr. Cullen says he has found all the symptoms of dyspepsia produced by snuffing, particularly pains of the stomach, occurring every day. He felt certain that he did not mistake the cause of these from the fact that from the sudden interruption of snuffing for some days the pains ceased, but upon the return of the patient to the habit, the pains also returned. Dr. Clay, of Manchester, England, says it is the sole cause of a species of dyspepsia, which he has witnessed in a number of cases, the symptoms being a painful sensation of weight at the stomach, as of some hard, indigestible substance pressing upon a tender part.

CANCER.

Dr. Warren, of Boston, says it is a rare thing indeed to find cancer of the gums, tongue and lips in any but a user of tobacco. He has, in a practice of more than twenty years, particularly noticed this; he has also noticed that when one side only was affected, it was that on which the tobacco, the cigar, or the pipe was habitually retained in contact with the part. Dr. Elisha Harris, one of the physicians of the New York Dispensary, says that of six cases of cancer that have been under his care within two years, five were those of men who used tobacco. Druitt, an eminent London surgeon, and author of a work on surgery, testifies substantially to the same general facts.

It may be said that cancer is a constitutional disease, that it exists in the blood, and that the ulcer is but its local expression; and that, moreover, if the predisposition did not exist, no amount of smoking or chewing would ever produce a cancerous ulcer. Granting all this, the predisposition might exist for years, perhaps for a lifetime, or until Nature, through some of the emunctories of the system or by a critical action of some kind, should find means of removing the poison from the blood, in a way less disagreeable and less painful to the patients, than through an ulcerous sore on the face, which is seldom or never healed. But when a man puts a quid of tobacco or a cigar into his mouth, Nature directs all her energies to that point, a cancerous ulcer is the result, and in a majority of cases, all hope of a cure is at an end.

Thus we see that the use of tobacco—first, originates various diseases; secondly, it aggravates those which owe their origin to other causes; thirdly, it pecipitates the development of those to which a predisposition exists, and which but for its use might have slumbered. And, besides this, Dr. John King, of Cincinnati, asserts that the systems of chronic invalids who use tobacco are by its use rendered, to a great degree, unsusceptible to the action of the various remedies employed for their cure. Dr. Willard Parker, of New York, says that although tobacco users appear to be as strong as other persons, yet when attacked by disease they are found to have less constitutional stam-

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ina, and are able to oppose but a feeble resistance to its onset; while from wounds or injuries of any kind they recover with difficulty, if at all, while other persons get well speedily. Moreover, Dr. Parker says that in his practice he has never yet found an employee in a tobacco factory who was perfectly sound and healthy.

Anything which has such a depressing effect upon the vital energies as tobacco must necessarily render the habitual users of it fit subjects to be carried off by any epidemic which comes along. Statistics show that epidemics count among their victims a greatly larger number of males than of females. Of those who die of yellow fever, the proportion of the former to the latter is said to be as three to one. This is accounted for by the greater addiction of the male sex to habits of dissipation, of which the using of tobacco is one. This, taken in connection with the drinking of ardent spirits, tells the whole story. Hitherto in attributing to this latter cause so large a share in the production of disease, the effects of tobacco have been, in a great measure, overlooked. It is only of late years, since the consumption of tobacco among our people has increased to such an alarming extent, and its effects in the production of disease have become so palpable as to be no longer ignored, that our physicians have come to more fully recognize its agency, until at length some have been heard to declare it as their firm belief that the effects of tobacco in lowering the general tone of the system, and thus rendering its votaries susceptible to disease, are fully as great as those of rum. Dr. Alcott says: "The German physicians state in their periodicals that of the deaths occurring among men in that country, between eighteen and thirty-five years of age, one-half die from the effects of smoking. A Paris physician says that six cigars a day will shorten a man's life five years. We are not yet prepared to treat this question with mathematical strictness, but it may be regarded as certain that, however moderately one may use the weed, and however long he may escape disease, his life will be shortened to some extent by such use."

(*To be continued.*)

Concerning Rest.

BY MISS R. E. HALL.

WHEN my friend told us the other evening that one of the best guarantees of a healthful life was a calm and peaceful spirit, I wondered if any one else thought with me, "True, indeed; but could you tell us how to secure this calm and peaceful spirit?"

Is it possible in this life of healthful activity or of weary unrest, a life ever working for the unattainable both for body and soul; is it possible to possess that spirit of peace, that "good cheer" which lends the face its power to "do good like a medicine," which shines forth from the eyes like light in dark places, and is as welcome; which brings the heart the nearest to being satisfied it ever gets in this world, and makes it to sing a quiet song of joy that steals into other hearts, burdened, and is as sweet as a pleasant tune; a spirit that is better than genius with its power of suffering, better than high moral fanaticism with its strained ideas of duty, representing God as always demanding sacrifice and as best pleased with a service of agony; better than the morbid longings and dreamings which fill our younger life and tend more to make us selfish than noble; better than great riches, or than all the honors or laurels that ambition can strew for us; aye! better than anything else in all the world except it be the great spirit of love, which is indeed as inseparable from it as sunshine from light; a spirit that is as content to be as a bird, and as fearless; that throws open all its windows to the sun without doubting, and waits patiently when it is cloudy weather? To discover the secret of such a spirit would be indeed to discover the fountain of youth which the fabled searcher of old failed to find. But to many does it not seem as unattainable as to the tired traveler who on the dusty highway looks away off to the misty mountain-tops, where he knows there are shady groves and cool waters and the fresh breezes of heaven, if only he could be lifted out

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of the desert of heat and set down upon the delectable mountains; but somehow it is a great way there, and he doesn't know exactly where the road turns, though he's looked often for it; so he looks away with his wistful eyes and plods along his journey, vaguely hoping that some time he will get a little nearer. It would seem that to many the great condition necessary to a peaceful spirit is a restful condition of the body. To be sure there are some who from their first start have received so vigorous an impulse as to keep the machinery of their lives agoing to a timely end, and they have but to keep it in action to have it bright and unrusted; but to many more there is need to husband carefully their sources of strength that in time of need it may not be found wanting. To be sure peace and activity may exist together, but do peace and weariness? certainly a happy spirit and suffering can not. Perhaps they may in certain religious biographies where the hero, and more particularly the heroine, are the more or less perfect according as they are the more or less sick, and the more their body suffers the more their spirit exults, but in real life I never knew it to be so. I can understand how patience and resignation—twin sisters—are often born of suffering, and he who waits long for health learns to wait long for other things, and to ills one cannot help one learns to be resigned, but I never knew a happy spirit was the result, and even patience is an uncertain child. If to be rested is needed to be at peace, how then shall we rest?—a question hard to answer. What is rest to one to another may be work. To man the word has scarcely a practical meaning. Tell a hard worker of either body or brain, especially one who with a low stock of nervous capital uses every cent of interest yearly and draws heavily on his principal, tell such a one to rest and he looks at you in a hopeless sort of way as though he scarcely understood you—he has a fragrant memory of the word when he was a boy on the old farm, where he went to sleep early, and in the fresh morning brushed the dew off the clover and buttercups as he drove the cows up the road; but now he is more tired in the morning than at night, and doesn't begin to live till the excitement of the day has made a new draft on the well nigh expended energies that can so ill afford it.

One half the women of to-day do not know what it is to be rested. Whether the housekeeper, with her many cares, or the shopgirl in her ceaseless routine, or the enslaved follower of fashion who has double duty to perform to the church and to the world—two masters being hard to serve—they tell you nearly the same story; and you find them everywhere, these women with pale faces and eyes that look hollow, and shoulders becoming bent before their time, and when finally the doctor, after vain attempts to make drugs supply the place of nature, says: "Rest is all that will avail anything," the case is well nigh hopeless, unless, indeed, the patient can learn how to obtain the great panacea; for indeed it is a lesson to be learned, and one not so easily or so thoroughly learned but what an occasional review is often beneficial. There is a false idea abroad that *rest* is a something to be done like a piece of work that will last for some time, a commodity of which enough can be laid up in storehouse for future use, a few weeks vacation in the summer and no more of it needed for the coming year. I go to my friend, who is, perhaps, a teacher, and I say to her, "Come, now, you are not as well as at the first of the term, your nerves are unstrung, you need to be freshened; let us go on the horse-cars out into the country and laze away the afternoon, or down to the sea and sun ourselves on the beach, and you'll forget the coming examination that hangs over you like a cloud, and that horrid Pat Donnely, who almost bothers the life out of you, and we'll have a good time and be in blissful ignorance of everything but the blue sky and the blue ocean."

But she shakes her head in a doleful manner, and says, "I can't."

"Can't; why not?"

"Oh, I must stay home and sew. Saturday is all the day I have to sew in."

"Well, Saturday is all the day you have for recreation, too, isn't it? and don't you think six days of work entitle you to one day of rest? You know you teach Sabbath-school on Sunday."

"Oh, yes, I need it badly enough; but then I am going into the country by-and-by, and that will have to do for this year, besides I went on a picnic some time ago."

"Which was all very well for that time," interposed I, "but you need another refreshing, and 'past blessings won't suffice,' as they often say at prayer meeting; besides if you wait till vacation you'll be so tired you won't begin to be rested till it is time to come back again."

"Well, it's no use," continues she; "here's all this sewing to get myself ready."

"Why don't you hire it done?"

"Can't afford it; there is so much trimming it costs as much to hire it made as to buy the goods."

"Well, what do you have so much trimming

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for? make it plain and then you can afford it; that's the way I do. I don't have half as much money as you, but I have a great deal better time."

"Almost thou persuadest me to be a Christian," says my friend, with a laugh; "but like Felix of old, 'Go thy way for this time, when I have a convenient season I will call for thee.'"

So I leave her puzzling her brain over the ruffles (too good a brain, by-the-way, to be so spent) and go to another friend of mine, a wife and a housekeeper, as happily and as comfortably situated as most women. I find her engaged in the commendable occupation of making bread. I see that she looks rather haggard, as though she had been up the night before, and with secret hopes of getting her out of doors I suggest rather meekly—for I am not as confident of success as I was before—"that it is a glorious day, one of June's best, and that it is her delight to be out in just such days, and I'll gather up such as the house affords into a basket and off we'll go to the woods and take the children." But my little ruse of whisking her off before she knows it is a failure.

"Not so fast," she says; "firstly, the baking isn't half done."

"Why I'm sure here's bread enough for a small army," looking at the brown loaves that have just issued from the oven. "Oh, yes, but there's the pie and cake, and by the time they are made it will be too late and I shall be too tired."

"Well, never mind the pie and cake, you've plenty of other good things."

"Not mind *the pie*; why John couldn't make out his dinner without pie."

"But John isn't coming home this noon; besides if he were, if he's a sensible man, as I think he is, he'd a great deal rather go without his pie once in a while for the sake of your having a restful time out of doors."

"Yes, but men don't understand such things."

"I don't see what there is to understand, except that instead of a profit and loss it's a profit to both of you."

"But" continues she giving an emphatic pat at the dough she is kneading, "although he would have no objection to my going he could'nt exactly see, perhaps, why I might'nt have done both, and so had his pie too—besides the oven is hot now and I must bake for to-morrow."

"Yes," I plead with increasing zeal, seeing I am about to lose the case; "but it may rain to-morrow and you can bake then, and is'nt it just as important to seize this beautiful day to use it for your own health and happiness, as to seize a hot oven which you can make to order at any time?"

"Well," she concludes, with a finishing pat on the shapely dough, "that's all very nice, and I'd like to go, for I feel poorly to-day, being up last night with one of the children, but for all that I musn't leave the baking."

So I consider the question settled and take my departure, having lost my cause, or rather *her* cause, and all for a piece of pie. So long as women will consider their health the last in any question and plan for, and sacrifice for, and make circumstances bend to, and move heaven and earth for the carrying out of every project before their health, so long they will be as they are; for how much of it the Johns of this world are to blame, I can not say, I suppose my friend knew *her* John at least better than I.

I believe I was saying there was a false idea about resting enough in a few weeks of the summer to last the year. However full of delight and peace the lazy hours in the country, however freighted with rest and strength the long days by the sea, we cannot hoard and carry away enough of the precious store. Every twenty-four hours is a circle of its own in which to tear down and build up, and whatever is spent between one sunrise and another must be made good from food, recreation and rest, and whoever commences the morning already tired is spending too much somewhere, and will find that a system of paying Nature's past debts by drawing on the future, will make him a bankrupt. But we do not need to wait till in the fullness of time we can join the throng at watering places. To any one, unless shut up between four brick walls, if there belong a green spot somewhere around the house, if he can sit at least under one vine and fig tree of his own, there is at hand a perrennial spring if he but knows how to drink of it.

We have some broad back steps which lead from the kitchen into the garden, and for more than half the day they are flooded with sunshine. They do not command a view of terraced walks, nor wide-spreading grounds; but there is a row of apple and cherry trees, supplying nectar and ambrosia to the robin-red-breasts that feast and swing on the branches, and pour forth such melody as makes my heart glad. Then there are the chickens, not so brilliant to be sure, but vastly entertaining. It's as good as a sedative to watch the careful manner in which they walk around, standing occasionally to stretch their necks and perch their heads on one side, eyeing you in that suspicious

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manner peculiar to hens, till settling their minds that you are not an enemy, the composed way in which they wallow themselves in the sand is exceedingly soothing to one's spirits. It's a great relief, too, if you have been troubling your brain with metaphysics, to fall to wondering by what rule or tactics, or divine law the old white rooster can stand so long and reflectively on one leg. You are very sure you couldn't. *This* is my parlor, my study, my work-room, my art gallery. I alternate between this and the cherry tree, where I sew or read, shell peas or write letters, and entertain my friends—such of them I mean as I love the best—and whenever the affairs of life press hard and its sorrows are heavy, I say, "Oh my soul why stay out in the darkness? let us go up to the land of Beulah." So I take my broad hat, and my blanket and myself out to the sun, or the flickering cherry shade, and ere long the weight on heart and brain rolls off like Christian's pack; the past slips away and there is more trust for the future, and faith, that has been trailing her wings in the dust, spreads them again, and soars up through the light to its giver, my spirit becomes braver and readier to meet whatever comes. Of course you say: "This is in accordance with a physical law governing the nervous system." But can you draw the line between the soul, the mind and the nervous system? particularly as it is the amount of gray matter in the brain that determines the cast of the mind; or can you define what part is physical and what part spiritual, how much of the spirit of peace comes from the heavens above, and how much from the earth beneath.

Perhaps you say, "I cannot stop to rest; I have no time; I will by-and-bye, but *now* I must do my work."

"Ah! but are you sure of your by-and-bye—the one this side of eternity I mean? Are you not doing the very thing now that may lose it for you, or, if entered upon, will it not, instead of being spent in rest, as you fondly hope, be spent rather in vain regrets for the strength so unwisely and hopelessly lost? Moreover, what is this work that you must be always doing? If to do good is your ruling motive, have you not learned that it is what *you are*, as well as what you do that blesses the world? and though the toil of your hands is worth much, a beautiful spirit of good cheer surrounding you is worth more, and you are not becoming the best you might be if you have no time to entertain this spirit of rest and strength which can not live with weariness. Or do you believe there is no use trying, that these things are not equally divided, that some inherit a disposition of peace and content, their life voyage has always been smooth, while others have sailed an ill-starred ship upon troubled seas from the beginning?

As true as this may sometimes seem, and though to one born of parents satisfied, content, with a body in which the moral, mental and physical are well balanced, it is an easier thing to say: "Be thou restful and happy." Yet Nature—ever kind and more impartial than we sometimes think—has better things in store even for you, my friend, whose life was well nigh cursed from the beginning, who came unwished for from the unknown sea upon the shores of time, and was almost a wreck ere the voyage of life began, whose inheritance was suffering and whose birthright was disease; whose parents were very poor, perhaps, with hearts and brains taxed to the utmost to care for those who came before, or whose mother's heart was o'ershadowed, not only with care for the food and raiment, but with a cloud of fear by day and terror by night, watching for the uncertain step, listening for the besotted voice, and holding closer her protecting little ones lest a crazed brain and a drunken hand should send out of existence that which it had better not have given. Who can number the lives that have received their bias toward wrong from their pre-natal influence? and who verify of a truth that "the sins of the fathers are visited upon the children," and who were well nigh without hope, were it not that the same great lawgiver continues; "but showing mercy unto thousands of them that love me and keep my commandments," and who have hope in that although disease works toward death. Nature always works toward life, if only she can have a chance, and there is no chance like rest. Not too heavily drawing on the low stock of pure life force, but adding a little day by day, so shall Nature work herself free from every taint of vice and disease, and give her children a better chance for health and happiness.

BE CHEERFUL.—"Be cheerful," says the man who is easy in his circumstances, missing no loved face at the table, nor by the hearth. But does he ever consider how it may be to be cheerful when the heart aches, and the cupboard is empty, and there are little fresh graves in the churchyard. How difficult for one man to understand another in such different circumstances! How easy to say "Be cheerful!" How hard he would find it to practice, were he stripped of all life's brightness!

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Eating and Drinking.

BY THE EDITOR.

IN our last article we discussed the uses of food, and tried to find out simple reasons for eating. Let us now go on with our subject. First, however, we will try and give a brief but correct classification of aliments. We do this because the people have been befogged on this subject by popular writers, who have given false classifications having no foundation in science. Their classification is more the result of the teachings of Dr. Bellows than any other man, other writers only copying him. Dr. Bellows divides foods into three classes, carbonates, nitrates and phosphates. Any boy having a smattering of chemistry could make a better division than this. If the reader doubts it let him get a dictionary and find the definitions of these words. A carbonate is carbonic acid united with some base, as lime or other substance; a phosphate is phosphoric acid united with a base of some mineral, it may be lime, potash, or iron; and a nitrate is nitric acid united with a base, as potash, silver, mercury, ammonia, etc., etc. We should not take up the reader's time with this subject had this classification not been widely copied by lecturers, editors and bookmakers, and passed into health journals claiming to be scientific in their character.

CLASSIFICATION OF FOODS.

The classification of foods now accepted by men of science is perfectly simple and easy. All the substances used come under one of four heads. These are:

1. Proteids.
2. Fats.
3. Amyloids.
4. Minerals.

The proteids are generally known as albuminous, or nitrogenous substances. They take first rank in the material for building up the fleshy part of the body. They include the gluten of wheat, the albumen of white of egg, the muscle of flesh, the casein of cheese, and a few other unimportant substances.

The fats include all oils and fats, whether animal or vegetable. They are called the non-nitrogenous articles of diet, because they contain no nitrogen. Butter, fat meat, vegetable and animal oils, oily nuts, etc., etc., are of this class. They are also called hydro-carbons.

The amyloids include starch, dextrine, sugar and gums. They are also non-nitrogenous and hydro-carbons; but the hydrogen and oxygen are in the form of water, while in the fats the oxygen is not in sufficient quantity to satisfy the affinity of the hydrogen.

The minerals are water and certain salts of alkalies, and other substances, such as go to make up the bones and teeth, etc., or act as regulators to nutrition.

None, however, of these substances alone will perfectly nourish the body. All of them must be present. The food which Nature has provided for the newborn babe is the only one which perfectly illustrates a combination of them all.

1. The curd of milk is a *proteid.*
2. The cream or butter of milk is a *fat.*
3. The sugar of milk is an *amyloid.*
4. The water, magnesium, potassium, iron, sodium, lime, phosphorus, etc., are the *minerals.*

Is this not simple and beautiful? How perfectly good milk nourishes the young. If in after years, when we eat and drink what we please, we were to choose food so wisely adapted to our wants as the Creator does for the child, it would not only save much suffering, but greatly add to our efficiency.

Now let us look at the functions of the different kinds of foods. This subject is not so well understood as we wish it was; still what is known will help us to decide somewhat as to the choice of articles of diet. First in the list come the *proteids.* What is their function in the body? One point at least seems settled, that their chief value is to construct and repair the tissues of the body. The nerves, the muscles, the glands, the secretions of the mouth, stomach and alimentary canal which help to transform our food, are all *proteids.* Parke says that every structure in the body in which any form of force is manifested, as heat, electricity, or mechanical action, is mainly built up of these proteids. This is so the world over. May we not, then, safely conclude, that the main function of the proteids is to build up and repair certain tissues of the body? It is also believed that by oxidation they develop some heat, and a small portion of the strength of the frame. If the proteids are cut off the functions of the body

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languish. If we wish to increase the power of the body to do work, we must invariably increase the consumption of proteids.

THE FATS AND THEIR FUNCTION, OR USE.

The fats are, in the scientific works on food, called hydro-carbons. They contain some oxygen, but never enough to satisfy the affinities of the carbon and hydrogen. For this reason they are powerful generators of heat. An ounce of fat burned in the fire generates a large amount of heat. An equal weight of it when burned will produce two and a half times as much heat as dry starch, or sugar. Some idea of its wonderful heating properties may be gained by the fact that ten grains of fat burned so as to save all its heat, will raise the temperature of twenty-three pounds of water one degree. This is sufficient to raise 18,000 pounds weight one foot high. The two great uses, then, of fat are, first, to maintain animal heat; and second, to generate force. It is very easy to see how it does the former, by burning in the body; but how heat becomes force is not so easy to see. That it does in the steam-engine is evident, and the same is true in the body. The man who does a hard day's work, does so by virtue of the fact that he is, so far as the labor is concerned, an engine. The muscles do not furnish the strength, they only transmit it. The wheels of the engine do not furnish the strength, that is the power behind them. Not only the heat of the body, but the working power of it, is largely due to the consumption of fat. (The reader must not confound fat with fat meat alone, butter is a fat, and so are oils and oily nuts.)

Still another use of fats is that, like the proteids, when taken into the body they enter into its structure, forming in all cases an essential part of muscle, nerve, brain, and other organs; and also entering largely into the adipose tissue.

Besides these important and principal functions of fat, it has minor uses in the processes of digestion, assimilation and nutrition, and, it is believed, in the formation of bile. Food digests more readily if fat is mixed with it. It also takes an important part in the formation of cells, blood corpuscles, and even the generation of blood. It is present in large quantities in the tubules of the nerves; and in all the nervous centers, at least, serves some highly important function in nervous action.

Indeed the distribution of it in every tissue and its accumulation around certain organs, serves to fill up the cavities of the body and give roundness to the form, equalizes the external pressure, and diminishes friction; and by its bad conducting property retains animal heat. Fat, therefore, must ever be regarded as highly important to the physical development of the body, and any system of diet that excludes it is faulty and to be condemned.

[An interesting case of the evil effects of the non-use of fats was recently brought to our notice. A gentleman of education and refinement, in rather feeble health, put himself under the care of a physician who ordered him to abstain from all butter, sugar, salt, milk, meat, and to live exclusively on farinaceous articles and fruits. The result was that he lost rapidly in flesh and strength, and soon took to his bed. The physician insisting that he would in the end be better for this course, advised him to continue it. The patient thinking that hickory nuts were not forbidden, purchased a quantity and ate freely of them. Being very rich in fatty matter, they supplied the place of butter and fat meat perfectly, and he soon became much better and believed he had made a great discovery in the dietetic value of this nut. We may add that it is excellent food for those who can digest it and for those who abstain from animal fats it will often prove to be very valuable. Where oily foods are not used, the proteids exist in excess in the blood, and furnish more nitrogen than can be used. The result is that the system is poisoned by it and seriously suffers.]

California as an Invalid's Resort.

A SERIES OF LETTERS TO THE EDITOR, BY JOHN P. PHILLIPS, M. D.

IN accordance with your request I will send you some of the facts and impressions learned and received by me about the State of California, considered chiefly with reference to its desirability as a resort for chronic invalids. Of course I can only send a meager collection tion of facts compared with what you ought to have. We should have a work tabulated and

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arranged in manner and form similar to the United States Census Reports, containing full and exhaustive information concerning the climate of every county in the United States. It should give all the meteorological observations, and should record all known facts relating to the climatic influences of each locality, not only upon healthy persons, but also upon invalids afflicted with different diseases in various stages of development. Such a work would cost an immense amount of labor and money, but would be worth ten times its cost. The United States government should commence it at once.

That climate has a great influence, either for good or evil, all will admit; but we have no scientific method of changing the location of a given invalid afflicted with a particular disease. As a general statement a patient should be placed under the opposite conditions of those which created or aggravated his special disease. If a cold, a warm, a damp, or a dry climate has made, or helped to make him ill, the reverse climate should be chosen. The statement is often jocularly made, that certain places are so healthy that it is necessary to kill some one to start a graveyard; and although an utter absurdity, is half believed by many people. Every location has some peculiarities of climate that are injurious to certain invalids—the difference between what we call a good and a bad climate is merely relative, we have no absolutely perfect climate on the globe. A good climate is one best fitted for the greatest number, a bad climate the reverse; but a good climate is not necessarily best for every invalid. The patient may have some morbid condition that would be aggravated by a climate that is admirably adapted to the average healthy individual. But these considerations are largely ignored by the majority of people. Of their own accord, and by advice of their physicians, invalids wander in every conceivable direction for the alleviation of the same disease, or class of diseases. The result is that a large number of persons that remove on account of their health, receive no benefit whatever; another large portion are injured thereby, many vainly exhaust their slender means and die away from home and home comforts, and an immense amount of discomfort and misery are inflicted on the class of persons least able to bear them. As a matter of fact it requires the entire fortune of the man of average wealth merely to *seek* a suitable location, in many cases. If any suggestions I may make will help you in the least degree to advise your patients intelligently, I will feel amply gratified and repaid for the time taken to put them on paper.

And first, with regard to the journey. Disappointment will be experienced by most persons. Almost every one has read the glowing descriptions of the overland passage with which the press teemed during the progress and soon after the completion of the Pacific railroad. The trip has been represented as a most delightful one, free from discomfort and full of pleasure; the scenery, the cars, the meals, in short everything is charming to the last degree. My experience is so different from the descriptions I have read that I suspect some of the writers of these fancy sketches have slipped their pens in greenback ink before commencing to write. In my opinion their statements are exaggerations of the facts. The journey is necessarily tiresome, and the scenery as a whole is not one half as fine as has been represented. There is no grand scenery until the Wasatch mountains are reached—a distance of about 1,500 miles from Chicago. The prairies of Illinois, Iowa, and part of Nebraska are beautiful, but the distance is so great in passing over them, that the traveler wearies of looking at such a vast, monotonous expanse of nearly level land. The bridges over the Mississippi and Missouri are fine structures, but not nearly as fine a sight as the Suspension bridge at Buffalo. About 250 miles west of the Missouri river a barren prairie country is reached, and the traveler rides hour after hour and day after day over a dreary, sterile desert; far in the distance ranges of broken, desolate-looking hills are seen; the water-courses are few in number and very small in size. Hardly any signs of life are seen. I saw a herd of antelope, a couple of prairie wolves and a lot of prairie dogs. You ride hundreds of miles without seeing a tree. Upon reaching the Wasatch mountains some fine scenery appears. These mountains are grand. The passage through them, at what is called the Devil's Gate, is exceedingly beautiful and interesting. You wind through a narrow, crooked defile, with mountains towering above you on either side. By your side flows a rapid, clear stream of water—the Weber river—and you emerge from the mountains into a smiling plain, dotted with farm-houses and surrounded with snow-capped mountains. The change from the arid desert on the last of the Gate, to the plain, which is an outlying portion of the Salt Lake valley, was striking and very pleasant. From the Wasatch mountains you ride 600 miles over a desert country, and see nothing but a vast, dreary, alkaline plain, devoid of vegetation, except

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small, stunted sage bushes. About 2,100 miles from Chicago you reach the Sierra Nevada mountains. Here the scenery becomes interesting. Your view, however, for a large part of the way, is obstructed by miles and miles of snow sheds, through which the railroad passes. But after passing the summit of the mountains some very fine scenery is reached. About this portion of the journey there has been no exaggeration, simply because it would be extremely difficult by any written description to convey an adequate idea of the beauty and grandeur of these mountains. The change of climate, too, is very noticeable. We breakfasted at the Summit House, where the ground was covered with snow and ice. Four hours afterward we were sitting with the car windows open, gazing with delight upon the beautiful country, bathed in a warm, genial sunshine. The Sierras can only be appreciated by being seen, and therefore I will not attempt to describe them. Our journey occupied seven days and seven nights from New York city.

SECOND LETTER.

The figures 3,300 convey an inadequate idea of the number of miles journeyed over by the traveler in passing from New York to San Francisco. What that number of miles means can only be fully understood by passing over the ground for that distance. It certainly is a long journey. An invalid should not attempt to make the trip by riding constantly night and day from beginning to end. He should travel by day and at night stop and rest; and if fatigued, remain a day or two to recruit. From New York to Omaha there is no difficulty in finding good hotels in which to remain until ready to start on another stage of the journey. From Omaha to Sacramento there are only a few points with hotel accommodations. Cheyenne, Ogden and Battle Mountain are tolerably good points at which to stop over one or two days, It should be remembered that quite frequently, by the excitement of change and travel, the invalid is kept in a state of nervous excitement that prevents him from realizing the need of sleep and rest; and this may be continued until serious injury is inflicted. The invalid under a little excitement, of which he may be unconscious, bears up under fatigue and apparently is doing well, until the journey is ended and the excitement over; and then, perhaps too late, it is discovered that too great a strain has been put upon a diseased organization. It is better to err on the side of safety by traveling leisurely, than to save a few days' time by a continuous ride, which is tedious and tiresome to a healthy person. The clothing should be, at all seasons, of woolen, and quite warm and thick.

It should be remembered that for a distance of 1,500 miles the Central Pacific railroad passes over a region at an elevation of from 1,000 to 7,000 feet above the level of the sea, and that the mountain air is quite piercing. Nothing contributes more to a passenger's comfort than a good warm blanket; he can use it as a pillow to rest himself against, as a covering for his limbs, should the car be cold, and at night an extra blanket is often very comfortable. Every invalid should certainly provide himself with one. In crossing the continent the extent to which the American people are deluded with the idea that drinking alcoholic liquors creates strength, is a very noticeable feature. The average traveler does not consider himself equipped for a journey without a greater or less assortment and supply of spiritous drinks. The array of bottles and flasks, even in a "drawing-room car," is fearful to contemplate. Invalids especially, imagine a full stock of liquor essential to maintain their strength. I saw invalids literally loaded down with various kinds of liquors. All the stations are plentifully supplied with rum shops. In the middle of what seems to be a boundless desert plain, at a railroad station of forty or fifty shanties, it often looks as if three-fourths of the population were elevated to the noble work of nourishing the weak by supplying them with "Fine Old Whiskies," "Lager Bier," "Best Brandy," "Ales, Wines and Liquors of all kinds." Two things seen constantly along the road seemed to me equally sad and pathetic, when considered as representatives of character and suffering. One is the multitudes of broken, empty bottles lying along the track from Omaha to Sacramento. The other is the whitened skeletons of the great number of oxen that, before the railroad was built, perished from starvation, thirst and fatigue in crossing the vast desert plains. At several places we saw Indians—all filthy, squalid, lazy, mean looking creatures. I can see no propriety of sending delegation after delegation of these dirty savages, at great expense, to Washington. Humane, capable men can be sent to direct them what is best for them, without such unnecessary parade and expense. To comply with their demands for more and better arms with which to kill the buffalo, is another absurdity. That noble animal has as much right to live on the great plains as the

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savages have; and, as between him and the Indians, my sympathies are with the buffalo. Why not send a delegation of buffaloes to Washington.

Their chief, in buffalo language, would say to the Great Father: "Our forefathers once roamed at will over all this broad country; now we are restricted to narrow limits. Once we were many; now we are few. Our enemies, both white and red, armed with dreadful, deadly weapons, pursue and slaughter us at all times and seasons, without regard to age or sex. The pregnant female, the new-born babe, the old, and our pride and strength are all alike ruthlessly and wantonly murdered. We have never made war upon you or any of your children. We feed on the grass that otherwise would decay. We ask that our Great Father may interfere in behalf of mercy—stay the hands of our enemies, and prevent us from being blotted off the face of the earth. Give us but a portion of this our native land, wherein we may dwell with our families in peace and quiet. We are helpless; we are fast melting away; have pity on our wretched condition."

In my next I shall tell you something about the climate of this State.

Answers to Prayer.

WE have received from Henry Hoyt, of Boston, a little book of two hundred pages, entitled "Answers to Prayer; or, Dorothea Trudel," being an account of the wonderful healing of sick persons in answer to special prayer at Mannedorf, Switzerland. This book was written long before Professor Tyndall made his famous proposition to test the physical value of prayer in the wards of a London hospital, by praying for the sick in one ward and not for those in another; and would seem to be an excellent answer to him, if we accept her statements and reasonings as correct. One thing is certain, the book is a very interesting one, even should we be obliged to explain Miss Trudel's success differently than she explains it herself. It is so sincerely written, and she so thoroughly believes that "The prayer of faith shall save the sick," that she makes this text of Scripture the foundation of her whole work, a brief account of which may be interesting:

It must have been fifteen or twenty years ago, that rumors reached this country that most wonderful cures were being wrought in several places in Switzerland, solely by the power of simple, believing prayer. The place was on the border of Lake Zurich, in a beautiful little town called Mannedorf, sheltered by the hills that fringe the lake. The place is described as a spot favorably situated for one who was tired of the strife of life, and desirous of seeking a quiet resting place to spend the remainder of his days. Dorothea Trudel was a poor girl, with a most healthy constitution, an excellent character, and strictly religious in all her habits. She was a worker in flowers, and had, in time, workers under her. It was not till she had reached the age of thirty-seven that several of her workers fell ill of a sickness that resisted all treatment, and appeared to be hopeless cases. She nursed them tenderly, and in her anxiety to give relief, sought the Scriptures for help, when this text flashed like a great light from heaven upon her mind: "The prayer of faith shall save the sick, and the Lord shall raise him up." Reflecting on it, she remembered that there was once a time when the sick were healed by prayer and the laying on of hands, and why might it not be so still? Was it God's fault, or ours, that it was not so now? Agitated by these questions, she knelt by the bedside of her sick and apparently dying friends, and prayed most earnestly for their recovery. They all recovered. At first she was startled by what appeared to be a direct interference by Providence, but the belief settled into a conviction of her life. A sickness broke out in the village. She sought the bedsides of many dying, encouraged them by her religious teachings, and sought their recovery by prayer alone. Many got better. Those who witnessed her labors besought her to establish a cure. This she at first refused to do. She shrank

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from publicity; but the people hearing of her labors and their results, besieged her house. Many were brought on beds from afar, and from compassion she took them in. By degrees one house grew into three. Patients came from France, from Germany and from Great Britain. There came to be a hospital in her home, and she gave all her time to its superintendence and praying for the sick. A physician in the neighborhood, not liking to see such wonders come through those who were not physicians, interfered, and insisted that a medical man should be at the head of it. The government interfered, and suppressed her cure. Miss Trudel determined to disobey the order of the government, and go on. She was fined. It was illegal to heal the sick without the help of a physician. After long and expensive litigation, however, the judgments were reversed, and she was permitted to go on her way. It was during the trial of this case that it was established, beyond a doubt, that many hundred cures had been wrought by her means. One man had been cured of a stiff knee, that the best physicians had not been able to relieve. One the doctors gave up to die, soon threw away his crutches and walked. One testified that the doctors had decided to amputate his leg for a severe burn, but Miss Trudel cured him through her simple, earnest prayer, laying on of hands, and annointing with oil. A physician testified that one of his own patients, hopelessly diseased, had been cured; and he had seen, during a residence of six weeks at her house, all forms of disease give way to her treatment. One person with a lip cancer got well. The method of treatment was very simple. The first object was to impress the heart. There was a short Bible service three times a day, prayers were made and hands laid on; and they were annointed with oil. All were not cured. The prayer simply takes the place of medical treatment, as a more direct and more simple way. Sometimes cures were immediate, at other times a whole year might be required.

In the year 1861 Miss Trudel died of typhoid fever; so her work was discontinued there, but in Wurtemburg, Pastor Blumhardt continued a similar institution for years, and had his house filled with patients. The great author, Tholuch, and Prelate Kapff, both investigated his cures, and expressed perfect confidence in them.

This little book will repay a careful reading by all who are interested in the subject; and who is not? It may contain the key to greater things yet to come. The explanation given may need modification, but the fact remains.

We will send the book for $1.25, post paid.

In a future number we may have another word to offer on this subject.

Babies.

BY ELEANOR KIRK.

"WHAT do you know about babies?" I fancy I hear some inexperienced and very much tired parent exclaim. I do not wonder at all at the question. Every mother has the right to make this inquiry of any one who attempts to advise or enlighten her upon this juvenile subject.

"I have been trying," said a dear little woman the other day, holding a fretful infant with one hand and with the other turning the leaves of a huge volume, "to see what this authority"—mentioning an M. D. of considerable note—"has to say on the subject of babies; but I am disappointed as usual, and have about made up my mind that everybody who has ever written on this topic has been either a bachelor or an idiot."

I examined the roughly criticised book and found, as may be imagined, not at all what she had led me to expect. It was a work for thoroughly drilled physiologists, well written, profound, and as scientific as a professed scientist could make it; but to this tired, perplexed young mother it was the veriest stuff. What more could have been expected? This wife and parent had, only two years before, graduated from a first class ladies' institute, with a diploma setting forth in the strongest terms the astonishing progress she had made in her studies. She could speak French with an accent truly Parisian, charm the lovers of music with the wonderful brilliancy and expression of her pianoforte performances. She could dance well and sing well; in short, could the programme

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her parents and teachers marked out for her have been the route she was to take through her earthly pilgrimage, she would probably have kept, as at school, at the head of her class; but love, that arch disarranger of the best laid plans, that great general disturber of the peace, that great remaker and rectifier, stepped in, and the result was harmony and inharmony; the last, in this case, brought about entirely by an improper education. My friend had been shown the necessity of painstaking and polish, to make sure of some rich and cultured life-partner, and very singularly—for such things seldom happen—and, very fortunately, she had found with this wealth and culture, love of the rarest and most enduring quality. All this had been done with a view to her obtaining a husband, but not the least preparation had been made for the life that should follow; the motto being, as in the majority of instances, "Catch him, and let the future take care of itself."

Now this mother wanted to know why her baby cried a large part of the night, and moaned and fretted the greater portion of the day. She wanted to know why the little creature was not able to properly digest its food; and she desired this information in plain, simple terms, and in the work she had examined she had found neither information nor comfort. Now I have had some experience with babies, and I could well sympathize with this exhausted woman, whose life was entirely given up to nursing this tiny bundle of flesh and blood. Trot, trot, trot, went the poor little baby on the poor tired little knee. "Hum, hum, sh, sh, there, there, hum, hum," up and down, back and forth, occasionally interpolating this jargon with a word or two to me. I had been invited to spend the day with my friend, and must confess I did not look forward with much pleasure to the visit.

"Why don't you let the nurse take him?" I ventured to inquire, after witnessing this distressing performance as long as my nerves would stand it.

"Nurse!" she repeated, in a disgusted, impatient sort of a way. "She wouldn't stir a limb or move a muscle if the baby screamed itself to death."

I thought, perhaps, that the nurse knew more than the mother, but scarcely dared make the suggestion just then.

"Does he cry like this *all* the time?" was my next query, hoping to lead the conversation into a channel where I could, without appearing to be inquisitive, get at something like a history of the case.

"*Nearly* all the time," she replied. "I hain't known a decent night's rest since he was born, three months ago."

"Will you let me take him a moment?" I asked. "Perhaps, being fresh to the business, I may be able to do something for him; at least, I can rest your arms a little, if no more."

So Mr. Baby was transferred to me, and I immediately commenced a critical examination.

"You must have had a great deal of experience with babies," remarked my companion. "Do see if you can tell what ails this one."

There was nothing amiss with the child. It was as healthy a specimen of an American infant as I ever looked at—well proportioned, strong and active as a young colt, with flesh unusually firm, and a pair of lungs that utterly defy my vocabulary. I couldn't say to that mother in plain terms: "There is nothing the matter with your baby; all this fuss and worry is directly traceable to mismanagement." The temptation to blurt out this truth was great; but I have found, after many mistakes, that if one desires to accomplish any real good in this world we must go to work in all cases very gently. This infant was beautifully dressed in nansook and valenciennes, richly embroidered flannels, and all that sort of thing; and was as faultlessly tidy and sweet as loving hands could make it. Notwithstanding all these advantages of dress and social position, this ungrateful baby would cry. I lifted the little one's elaborately trimmed skirts, and what should meet my eyes but a "pinning blanket," (an article of infant's wardrobe I had supposed entirely obsolete) so fastened and doubly fastened that the poor child could not get a leg out to save its life.

"What are you doing?" my companion inquired, in wonder.

"Unpinning this thing," I answered. "Just look here! you have pinned this blanket so short that your baby hasn't room to stretch its limbs."

For a moment or more baby stopped crying, and kicked right and left with an evident relish for this description of leg liberty, and then commenced again.

"It isn't that," said my companion, with a sigh.

A cambric skirt covered the above-mentioned relic of barbarism, and both these affairs were made with waists, or bands, and fastened with three pins. It seems as incomprehensible to me now as it did the day I made the discovery, that an ordinarily intelligent woman even should not know that an infant's apparel should always be

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loosely put on; and here was the child of an unusually well informed and intellectual woman, actually gasping for breath on account of compression caused by tight bands. As I removed the pins the child gradually ceased screaming, and as I removed the last one such a grunt of relief as came from this baby's lips I never heard before or since. I rubbed his little back and sides, all creased with the wretched compressors, and the darling actually cooed with delight.

"There," said his mother; "that's just the way he acts when I give him his bath. I was telling his father this morning that I didn't believe he would ever cry if I could always keep him in the tub, or undressed. Some way he seems to hate to be dressed, and he always screams to the top of his voice just as soon as I begin to put on his clothes."

Now it took me some time to make that mother understand that she did not give her child as much credit for instinct even as her husband gave his Newfoundland pup about the same age; that the baby knew that this liberty of the bath was all he was likely to get, and resisted naturally the idea of such terrible physical bondage. I kept on with the soothing manipulations, and was very soon rewarded by seeing the blue eyes close, and after an exceedingly short space of time my charge was asleep.

"If you don't move just so you'll waken him," said the mother, in a whisper.

"Hum, hum, sh, sh, there, there," she commenced coming close to my side.

I took no notice of her "hums" and "shs" and "there's," but laid him gently on the bed, and not a sound was heard from that quarter for three long hours.

"Now," said my friend, making sure that the baby was not likely to waken, "I must have my bowl of tea. Shall I order a cup for you?"

"Tea!" I repeated after her, wonderingly; "what for?"

"Oh!" she answered, "I couldn't nurse my baby without it. Tea braces me up and keeps me going. I shouldn't be good for anything without my bowl of tea three or four times a day."

"If you want to undermine your own health beyond all power of restoration," I couldn't help saying: "If you want to see your child grow up a brainless, fidgety nobody, keep on swilling tea and you will surely accomplish your purpose."

"Why, for mercy's sake!" was all the astonished woman could gasp, and then continued timidly: "If I didn't drink something I shouldn't have food enough for my baby, and tea seems to give me strength. The nurse who was with me the first six weeks after baby was born used to *make* me drink it."

On this point again I found my friend entirely uninformed, with no more conception of the effect of tea upon the nervous system than her baby. I have had occasion a great many times to find fault with the work of certain monthly nurses; but I never felt so much like anathematizing the whole army of professionals as at this particular time. I found upon inquiry that this one had not only dosed her patient with tea, but had really laid the foundation for all the misery she was experiencing.

The proper person, possessing a proper knowledge of her business, arrived at by thorough education, could have so instructed this teachable and intelligent woman in the details of babydom that a mistake would have been next to impossible. This nurse had also insisted upon constantly holding the child, scarcely letting it out of her arms, asleep or awake; cuddling it close at night, and passing it over to the mother every time it cried, taking it for granted that hunger was always the cause of its unrest. She it was—this ignorant woman, who never had had a child of her own—who taught this young mother how to dress her baby, or rather the best method of stopping the circulation of blood; in other words, the speediest manner of putting an end to the little one's life. The only weapon that child had was its voice, and this he made use of indefatigably. So the lungs were used, and made to resist the deadly strain upon them. This infant was an uncommonly strong one. In nine cases out of ten the child would have long before this got through trying to resist, and given it up for a hopeless job; but this baby was born well, inheriting a strong constitution from both sides of the house; so it was quite a difficult matter to kill it.

Well, the upshot of the business was, that after that baby awoke from its long and refreshing sleep, I carefully dressed it, substituting a flannel skirt for the obnoxious pinning blanket, making sure to give it plenty of room to stretch and turn round in. I drew a pair of worsted socks on the chubby pink feet, and the little fellow cooed and laughed during the whole performance. About six o'clock a suspicious looking vial made its appearance.

"What's that?" I asked.

"Baby's *drops*," was the answer.

"Pitch them out of the window," said I.

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"But," she sighed, "there won't be a particle of peace for any of us without them."

Then issued another bottle, and it took some time to convince her that this Spartan baby did not need paregoric, and anaise and morphine, and whatever other stuff goes to make up these disgusting compounds; but I won, and am happy to say that not a drop of anything of the kind has since been presented to the little one's lips.

Now, women who are nursing babies should never drink tea. If I had time I could tell you in plain terms the reasons for this assertion. I do not believe in tea for any one outside the countries where it is raised, and I have no doubt that there it is a national blessing. Americans need no such astringents, no such nerve quickeners. That tea drinking is one great cause of nervousness among our women I believe every thinking man and woman will agree; and I often wish that our first row with our mother country had been one something worth fighting about, instead of an old tea chest.

Oatmeal, indian meal, gruel and cocoa, or chocolate are the beverages to be partaken of by women who nurse their babies. These insure quality as well as quantity, and made of good rich milk can be freely partaken of. There is no need of an ordinarily healthy woman growing thin because she is nursing. Then, again, infants should be held as little as possible, and trotted and rocked never. Use your baby at once to the bed, or crib, and insist, whatever your nurse may say to the contrary, upon its sleeping alone. Then feed your baby regularly, and disabuse your mind of the impression that it is hungry every time it makes a noise. No woman should nurse her infant oftener than twice in the night, and at six months this should be stopped entirely, in order to guard the mother against the exhaustion which follows inevitably upon the keeping up of this unnatural night drag. Once in two or three hours during the day is also quite often enough. Bear in mind also that your baby wants, and must have, cold water to drink daily. Begin first, and immediately, with a teaspoonful, allowing the child to be its own judge as to the quantity.

Give your babies room enough, and enough to eat of the right kind, good air to breathe and plenty of sunshine, and my word on it you will have no trouble; and mothers can only do this by taking proper care of themselves. The present system of bringing up children is an abomination; but what more can be expected with so little preparation for life and its duties on the part of our women?

LESSONS FOR THE CHILDREN.

BY THE EDITOR.

LESSON XV.

Last month we had a very pleasant talk about the brain, and some of the things it does. I might go on about the same subject for several lessons, and tell you of other things the brain does, if it seemed best. I might tell you that all the faculties of the mind have their seat in it; such as firmness, kindness, ambition, the love of praise, the desire to tell the truth, or to get money, the ability to invent things, the love of learning, the love of home, friends, etc. But I will omit these things, or leave you to think about them, and find out all you can for yourselves. To-day we must talk about the nerves. Who of you can tell me what a nerve is? The brain itself is a great nervous center. What is a nervous center? You have, perhaps, seen a city and a *depot* where railroad trains from all parts of the country come together. Such a place is called a railroad center. New York city is one of them. Ever so many railroads center here, from east, west, north and south. Well, now, the brain is not a railroad center, but a nervous center, and nerves from all parts of the body meet here, and go from here to every part of the body. Take a look at the picture in the January number and you will see the white lines, or nerves, as they are stretched from point to point, all centering in the great nerve-center, the brain. Now what is a nerve? Let me see if I can tell you. The word *nerve* is from an old Greek word which means *a string*. Now boys are very fond of strings. They like

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nothing better than long ones of all sizes for all uses; but I do not believe one of you every thought that your body was full of them. I hope none if you will ever try to get them out to fly your kites with; for they are needed where they are, and would not answer the purpose of holding a kite. Taken away from their natural bed they shrivel up and dry away. You see they are not, after all, strings; but they look like them, and when first found were called so. The name sticks to them for these thousands of years, just as your own name does to you. If all the boys get in the habit of calling you Dick, when your name is Harry, the name will stick to you wherever you are known. It you get a good or a bad name it sticks, often longer than you deserve to have it, just as this word nerve, which means string, sticks to these curious organs. We have, however, got so used to it that the word answers just as well as any, and perhaps better. But I have not told you what a nerve is yet, have I? Let me see. Did you ever see a telegraph wire on high poles stretched from city to city? Yes, you all say. Well, the nerves are only telegraph wires, and they perform a similar use. The telegraph wire is used to carry news from one place to another. Your Uncle John, for instance, is a rich banker in London. He has no children to give his money to, but instead gives to his nephews and nieces. Now, suppose on some emergency you need, and must have, five hundred dollars right away. You step into a telegraph office and write:

"Dear Uncle, I need $500 to-morrow.

"Your nephew, Tom."

The telegraph man sends it over the ocean, and in a few hours your uncle sends word back to his banker in New York to give you the money. How quickly it is done! If it were not for the telegraph you would have to send a letter and wait a long time for an answer. Now the nerves of the body carry news to all parts of the body very quickly. Let us see. Let me take hold of one of your hands; I want to prick it with a sharp pin. But why do you draw it away from me so? Are you afraid I will hurt you? Probably you are; but how did your hand know it? Your hand don't know enough to get out of the way of itself. What made it jerk back so quickly? I had hardly got hold of it before you took it out of my reach, as if you had felt the prick. I will tell you. Your brain knew what I was going to do, and telegraphed down to the arm to get out of my way. You see the brain is the great telegraphic office, and it sent the message as soon as it knew what I was going to do, and it sent word along these strings that go from the brain to the arm, to the muscles to get out of the way. The muscles understood it and did as the brain told them. Suppose, however, you had been blindfolded, and I had not told you what I was going to do What then? Why, you would have waited till you were pricked. The nerve in the hand would have telegraphed news of the pain up to the brain, and this organ would have sent back word to the muscles, as before, to getthe arm away, unless you had made up your mind to be pricked when it would have sent word to the arm to hold still as long as the pain was not very severe.

There are forty-two pairs of nerves which start off from the brain and spinal cord. The first nine pairs go from the brain; the others go from the spinal cord, which connects with the brain. They go to every part of the body, to the eye for sight, to the nose for smell, to the ear for hearing, to the tongue for tasting, to the muscles for motion and to the skin for sensation, or feeling. If you cut off or destroy a nerve that goes to a part of the body, then that part cannot do its work. Suppose the nerve of the right arm is destroyed entirely—you could not move it, or feel the prick of a pin. Did you never see such a case? Sometimes a man has his arms or legs paralyzed and cannot move his body. The trouble is not with the muscles, but with the nerves. If the nerve that goes to the eye was paralyzed or destroyed you could not see, and so on. If the brain was injured, or paralyzed, it would injure your power to think. The brain and nerves do very important work—the most important of any part of the body. Without them you would be no better than a tree, or shrub, or flower. These have no nerves. Man has the finest nerves of any living creature. All animals have nerves; but none so perfect as ours. But the nerves would not be worth much if it was not for the blood. Now how does the blood make the nerves go? It supplies them with force. If the blood is poor and thin, the brain becomes weak and the nerves feeble. Were you ever sick; so sick you could not sit up? Well, then, your nerves were weak, and even if the brain had told them to move the arm they could hardly have done it. It is very desirable that we all preserve our nerves and the brain, otherwise we become idiotic. Let the heart stop beating for a moment and you soon lose your consciousness; all becomes dark and blank; you faint away and fall. The nerves, you see, need the blood which the heart sends, and can do nothing without it. The

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best way to preserve the nerves, so they shall be healthy and strong, is to first take plenty of sleep. Don't be out late nights, but go to bed early. Then never strain your brain and nerves by too long hard work. Our great and good Horace Greeley, who has just died, fell a victim to an overworked brain. What a loss we have sustained because of this! Another help to keep the nerves strong is to train and discipline them carefully. If you try to preserve them by doing nothing they will wither away and die. Use them properly, but don't abuse them.

QUESTIONS.

1. What other things does the brain do besides remember, think and judge?
2. What is a nerve?
3. What is the brain sometimes called?
4. Why so called?
5. What does the word nerve mean?
6. Would a nerve answer the purpose of a string?
7. What is a nerve more like than a string?
8. Why like a telegraph?
9. What do the nerves do?
10. Give me a case?
11. What told the hand and arm to move away?
12. Could the arms move without nerves?
13. How many pairs of nerves are there?
14. Where do the first nine pairs go from?
15. The others?
16. Where do the nerves go to after leaving the brain and spinal cord?
17. When a man is paralyzed can he move the parts affected?
18. Why?
19. Have vegetables and trees nerves?
20. What about the care of the nerves?

EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

ENGLISH CHILDREN.

I. Please tell us if English children are better cared for, or more healthfully raised than American children?

ANSWER.—The children of the English aristocracy are cared for more perfectly than any other children on the globe, so far as their bodily nature is concerned. This is due, in a great measure, to the fact that in England intelligent people have studied the subject of rearing their offspring more than other nations. Their libraries are filled with all the best works on physiology and hygiene, and they are not ashamed to read and study them, and apply the knowledge they obtain. A recent article in one of our monthly magazines presents this subject to our view in the following language. The picture may be slightly overdrawn if applied to all, but that it is correct as applied to most children we area ssured by high authority: "The new-born English aristocrat receives, as soon as born, a little bed with a hard mattress. From its earliest age it is taken, warmly wrapped, into the fresh air. After the first year its meals are reduced to three, and this rule is so unchangeable that no child thinks of requiring anything more; and from this time its food is rich milk and bread and butter, and good meat. After breakfast it remains several hours in the open air, and then sleeps. Never are English children intrusted to the care of a young nursery maid; but to an elderly, experienced person, under whose direction they constantly are. As soon as the young girl goes to school the carriage of the head and shoulders becomes an object of attention, and under no circumstances is she permitted to sit otherwise than upright. "My child grows but once," says an English mother, "and therefore nothing is so important as her physical development. Every thing else can be acquired later." An English child rises at seven, breakfasts at eight, dines at one, sups at seven, and at nine o'clock goes to bed. Until twelve years of age they pass the greater part of the day in the open air, with only about four hours' mental work. The young English aristocratic maiden dines first with her parents at eighteen years of age, when she leaves school and makes her *debut* in society. She is fresh and blooming as a rose, with light step, and eyes beaming with pleasure and life. Her frequent laugh displays her beautiful teeth, and her hair is rich and abundant. Here, for the first time, fashionable Violet display the fine fullness of contour. London possesses noble museums, galleries of art, and treasures of architecture, but one of the most charming of its sights may be seen on fine afternoons in Hyde Park—crowds of children merrily playing, earthly angels of incom-

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parable beauty. A sight equally interesting may be witnessed after service on Sunday, at the Foundling Hospital—several hundred children, ranging from five to thirteen years of age, of the most noble physique and absolutely bewildering beauty. Two of the most wonderful sights of Europe are the children of England and the flowers of Paris. Both appear to have descended from paradise, and scarcely to belong to earth. Nowhere else are seen such blooming maidens and children as in England. Of course the life of gay society undermines, to some extent, what the early training has accomplished; but the sensible physical education of the first years leaves permanent effects, and the English woman remains equal to the duties of life and the requirements of wife and mother. If she does not continue perfectly well, she retains enough health to be ever beautiful. One sees in Great Britain ladies of sixty with complexions fairer than those of our youngest maidens, and whose hair, though slightly silvered, is yet abundant and handsome. Just as by the Greeks, every trouble was taken to reach the highest beauty, so too with the English aristocracy. Many artists who have pilgrimaged half over the world, assure us that the daughters of Albion surpass all others in perfection of physique. Even in Europe the women of the best classes are not so healthy as the men, except perhaps in England. Dr. Bock, Professor of Pathological Anatomy at the University of Leipsic, says: 'A healthy man is a rarity; a healthy woman apparently does not exist.' Yet it is possible that women may be, and are, when they have the same training, as strong as men. I take this position boldly. In England, even with the disadvantages of female dress, and where their physical education, though superior to that of any other country, is still inferior to that of the males; the women of the best classes appear to be as strong as the men of the same rank, for we must not compare the women of one class with the men of another. Who doubts this, let him station himself at the fashionable hours in Hyde Park, and see, on horseback or promenading, these incomparable women."

MINGLING WITH STRANGERS.

II. Is it well for invalids to mingle with strangers?

Ans.—Yes, often it is the effect of mingling with new people, who have new methods of thought, is very salutary. Always to see the same people, do the same things, feel the same way, produces a stagnant condition of the mind and heart that is very distressing to behold. There are thousands of invalids who might be greatly benefitted by getting away from home, if only for a short time, to mingle with strangers and be touched with the magnetism of the great world as it courses in its accustomed rounds. And there are mental and moral invalids who need the same change, to get their heart and mind enlarged, and let in a little more of the great light of life. Outside the influences are very valuable to those who at home have been well trained by healthful influences in early youth, so they can avoid the snares and pitfalls into which some so blindly fall.

CAUSE OF MR. GREELEY'S DEATH.

III. Do you think the cause of Mr. Greeley's death was political disappointment?

Ans.—We do not. It was over-work and under-sleep. Mr. Dewitt Talmadge, in a recent sermon, said: "Mr. Greeley, at my own table, ten days before his nomination at Cincinnati, told me that he had not had a sound sleep in fifteen years. I said to him, 'Why do you sit in your room writing, with your hand up at that elevation, on a board raised to that point?' 'Well,' he said, 'I have so much work to do that I must not have my chest cramped at all. I must keep all my faculties of body and mind in full play, or I cannot get on.' During the late war, in connection with his editorial duty, almost every evening you might have seen him on the rail-car going out to meet a lecturing engagement. He was writing articles for other journals beside his own. He was preparing a history of the war, which history might have taken the exclusive time of any other man for two or three years. And now people say it is political disappointment that killed him. I do not believe it, unless it is on the principle that it is the last straw that breaks the camel's back. A man with his magnificent cerebral development would not have been overthrown in that way; it was because for twenty years he had been giving the deathblow with his own pen—extreme work—work which he did conscientiously, but it was over-work. Work is good, as I said in the former head of my discourse, but too much work is death."

HOW TO SLEEP.

IV. Please give a rule for getting sleep for weakly, nervous people?

Ans.—With many the inability to sleep, as a growing habit, is the first step toward certain madness; in every disease it is an omen of ill. Hence, to cultivate sound sleep, do not sleep a moment in the day time. Go to bed at

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a regular hour, and never take a "second nap" after waking of yourself in the morning. Take nothing after dinner but a piece of bread and butter and one cup of hot drink—not China tea, as it makes many wakeful. Never go to bed with cold feet. Read nothing after supper, listen to nothing, talk about nothing of a very exciting character; avoid carefully every domestic unpleasantness, as to child, servant, husband or wife. Let no angry word be spoken or thought harbored for a single instant after tea time; or sleep may not come before the morning light. Grown persons generally require about seven hours sleep in summer, and eight in winter. Few indeed, except invalids, will fail to sleep well who go to bed at a regular early hour on a light supper, in a large room, and clean, comfortable bed, if there is no sleeping in the day time, and not more than seven hours in any twenty-four are passed in bed. One week's faithful trial will prove this. Children, and all persons at school, should take all the sleep they can get, and should never be waked up in the morning after having gone to bed at a regular early hour. Every humane parent will make it a religious duty to arrange that every child shall go to bed in an affectionate, loving and glad spirit. If wakeful during the night get up, draw on the stockings, throw off the bed cover to air it, walk the floor in your night gown, with the mouth closed, all the while rubbing the skin briskly with both hands, until cooled off and a little tired. Except from August first to October first, in fever and ague localities, a chamber window should be open two or three inches in length.

CORSETS.

V. Who invented corsets?

Ans.—There is a strange and curious story extant that they were first invented by a brutal butcher of the thirteenth century, as a punishment for his wife. She was very loquacious, and finding nothing that would cure her, he put a pair of stays on her in order to take away her breath, and thus prevent, as he thought, her talking. This cruel punishment was inflicted by other husbands, till at last there was scarcely a wife in all London who was not condemned to wear stays. The punishment became so universal at last that the ladies, in their own defence, made a fashion of it, and so it has continued to the present day. We do not vouch for the truth of this story, but it seems possible, if not probable.

INVALID SLIPPERS.

VI. Please give me directions for making soft, warm slippers for invalids?

Ans.—Cut a pattern of the right size in paper, and then cut the slipper of gray jean, lined with red flannel; make the soles of plaited straw, lined and wadded with flannel, and embroider the upper with stars in scarlet and wool. A corded gimp border is put across the instep. This border is made of four strings of red cord, plaited together, two of the cords forming the foundation over which the other two are plaited. All four cords are twisted into a knot in front of the slipper, and a scarlet cord finishes the edge of the sole.

BEST EDUCATION.

VII. What is the best education for a useful life?

Ans.—The best provision that can be made for one's family is a thorough education for each one. We mean education in its broadest sense, embracing the entire preparation for a useful life, and for self-maintenance. This is better for every son and daughter than even the fortune of an Astor would be.

SUN BATHS.

VIII. Do physicians ever prescribe sun-baths?

Ans.—Rarely, except a class called hygiene physicians, because they prescribe only such remedies as are supposed to be healthful. There are few persons, and physicians among the number, who have been honest enough to prescribe sunlight as a remedial agent; but it is evident that were all ailments cured by such simple and cheap remedies as sunlight, air, water, exercise and diet, there would be no need of drug-stores or physicians; they would be blotted out of existence, and the followers of those professions would be called to new fields to obtain a livelihood.

We hope, as the world progresses, that physicians will become enlightened and honest enough to prescribe for the promotion of health and the prevention of disease, these simple but efficacious remedies which Nature mixes and offers with her own hand, free of charge to all who will partake thereof; and which remedies only require the sanction and recommendation of physicians to have them substituted for the nauseous, constitution-breaking and life-destroying drugs that are constantly being consumed by invalids, through ignorance of their nature and effect upon the system.

TRAINING FOR GIRLS.

IX. Do girls require the same sort of education as boys?

Ans.—In some respects, yes; in others, no. What girls need is a thorough training for a

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life that is real and earnest. Not trained in the same way, nor to do the same things as boys, but trained as thoroughly for the duties and cares, the pleasures and sorrows of the world. And training means the development of the faculties, the sentiments, the body and soul, in practical and effective ways. Training is initiation. It is teaching by practice and example. It is preparing for a work by doing the work. It is acquiring strength by exercising the strength already acquired. It looks at use. It aims at skill. It means accomplishments, self-support, independence, power. Give our girls this thorough, practical training in the great art of living, and we shall hear no more of woman's weakness and incapacity. It is not bringing up, but training up, that our daughters need, and with this training the new womanhood will shortly come.

HONEY.

X. Is honey wholesome?

Ans.—Yes, used in moderation it is. Very old honey, however, should be eschewed. A German teacher has lately written a work on the subject of honey and its healing properties. While he may over-estimate its value, what he says is interesting. We quote: "A strong influence for publishing this book was the fact that I, a sufferer from hemorrhages, already given up to despair, and at the verge of the grave, was saved by the wonderful curative powers of honey; and now, thank God, I am freed, not only from weakness of my lungs, but rejoice in the possession of perfect health.

"At my first attack, upwards of thirty years ago, powders and tea were ordered for me, which benefitted me but little. I then placed little confidence in honey, which I used occasionally, and in small quantities. Judging from my present knowledge, I believe that the honey was the only remedy that was doing me any good, and it is this that I have to thank for the gradual, the sure restoration of my health.

"As my disease increased I began to use cod liver oil, which weakened and injured my stomach, so that I could hardly digest anything more, and my condition became worse and worse. Again I returned to honey, when my suffering immediately began to decrease and disappear. Besides the use of honey, I took pains to preserve my breast and lungs from injury which, in my trying situation as public teacher, was almost impossible. My disease being caused by my constant teaching during so many years, I gave up my profession, and honey was my only medicine, whereby I, by the simplest, safest, quickest and pleasantest manner (for I was fond of honey), relieved the disease in my throat; and out of thankfulness I now write this book for the use and benefit of many, especially for the use of those suffering from diseases of the throat and lungs."

BRAIN FOOD.

XI. Does the man who labors with his brain require the same kinds of food as he who labors with his body?

Ans.—Dr. J. M. Winn, an eminent English physician, says: "If we keep in view the difference between the structure of the nervous and muscular tissues, it becomes evident that a somewhat different kind of diet is required for the nutrition of the former from that of the latter. In order to develop and support the muscular organization, a large proportion of animal food is requisite; not so when the object is to supply the waste of the more delicate and subtle tissue of the nervous system. Fatty matter and phosphorus enter largely into the composition of the brain. It has been estimated that the former (brain wax, or brain fat, as it has been called), amounts to about one-third, and the latter (phosphorous) to one-twentieth or one-thirtieth of its solid substance. It is now generally believed that exertion of the will and reasoning powers cause an expenditure of the brain material, and a corresponding exhaustion of the nervous force. However, it must not be forgotten that prolonged bodily exercise exhausts the nervous force, as muscular contractions are commonly brought into action by nervous influence, hence the importance of a student avoiding excessive bodily efforts, which expend that nervous energy so essential for brain work.

"He should take gentle exercise for at least two hours daily in the open air, and his diet should be light, simple, and nutritious. Large quantities of animal food and malt liquor conduce rather to somnolency than to mental activity. There is a common saying that 'fish feeds the brain,' which may depend on the phosphorus it contains. Certainly there can be no doubt that some sorts of fish, such as soles, whiting, plaice, etc., are peculiarly suitable to a weak digestion. I may incidentally observe that I have found a fish diet especially serviceable for those predisposed to phthisis. A certain amount of rest and sleep, as well as a due supply of healthy blood, are absolutely necessary to maintain the brain in a working condition. Above all, the amount of mental work must be in proportion to the physical strength.

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I knew an instance of a gentleman who attempted to read ten hours a day, and whilst doing so his competitors got ahead of him; he then wisely reduced his time of work to eight hours. He then recovered his lost ground, and came out a wrangler. There are men of iron constitution who can afford to laugh at these precautions, and who can excel both in mental and bodily exercises. A friend of mine who went in for a public examination surpassed most of his contemporaries, who were his equals in mental capacity, by sheer power of physical endurance."

MUSHROOMS.

XII. How can one distinguish the edible from the poisonous mushroom?

Ans.—First and foremost, the true mushroom —*agaricus campestris*—is invariably found among grass, in rich open pastures, and never in or about stumps or in woods.

Many cases of poisoning have occurred, owing to the supposed mushrooms being gathered from stumps and in woods. It is true, there is a certain variety found in woods and woody places, but as far as amateurs are concerned, it is best left alone. A second very good point is the peculiar intense purple-brown color of the spores—which are analagous to seeds—the ripe and fully matured mushroom derives the intense purple-brown color—almost black—of its gills from the innumerable presence of these spores. To see these spores, and to become acquainted with the peculiar color, remove the stem from a mushroom and lay the upper portion, with the gills lowermost, on a sheet of writing paper; in a few hours the spores will be deposited in a thick, dark, impalpable powder. Several dangerous species, at times mistaken for this mushroom, have these spores umber-brown, or pale umber-brown in color, and belong to *phaliota* or *nebeloma*. There are innumerable varieties of the true mushroom, and of the horse mushroom, but all are equally good for the table. Sometimes the top is white and soft, like kid leather; at other times it is dark-brown and scaly. Sometimes, on being cut or broken, the mushroom changes color to yellow, or even bright red; at other times no other change whatever takes place. But observe, the mushroom always grows in pastures, always has dark purple-brown spores, always has a perfect encircling clothy color, and always gills which do not touch the stem, and a top with an overlapping edge.

LAWS OF HEALTH.

XIII. Is there any remedy for preventing the evils of ill health?

Ans.—Dr. Cobb says: "Nothing short of a thorough knowledge and strict obedience to the laws of health will ever save the human family from the vast amount of suffering from sickness and disease." This we offer as the only remedy to save the great number of children that die teething, as well as an equal number that die of other diseases before five years old. The medical profession, in its various departments, have undoubtedly power to be the greatest benefactors known to man; yet with all its science, skill and ability, it has failed to take half the children born, to middle age, and we dare say will continue to fail until children are early instructed into the laws of health. In addition to such lessons as may be taught in school books, which should be extensive but simple, we would advise every family not only to take, but read, and make every child read regularly some good health journal.

FLOATING HOSPITALS.

XIV. Why could not hospitals be made to float on the water and travel from place to place?

Ans.—They could. A German medical paper says: "To our numerous land hospitals, low down on the sea coast and high up in the mountains, is to be added now a new institution with very many advantages, but with the single disadvantage of being only for the benefit of the rich. Dr. V. Wallendorf establishes a hospital for chest diseases this winter on a screw propeller, which is to journey out late in the fall from Cuxhaven beyond Gibraltar and along the coast to Malta, if the weather is fair; and to return again in the beginning of April. The vessel is to be specially prepared for its purpose, is to have a competent physician on board, and the patients are to be allowed to make land sorties as long as possible, in several stations in mild climate."

DANGEROUS DISEASES

XV. Do you think a person should run from dangerous diseases, such as scarlet fever, small pox, etc.?

Ans.—If duty calls one to expose himself he should not flinch from it, but needless exposure is a crime. The London Times once quoted an eminent physician as saying that "a child affected with scarlatina is as dangerous as a rattlesnake, or a tiger escaped from a menagerie.

We avoid mad dogs, gunpowder bags, robbers, and other dangerous creatures. Mahomet told his followers to run from persons with elephantiasis—a serious skin disease—as from a tiger. The traveler, Burckhardt, re-

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lates a touching Arabian story, as follows: "In the last century a Bedouin, returning from the Hadji, was joined beyond the gates of Mecca by a traveler going the same way as himself. They reached this spot—*i. e.*, where the tomb stands—in company, when one of them felt so ill that he was unable to proceed farther, and on the following day the small pox broke out on his body. In this situation his companion would not abandon him. He built two huts with boughs of acacia trees—one for his friend, the other for himself—and continued to nurse him and solicit alms for his benefit from passing travelers, until he recovered. But, in turn, he himself became ill of the disease, and was nursed by his convalescent companion with equal kindness, though not with equal success, for he died, and was interred by his friend on the spot; where his tomb serves as a monument of Bedouin generosity, and inculcates benevolence even towards the casual companions of the road."

SKIN DISEASES.

XVI. Why is it that skin diseases differ so much in their character—why are they not all alike?

Ans.—When you plant corn in a field why does corn grow? Because like produces like. When the germs of scarlet fever are sown you expect that disease and not a ringworm, and *vice versa*. It is supposed that all contagious diseases are but crops produced from seeds, that go from person to person, and are propagated in the blood. This theory is the most recent one in science, and most easily explains the phenomena of contagious diseases. It is, however, vastly different from the theories of disease held by the savage and barbarous tribes. Take for instance the belief of the Buddhist theory. When a man is sick, according to their religion, it is a *Tchutgour*, or devil, who torments the sick man by his presence. And the first thing to be done is the expulsion of this devil, which they do mainly by incantation and prayer; always providing a horse or other animal for the devil to ride away upon.

HIRING PHYSICIANS.

XVII. Do you think it possible for people to adopt a method of hiring physicians to keep them well, instead of attending them when sick?

Ans.—Yes. Such a plan is perfectly feasible. All that is wanting is the will to carry it out. We employ architects to plan our houses before they are built, rather than to criticise them afterwards. We employ teachers to teach our children. Why not employ physicians to teach us how to avoid disease? The Anti-Vaccinator, one of the most lively and earnest of our exchanges, says: "The simplest form in which this great problem can be met and made to assume a business shape is this, we must insist upon the faculty standing upon their own merits; they must be freed from the trammels of State protection and State pay. And, secondly, the basis of their charges must be shifted from the principle of being paid for curing disease, to that of being paid for preserving health. A scale of charges must be jointly agreed upon for attendance upon individuals and families, and for the necessary advice as to the preservation of the lives of both, not only in sickness, but also in health. 'Prevention is better than cure.' If the plan here recommended were adopted the physician would find, for the first time, his true place for usefulness, and the gain to the community would be infinite, both in health, wealth and happiness. His periodical visits would be hailed with joy in every household, and the public would not defer sending for him until the patient's ailment really threatened the life, as is often the case. Instead, therefore, of having thirty thousand medical men who live upon disease, we should see them transformed into so many officers of health And men would not think as they do now, and with too great show of reason, that the cure of disease under any system is not only protracted, but costly and pernicious."

HARMLESS STYPTIC.

XIX. Is there any simple, harmless styptic, that can be prepared by any one and used as occasion requires.

Ans.—Yes. Sheets of household paper, of moderate thickness, are steeped in a solution of tannin, of such strength that each sheet is impregnated with two grains, and then dried in the air. It is most useful in cases of external hemorrhoids, used as closet paper, a portion being placed in the cleft of the anus after each use; also in excoriations around the anus caused by the acid discharge of diarrhea in children. They form a ready styptic for stopping the bleeding from cuts, and in superficial excoriations from blows or falls. Many other modes of application may occur to our readers.

It is stated that the most marked feature of the book trade at the present time is the large and increasing demand for scientific periodicals. This accounts for the great popularity of The Herald of Health.

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

"MY DOCTRINES MAKE NO WAY."

[The Master said: "My doctrines make no way. I will get a raft and float about upon the sea."—*Confucian Classics.*]

Evermore brave feet in all the ages,
Climb the hills that front the coming day;
Evermore they cry—these seers and sages—
From their heights: "Our doctrines *make no way.*

"All too high we stand above the nations,
Sending forth our trumpet-calls sublime,
Shouting downward our interpretations
Of each newer mystery born of time.

"Lo, from chilly mountain-tops descending
To the level of life's human tide,
Hands enclasped, and warm hearts interblending,
We will float upon its ocean wide."

Stay not alway on your heights, O Teacher!
Earthward bear the starry truths you hold;
For the man pleads better than the Preacher,
Words without the breath are very cold.

Helen Barron Bostwick.

HEAVEN IS WITHIN.

How far from here to heaven?
Not very far, my friend;
A single hearty step
Will all thy journey end.

Hold, there! where runnest thou?
No, heaven is *in* thee!
Seek'st thou for God elsewhere?
His face thou'lt never see.

Go out—God will go in;
Die thou, and let him live.
Be not, and he will be;
Wait, and he'll all things give.

I don't believe in death
If hour by hour I die,
'Tis hour by hour I gain
A better life thereby.

Angelus Silesius, A. D.1620.

LOVE.

Ill-will of doubt is born,
Our love is born of trust.
We hate because we will,
We love because we must.

George Houghton.

RECONCILIATION.

Ask me not to speak,
Words are but a mask;
Only read my eyes,
That is all I ask.

Let us not look back,
Let us not explain;
The past is still the past,
All regret is vain.

We are sorry both;
Let us bury all,
And upon the ruin
Build a stronger wall.

George Houghton.

DEEDS, NOT WORDS.

Prune thou thy words, the thoughts control
That o'er thee swell and throng;
They will condense within thy soul,
And change to purpose strong.

But he who lets his feelings run
In soft, luxurious flow,
Shrinks when hard service must be done,
And faints at every woe.

Faith's meanest deed more favor bears,
Where hearts and wills are weighed,
Than brightest transports, choicest prayers,
That bloom their hour, and fade.

WHAT IS LIFE?

What is life?—a fleeting shadow,
Transient as a summer shower,
Sweeping over hill and meadow,
Mountain crag and shady bower.

What is life?—a stormy ocean,
Where frail human craft are cast,
From the cradle to the coffin,
To be ever tempest-tossed.

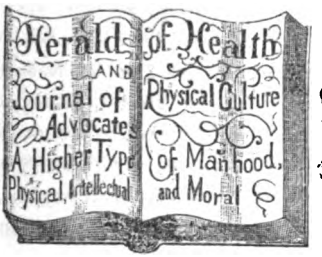
What is life?—a vale of sorrow,
Filled with trials, toil and tears;
Where we stumble, plod and wallow,
As we journey through the years.

What is life?—a mystic pageant;
Why or wherefore—who can tell?
God alone can comprehend it—
He who orders all things well.

William J. Larmer.

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EDITORIAL DEPARTMENT.



NEW YORK, FEBRUARY, 1873.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

☞ THE PUBLISHERS *do not hold themselves as indorsing every article which may appear in* THE HERALD. *They will allow the largest liberty of expression, believing that by so doing this magazine will prove to be more useful and acceptable to its patrons.*

☞ *Exchanges are at liberty to copy from this magazine by giving due credit to* THE HERALD OF HEALTH AND JOURNAL OF PHYSICAL CULTURE.

TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

CHARACTER.—The roots of success and flower of all high achievement grow out of the hard pan of character. 'Tis not the machinery of the mind—for no account of the separate faculties can define it; but the power which puts the whole person in action. It shapes thought and determines tendency; and presides over the more trivial, as well as the most magnificent performance. You can see it no more directly than you can the summer lightning; but it is perceived in the flash, the reverberation, and final blow.

Durable eminence of any sort is the result of this force. There is a fame, to be sure, which comes to the eye, apparently, by accident; but it perishes by the same easy event. The strength of purpose which makes stepping-stones of obstacles—braving all things and fearing nothing—or which sits patiently down to evolve results, has its support in no single faculty, but in the essential substance of the soul itself. It is neither intellect nor temperament alone that tells finally, but this something which lies behind them—the sum, indeed, of many faculties—but which works steadily to a given end, is not to be tripped up or disconcerted, and is seen merely in its results.

The Greek syllables which we have naturalized to express this moral force, by a frequent elicity of that tongue, suggest in a measure its meaning, by the sound. They give a hint of hardness, as of something irresistible. When we speak the word with a mental reference to its sense we think of granite rather than liquid; of something which upholds rather than of that which dissipates or gives way.

Wolf before the heights of Quebec sees not the intervening cliffs, but is fired by the victory beyond. Napoleon glances at the Alps, and they are no longer walls of impediment, defiant and frowning, but a beckoning highway. Alexander makes the Granicus a mere hurdle, takes no account of the preponderant hordes against him, but pours his enthusiasm in the channel which sweeps away Persia and the Persian throne. All heroes are made of the same stuff, and in this manner the lives of history are rounded. The Dariuses fail, the Alexanders win.

Circumstances, of course, modify; but it is the tendency of character to wipe them out of the problem, or to bend them to its solution. To begin life with wealth, or assured position, is to give enormous advantage in the race; but we see these melt daily from the hands too weak to hold them, and fly to the power which commands whatsoever it asks. The prizes of life wait always for those who can win them,

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and never go by mistake. And as Daniel Webster said to the young legal aspirant: "There is always room higher up."

We must not confound character, however, with momentary success. Men win sometimes, it is admitted, because every wind and tide push in the direction they have chanced to sail; and we falsely attribute to their power what was merely their good fortune. On the other hand, a brave spirit is sometimes baffled by impediments that no eye perceives; but these things do not affect character so much as they suggest the errors which creep into our current estimates of it. No doubt, too, there are heroes lost to our vision for want of suitable opportunities to advertise them.

"Perhaps in this neglected spot is laid,
Some heart once pregnant with celestial fire,
Hands that the rod of empire might have swayed,
Or waked to ecstacy the living lyre.

"Some village Hampden, that with dauntless breast,
The little tyrant of his fields withstood;
Some mute, inglorious Milton here may rest;
Some Cromwell, guiltless of his country's blood."

Had it not been for the late Rebellion our President would, perhaps, be plying his humble vocation; and Mr. Lincoln might still be practicing law at Springfield. The power would have existed all the same, but would not have been so published. Yet, when these men arrived, the bursting levee of public order was restored, and the Republic refounded.

If character is the predominant moral force it is no less subtle than active. Until adversity comes in grim earnest you do not always find it out. You took your neighbor to be the very soul of honor, a pattern for all men; but an hour of distress, coupled with sharp temptation, swayed him into baseness and sin. You thought he had built his house upon a rock; but when the storm beat and the winds blew, its timbers went to pieces in the sand. 'Tis certain, however, that this is the self-same man. He has not suddenly changed. On the contrary, the weak fibres, of which you did not know, were in his composition from the very first. Only, until this accident came, the crucial test had been wanting.

We have no recipe to express its ingredients, no arithmetic to number the necessary factors; for character eludes all specific statement. We merely know it exists. We note its daring purpose and easy achievement, the sure path which it either finds or makes; but there is no moral crucible by which we can take it in solution. Honor, wealth and power are its pawns, and like the invisible angel at the chess-board, it makes its gambit on the line of victory, and moves with the sure, but relentless step of Fate.

JOEL BENTON.

FRANKLIN'S WHISTLE.—*To the Editor.*—"As your journal professes to aid the people in things relating to the improvement of the mind as well as the body, I ask you to aid me in teaching my son the way to economy, rather than to spend money for what is of little worth?"

ANSWER.—This is the discipline of life, and cannot be taught in a day. It is said that necessity is the mother of invention, and so, sometimes, necessity makes people economical. Perhaps you give your boy too much spending money. Can you not instill the principles of economy and industry into his mind, as the teacher does the multiplication table? Above all, teach him the true value of things. This is a difficult point. Children estimate values differently from grown people. Even the great Ben Franklin, when seven years old, did this. Did you ever read from his own pen the story of the whistle? Let me here repeat it, and also advise you to read it to your boy sometime, when you are spending a happy hour in his company. Franklin says: "When I was a child of seven years old my friends, on a holiday, filled my pockets with coppers, I went directly to a shop where they sold toys for children, and being charmed with the sound of a whistle that I met by the way in the hands of another boy, I voluntarily offered him all my money for it. I then came home, and

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went whistling all over the house, but disturbing all the family. My brothers and sisters and cousins, understanding the bargain I had made, told me I had given four times as much for it as it was worth. This put me in mind of what good things I might have bought with the rest of the money. And they laughed at me so much for my folly that I cried with vexation, and the reflection gave me more chagrin than the whistle gave me pleasure.

"This, however, was afterwards of use to me, the impression continuing on my mind; so that often, when I was tempted to buy some unnecessary thing, I said to myself, 'Don't give too much for the whistle.'

"As I grew up, came into the world, and observed the actions of men, I thought I met with many, very many, who gave too much for the whistle.' When I saw any one too ambitious to court favors, sacrificing his time in attendance on levees, his repose, his liberty, his virtue, and perhaps his friends, to attain it, I have said to myself, 'This man gives too much for his whistle. When I saw another fond of popularity, constantly employing himself in political battles, neglecting his own affairs, and ruining them by that neglect, 'He pays, indeed,' says I, 'too much for his whistle.'

"If I knew a man who gave up every kind of comfortable living, all the pleasures of doing good to others, all the esteem of his fellow men and the joys of benevolent friendship, for the sake of accumulating wealth; 'poor man,' says I, 'you pay too much for your whistle.' When I meet a man of pleasure sacrificing every laudable improvement of the mind, or his fortune, to mere corporeal sensations, and ruining his health in their pursuit—'mistaken man,' says I, 'you are providing pain for yourself, instead of pleasure; you give too much for your whistle.'

"If I see one fond of appearance, of fine clothes, fine houses, fine furniture, fine equipages, all above his fortune, for which he contracts debts, and ends his career in a prison—'alas,' says I, 'he has paid dear, very dear, for his whistle.'

"When I see a beautiful, sweet-tempered girl married to an ill brute of a husband—'what a pity it is,' says I, 'that she paid so much for a whistle.' In short, I conceived that a great part of the miseries of mankind were brought upon them *by the false estimates they had made* of the value of things, and by their giving too much for their whistles. Yet I ought to have charity for these unhappy people, when I consider that, with all this wisdom, of which I am boasting, there are certain things in the world so tempting—for example, the apples of King John—which, happily, are not to be bought, for if they were put up for sale at auction I might very easily be led to ruin myself in the purchase, and find that I had once more given too much for the whistle."

PASSY, Nov. 10, 1779. B. FRANKLIN.

In conclusion, we may add, that while Franklin has been criticised by great men as teaching a penurious, stingy doctrine, it would be well for us if his works were more studied than they are. It is not wise to live for wealth alone, but it is well to cultivate, along with the head and the heart, a reasonable amount of what is known as thrift; not only as a means of comfort, but as a means of health.

THE HORSE PLAGUE — ITS LESSONS.— We have had sweep over the country within the last few months a new disease, called, perhaps, as properly as anything at present, the horse plague. It is not our purpose to go into any discussion of its character. No one has yet caught the peculiar poison that causes it. We can only explain it in a general way. Probably the disease is spread by germs that float in the air and find a peculiar nidus in our horse stables, when they do the mischief. Whether the disease can be entirely avoided or not, is questionable; but this is certain, that horses as kept in stables are not always in the most healthful condition. The air there is nearly always bad, and the unclean condition of the stables, in most instances, enough to produce a plague, without anything else. If horses could talk they would, no doubt, order a great

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change in their homes. They would order windows for light and ventilation, plenty of water to drink, now and then a bath, daily cleaning, the best of food, and kindly care. Why can we not give it to them without their asking?

Books on our Shelf.—We have for notice this month a few really valuable works. The first one is entitled, "What to Do, and Why? and how to Educate each Man for his Work." It describes some seventy-five trades and professions, and tells what are the talents and temperaments required for each. We have read through its 400 pages with some care, and have no hesitation in saying that the book must prove most useful to young men and women who are at that age when they are about to decide the pursuit they are to follow for life. This is a momentous period, and every person should choose as wisely and well as he can, if he would lead an honorable, useful and successful life. We wish that parents who have children to educate might have a copy in their library, for study and reference. It will help them amazingly, if they take advantage of its wisdom; and it may save some of their children from making a failure of their lives. The author is Mr. Nelson Sizer, a practical, self-educated man, who knows the needs of the young most thoroughly, and has spent many years of his life in their interests. Mason, Baker & Pratt are the publishers.

Next comes to us, fresh from the press of J. B. Ford & Co., those admirable lectures to young men, written by Rev. Henry Ward Beecher, some thirty years ago. They have already had a sale of some 70,000 copies. In their present form Mr. Beecher has added several new lectures, one on profane swearing, one on vulgarity, and one on happiness. We are glad Messrs. Ford & Co. have republished them, and have no doubt they will do good service to thousands of young men who may read them.

Of a different character, but not less interesting or instructive, is the story entitled, "The Mantle of Elijah," by George Lee. Mr. Lee has not attempted a plot so deep and dark that one feels tempted to look ahead to see how the story ends, but a simple, natural story, every word of which might be a correct narrative of life; and he has executed it in a fresh, lively, racy style that is highly commendable. If this young writer keeps on in the way he has begun, as we believe he will, he will eclipse many of the most popular writers of the day. It is published by A. Martien, of Philadelphia.

Still another book of rare merit is Robert Collyer's "Life that Now Is," handsomely printed, by Lee & Shepard, of Boston. It contains sixteen sermons by this preacher, on various topics of every day interest, intended to help people to live more manly and womanly lives while on this earth, and to fit them for the life that is to come; which is pretty fully discussed in another little book just sent us by Claxton, Remsen & Haffilfinger, of Philadelphia. The correct title is, "The Future Life," and it was written by B. F. Barrett. This author takes the writings of Swedenborg as his teachers on this subject, and gives us, in plain language, the doctrines of this great seer who is, as time goes on, becoming better understood and appreciated. He, our readers must understand, claimed for many years to have lived in direct and almost constant intercourse with spirits and angels, as we do with our friends and neighbors; and in his works, tells us what he saw and heard. While it is hard to believe all, yet there is much of rare merit in this work; and it may serve, in this age of doubt, to cheer and help many persons, and can do no harm.

Paper Caps. — Every man who works in the house at any trade and needs a cap on the head to protect the hair from dirt, should wear a paper cap, instead of a cloth hat or cap. The latter so heats the head as to injure the scalp, and, in multitudes of cases, causes baldness. The Scientific American says that a very large percentage of the operatives in factories are bald-headed. A paper cap protects the head, and is cool and light.

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POISONING THE SICK. — By some novel process of reasoning, or rather for want of correct reasoning, the practice of poisoning the sick was brought into repute by the learned of ancient times; and is still, to a great extent, perpetuated. It is a great mystery to-day, and will be regarded more so by future generations, how eminent men have for centuries employed their time and talents learning how to administer poisons. Experience should have demonstrated this fatal mistake so forcibly that no person of candid mind, with powers of deep research, ought to have grown gray in the administration of deadly drugs.

Strange philosophy! to shudder at the thought of taking poison when in health, and yet swallow them with impunity when sick, under the false impression that being ordered by a physician renders them harmless. How vain to ask God to save life, and at the same time plunge a dagger to the heart; but not more hopeless than the anguish of the mother who prays for the life of her darling child, and yet puts to its lips the poisoned draught.

A sad, but oft repeated picture, is the pale, earnest face of the physician and the agony of loving friends, gathered round the sick bed, where only a slight attack, aggravated by dangerous remedies, becomes incurable malady.

Medicine should be to the sick what a staff is to the lame. Take notice of the effects of those stupefying anodynes which paralyze the senses, and prevent nature's remedial effort.

Pain is a note of alarm, giving warning that the machinery is out of order, or obstructed, and the first care should be to remove the cause of the disturbance, instead of regarding pain as a monster, to be poisoned or stifled at all hazards.

In dangerous sickness the vital forces are engaged in a desperate combat with bad conditions; and should the patient be weakened by poisonous medication, and lack that valuable reservoir, a constitution sufficient both to overcome the disease and expel the ruthless invader, nature must yield and death claims the victim; while aching hearts endeavor to find consolation in calling their bereavement a dispensation of Providence.

How long will the wise act unwisely? How long will the studious and thoughtful practice as though they thought not, and the churchyards be filled with untimely graves. S. L. N.

PRESERVING THE LUNGS. — Cotton is much better as a dust-catcher than sponge, being much finer. Professor Tyndall has recently made experiments in purifying air by passing it through tubes filled with cotton, and succeeded in making air so dustless that the microscope, aided by the strongest sunlight, could not detect the least dust particle in it. In order to use this material as a preserver of the lungs, it would be best to provide the apparatus to be placed before the mouth with two valves, so as to give the expired air another channel of exit, without passing it through the cotton.

THINKING WHEN SICK. — On a recent occasion, when the Rev. Mr. Spurgeon arose in his pulpit to speak, he apologized at the outset on the ground of being unwell, adding, "One cannot think very clearly with a cold in the head." There is a world of truth in these words. When the body is sick the mind is weak, and the thoughts are not clear or vigorous. It is useless to know this truth unless we apply it, and avoid colds and illness wherever it is possible to do so, as it generally is.

WHO SPEAKS FIRST?—A lady physician, who has had nearly fifteen years experience in several of the largest and best health institutions in this country, and understands the use of electricity, water cure, movement cure, etc. etc., and can furnish the best of references, is desirous of locating in some large town, where such a physician is needed, and where there are sympathetic and reformatory people. Her name and address and references may be obtained of the editor of THE HERALD OF HEALTH.

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DIRECTIONS FOR TAKING A SITZ BATH.—Our friend, Dr. Carrie E. Youngs, sends the following directions for taking a sitz bath. This is one of the most useful forms of bathing, especially for women; and every home should be supplied with a tub for taking it. The same tub may be used for giving a bath to children. The sitz is particularly adapted to tired, nervous people, to those who are not good sleepers, and to many forms of disease. Here are the directions:

"It is, no doubt, better to remove all the clothing, except of the feet, and possibly the under garments, which can be securely pinned over the shoulder; for otherwise the clothing is pretty sure to get wet, unless an attendant is constantly at hand. The tub should be set near the wall for a support to shoulder and head. After being seated in the tub, with the feet, of course, out, wrap a blanket well around you, pinning it securely, so as to exclude all air. A water-proof mantle answers admirably instead of a blanket. Pin up the arm holes, and it can be put on at once, on removing the clothing, and then in sitting down can be drawn around outside of the tub, and envelop you completely. Never take a sitz bath—or any other—in a cold room. Before commencing the bath, set a chair beside the tub, with a bowl of water and a cloth for the head, and a tumbler of water to drink. Have a towel at hand, and *in* hand, as you rise from the bath, so as to wipe off the water as it trickles down the limbs, and thus prevent the wetting of the stockings. Have a timepiece where you can see it, or some one within call to tell you when your time is up. Have a book or paper in the chair to read, if you like, and are not too tired. If your feet are in the least cold, or inclined to be, have a hot foot-stone for them; or if you have some one to wait on you, take a hot foot-bath. In this latter case, step from the foot-bath to the sitz bath, on getting up, and back and forth, two or three times, so as to get the tonic effect of the cold water to the feet. Take all these before-hand precautions, and then sit back and get the good and refreshment of the bath; and you will certainly find that it is worth, many times over, all the trouble you have taken. At the afternoon dressing, or at bedtime, is the most convenient for this bath. If at bedtime, allow ample time for the bath, and to get to bed seasonably. Don't empty your bath tub. Let it stand for some one else better able to empty it than you are. *Ordinarily*, one sitz bath a day is sufficient, and four or five a week are excellent. Too much care cannot be taken in all these little things, so as to get the real *comfort* and great benefit of this best of baths for ladies."

HYGIENIC BREAKFAST CAKES.—One pint of fresh oatmeal, one quart water, let stand over night. In the morning add one teaspoonful of fine salt, one tablespoonful of sugar, and the same of baking powder, one pint of fine, or Graham, flour. If the above proportions make a batter too stiff for griddle cakes, add more water. If gems are preferred instead of cakes, the addition of a little more flour is all that is required to produce an extra article, superior in all respects to the Graham gems. S. L. N.

A GOOD JOKE.—A well known wholesale wine dealer in New York, who also secretly manufactures Champagne, did not want to dispense this on the occasion of the marriage of his daughter, but in order to obtain a genuine, first class article, ordered it from an importer of good reputation in Boston. It arrived, and looked, in regard to labels, as a foreign article; but when the company were enjoying the Champagne, he accidentally looked at one of the corks and found there his own private mark. He had been drinking his own wine, for which he had paid five times his own price. It had passed through several hands, labels changed, etc.

OATMEAL BREAD.—One quart fresh oatmeal, two quarts of water, let stand half a day, or over night. When ready to bake, add one quart of fine, or Graham, flour, half a cup of

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sugar, one tablespoonful fine salt, two tablespoonfuls of baking powder; mix with a spoon. No kneading is required. If too stiff, add water. S. L. N.

FREE SCHOOLS. — Our system of free education is now, probably, as efficient as any in the world. Abundant opportunity is afforded to all who desire to obtain knowledge, and those who remain ignorant have only themselves to blame. Even the higher studies, not taught at common schools, and which have heretofore been the privilege of the chosen few, are now attainable by any one possessing sufficient determination and stability of character to take advantage of the opportunities offered.

Our colleges everywhere throughout the country hold out inducements that come within the reach of all; at least all who are imbued with the proper desire for such instruction, and and who are willing to undergo some slight privations for its attainment. Our city is especially fortunate in possessing the Cooper Union Free Night School of Science and Art, where a course of instruction is provided almost equal to that of any of our colleges. In the department of science the studies pursued are, Algebra, Geometry (plane, solid, descriptive and analytical), Trigonometry, Differential and Integral Calculus, Mechanics, Natural Philosophy, Astronomy, Elementary Chemistry, and Chemistry applied to the Arts. In the art department the studies are, Mechanical and Architectural Drawing; Drawing from Copy, Cast and Life; Perspective Drawing and Modeling in Clay. The regular course in each department requires five terms for its completion, and to those who have successfully completed it, the medal of the Cooper Union is awarded. The term commences on the 1st of October and ends on the 15th of April; and there are accommodations for 2,260 students. All this is absolutely *free*, there being no charge whatever for instruction, and the students are provided with books at wholesale prices. Those whom circumstances may prevent entering the five years' course, can pursue the study of any subject taught in the school, for which they are fitted. Visitors are admitted to the lectures on Chemistry, Natural Philosophy and Astronomy, without any ticket, provided they enter at the appointed time and remain until the lecture is ended. The teachers are the best that can be procured; most of them being engaged at our city colleges during the day. There is also connected with this institution a Day School for Women, wherein they are taught telegraphy, wood-engraving, drawing, etc. Our citizens are deeply indebted to Mr. Cooper for the large sum of money—over $1,000,000—he has expended on this institution; but they owe him a still greater debt for the exercise of that comprehensive intelligence which has enabled him to make so wise a use of his wealth. W. J. L.

PIE FOR DYSPEPTICS AND INVALIDS.—Four tablespoonfuls of oatmeal, one pint of water; let stand a few hours, or till the meal is well swelled. Then add two large apples, pared and sliced, a little salt, one cup of sugar, one tablespoonful of flour, one teaspoonful of ground cinnamon, or other spice. Mix all well together and bake in a buttered pie dish, and you have a most delicious pie, which may be eaten with safety by the sick or well. S. L. N.

DIET OF LITERARY MEN.—The London correspondent of the Birmingham *Morning News* alludes to a new book that has recently appeared, containing remarks about the diet of certain literary men; and he states that he is acquainted with a well-known writer who cleaves to oatmeal porridge when he is in working trim. In this respect the said writer imitates Gerald Massey, who swears by oatmeal porridge as a brain inspiring compound. "There is a deal of phosphorus in oatmeal," Mr. Massey says, "and phosphorus is brain. There is also a large amount of phosphorus in fish. Consequently I never miss having a fish dinner at least once a week, and take a plate of good, thick, coarse, well-boiled Scotch oatmeal every morning in my life."

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RAILWAY AIR CUSHION.—Persons unused to travel often suffer much fatigue in the lower limbs from a long journey by rail, which is attributed to the tremulous motion communicated from the floor of the car. Those who have experienced the difficulty there is in walking over a bridge, or a loose plank road, while a vehicle is passing by, and the painful effort required to keep the legs in trim, will appreciate the case. As a preventive, it is recommended to rest the feet on an air cushion. Footstools of this kind are made for the purpose. All invalids and persons unused to hardships would do well to supply themselves with this simple contrivance before entering on a journey by rail.

HYGIENIC COFFEE.—One pound of pearl barley, well browned, and ground coarsely, used as a breakfast coffee, is superior to any other article for the invalid, and equally adapted to the healthy. When used as a substitute for the Java coffee, a little of the Java may be added to give the desired flavor. S. L. N.

THE RECORD.—Our friend, W. D'. Haley, whose contributions have graced our pages, is now publishing a weekly paper at Binghamton, N. Y., called *The Record*. It is devoted to humane and scientific efforts to ameliorate and cure inebriates. Some ten numbers have been published, and they have each been filled with most valuable contributions. It will be the organ of the various inebriate institutions of the country, and furnish an excellcent medium to communicate to the public the best knowledge that is known on the subjects it treats. We wish it every success.

BARLEY BISCUIT.—Equal parts of barley and fine wheat flour, made with pure water, baking powder, and a little salt, without the addition of shortening of any kind, furnishes a rich, nutritious and healthy biscuit, and needs only a trial to recommend it. S. L. N.

ICE IN ACUTE RHEUMATISM.—Professor Esmarch, in a communication to the Berlin Medical Society, related instances of the great benefit which he had derived from the continuous application of ice to joints affected with acute rheumatism. The general temperature becomes lowered, the pain abated, and the course of the disease abbreviated to an extent procurable by no other means. So far from fearing the induction of cerebral affection by repelling the articular inflammation—the *phrenopathia rheumatica* being here, as in typhus, dependent upon the increased temperature—ice is especially indicated for its prevention or removal. Similar treatment is often applied in health institutions, and has been for years, with success. In addition to the above, the use of the Turkish bath in acute rheumatism is a great aid to its rapid cure.

DISEASE OF EAR ATTRIBUTED TO QUINIA.—In the Transactions of the American Otological Society, recently published, is described the case of a physician who was cinchonized for malarious disease, and who afterward suffered from violent disease of the ear. His trouble began with laryngeal inflammation and chronic naso-pharyngeal catarrh. When the malarious affection supervened, he took 25 grains quinia every other day, until ringing in the ears and dizziness came on, followed by severe otitis. The otitis was subdued by antiphlogistic treatment, and facial neuralgia followed, for which he took 15 grains quinia, with the effect of producing pain in the ears. Every repetition of the dose was followed by pain. The naso-pharyngeal disease increased, with returning neuralgia and otitis. The last was brought on within twenty-four hours by a dose of quinia. He suffered for several years, spending a portion of the time in Europe. He became deaf, and his ears filled with inspissated wax. At length, after long and varied torment, he was restored to tolerable health by judicious treatment. Dr. St. John Roosa, of New York, who describes the case, attributes much of the ear disease to quinia.

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To the list of eminent writers who have contributed to the Magazine in the past, we shall add other of our prominent Snnday-School workers in all parts of the country.

PAUL A. CHADBOURNE, D. D., PRESIDENT OF WILLIAMS COLLEGE, MASS., will furnish a series of articles directly bearing on the lessons in Genesis.

The first article on "Dogmatism in Science," will be given in the January number.

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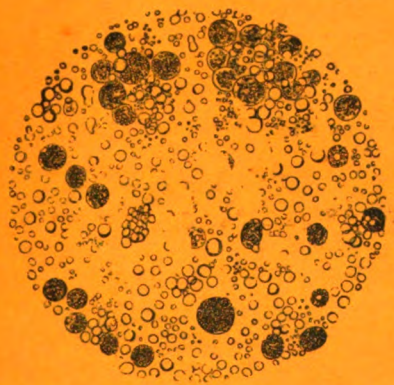
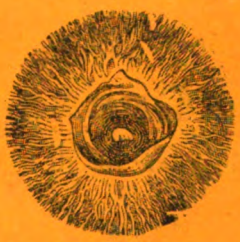



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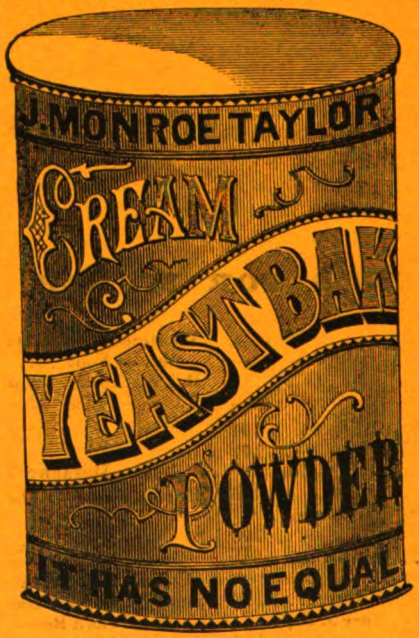
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* From the *Scalpel*, 1849.

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transmit in a great degree, their own personal and mental peculiarities to their offspring. That a quiet state of the mind and body during pregnancy is most conducive to the production of healthy and good-tempered children, is a conclusion to which we believe there will be no difficulty in bringing every rational and thoughtful mind. Whether good or evil will result from the facts we are about to offer, we cannot tell. Our intentions are to do good, and to add something to science.

A few years since, we were requested by Dr. Moore Hoyt, a gentleman whose powers of observation and veracity will not be questioned in this city, to examine an infant of a few months' age, and to bring with us our pencil and a bit of Bristol board, as he designed to publish a description and drawing of the case he wished to submit to our notice. We found a very healthy child and mother; the former presenting an eschar directly across the patella —or kneepan, as it is is called by the people— of each knee. They were of irregular form, as if made by the scratch of a nail, or pointed instrument, and from two to two and a half inches in length. The doctor was much astonished to observe these wounds at the birth, as there was no instrument or hard substance near, and the labor was perfectly natural. On careful examination of the eschars, his astonishment was greatly increased, by observing that the wound on one knee was half united by a recent cicatrix. This was sufficiently defined to put its character beyond a doubt. No one in this city who knows Dr. Hoyt will question the accuracy of his conclusion, or his want of sufficient interest in so remarkable a case, to induce a thorough and critical examination. It was then evident, that this state of the knees had been produced within the womb. But how? The mother had spent, for a number of days, some hours daily on her knees, leaning over a cradle and nursing a sick child. She complained of pain on arising, but did not anticipate any deformity in her child. When we saw the eschars they were completely healed. This process, Dr. Hoyt informed us, went on without interruption.

The next case occurred in our own practice. A lady of great equanimity of temper, and extremely delicate constitution, during the second month of gestation was presented by her husband with a pair of ear-rings. These she was exceedingly desirous to wear the same evening to a party, but found it impossible to insert the hoop into one ear, as the hole had partially grown up. The attempt was therefore abandoned, with some disappointment, and the expression of apprehension that her child would be marked. We were consulted on this point, a few days after the event, and asked if such things were ever true. We unhesitatingly answered, no; for at that time we treated such stories with ridicule. Judge, then, of our surprise on observing one of the ears of the child present, at birth, a hole in the center of one lobe of the ear, so nearly perforated, that, on stretching it slightly with two fingers, the unperforated part proved so thin as to be absolutely diaphanous; a deep cleft running downward for a quarter of an inch from the center of the hole.

But these cases, astonishing as they are, are far surpassed in interest by one, which, from its very peculiar nature, it was impossible for us to authenticate by personal inquiry or observation. The high respectability of the parties who were our informants, and the circumstances under which the case was related to us, leaves no other course than to give the facts, however wonderful, our entire belief. In narrating it, the parties must be nameless, as all, so far as we know, are living. We trust they will perceive our intention, and impute it solely to our desire to post up a matter of intense interest to humanity and science.

Mr. A., of the northern part of this state, married, some forty years since, a lady of an adjoining state. Pecuniary circumstances, at the time of the marriage, rendered offspring undesirable. Within a year, however, it became evident to the wife that their wishes were no longer to be realized; on expressing this belief to her husband, she was, at the moment, quite shocked at the dissatisfaction with which he received it. Taking his hat, shortly afterward, he left the house, and was absent for near an hour. He was distressed on his return, to find his wife in tears, He assured her immediately (for they were devotedly attached) that he was rejoiced to learn the probable realization of her announcement; that he was now satisfied with the condition of his pecuniary affairs, and convinced of their stability.

The wife dried her tears, but soon expressed her conviction that, in some way her expected offspring would suffer from her agitation. The husband endeavored to remove her apprehensions, by gentle and affectionate ridicule. But her fears continued at intervals during her early months, and gradually increased as gestation advanced. The relief of the parties was great at the birth of a healthy and well-formed boy. No peculiarity of conduct in the child was ob-

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served, till several months had elapsed, and then their fears were renewed, by its extreme unwillingness to approach the father. This gradually increased, until its dissatisfaction was manifested by loud and continued screaming when brought near him. As age advanced, the most persevering efforts were made to overcome this repugnance; the utmost degree of persuasiveness and ingenuity, diversity of childish gifts and sports, all were tried in vain, and the attempt was abandoned in despair. The feelings of the father may be judged by parents, for he was, and is, an exceedingly affectionate man.

This continued, and at the time of our receiving the information from a near relative, the son, then an active and rising member of the bar, had never been able to speak a word to his father, though the most painful efforts were made.

We give this case as we heard it from a lady and her husband, whom to know is to revere. It was told us by the lady, just arising from what we all supposed would be her deathbed, and an offer was made at the time to introduce us to the parties. We now regret that our years induced us to decline the proffered introduction. We did not feel willing, at the time, to make any personal inquiries in a matter that had been productive of so much distress, and that time had somewhat alleviated.

The next case was related to us by Dr. Cox, now practicing at Williamsburgh, Long Island. Dr. Cox certainly is authority that few who know him will doubt. His urbanity and truthfulness are known. A lady was in constant attendance upon her dying father; his disease was a cancer on the forehead, and required repeated daily dressing; this was done by the daughter, who was in the early period of pregnancy. In a few months the father died, and the daughter was delivered, at the full period, of an infant disfigured with a large tumor on the forehead. This, the doctor assured us, became an open sore, in all respects similar to the one of which the its grandfather died. It resisted every application, and soon terminated the child's life. No one, Dr. C. observed to us, could have told it from a cancer.

ADDITIONAL CASES REPORTED FOR THE *Scalpel* BY J. A. T., M. D.

1. A gentleman, residing in Brandon, Rutland county, Vt., removed to New York city, and while residing there, went one day to visit the zoological garden. While there his wife, who was of a highly nervous temperament, became greatly alarmed in consequence of the ferocity of a beautiful Bengal tiger, which was enraged at being disturbed while sleeping. The lady fainted. In process of time she gave birth to a healthy boy, which grew like other children. After the child was old enough to run about and play with its mates, it was observed of him that he exhibited the strangest of tempers whenever he became vexed at any little thing. At such times he would growl and shriek, and fly at the faces of his companions with all the ferocity of a wild cat—tearing their clothing, biting and scratching their faces, and the like—his eyes, during the paroxysm, being of a fiery or green color, like those of the cat when angry or seen in the dark. As he advanced in years, and became large enough to run out of doors and play with other boys, it became necessary for an older person to accompany him to prevent his injuring his playmates during his paroxysms of fury. At other times he was of a most amiable disposition, and very affectionate. The sounds he uttered were precisely like those uttered by cats when fighting. I should have added that his parents removed to their former place of residence when the child was an infant. What he became, in after years, I know not, as I left the place when he was about five years old.

2. In the same town of Brandon lived a man —a farmer—who, one morning, desired his wife (to whom he had been married but a short time) to go to the barn and assist him in killing and dressing a calf. The wife of the man's brother tried to dissuade her from going, being tinctured with certain "whims" or "notions," but to no purpose. She went. The calf was thrown upon its side, and as the man was in the act of applying the knife to its throat, his wife helping to hold it down, it suddenly sprang up, receiving at the same time a severe cut across the mouth and nose, the knife passing over and cutting off one of its ears. The woman became greatly alarmed, and ran to the house. In time she gave birth to a living child, which had a hare-lip, each lip being deeply cut through, and the cloft in the superior one extending entirely through it, and far back toward the posterior part of the palate. The child had but one ear, also. The physician in attendance immediately sent for aid, and while in the act of closing the fissure the child died. I presume the parents are now living, and one or both physicians who were present on the occasion.

3. In Rutland, Vt., lived a man who wa

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given to strong drink. His wife—an excellent woman—had a favorite cat, which she loved immoderately. One day the man came in and found his wife holding her favorite tabby, as usual. Being under the influence of liquor and passion, he seized the cat and, with an oath, dashed its head against the hearth. The wife was greatly affected. Some months after she gave birth to a female child, whose physical organization presented strange peculiarities. Its face bore the general resemblance to that of a cat—having no chin, with the mouth quite at the lower part of the face—the nose long and depressed, and the eyes like those of the cat. The hands were deformed—very short fingers, crooked and sharp nails. The child lived, and when I saw her in 1830, she was nine years old. She was passionately fond of her mother, but shunned her father. She had never spoken a word, but made known her wants by a kind of yawling, cat-like sound, which it was horrible to hear.

4. In the same town resided a child, upon whose face was a peculiar red stain. The history of the case is as follows: At a wedding party given to the young couple soon after their marriage, the bride, by some accident, received the contents of a wine-glass upon her face as she was playfully running from one room to another. It spattered her face, neck and breast, and caused her much confusion of mind and not a little anger. Their first-born child came into the world with its face well covered with claret, its neck and breast being in the same state. As it increased in years the color of the mark became brighter; and if any of your readers ever walked in the region of "Freeman's," in the north part of East Rutland village, they have doubtless often met the same red-visaged little urchin, and stopped to wonder why nature was so naughty:

5. If any of your readers ever attended church in the brick edifice in the north part of the same town, they may remember of having seen a young man, some seventeen years since, one half of whose forehead was covered with an unseemly mass of coarse, red and black hair, presenting not a very agreeable appearance. Its history is as follows: The father of that young man owned a favorite heifer, which one day got mired, and no man being about, the wife and mother exerted herself very much to extricate the young cow from her uncomfortable condition. It was in vain. She sat down exhausted, and commenced patting the dumb animal upon the head, admiring and playing with the *curl* in the center of its forehead. Some months afterward a child was born to the fond parents having a tuft of coarse hair, quite unlike in both color and quality to that upon the rest of the head, covering nearly one half its forehead, having the same curl or rosette shape which existed on the forehead of the young cow.

6. Some years since a gentleman from Clarendon, Vt., was crossing the North River near Albany, in an open boat, in company with two other men. When midway the stream (it being a little dark), one of the men suddenly seized a broken oar and struck the man first alluded to over the head, cutting a severe gash through the scalp, and rendering him senseless. The object was robbery, but they were defeated in their purpose. The circumstances were soon communicated to the friends of the injured man; and his wife, who was devotedly attached to him, was greatly distressed. Some seven or eight months afterward she gave birth to a child, upon whose head was a wound corresponding in shape and position with that made upon her husband's head, which had not healed when he returned home. Adhesive straps caused the wound to heal kindly, and the child lived.

7. Some few years since, a clergyman in Providence, R. I., was riding out with his wife in a covered sleigh. While riding along they were met by another team, the horses attached to which were running away. In passing on the wrong side, the head of one of the horses came in contact with the covered sleigh and carried away part of the top, slightly injuring the gentleman and greatly alarming his wife. The idea took hold of her mind that all his head above his eyes was carried away, and she repeatedly put up her hand to ascertain if his head was really where it ought to be. Some months elapsed, and the lady gave birth to a living child. The child had a face, but above its eyes it had no head or brain. It, of course, lived but a very brief period. The father is now (1849) living in Worcester county, Mass., and is a Baptist clergyman.

If such results do really sometimes follow the exposure of mothers to disagreeable objects, the appearance of the maimed foreign paupers that shock their feelings at the corners of our streets should be instantly put a stop to by legislative interference. And if mothers desire to be blessed with healthy offspring, they had better not only avoid disagreeable sights during pregnancy, but observe all the laws of their being, and keep a rigid watch over their more secret thoughts and actions.

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Women in Council. No. 1:

EDITED BY HOWARD GLYNDON.

WOMEN have come together frequently of late, and to discuss many things. This tendency to gather together and talk has, undoubtedly, been of the greatest service in every effort toward reform yet made by them. They are, it is true, accused often of too great an inclination to chatter, to bury the subject which has been selected for investigation under an avalanche of speculative conversation, much as the traitress Tarpia was anciently buried under the bucklers of the invading soldiers; and they do, indeed, sometimes linger too long over eloquence where action is required. But I maintain that after all, the reform could not go on without the talking. It must, in cases where a number are required to work together, precede action. There is, for example, some great abuse to be reformed and some thoughtful women have arrived at the conclusion that its reformation is especially woman's work. It is necessary that they should draw the attention of their less thoughtful sisters, first to the magnitude of the abuse, and then to the necessity of action on their part. All this requires a good deal of explanatory discussion, and eloquence is undoubtedly necessary to convince the great body of hearers that they ought to work together as one. Now, when they fully understand the subject, and are aroused to the importance of doing something, and are warmed into an enthusiastic desire to take the doing of that something into their own hands, the question which next arises is, what is the best way of going about it in order to insure successful action? And here, I confess, all at once out of the troubled surges of discussion, looms up the rock upon which the conventions of women usually split. Every woman has her own solution of the problem, and naturally thinks it is better than that of any other woman. Up to this juncture she has been content to sit still and hear cause and effect discussed by more experienced speakers, but when the moment for suggesting a remedy arrives, she wants to take matters into her own hands; and she is so thoroughly convinced that she is right, and so interested in well-doing, so sure that we shall all go to the dogs if her plan is not adopted, that she throws herself, unconsciously, with all her impulsive strength, into the struggle for a hearing, which has usurped the place of quiet and dignified discussion. Given, several hundred women, each trying to hear herself and to be heard by all the others, and you are not long in arriving at these results: indescribable confusion, unbearable noise, bad feeling pervading the entire assembly, utter failure to come to an understanding, dissension in the camp, and finally, breaking up without having effected anything. Men are bad enough when they get together, but they generally keep the primary object in view; whereas women are too prone to fly off at a tangent. Nothing more clearly shows the difference in their education. Men are continually learning the lesson of self-control, of subordination to discipline, because it is necessary to success in life; and for the same reason, consecutiveness, both in argument and action. The effects of this training are seen when they go into council. Woman, with aims just as worthy and forces just as valuable, and only awaiting utilization, generally fails in council because of inability to subordinate impulse and desire to reason and discipline. The few among them who have become leaders are so in proportion as their training, in these respects, has been akin to that of men.

So I tell the cynics who sneer at what they call womens' gabble, that the talking has not failed of effect because speech is inimical to action, but because at a certain point it hasn't been conducted in the right way. We must discuss a thing fully in all its bearings before we are prepared to take successful action concerning it. We must talk about all the ways and means of getting the better of an evil before we can select the best; that is, if concerted action is the thing necessary. If you are to do a thing by yourself, it may be sufficient to work it out in your own head; and may be you'd better keep it to yourself and avoid talking about it, on the principle that the coals on the hearth keep hot while covered up, but if raked out and exposed to the air soon die. But where a concert of heads and hands is required, all working together for one end, a good deal of preliminary talking is not only desirable, but is the very germ of the movement's life. We must talk first to define the limits of the subject in view; then to get a true idea of its importance; and when fully impressed with this, we have to lay our heads together to devise

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the best plan of action. What is necessary at this juncture is that the assembly should have arrived at a perfectly good understanding, and that every member, while giving ungrudgingly his or her best into the public treasury of thought, should yet be able and willing to entirely subordinate self to the general good. Egotism is the ruin of all harmony in any gathering, public or private. The egotist, who struts forth with the air of being monarch of all he surveys, ought to be sentenced to lead a Robinson Crusoe life, minus Robinson's man Friday.

Then let us not be afraid to talk, especially we who are women; but let our talk have its conditions and its limitations; for talk is at this era woman's great instrument in doing good. We are not allowed such license of action as is common among men; but by talking in the right way we can draw attention to many things which otherwise, in the masculine hurry incident on incessant action, would be neglected or entirely forgotten—perhaps never even discovered.

Especially in matters of vital importance to themselves, women ought to talk, and talk a great deal. It is the only means of rousing thought upon, and so drawing the universal attention of their sisters to these things. When they have talked enough to become sufficiently convinced of the importance of reformation and have found out, by laying their heads together, just what to do, I hope and believe, for the credit of feminine common sense, that they will begin to act. In the mean time a few of us must set the example—inaugurate the movement, as it were.

Women have been talked at and talked to a great deal. But the thing to be compassed is so to talk to them as to provoke thought on the hearer's side upon the subject under discussion, and to elicit the expression of that thought. Then we shall be sure that the mind is interested, and we may count on something in the way of action.

The heading under which this article comes will appear in the regular monthly issues of THE HERALD OF HEALTH for an indefinite period. I wish thoughtful women, well informed women, women of experience, and all women with the good of their sex and kind at heart, to consider it as a sort of bugle call to a rendezvous. Figuratively speaking, under the banner bearing this device THE HERALD OF HEALTH will hereafter throw open three pages of its columns monthly to the ingress of womanly discussion on subjects of peculiar interest to women. It is to be my office to have a sort of general supervision of these discussions—sometimes to select the subject, in default of a better purveyor; sometimes to start them; to make talk when it flags, or to repress it when it overflows limits; and to skim off the cream of what is said in this connection for publication. I wish it, however, to be clearly understood that the department is not to be considered strictly as a medium for the original communications of writers in their unabridged form. Three short magazine pages do not give *carte blanche* in that way; and it must be left entirely to my option as to whether I shall publish a whole or a part of a letter or communication, or whether I shall merely advert to the writer's views, giving the sense in my own words. Names will be given in connection with these views, or withheld as may be desired, or as may seem best. It will, of course, fall to me to comment upon the facts and theories advanced. I want such women as I have described to write short, familiar letters on the questions under discussion, and on such other subjects as may seem peculiarly fit to be discussed by "women in council." Let them be pithy, practical, to the point, dealing in facts, figures, illustrations and suggestions, rather than in speculations and theories. Health, education, mental, moral and physical; pursuits, marriage, the bearing and rearing of children, domestic economy, household matters and dress all come under this heading.

I don't add the getting and the management of husbands after they are gotten, albeit I am not of that extreme party of women who turn up their noses at these questions in the abstract, though I candidly confess I think the subject one of the most vital importance to women, socially considered. But I think the solution of these questions is contained in the successful answering of those which I have suggested for discussion.

The higher and more perfect the training a woman has received in all womanly essentials, the better a wife and mother she is prepared to become. She will not want for suitors who is worthy of them. Men are not all blinded by glare and glitter, by long ringlets of false hair, by mammoth panniers, artificial insteps, unnatural complexions, and that long languish of the eyelashes, due to deceptive arts. Not even when the soft rustle of silk is thrown over all this, and is softened by draperies of real lace, and embellished with the gleam of costly jewels. Most of them carry, deep in their

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hearts, a love of home and real womanhood. Now it is the business of all true women to call out this feeling in men; their doing so is necessary for the life of society, for the prosperity of the world. "Men are what women make them," is the title of a new novel lately translated. Well, before women can call forth any good in men, they must themselves be good and pure and true to every law of health, mental, and physical.

I trust that the women who read this will see how splendid, how noble, how far-reaching may be the work accomplished by "women in council." Dear sisters! it is fully worthy of those, of one of whom a Christ was born. I hope none of you will ever again consider ours a secondary work. God gives into our care the germ of human life, and also the germ of all moral good. It is ours to watch and tend both. Without us both would die! I hope, therefore, women will come to this council fully impressed with the importance, not only of the work given them to do, but also of the importance of talking it over and of discussing it fully in all its bearings, and of planning out ways and means toward the great end. Let us talk, that we may act!

Education.

BY REV. HENRY WARD BEECHER.

A MAN'S wealth and power and happiness do not stand in external things. There may be an effect in the relation of external things to that which he is in himself; but a man stands in the attributes of his own mind; and what he is at all, is to be found out by measuring him there.

The true method is to augment the man, and not the circumstances which surround him. When you augment that which is the constituent of power in him, then you give him being; and being is joy. Where you secure cause, there you secure effect also; but it does not follow, because you secure effects, that therefore you secure the powers that produce them. He that owns the soil owns the harvests which that soil is going to bring forth; but he that garners the harvests does not necessarily own the soil. A man may surround himself with endless effects of power, skill, labor, industry, and he may gather these effects about him; but they do not make him rich or strong. If, however, he has the cause in him which wrought out these things, that cause makes him strong and rich.

Education develops men, and trains them; but education and training never create anything. All the education in the world does nothing but develop that which is in you.

Education—the development and training of the whole man—is, then, the greatest boon which can be conferred upon us; first, because it takes hold of the secret of happiness and of prosperity in its very causes and sources. We carry the secret of our happiness in ourselves.

Secondly, education develops the power to control external effects. It makes man the king of creation, in so far as anything can make him so. He that rules over causes, rules over results. Not he is the most fortunate who can gather up effects, but he who can produce those effects over again. Not what a man has thought, but his power still to think, is his measure. Not what a man has accumulated, but his skill, his power, his will to accumulate, measures him. Down below all achievement lies the secret power of manhood. The doer is still greater than the deed. And yet how, with a subtle species of idolatry, do we still do by men what the brute man always tended to do by God—gaze upon the created thing, and forget the Creator, deifying effects, and not going back to their causes!

This, which is true of individuals, is in a more striking manner true of communities. The glory and power and riches of states are in their citizens, and not in their physical products. Soil, mines, forests, navigable waters, cities, fleets, factories and warehouses, are mere bills of credit. The bullion consists of the men that create these things, and that can still create them. Laws, constitutions, institutions, libraries, art treasures—these are all admirable, but chiefly on account of those who created them,

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or who know how to use them, and are served by them. It is the living power which causes or uses, that makes the value of these things. They are of value, but not for the purposes for which we too often store them up and gloat over them.

God made but one thing in this world—*man*. All else is clothes, toys, or tools. Man is the unit of measurement, and the unit of value.

The strength and glory of the state, therefore, is to be looked for, not in its achievements, but in those that achieve. A people capable of creating a future is glorious. The future itself which comes, may find external circumstances changed and improved; but it is not the circumstances themselves that are to be gloried in; it is the men that produced them.

We always measure a city by its fine streets. Go into the purlieus of a city, if you want to measure it. We measure it by its buildings. Go and look at those who built them. We measure a community by its middle and prosperous classes. Go and look at the bottom of a community, if you wish to measure it. The great ground-class of society carry the life and strength of the nation in it; and measure them, if you would know how vital and strong it is. No ship is stronger than its own bottom. If the hull is built with weak timbers and rotten planks, the ship would not be any stronger if it had gold masts and silver rigging. And so it is with nations. You may build the upper circles of the community with glittering refinements, and make them beauteous as the precious metals; but, after all, it is the bottom that tells the story of its condition. An educated class at the top is better than nothing; but it never saves a community from the ignorant masses at the bottom. A nation is a unit; and a nation, to be prosperous, must be treated as a unit. An extreme of advancement in one part, must carry up with it the other part, or else the nation will be like a cake not turned, burnt on one side and dough on the other.

We know, then, exactly where to begin, and how to build, our nations. Not territory, nor climate, nor soil, nor golden mines, nor inventions, nor towns, nor cities, nor ships, nor forts, nor armies, but educated Christian citizens, are our safety and our glory.

Greed of material prosperity and infidelity to moral qualities, I hope, are not long to continue. I hope the scoffs which we have heard aforetime against things high and noble will ere long be silenced. I hope the time is near at hand when justice and manhood and rectitude shall be declared to be super-eminent in the state, and to be of more importance than policies, better than commerce, and more valuable than wealth. Men, I hope, are coming into conditions in which they begin to understand that spiritual qualities are the very creators of prosperity and wealth.

Education usually conveys merely the notion of intelligence; but when it is rightly used the term means the training of the whole manhood. Education is not simply learning to read and write. That is the gate which leads to education; it is the indispensable means of popular education; but education implies the development of all the faculties that God put into man, and the bringing them to their highest state of power, and to their most perfect state of co-operation. In the generic term *education* is included the education of the body, physical education; the education of the emotions, domestic education; the education of the soul, religious education; and the education of the understanding, intellectual education.

The means of this education are, the family, the church, the school, and the shop; or rather, work in all its varieties. These things are not merely incidental; they are not harbors of ease or places of refuge; they are schoolmasters. They are co-factors, they are co-ordinate in their work, and they tend to produce the same result—the development of a true manhood.

There is need of pushing all of these, but there are certain great reasons why, in our condition, we should make much of, and push with especial zeal, the Common School, by which men are educated, which unseals their eyes, opens their faculties, and gives them the liberty to think and acquire. It is chiefly valuable as putting the whole population in possession of the means of intelligence. And popular intelligence will tend powerfully to produce and to maintain popular morality. Virtue is in accordance with man's nature, individually and collectively; and if the whole community are intelligent, it is more probable that they will heed those things which are in accordance with their nature than if they are left in a state of ignorance. I do not believe in ignorant morality. I do not believe ignorance is compatible with the highest morality. I do not call torpidity morality. Morality is a voluntary thing; it is an election of that which is good, better, or best; and no community can attain to a morality that carries any great stability or value in it, except it be a morality based on intelligence.

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True virtue and true piety are intelligent things. Virtue and piety, to be worth anything, must exist under circumstances where there is intelligence.

It is the Common School, it seems to me, that is the peculiar gospel of to-day. Not that I think we ought not to preach any other gospel. The family still exists, and must be under the care and ministration of the moral teacher. The individual yet exists, with passions that are to be subdued by reason and conscience. Every soul has its sorrow, and the Cross is yet to be the symbol and guide. But while we carry on the work of the household and the church as much as ever before, and more than ever before, just now we are to do a vast deal more for schools than ever before.

Common intelligence is the natural remedy, in our time, and in this nation, for the various dangers that are intensified on every side of us. Common Schools create that kind of popular intelligence which will make all this vast population that is to come up between these two oceans unitary. That is, they will be conscious of the same interests, the same curiosities and the same zeals, about the same things, and at the same time. That which in the morning is news in New York is spread abroad by the telegraph, and long before noon every state in the Union stands as if it were New York. And the newspaper never grows tired. It never becomes old. It is renewed every morning, and is fresh every moment. It goes everywhere. It penetrates the forest, the mine, the very shanty of the farthest settler. It is in the shop and on the ship. It is among the most laborious men in the city and in the country. The drayman has it, the collier has it, the farmer has it. All classes read the newspapers. There are so many of them in competition that they swarm in every department of life. They look to us simply as enterprises; but in point of fact they are the instruments which God is employing to unitize the thoughts and feelings of the vastest nation that ever held a common population. And it is unity of thought and feeling that is going to be more than latitudes and longitudes, and more than constitutions, in keeping the nation together. If there were not the hope that by common intelligence, and common interests and reciprocal benefits, the various sections of the nation would be cemented together, we should expect in the future to see scores of warring monarchies. And it is the Common School that is to make this possible, by creating the capacity and the desire to read.

The corruptions of politics and the flagrant venality of legislators can be corrected only by this course of general public education. What we want is a community that in every part is so intelligent that there shall be a public sentiment that shall do what the individual volition and virtue of men cannot do. We want such a public sentiment as can be created only in a universally educated community. We want a public sentiment that shall make it so perilous and painful for men to sell their country for a mess of potage, that they will not dare to do it. Nothing will maintain law, respect, power and authority, if we are to be sold thus. But schoolhouses are more than a match for legislative halls. The schoolmaster is better than the sheriff. Therefore, educate! *educate!*

If the top of society is corrupt, go to the bottom. The way to regenerate communities is to bring out more manhood in the masses of men. Do not distrust them. Do not go back on the theory of liberty. There is not too much, but too little liberty. If men are easily mismanaged, it is not because there is so much of them, but because there is so little. An education that is the empowering of men, is the salvation of the individual, and still more eminently the salvation of the community. The theory of a free government is the true one. If you will have government on the inside, you need not have it on the outside; but if you will not have it inside, you must have outside. He that knows how to govern himself needs no one to govern him; and a city, a community, a state, a nation, that knows how to practice self-government needs few laws, few legislators, few executive officers, and needs no strength in the central hand.

States should promote common school education—*free* common schools, I mean. Knowledge ought not to be bought and sold when the state ministers it, any more than air and water. The state is bound to see to it that means are provided in every town and township for the education of its whole population.

I would go further, and make education, as it is the indispensable foundation of good citizenship, obligatory. Every nation is bound to educate its people, as a part of its duty. Common schools are national life policies of insurance.

Education is the foundation of republicanism; it is the charter of our liberty; it is the hope of the future; it is that on which the community and the state stand; it is that on which self-government rests; and it ought to be

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a part of the duty of the supreme central government to make provision everywhere for the education of the whole population, without distinction of color, race, sex or condition, in the common school. Let churches be built, let revivals spread and touch revivals, let schools at home thrive and flourish, let art refine the thoughts and manners of the people; but there is one cause that must come up to a greater prominence, and must attract our attention and enlist our zeal more, namely, the common school education of the whole people of the United States, in the North, in the South, in East, and in the West.

Hints on Nursery Training.

BY HELEN BARRON BOSTWICK.

THE "baby of the period" is now almost as distinctive a personage as the youth or the girl of the period. Even in preparations for its advent, dollars are hardly expected to perform the work that dimes once accomplished; and an amount of labor is expended in needlework often sufficient for the making up of a season's outfit for an ordinary family. But this is comparatively of small moment. Provided the expense can be afforded, let the mother please herself if she will, by clothing her baby for the first year of its innocent life

"All in white, fleecy white,"

and by covering it from head to foot with dainty devices of delicate embroidery. It will at least give employment to seamstress and laundress; may cause them to feel as did the impecunious priest, in recounting his baptismal fees, that babies are indeed a great blessing—other folks' babies! And the little ones, in their robes of preposterous amplitude, cannot yet be harmed by flattery, or begin to imitate the devotees of fashion. They can only suffer physically as yet, and much suffering they do, indeed, endure from injudicious management. They suffer from long, entangling skirts, where their restless limbs crave freedom; from pitiless pins, where soft bands should be; from trotting and bouncing when the tender cartilages of their frames require rest; from paregoric, and messes of all kinds, when patience and a tepid bath would be infinitely preferable remedies. It is not until the age of two or three years that the real sacrifice of babies to the gods of this world actually commences.

Not long ago, a lady being asked what were the ruling powers in a family of children she had just visited, replied that they were three: "Cake, candy and clothes!" It is to be feared that this criticism would hold good in a vast number of modern nurseries. I recall half a dozen at this moment, where sickly dainties and poisonous sweets dispensed liberally as bribes to good behavior, are leaving their mark in pasty, sodden complexions, dull eyes, blackened teeth, and fretful tempers.

It is a question, however, whether the food or dress management of our modern nurseries is the more inimical to the well-being of its occupants. The child's dress must be fashionable, it must attract attention and invite inspection; this is the first *desideratum*, comfort is the second. Wonderful pyramidal creations of costly merinos, silks and furs parade our streets in winter, crowned each with its tiny circlet of velvet and its brilliant feather; supported by slender pedestals, cased in garments of such exquisite fit that they resemble more the "tights" of an actor than clothing for useful service. So much has been well said and written upon the dangers of this style of dress to the physical well-being of children that our present purpose is rather to speak of its moral and esthetic effect. It needs but little observation to show that vanity, self-conceit, and all the grown-up follies that walk in their train, follow naturally enough from the seeds thus early sown in the infantile mind.

It is of little use to din into a child's ears the stereotyped phrase that "dress is of no consequence, behavior is everything," while every day's experience contradicts and worse than neutralizes the lesson. He will draw his own conclusions, and none can draw shrewder ones from what he sees than a wide-awake child.

"But," objects an enthusiastic mother, "it

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cannot be wrong for me to deck my child in dainty and beautiful garments. It will cast about his sensitive young mind a refining influence, and help to impress him early with a sense of beauty and harmony." Yes, just as flowers and pictures, and bright colors of earth and sky will do. The mistake is not in dressing him beautifully, but in doing it for any other sake than beauty's own. A child has its own estimate of beauty, and it should be a law to itself while it remains a child. It is cruel to destroy their pretty illusions and imaginations, substituting your own wisdom untimely in its stead; to cast scorn upon the bits of glass and pebbles, which are diamonds and pearls to them. The love of beautiful things for beauty's sake—that is, because they suggest beautiful ideas, and not because they represent money or artificial distinctions in society—this cannot be too carefully cultivated. There is no more beauty to a child, and certainly no more refining influence in a "real ostrich" plume or a costly marabout, than in the modest oriole's wing with which its little head-gear is adorned; yet its baby heart may easily be made to fill with envy toward another child, who wears the costlier ornament. It is natural for a little girl to be glad at a pretty frock and hat, but it is not natural that she should inquire their price, or pout because they are not trimmed in the very latest mode.

"Oh, the pretty, rosy cloth!" cries a little one, stopping before some bright pink prints in a shop window. "Get Mamie a frock, mamma." "That!" the mother answers, witheringly—"that is only shilling calico. The berry woman's children are wearing dresses from it." The child-face first sobers with wholesome wonder, then takes on a satisfied look of superior enlightenment, and her first lesson in the science of artificial standards is taken. Will mothers ever come to see that the sweet genuineness, and unworldliness of their children is the truest charm they possess? And that to cultivate simple habits, both of thinking and living, is to give them the surest foundation for happiness in their after lives?

The moral education of a child may be said to commence on the day in which he first comprehends the difference between right and wrong. Then is the time to surround him with such associations as shall make him *feel*, rather than *learn*, that the right, the good and the true are *in order*; that wrong is discordant and disorderly, an outcast and an alien, to be astonished at, and ignored if possible; at any rate, not to be harbored or compromised with in any manner. He is to understand, as soon as he is able, that generosity is better than stinginess, that to be careful of the fragments is wiser than to waste; that to forbear a return of injuries is nobler than to fight; that truthfulness and patience and bravery and self-denial are better than their opposites; not because they are sure to bring a reward in this life or the next, but because they are the natural course and proper order of things. He is to "be good" at first because papa and mamma wish it; afterward because being good is what he was meant for. He is to conquer naughty tempers, not mainly because "mamma will cry," or "because people never love cross boys," or because God will be angry with him; but because naughty tempers are outlaws, which have no business in the world except to make people do mean things, which they will be ashamed of and sorry for afterward. He is to be taught that all great and good men and women had once to conquer naughty tempers; that they began early, and kept on trying, and never gave up, and he can do it as well as they. The earlier a child is imbued with the brave, chivalrous spirit of the little soldier, "fighting against wrong, for the good, the true, and the beautiful," the easier his conquests will be gained. Both in and out of nurseries a great deal of unhealthful and unprofitable begging is done for goodness, when a robust setting forth of its nature and claims would produce far better results. It is well to teach a child that the eye of God is upon him, noting his conduct, whether right or wrong; but as soon as he is able to understand, teach him also that right is its own excuse for being, and that he would be equally bound to follow it if there were no eye of God to watch him.

With all preventive care and oversight, offences will creep into the nursery; times will come when the law must be plainly laid down and firmly enforced. A few good rules are:

1. Be sometimes conveniently blind and deaf, especially when the child is the only sufferer by his misdemeanor.

2. Rigidly respect the *rights* of your children, both as to property and conduct.

3. Be careful how you threaten or promise; but never break your word, unless you find that you have made a mistake, and that it would be a greater wrong to keep it.

4. Set before them a lofty ideal, and so live before them that they may believe it real and attainable; not a mere figment of your imagination, brought out for display on Sundays and forgotten the rest of the week.

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Very young children sometimes display a chronic obstinacy which punishment only increases, and which seems impossible to account for. Time, a healthy home atmosphere, and unlimited patience will generally cure the complaint. Above all, a thorough sympathy, judiciously manifested, is the most subtle and and powerful agency in a child's moral education. Without it there may be training, but not true culture. It is this which softens and mellows the soil for the reception of the good seed, and watches over it till the up-springing. Unless a mother understands the peculiar susceptibilities and tendencies of her child's nature, how can she cultivate wisely the tender growths of intellect and heart?

A mother once said, with tearful eyes: "There is one reminiscence of my early motherhood which I can never recall without bitter regret, trifling as the circumstance may seem to others. It happened when my first child was with me. At five years old she used to go to church with me, and usually sat very quietly by my side. Occasionally, however, she would grow fidgety and restless, and then it was her habit to slip her little hand in mine and hold it, fancying it helped her to be quiet. One or two of the last Sundays that we sat together, not wishing to change my position at all, I pretended not to see the little hand that was laid coaxingly on my lap, and I can still hear her low sigh of disappointment as she removed it. Not many weeks after God took my little one's hand, and led her away into the better country. And ever since I have felt like saying to mothers, 'always *see* your children's hands when they reach out toward you.'"

Long lectures are not good for little ones. Here a little and there a little, but nowhere a great deal. Too much teaching of any kind should be avoided, while the young animal is getting his frame well knit for future action. The practice of hurrying them into the realm of book-lore in these tender years is, in nine cases out of ten, an injury. Periods of thorough letting-alone are wholesome.

There is something pleasantly suggestive in the fact that we have no intimation that He who said "Of such is the kingdom of heaven," ever taught the little children anything, or preached to them, or gave rules for their instruction; only drew them to his bosom, and laid His hands on them and blessed them; that is all, we are told.

Quaint old George Herbert, in some excellent remarks upon this subject, says: "We cannot be too careful, lest by our much chiseling and artifice we mar the fine lines of our copy."

Vital Statistics Connected with Small Pox and Vaccination.

BY JOHN PICKERING, F. R. G. S., LONDON, ENG.

FROM the earliest adoption of the practice of vaccination statistics have been appealed to with as much confidence as if the rite depended solely upon figures to establish its value, or to show its inappropriateness as a remedy. Precisely the same error was made, as I have observed aforetime, with regard to inoculation. The history of the rise and progress of that practice has been repeated over again in the matter of vaccination. Indeed, so closely have the arguments resembled each other, that it is to me surprising how the detractors of inoculation did not see that both arts must stand or fall together; and that the same set of fallacies underlying one were supporting the flimsy fabric of the other. For the like number of years these two fallacies have possessed the people; and the public exposure of vaccination now going on will, in the end, settle the question as to both, for all countries and for all time.

Wherever statistics have been referred to of late years, the table adroitly constructed by Dr. Seaton has been the most effective and complete defence of vaccination. A fool may, however, put a lot of figures together, and project a theory that a wise man may not be able to unravel or explain. A sophistry based upon figures may delude mankind for generations, and the more antiquated the observance becomes the more difficult it is to displace. The table to which I refer is to be found in his Handbook of Vaccination, p. 252; and the object which Dr. Seaton had in view was to illustrate the principle that small-pox mortality had declined coincidently with the more rigorous enforcement of vaccination. To use his own words, he says there has been a "regular progression in correspondence with the progress

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that has been made in the adoption of vaccination."

Dr. Seaton commences his table with the year 1838, for in that year the system of registration was first inaugurated and carried out. Prior to 1838 London alone kept any records of the mortality of the inhabitants. These are known as the "London Bills of Mortality;" but they furnish no basis upon which can be calculated the mortality of the nation, although that has been attempted. Dr. Seaton divides the period from 1838 to 1866 into three groups or divisions, viz., from 1838 to 1840, the three years when there were no vaccination laws; then from 1841 to 1853, during which nine years the first act making vaccination "optional" was in force; and the third division from 1854 to 1866, which includes the thirteen years when the second act was in operation, rendering vaccination "obligatory." The compulsory vaccination act was passed in the following year, 1867.

The first three years, 1838 to 1840, it so happened, were epidemic years; and in that period there was a greater small-pox mortality than in any previous three years of this century. It was an accident, certainly, but it gave countenance to a theory which the artful vaccinator turned to good account. No table which has yet been published has been so thoroughly deceptive, and so successful in its influence upon the profession and the public. Ready, nay anxious to accept the inferences drawn from the statistics, neither party questioned the accuracy nor the fairness of the conclusions.

The following is the table to which reference has been made, viz.:

Mortality from Small-Pox

From 1838 to 1866, inclusive.

Division I. Before the Enactment of any Vaccination Laws.		Division II. Vaccination provided Gratuitously, but not Obligatory.		Division III. Vaccination Obligatory.	
Year.	No. of Deaths.	Year.	No. of Deaths.	Year.	No. of Deaths.
1838	16,268	1841	6,368	1854	2,808
1839	9,131	1842	2,715	1855	2,525
1840	10,434	1847	4,226	1856	2,227
		1848	6,903	1857	3,936
		1849	4,644	1858	6,460
		1850	4,665	1859	3,848
		1851	6,997	1860	2,749
		1852	7,320	1861	1,320
		1853	3,151	1862	1,628
				1863	5,964
				1864	7,684
				1865	6,411
				1866	3,029
Avge. Annual Deaths.....	11,944		5,221		3,891

The returns for 1843, 4, 5 and 6 were not analyzed.

The most correct calculation would be one based upon the years 1841 to 1846, being the years embraced within the operation of the two first vaccination acts. If the Doctor wished to take in the period prior to the passing of any legal enactment, then he should have started from the commencement of the present century. It answered his purpose best to begin with the the three first registration years. But let the reader start with 1841, the date of the first vaccination act, and run his eye down the figures in divisions two and three, showing the total mortality in each year, and then say where the "regular progression, in correspondence with the progress that has been made in the adoption of vaccination," is discoverable? "Regular progression," indeed! when in 1864 the small-pox deaths exceed those of any year since 1841; when the mortality is greater in 1864 and 1865 than in any two consecutive years since 1841; and when small-pox is lethal in more cases in 1863, 1864 and 1865 than in any three consecutive years since vaccination was enforced by law! The duplicity of the statistician is beyond all precedent. But the doctor shall see what "regular progression, in correspondence with the progress that has been made in the adoption of vaccination" means, before I have done. There are always two sides to a question. We have seen the doctor's side of

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the shield—let us look at the other side. Bismark said of the French that he would stew them in their own sauce;" so Dr. Seaton must not quarrel if he is fried in his own figures.

The anti-vaccinators have affirmed that if there is a saving in small-pox mortality there has been a much greater loss in other diseases, which have become more fatal with the extension of vaccination; so that, instead of a saving, there is only a displacement of mortality, and a displacement that involves a positive increase in the death rate. The proposition has been denied. The following tables, showing the mortality from scrofula, syphilis, tabes mesenterica, diarrhea, bronchitis, and atrophy and debility are constructed on Dr. Seaton's own model; and the facts which they establish can not be lightly regarded. All the statistics are extracted from the reports of the Registrar-General. I mention this as a guarantee for their authenticity. Our figures, therefore—*i. e.* Dr. Seaton's and my own—are from the same source.

Table 1.

Mortality from "Scrofula" and from "Syphilis"

From 1838 to 1866, inclusive.

Division I. Before the Enactment of any Vaccination Laws.			Division II. Vaccination provided Gratuitously, but not Obligatory.			Division III. Vaccination Obligatory.		
Year.	No. of Deaths from SCROFULA.	No. of Deaths from SYPHILIS.	Year.	No. of Deaths from SCROFULA.	No. of Deaths from SYPHILIS.	Year.	No. of Deaths from SCROFULA.	No. of Deaths from SYPHILIS.
1838	1,119	159	1841	1,193	177	1854	2,613	964
1839	1,151	142	1842	1,295	178	1855	2,985	947
1840	1,312	195	1847	1,404	565	1856	2,831	879
			1848	2,363	577	1857	3,781	957
			1849	2,739	595	1858	3,004	1,006
			1850	2,484	554	1859	2,995	1,089
			1851	2,592	598	1860	2,860	1,067
			1852	2,580	623	1861	3,457	1,117
			1853	2,727	622	1862	3,416	1,245
						1863	3,277	1,386
						1864	3,111	1,550
						1865	2,963	1,647
						1866	2,901	1,662
Avge. Annual Deaths	1,194	165		2,153	498		3,091	1,193

Table 2.

Mortality from "Tabes Mesenterica" and from "Diarrhœa"

From 1838 to 1866, inclusive.

Division I. Before the Enactment of any Vaccination Laws.			Division II. Vaccination provided Gratuitously, but not Obligatory.			Division III. Vaccination Obligatory.		
Year.	No. of Deaths from TABES MESENTERICA	No. of Deaths from DIARRHŒA.	Year.	No. of Deaths from TABES MESENTERICA	No. of Deaths from DIARRHŒA.	Year.	No. of Deaths from TABES MESENTERICA	No. of Deaths from DIARRHŒA.
1838	724	2,482	1841	1,070	3,240	1854	5,638	20,052
1839	706	2,562	1842	1,283	5,241	1855	4,762	12,770
1840	1,044	3,469	1847	4,580	11,595	1856	4,752	13,815
			1848	4,368	11,067	1857	5,380	21,189
			1849	4,440	17,831	1858	5,017	13,853
			1850	4,012	11,468	1859	4,982	18,331
			1851	4,510	14,728	1860	4,680	9,702
			1852	4,700	17,617	1861	5,692	18,746
			1853	4,965	14,192	1862	5,203	11,112
						1863	5,877	14,943
						1864	5,941	16,432
						1865	6,698	23,531
						1866	6,377	17,170
Avge. Annual Deaths	824	2,837		3,769	11,886		5,461	16,280

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Table 3.

Mortality from "Bronchitis" and from "Atrophy and Debility"

From 1838 to 1866, inclusive.

Division I. Before the Enactment of any Vaccination Laws.			Division II. Vaccination provided Gratuitously but not Obligatory.			Division III. Vaccination Obligatory.		
Year.	No. of Deaths from Bronchitis.	No. of Deaths from Atrophy & Debility.	Year.	No. of Deaths from Bronchitis.	No. of Deaths from Atrophy & Debility.	Year.	No. of Deaths from Bronchitis.	No. of Deaths from Atrophy & Debility.
1838	2,067	8,652	1841	2,267	11,724	1854	20,062	26,092
1839	1,663	11,285	1842	2,267	15,309	1855	27,182	25,542
1840	2,053	13,238	1847	16,499	19,249	1856	21,528	24,709
			1848	14,472	19,959	1857	25,558	27,752
			1849	14,826	23,430	1858	29,093	26,860
			1850	14,611	21,521	1859	25,998	27,990
			1851	17,294	24,154	1860	32,347	26,930
			1752	17,073	25,131	1861	30,986	29,291
			1853	22,391	25,051	1862	32,526	27,077
						1863	32,025	28,193
						1864	38,969	29,634
						1865	36,428	32,161
						1866	41,334	31,097
Aver. Annual Deaths.	1,927	11,058		13,522	20,614		30,310	27,918

From the year 1838 to the year 1866, the increase in the population of England and Wales is equal to 30 per cent. The following table shows the net increase in the six diseases tabulated above:

Table 4.

Showing the Average Annual Deaths from the Six Diseases,

For which Statistics are to be found in the preceding Tables.

Division I. Before the Enactment of any Vaccination Laws.		Division II. Vaccination provided Gratuitously, but not Obligatory.		Division III. Vaccination Obligatory.	
Name of Disease.	Average Annual Deaths for the 3 Years from 1838 to 1840, inclusive.	Name of Disease.	Average Annual Deaths for the 9 Years from 1841 to 1853, inclusive.	Name of Disease.	Average Annual Deaths for the 13 Years from 1854 to 1866, inclusive.
Scrofula.....	1,194	Scrofula.....	2,153	Scrofula.....	3,091
Syphilis.....	165	Syphilis.....	498	Syphilis.....	1,193
Tabes Mesenterica.	824	Tabes Mesenterica.	3,769	Tabes Mesenterica.	5,461
Diarrhœa.....	2,837	Diarrhœa.....	11,886	Diarrhœa.....	16,280
Bronchitis.....	1,927	Bronchitis.....	13,522	Bronchitis.....	30,310
Atrophy & Debility	11,058	Atrophy & Debility	20,614	Atrophy & Debility	27,918
	18,005		52,442		84,253
Add 30 per cent...	5,401	Deduct.....	23,406	Deduct.....	23,406
	23,406	Net Increase.....	29,036	Net Increase.....	60,847

The net increase of 60,847 deaths per annum in six death-causes only, is a fact absolutely frightful to contemplate. There is an epidemic influence at work in our very midst which, in its quiet, yet mortal results, sets all our philosophy at defiance, either to detect, to mitigate, or prevent. The plagues of former times are as nothing to it. What is the cause? I shall answer that question at a later stage of the inquiry. There are minor points to settle first.

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The only reason why I have not given the statistics of the mortality from 1867, the date of the compulsory act, is that the period is not complete. If the act of 1867 were to be repealed this year, then a fourth division, or grouping, could be added to the the tables. I can assure the reader that the increase in the six diseases above tabulated is advancing with the tide of legislation, and the principle I have before enunciated, that the disease-rate and the death rate follow the vaccination rate and the pay rate, is confirmed and corroborated beyond all doubt.

I have not gone into any minute calculation as to the rate per million of the population, as I prefer to leave the sum total of the figures for each year, and division, to tell their own story. Those who wish for more particular calculations, must make them for themselves; the study will repay them for the labor.

The statistics of the diseases mentioned in the above tables seem to point to a period prior to 1838, when they had a beginning, or if not a beginning, a resuscitation after a state of inactivity and rest. When inoculation was in vogue, many of these diseases would doubtless prevail as they do now; and when that practice was given up, say in 1798, the diseases which owed their existence more or less to its agency would, in some measure, disappear, and the mortality from those causes would decline.

From 1806 to about the year 1825, during which vaccination made spasmodic attempts to gain the suffrages of the people, the mortality, with comparatively trifling interferences from inoculation, was left to tell its own tale. But when vaccination became more general and, in 1841, really took the vantage ground formerly in the possession of inoculation, then the diseases which are aggravated or born of the observance, sprang into life again and have grown with the diffusion of the practice year by year.

It is said that my statistics are not thoroughly complete, inasmuch as there have been changes of nomenclature which may have affected the returns; and that certification of death, which alone can be depended upon, only commenced in 1845. Changes of nomenclature since 1838 or certification, which was substituted in 1843 for a loose sort of registration prior to that year, shows the same gradual increase in the mortality of each disease; and this evidence is conclusive that, for all legitimate purposes of inquiry and investigation connected with the total death rate, the statistics may be accepted at their full value. The objections are unfair. But Dr. Simon, who started both objections, is under the delusion that by withdrawing attention from the "lump" death rate (to use his own phrase) he can, by splitting the mortality into sections, conjure it away from our observations; and then he coolly informs us that there is no increase, but a decrease; and to prove the assertion he goes back to the last century. I confine Dr. Simon to this century, and to the period when our statistics had their rise, and I tell him to his face that since 1838 "the mortality of England and Wales" has increased —is increasing upon us every year. And I tell him, further, that so long as he and his miserable crew of vaccinators stand at the helm and pursue their horrid and disgusting trade, so long will the death rate follow the vaccination rate.

Is there any reason to go beyond the present century for our statistics? Nay, is it not far more reasonable to restrict our investigation entirely from the year when our first returns were published, in 1838, and down to the present time? What dependence can be placed on statistics which exhibited a great decrease in the death rate of any one disease up to a certain date—say 1838—if that decrease were not continued, and showed the same regularity in its decline as we have noticed; for example, in the last three last cholera epidemics? It is of no use, therefore, and would only end in making confusion worse confounded, either to go out of England for statistics, or to go beyond the point where our own statistics commence, and can be relied upon. Confining our attention, therefore, to the registration period is, for all purposes of contrast and fair argument, the wisest, if not the only legitimate mode of conducting an inquiry into the operation of vaccination upon small-pox mortality, or in estimating its influence upon the public health.

Another objection which is urged is this—that prior to 1838, such diseases, or death-"causes," as "phthisis, pneumonia and bronchitis," were all included under the head "consumption," or "decline;" and it is said one can therefore form no correct idea as to the separate mortality under each head. Supposing that phthisis, pneumonia and bronchitis had not been separated, and the mortality had still appeared under the head of "consumption," or "decline," the statistics from 1838 would not have been altered; we should have had the same deaths under one head, instead of three. The change, however, has this advantage—we are able to ascertain in which of the three 'causes of death," the principal mortality occurs. And, further, if it be true, as is stated,

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that there was a greater death rate from "consumption," or "decline," during the last century than what there is in the present day, from the three causes above named; that circumstance furnishes no denial to the statement that from 1838 the death rate has steadily increased. That the death rate of England and Wales since 1838—from which date statistics can be at all depended upon—is an increasing death rate, is a fact which admits of no dispute; no amount of sophistry can hide it, and the glamour of such men as Dr. Simon and Dr. Seaton, when employed to explain it, is as empty and powerless as their efforts are to control or pervent it.

It matters not to us what nosological changes have taken place, nor when certification began; here the diseases are, and the statistics with them, and the steady and progressive advances of the mortality, with respect to each is as palpable and appreciable as the ebb and flow of the tides; and the increase is as distinguishable in 1866 as it was in 1839, or in any of the intermediate years. It would be manifestly unfair to compare the mortality during the last thirty years with the mortality during the same period a century ago, say from 1736 to 1766. The condition of the country and of its inhabitants in the two epochs is as different, in a sanitary point of view, as that which obtains at the present moment between the agricultural population of this island, and the "Ryots of Jessore," or between the districts in the neighborhood of our own coast towns as compared with the Nomes, situate in the delta of the Nile. The only comparison that we can admit is, that from the time when our statistics are official, and the truest comparison would be that between the two quinquenniads, 1857 to 1861, and 1862 to 1866, inclusive, being a comparison of the population under the nearest similar conditions; and the increase of the mortality is thereby established beyond all question.

Here let us inquire: Do the statistics of small-pox since 1838 to 1869—for which years the figures are now incorporated in the annual reports of the Registrar-General—give to the public a fair and accurate return of small-pox mortality? I answer unhesitatingly, "No, they do not." I am satisfied in my own mind that the statistics for any given year only include a tithe of the actual deaths which ought to be debited to that disease. It is not that I believe the certificates of death are knowingly and wickedly false and deceptive; I have no intention of asserting any such notion. The worst feature of the returns consists in this, that there are "causes of death" in such heads as "convulsions, diarrhea, atrophy and debility," and "bronchitis," and some others, which are no causes of death at all; they are merely symptomatic, or after-consequences, sequelæ of small-pox and other diseases of that type, and ought not to appear, as they do now, under heads which are so many loopholes where the faculty may draft off the mortality of the diseases of which, as they think, the public had best know the least about it. Convulsions and diarrhea frequently terminate the life of a patient whose first disorder was small-pox, and other deaths appear under the wrong "cause," and thus the public are deceived. If the real truth were known, and if every death were credited to the first cause and not to its effect, the world would be startled to find that small-pox is as fatal to-day, under the shadow of Jenner and Jenner's disciples, as it was during previous centuries when our countrymen knew little of sanitation, and forgot to put into practice the little which they did know. And yet we are perpetually taunted with the insinuation, "we have no small-pox now as compared with the mortality of the last century." My answer is, "we know not what we have." The figures entered in the annual charge-sheet of death gives at best but a poor idea of the true "death causes of the nation. Unfortunately, we have no means of ascertaining the real truth. I firmly believe that small-pox, in one shape or another, including vaccination, of which the virus in use is small-pox matter, is answerable for as many deaths as at any previous epoch. The mortality from the before-mentioned causes in our day is a regular and perpetual epidemic, whilst the small-pox epidemics of former times visited us only at intervals. As truly as I believe in the existence of God so truly do I believe that thousands of deaths, certified under heads such as "convulsions, diarrhea," and "atrophy and debility, bronchitis" and others, are really attributable to small-pox inoculation, the new name for which is vaccination. The mischief of inoculation in spreading small pox, and in inducing and diffusing other diseases, is now a recorded fact, a chapter in our history which we cannot wipe out or forget; and that being so, who can dispute the conclusion that vaccination is an agent equally destructive and equally mortal? I say, therefore, that the statistics of small-pox do not represent the actual mortality from that disease, and to that extent our statistics are defective and misleading.*

* The other side of this question will be discussed in due time.

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Eating and Drinking.

BY THE EDITOR.

THE AMYLOIDS.

THE word "amyloid" is from two Greek words, which taken together signify "resembling starch." The principal amyloids are starch in its various forms, as arrow-root, corn starch, potato starch, etc; sugar in the form of grape sugar, milk sugar, cane sugar; honey, and cellulose. Cellulose is the woody substance of plants, after all other matter in their composition is dissolved and washed away.

The amyloids, like the fats, discussed in the last number, are destitute of nitrogen, and are composed of only oxygen, hydrogen and carbon. They are the true hydro-carbons. (A hydro-carbon is a substance in which the hydrogen and oxygen are in the proportion to form water, and, to make the matter perfectly simple, we might call them water-carbons—*hydro* meaning water). Liebig divided foods into two great classes, nitrogenous and non-nitrogenous, and fats and amyloids come under the latter head; but as they are very different in their chemical composition, and in their uses, they have more recently been subdivided. Liebig thought their use was to support animal heat, and this they do to a certain extent; but, as remarked last month, they do not equal the fats in this respect. The reason of this is that the fats contain a great deal of hydrogen in excess of what with its oxygen forms water, and this excess when burned helps to maintain heat. The following table will make this clear:

CALORIFIC POWER OF TEN GRAINS OF THE SUBSTANCE IN ITS NATURAL STATE.

	Lbs. of water raised 1° F.
Grape sugar	8.42
Lump sugar	8.61
Arrow-root	10.06
Butter	18.60
Beef fat	20.91

From the above instructive table it will be seen that fat is over twice as valuable a heat producing agent as starch. This might be inferred by throwing an ounce of each into the fire, and noticing the difference in the amount of blaze they produce.

There is also the same difference in the amount of work these substances will do when burned, as the following table will show:

MOTIVE POWER OF TEN GRAINS OF THE SUBSTANCE IN ITS NATURAL STATE.

	Lbs. lifted one foot high.
Grape sugar	6,500
Lump sugar	6,647
Arrow-root	7,766
Butter	14,441
Beef fat	16,142

That the above may be made perfectly clear, it must be understood that any substance which when burned will heat a pound of water one degree will by another mode of action raise 772 pounds one foot high. This seems marvelous at first sight; but the marvel will disappear when we consider the wonderful power that a little coal generates in the engine of an ocean steamer, and in this case much of the power is lost, as no engine has yet been made perfect enough to save all the force generated by the fire under the boiler.

But the amyloids have other important uses in the system besides the generation of heat. In the first place, they may be converted into fat and stored up in the system for future use. This has been abundantly proved by numerous experiments. Perhaps as good an illustration of its truth is the one familiar to most, that the negroes of the south always become fat from the sweets they eat during the season for gathering the cane and manufacturing the juice into sugar. Indeed it is generally thought that most, if not all, of the fat of the system is produced from the amyloids of the food we consume. Other uses still remain for the amyloids. In the processes of digestion and circulation they are converted into lactic acid, found both in the stomach and in the flesh, and into butryic, formic and acetic acids, found in the sweat. These acids have their uses in the various reactions of the fluids of the system—the blood being alkaline, while most of the secretions are acid. They also assist in the solution of effete matter in the system and render it more easy of removal.

MINERAL MATTER.

The bodies of every man and animal contain a very considerable amount of mineral matter, and this comes from the food we eat. Minerals constitute one of the important divisions of food as now divided. The bones and teeth are

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composed largely of mineral matter. It also constitutes an important element of the blood and of many of the secretions. Nearly every tissue contains a small amount of mineral matter. The principal minerals of the body are calcium (the base of lime), magnesium, potassium (base of potash), sodium (base of soda), iron, chlorine, phosphorus and sulphur; water is also included in this list. The minerals are equally important with the proteids, fats and amyloids. Lime, chiefly in the form of phosphate, is absent from no tissue. No cell growth can go on without it. Lime and magnesia are necessary to bone growth.

Potash and soda, combined in the form of phosphates and chlorides, are important. They are thought to be concerned in the molecular currents, They form parts of nearly all tissues. Potash seems to constitute an important part of the formed tissues, while soda is contained in the fluids that bathe them.

Chlorine and phosphoric acid exist in considerable quantities. Chlorine is found combined with sodium, and also in a most important acid, the hydrochloric; and has a special action on the proteids. The phosphoric acid produces important actions with the alkalies. Nearly all food contains them.

Iron is found in all foods, and is an important constituent of red blood corpuscles and in the coloring matter of red flesh. A small amount of iron is found in nearly every tissue.

Sulphur and phosphorus exist in the tissues as important constituents of the proteids, or albuminates.

Silica is present in the integuments, the hair, nails, etc., and in the lower animals is more important than in man.

It has been one of the most difficult problems of physiologists to discover the uses of some of the minerals of the blood. It was easy enough to discover the uses of lime to build up the bones and teeth; but the other minerals had uses more difficult to find out. Even yet there is doubt and uncertainty about it. Still much is known, and it is pretty certain that the mineral constituents of blood are largely concerned in the constant changes going on in the system. In the first place the food, as it goes into the stomach for digestion, could never be digested or absorbed through the microscopic absorbing vessels if not rendered perfectly fluid, and this is done by the minerals contained in the gastric and pancreatic juices. They give a soluable form to those substances which would otherwise be semifluid, like glue or jelly. They maintain this fluidity to the blood that it may circulate through the arteries and veins and capillaries. It is very curious, but probably true, that as the nutrient material leaves the blood and is converted into tissue, that this, too, is done by means of the help of the mineral constituents of the blood. In the blood, which is alkaline, the proteids remain fluid; but in the flesh, which is acid, they lose their fluidity and become solid.

Then, again, when any tissue is worn out and must be removed from the system, it needs become fluid again, and this is accomplished by the action of mineral substances.

Letheby says: "As to the special functions of each of the saline (or mineral) constituents of food, little can be said; but it is a remarkable fact that the alkaline, or basic, phosphate of soda is invariably found in the blood, while the acid phosphate of potash is the chief constituent of the juice of flesh, and" he continues, "most likely the former is concerned in preserving the liquid condition of albumen and fibrine, and so keeping them from being lost by secretion, while the latter is engaged in an opposite duty."

The following table will show the relative amounts of different minerals in human blood:

Phosphoric acid	31.79
Alkalies	55.66
Alkaline earths	3.33
Mineral acids and oxide of iron	9.22
	100.00

Just how much of each mineral our food should contain for each day is not so easy to answer; but Dr. Edward Smith says that a full grown man requires daily from 32 to 79 grains of phosphoric acid, 51 to 175 of chlorine (equal to from 85 to 291 of common salt), 27 to 107 of potash, from 80 to 171 of soda, and from 3 to 6 of lime, and 2 to 3 of magnesia.

According to Lawes these minerals are not stored up in the system to any extent. He found that of every 11 lbs. taken into the body, but 12 oz. remained, the rest being unabsorbed, or used in the work of secretion and excretion.

From what has been said the reader must feel that the subject of food, and eating and drinking is a very elaborate one. The system, to do the best work, requires each day a certain amount of a great variety of substances. Excess of one and deficiency of another may cause serious disease, or prevent the full play of all the faculties. Too much of the proteids poison by an excess of nitrogenous matter. Too little of the fats and amyloids prevents the generation of heat and force, and reduces the

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heat and vigor of the body, while their excess produces corpulency, and other diseases, it may be fevers, colds, etc.; while an excess of the minerals produces gout, gravel, rheumatism, and their deficiency prevents the full play of secretion and excretion.

In the next number this subject will be continued.

Tobacco—Its Effects on the Human Constitution, Physical, Intellectual and Moral.

BY JAMES COULTER LAYARD, M. D.

ITS EFFCTS ON THE ORGANS OF SPECIAL SENSE.

THAT tobacco injures the sense of smell, we presume no one, even of its votaries, will have the hardihood to deny. How can it be otherwise to the snuff-taker, who is constantly filling his nose with an acrid and irritating powder? Or to the smoker, who inhales through his nostrils a smoke-laden atmosphere? Or to the chewer, who never escapes from the odor of the filthy weed? We all know what a disagreeable odor we perceive upon entering a drug-store. Yet, after we have been in for an hour or two we do not notice it. The shop-keeper, who stays there all the time, does not perceive it. His sense of smell has become blunted. Druggists sometimes lose the sense of smell altogether. We have known instances of the kind. The habitual user of tobacco carries about him all the time the odor of a drug of the worst kind, lives in it, breathes it; yet he does not perceive it. Should it, then, be a matter of astonishment that his sense of smell should, after a time, become so obtuse as to render him well-nigh incapable of smelling anything? That the use of tobacco impairs the sight and hearing, will not, perhaps, be so readily believed. Nevertheless, there are upon record well authenticated cases, not only of impaired hearing, but of total deafness, produced by the use of snuff. Do you ask how? The cavities of the mouth, nose and ears all communicate with each other, as do these also with other cavities in the cranium, called *sinuses*, by means of internal passages, lined continuously with mucous membrane. Any substance, therefore, which is introduced into the nose can readily find its way into any of these other cavities—the passages of the internal ear, for instance—with which it is continuous. The late Rev. Dr. Cooper, of Boston, by the constant use of snuff, brought on a disorder of the head which was thought to have ended his days. A *post mortem* examination disclosed a quantity of hard and impacted Scotch snuff lodged between the nose and the brain. Now, in addition to the pathological effect which all narcotics have in blunting and deadening the special senses, snuff, by getting into the passages of the internal ear, may cause deafness, by its mere mechanical effect in blocking them up. We dare to assert, without fear of successful contradiction, that every man and woman who uses snuff carries about with him or her, constantly, more or less of the detestable stuff lodged in some of the cavities of the skull; and that a *post mortem* examination would reveal the fact! Do you wish to make a snuff-box of your *frontal sinus*?

It is only of late years that the attention of medical men has been directed to the influence of tobacco upon vision. That loss of sight is one of the symptoms of acute nicotinism, has long been known to the faculty; but it is only within a recent period that the agency of chronic nicotinism in causing blindnes—at least that species of it called amaurosis—has become a well established fact. Amaurosis is a paralysis of the optic nerve, and was formerly one of the most intractable maladies that physicians were called upon to treat—in most cases incurable. But since the causes which produce it have been better studied, greater success has been met with. Thus, Mackenzie, whose work on the eye is a standard authority, Hutchinson, and other oculists of eminence were led to notice that a great majority of those who came to them to be treated for amaurosis used tobacco in some form; many of them to excess. Acting upon this hint, their amaurotic patients were advised to abandon the habit. In the case of those who followed this advice, the disease soon became amenable to remedies it had hith-

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erto resisted. In some instances sight was restored after a time, without any treatment whatever; just as many other diseases get well of themselves, when the causes which produced them cease to operate. No fact in medical science is now better established than that the use of tobacco is one of the most efficient as well as one of the most frequent causes of amaurosis. In most medical text-books of a late date this is cited as one of the causes of this disease. And so prominent a cause is it allowed to be that the disease itself is sometimes characterized by medical writers by the term *tobacco blindness*.

But short of producing total blindness, that the use of tobacco, at least tobacco-smoking, causes weak eyes and impairment of the sight, the Germans furnish us with the best of proof. In Germany nearly all the men smoke, and an astonishingly large number of them wear glasses. Dr. Alcott characterizes them as a *spectacled* nation. Diseases of the eye and defective vision are surprisingly common. Every town of any importance has its eye infirmary, with surgeons who practice this specialty. Heidelberg, with a population of 16,000, has one. Wiesbaden, with a population of 10,000, has one, employing four surgeons, and treating 2,500 patients annually. While the eye clinic of the University of Vienna receives 3,000, and that of Prof. Von Graefe, in Berlin, 6,000 annually.

EFFECTS OF TOBACCO ON THE PERSONAL APPEARANCE.

The effects of tobacco on the personal appearance are often great and striking. It is remarked that those who are employed in tobacco factories and in tobacco stores have a yellow, dried-up look; a look which is not symptomatic of any known disease, but which is peculiar, characteristic, and indescribable. They carry with them the appearance of premature old age. Its effects on the users of the weed are, to a greater or less extent, the same. We can almost always detect in the withered, blear-eyed old crone, the devotee of the pipe. Those who wish, therefore, to preserve a fresh, rosy complexion, a youthful appearance, and their good looks generally, had better avoid the seductions of the Indian weed.

ITS EFFECTS ON THE MIND AND INTELLECT.

It is an acknowledged principle in physiology that whatever enfeebles the body must, in the end, in some degree, enfeeble the mind. This is pre-eminently true of tobacco. That it causes loss of memory, is a fact long known to physicians. Such was the opinion of Dr. Cullen, the celebrated physician and medical author of Edinburgh. Such was the opinion of Dr. Rush, the father of American Medicine. Other men of note, too, besides physicians have testified to the same fact. The Abbe Mignè, in a letter of late date to the director of one of the great seminaries in Paris, condemning the use of tobacco, makes mention of it. In this connection, M. Moigno, author of various mathematical treatises, gives his own experience. He was an inveterate snuffer and smoker, from which he says he experienced a diminished sensibility of the nervous system and a rapid loss of memory, not only of things which occurred some time previously, but of passing events. He had learned several languages by their roots, but was often at a loss for a word. Alarmed at this condition of things, he resolved to renounce the use of snuff and cigars forever. He soon after recovered his memory completely, and also his nervous sensibility. M. Berillon found that of the pupils attending the Polytechnic, at Paris, 102 smoked, while 58 did not. Arranging the two categories in the order of merit, according to the result of the examinations, he found that the non-smokers held in every grade the higher rank, and that smokers deteriorated from their entering to their leaving the school. Facts like these induced the Minister of Public Instruction, in 1861, to issue to the directors of colleges and schools throughout the French Empire, a circular forbidding tobacco to the students.

No close observer can have failed to notice the effects of tobacco in producing irritability of temper. A religious journal of late date says: "One whom we had long known, esteemed, and admired for his former piety and his bright and ready conversational powers, is now so engrossed with his pipe that a simple question has to be put to him the second time before his attention can be gained; and he is so irritable, so short, and so indifferent in his replies, and so intent on his smoking, as to put an end to social intercourse."

Every one has observed the moroseness of the habitual smoker, when deprived for a length of time of his accustomed indulgence. How quick to take offonse, how short and crabbed, perhaps sarcastic, in his replies. But let him for a few minutes get a pipe or a cigar between his teeth, as the smoke curls in graceful wreaths about his head, his face relaxes into a broad smile, and he becomes at once as bland and courteous as a Chesterfield.

The irritability of temper and general per-

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ishness above noticed may be said to be one of the earlier stages of the tobacco disease. With some persons it never goes any farther than this, but with others it progresses into moodiness and melancholy, sometimes into hypochondria; while with not a few it never stops short of insanity. That tobacco is one efficient cause of insanity, we have the testimony of physicians in charge of lunatic asylums. Dr. Woodward, of the Massachusetts Insane Hospital, and others have testified to this. That such is the case is perhaps more strikingly demonstrated in France than in any other country. From 1812 to 1832 the tobacco tax in France amounted to 28,000,000 of francs, and the lunatic asylums contained 8,000 patients. Twenty-five years later the revenue from tobacco had reached 180,000,000 of francs, while there were 44,000 paralytic and lunatic patients in the hospitals; showing that the increase of insanity had kept pace with the increase of the revenue from tobacco. These statistics were presented to the Academy of Science by M. Jolly, who in presenting them took occasion to say that, "the immoderate use of tobacco, and more especially of the pipe, produced a weakness in the brain and in the spinal marrow, which causes madness."

Since we commenced the writing of this essay we read in The Rochester (N.Y.) Democrat, copied from The Nashville (Tenn.) Banner, an account of a young man in Nashville, a tobacco-chewer, who being disappointed in an affair of the heart, endeavored to find consolation for his wounded feelings in chewing an increased amount of tobacco. The result was, that in less than a fortnight he was sent to the insane asylum a raving maniac—another victim of the tobacco plague. He *chewed* "not wisely, but too well."

ITS EFFECTS ON THE MORAL SENSE.

The legitimate effect of every kind of sensual indulgence is to stimulate the passions and to blunt the moral sense. The use of tobacco being a mere sensual gratification, has, then, this effect, as a matter of course, in common with every other method of sensual indulgence. We can treat this branch of the subject only thus generally, having no statistics to offer, other than to point to our prisons and penitentiaries, the inmates of which will be found, in nine cases out of ten, to have been habitual users of tobacco previous to their incarceration. The same is the fact, too, with regard to swindlers, thieves and reprobates of every kind, whether in or out of jail.

The habit of using tobacco is likely to lead to other habits of dissipation. It is very likely to lead to the drinking of alcoholic liquors. We know there are many temperance men among the votaries of the weed, but such is not the fact with regard to the majority. Although it is not true that every man who chews tobacco or smokes cigars also drinks liquor, it is true that nearly every habitual drunkard uses the weed in some form. The chewing of tobacco, and especially of smoking, awakens a thirst which plain cold water will not always allay; and this because it is not thirst simply which is thus aroused, a normal demand of the economy for fluids, but it is an abnormal condition of the nervous system, which demands something of a stimulating nature for its relief. Hence resort is had to spirituous liquors.

The chaplain of the New York State Prison at Auburn reports that out of 700 male prisoners at one time confined there, 600 were convicted of crimes committed while under the influence of intoxicating drink; and that of these 600 as many as 500, or five out of six, had, by their own confession, the desire for strong drink awakened in them by the depressing effects upon their nervous systems of tobacco.

In places where spiritous liquors are sold, we almost invariably find tobacco and cigars on sale, too, and receptacles for the filthy juices expectorated in every corner. Rum and tobacco are congeners; they go together as naturally as roast beef and plum pudding.

EFFECTS OF TOBACCO ON POSTERITY.

We have seen that the general effects of tobacco on the human constitution are to depress the vital energies, and thus render its votaries subject to various diseases. We have seen that it begets consumption, dyspepsia, neuralgia, and other maladies; that it injures the sight, smell, and hearing; that it enfeebles the intellect, causing loss of memory, etc.; that it produces irritability of temper, melancholy, and even madness; and that it blunts the moral sense. What then must be its effect on the offspring of those largely addicted to its use?

No physiological law is now more generally recognised by men of science than that of the hereditary transmission of constitutional peculiarities and infirmities, physical, intellectual and moral, by parents to their children, "visiting the iniquities of the fathers upon the children unto the third and fourth generation." Holy Writ affirms it, all intelligent men assent to it, and all experience proves it. The man whose constitutional energies are in a depressed condition, who is suffering from any disease

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who is short of memory, irritable in temper, hypochondriacal, or with a blunted moral sense, will inevitably transmit to his posterity the same constitutional defects possessed by himself. What a fearful responsibility thus rests upon parents! If you will not for your own sake desist from a practice which is liable to leave all these evils in its train, for the sake of your children and your children's children, be persuaded to reform your habits; and thus refuse to entail upon your posterity your own infirmities, whether of mind, body or soul.

TOBACCO AS A MEDICINE.

We think we have now shown to the satisfaction of every candid mind that tobacco is an article destructive, to a greater or less extent, alike to the health, intellect and morals of all who use it, and that its habitual use ought to be abandoned by every one. In fact, there are few who have not at all times been ready to admit this. There are some, however, who claim for it medicinal qualities. What are they?

Tobacco is described in the Dispensatories as being a cathartic, an emetic, a narcotic, a sialagogue, etc. etc.; and has been said at one time or another to possess nearly every other medical property beside. Indeed, there is scarcely any human malady for which it has not at some time or other been claimed as a remedy. Yet Dr. Wood speaks of its present standing as a medicine in the following terms: "Its remedial employment is less extensive than might be inferred from the variety of its powers." It seems then more recently to have lost character with the profession as a remedial agent. In fact, death has so often resulted from its use as a medicine, that it is now for the most part abandoned as such.

Tobacco has sometimes been employed externally as an emetic, in the form of a cataplasm applied to the abdomen. It cannot be administered internally to either man or beast with safety. We heard the other day of a man who, having a sick dog, and wishing to give him an emetic, took a cigar and soaked it in a glass of water, and gave the dog the infusion; but it killed him so quickly that he had not time to vomit.

It is claimed that tobacco is a sovereign remedy for the itch! This disease is an irritation produced by a microscopic insect, which buries itself in the skin. From the well known effects of tobacco in destroying animal and insect life, we are disposed to admit that it might be of some use here. Tobacco is always in place where there is anything to be killed. But you must look out you do not kill your patient, too.

It is claimed that tobacco is good to preserve the teeth, and that it cures toothache. How any one could for a moment entertain an idea so absurd as the former, we cannot imagine. Its effects on the teeth are directly the opposite. The late Dr. John Burdell, dentist, of New York, says that tobacco causes the gums to recede from the teeth, thus loosening them and rendering them liable to drop out. Dr. Rush mentions the case of a man in Philadelphia who lost all his teeth by smoking. And there are well known instances of the teeth being worn down to a level with the gums simply by the mechanical effect of chewing a quid of tobacco between them—aided, as it no doubt is, by the chemical action of the tobacco juice upon them. Tobacco is certainly the very last thing in the world that we should ever think of using as a dentrifice. It may afford temporary relief in cases of toothache where the nerve is exposed; but only in those unaccustomed to its use. But this it does either by deadening the nervous sensibility of the part to which it is applied, or by causing a revulsion of the nervous system, making the subject deathly sick. We should think the remedy was worse than the disease.

No, not even as a medicine do we need tobacco. We do not think the annals of medicine can furnish a single instance wherein it has saved life, or wherein, if benefit has been derived from its employment, the same results could not have been more safely obtained from the use of some other remedy. Whether as a medicinal drug or an article of daily use, its tendency and its influence are evil, only evil, and that continually. Its ill-advised employment as a remedial agent, per advice of thoughtless physicians, has often led to the formation of habits which last for life. It had, therefore, better be abandoned altogether.

Of what use, then, is tobacco? That is a question which is more easily asked than answered. God, who bringeth good out of evil, who maketh even the wrath of man to praise him, may yet in his all-wise providence, and in his own good time, discover to man the proper and legitimate use of tobacco, for he has created nothing in vain; but when he does so discover it, it will be found to be, we venture to affirm, neither by chewing it, nor by smoking it, nor by snuffing it, nor yet by snuff-dipping, nor still as a medicine, nor in any other way in which human beings can use it to their hurt, or to shorten their days. Nor will it then be found necessary to employ so much land, labor

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and capital in its cultivation in order to furnish a sufficiency for those purposes, whatever they may be; but the spontaneous production of Mother Earth will doubtless be found to be all sufficient for those ends. Until that period arrives let us possess our souls in patience.

(To be continued.)

Ornament and Dress.

BY DR. MARY J. SAFFORD.

HAVING scanned somewhat the dress of our young gent, let us look at the dress of our young miss. If in summer there be a picnic to the country, she appears in muslins and tissues, in ruffles, in sashes and bows, in thin slippers, or in equally thin shoes, encasing the ankle with severity. She must not run in the sun for fear of tan or freckles, she dare not climb because she is clad in gossimer and because she is told that it is very unladylike. There is no freedom of movement, because the waist is fettered, and the arms are bound down by seams that reach below the shoulder joints; and hence the day that has been one of rollick for the boys has been one of restraint and thought for the girls, that they do not ruin their freshly made bows, their new and ruffled clothes. If in winter, you see her again with shoes like paper, compared to those solid ones worn by her brother; those slender ankles and legs almost to the knees are covered, perhaps, with only thin stockings; and, instead of flannel for undergarments, cotton. If it rains, the skirts and stockings are wet; and, as a result, the exposure that hours of sitting in that condition involves. Our young man unites with mental discipline, physical development; if he neglects the latter, as is too frequently the case, he graduates with honors but to die in a few short months or years from an over-taxing of the vital energies. Nearly every institution for men has its gymnastic department, its boat and foot-ball clubs; and did you ever hear of any of them being obliged to change their clothes, so that they could use their limbs in these various exercises. Very few of these institutions of learning *dubbed female*, make any thorough provision for the muscular training of women. I learned at the Girl's High School, in Boston, that gymnastic exercises, once in vogue, had been abandoned, because it was impossible to have them carried on with any benefit to the girls, with waists compressed and arms pinioned. At Vassar College the external bandages are removed, and the muscles of the students are given partial freedom in the movements granted them, one brief hour daily. A large school that I visited in North Germany, in separate departments but under one roof, were boys and girls. I was invited into a large, open yard to see the boys go through with their splendid gymnastic exercises; being so much pleased with the skill they exhibited, I asked the privilege of being present during the exercise of the girls, when I was told that that was not a part of their education. Not being willing to drop the subject without a reason being assigned for the neglect, I said, "Why do you consider the exercise necessary for the boys, for without that they have much more of out of door exercise than the girls?" "Yes," was the reply, "that is true, but we must make the men strong, and leave the women to be fair;" and I went into their department to see what was being done to render them fair. They were all sitting on high benches, the toes of the majority could not touch bottom, bent over their work, the stitching of fine linen, and counting with each stitch the number of threads taken up—and that was a German pedagogue's idea of making fair women. They were given, to be sure, as in our *finishing off* fashionable boarding schools, a daily turn in the open air, marshaled in squads, headed and followed by a teacher, with no joyous running and leaping, and with no aim but the duty of so much time consumed in stepping. When our young Miss has finished her education, at sixteen or eighteen years of age, perhaps, just when the young man enters upon mental discipline, you will find her often with only a smattering of French, wherein she finds no pleasure, as she cannot appreciate that which is worthy to know in French literature, neither profit by it; for if

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she makes a voyage to the Old World she might starve before she could command a meal in that tongue. In music she can thrumb the latest waltz or polka, at a 2:40 speed, but knows nothing of the soul to be found in Beethoven's, Mozart's and Schubert's music. If she has gone so far in botany as to know what constitutes the sepals, petals and stamens of flowers, she has not become interested sufficiently in their family relations to find a joy in rambling in the wild woods to seek the first buds and blossoms of spring—to know their names and uses as well as their beauties. The heavenly canopy that sparkles over her head at night she looks upon as a convenience, since its myriad stars add romance to her evening rambles; but there is no comprehension of the larger and lesser lights, and of their relations to our mundane sphere. And so of her knowledge of philosophy, of chemistry, and of physiology, which being thoroughly studied are of practical use in every branch of the household economy, and unfold daily interests as far-reaching as creation itself. That so-called education being ended, she is now launched upon the world—fair, and oh, how frail! She is, perchance, sent to the great Capital for a winter round of gaieties. The opening ball of the season is given. She may have been dressed warmly in flannels; they are laid aside; the shoulders—and we will not add how much more of the body—are bared; she dances and whirls in her trailing robe of muslin, tulle, or silk, becomes heated, goes into a draft; in repose takes a severe cold, hacks, coughs, grows pale and appetiteless; but still balls, operas and theaters call her out night after night in this same undressed state, it may be. Spring comes; she returns to her home an invalid for life; or the scene is a hasty one; she dies of quick consumption. The grief-stricken mother exclaims, "Oh, that my daughter had been endowed with the health and the endurance of my sons. The minister brings her the balm of consolation by saying, "Death loves a shining mark." The doctor says it must needs have been; she was frail, you know, as women are.

While in the hospitals of Vienna and North Germany great opportunities were given me of witnessing the *post mortems* of women; not only those who die in the hospital, but many in private life are brought here for examination; and I have had the occasion to study closely the ill effects of dress upon all classes of women. And my deep feeling upon the subject cannot be called a hobbied zeal; it is founded upon the observation of many hundred women, and I can safely say that not one out of fifty had a natural development of the thorax, and the abdominal organs in their proper position. I expect in every new anatomy that appears, that some one equally wise with him who has given it as a physiological law that women breathe differently from men, will say that the ribs of women naturally curve in more than those of men, and that their livers are unlike, that the right lobe of that of women extends far below the ribs, and is usually cut in two, as has been the case of many I have seen. The humorous old professor, who made the *post mortem* examination, always had a joke accompanying the twinkle of his eye, and a standing one used to be, "here is another weak sister, a victim to vanity." I have seen ribs over-lapped, as one can twist the fingers one upon the other. I have seen them doubled under, perforating the liver, and other internal organs atrophied and distorted by pressure; and this not always among women of fashion, but among the working classes. Laboring women in Austria work out of doors, employed in the various ways that men are, doing the same amount of work with a fourth less pay. The winter that I was in Vienna the thin brick walls of a block of houses fell, killing and mangling fifteen women who were employed in their construction.

They were mostly thick-waisted peasants, whose sides had never been screwed into corsets, and yet none presented a normal condition; the heavy skirts worn from childhood, tightly tied about the waist, had displaced the internal organs, and by pressure changed the texture of the tissues. The laying aside of that inquisitorial instrument, the corset, is not all that must be done to render woman's garb less injurious. When I am told by women, as is frequently the case, that they cannot live without this pressure upon them, the acknowledgment bears upon its face an abnormal state of the body, for when our own bones and muscles refuse to support us, it shows plainly that violated nature cannot longer perform the functions belonging to her.

Knowing that that most sensitive nerve ganglion, the solar plexus, lies at the pit of the stomach, if there is the least reflection given to the subject, one can but see how injurious those steel and bones must be, pressed upon that tender spot, which adapt themselves to the form of the body, and must be felt, whether the corset strings be loosely or snugly drawn. Continually pressed upon, the abdominal muscles lose their tone and almost their existence, and a train of evils follow that I cannot here enumer-

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ate, but which every physician knows brings him the largest share of his patients.

It pains me to say it, but perhaps we may be benefited by seeing ourselves as others see us, the opinions that American girls in Europe have won are anything but creditable and desirable.

While visiting a school near Frankfort-on-Maine. I asked if there were American pupils, and the preceptor replied, "No, we do not take them, they dress so extravagantly, they think and talk so much of their clothes, that they disturb the quiet, simple ways of our German girls; and we find their influence does us more hurt than their money does us good. In Dresden I knew an American lady who could not find a private school where they would take her daughter, for similar reasons. Who could have imagined for a moment that when the bondage of trailing street dresses was once removed, and short ones sanctioned, that you could ever find human beings in the shape of women yielding homage again to that most filthy and abominable of all fashions? But you see, even now, on the ruins of burned cities, trailed offerings of silks and Thibets.

So long as women were kept in idleness, or allowed to do only such work as confined them within doors, there was less need of practicality in dress. Now that she competes with men in most of the activities of life, shall the style of dress not be changed to meet this new dispensation? Or shall we still see her in this bondage of attire, that enslaves her at every step? You will find weeks of labor spent, with each change of season, in making or remodeling clothes that do not stand guaged by the latest ukase of fashion. You are invited to an evening entertainment in Germany, at the house of a professor, perhaps, where you meet with persons the most intellectual and cultivated—persons whose names are known and honored in all lands; the hostess appears in a quaint dress of drab silk, that served as her wedding one fourteen years before; the bodice is long, the sleeves are mutton-legged; but dear Mrs. Grundy's presence is not felt; no one seems to scan her from head to foot and exclaim, "how horridly she is dressed, how dowdy she looks!" Six months' time, at least, would have been expended upon that dress had it kept pace all of those years with the ever recurring changes of fashion; and in that time, with the cares of a family—and they are not few that devolve upon the wife of a scantily paid German professor—she has learned, with her children, to speak English so well as to be able to entertain those of her guests speaking only that language. You will find, as a rule, in all lands, that the most cultivated and best bred people are the most simply and unpretendingly dressed. You find in Europe women dressed suited to their occupation; the French shop girl in a neatly, plainly made black alpaca. The homespun and woven woolen gown of the German servant girl meets her necessities for years. The dress of the English and Irish serving girls is made of some substantial material. But let them emigrate to America, and what do you see?—this epidemic rage for dress attacking them immediately. As soon as Bridget has gathered together a few spare dollars, she takes her mistress for a prototype, and goes forth, prayer book in hand, to St. Xavier's as gorgeously arrayed as the mistress to St. Paul's.

There is another thought to which this overweening love and desire for gaudy decking and external show in dress leads, and one that every true-minded woman should ponder well in her heart; and that is the snare to evil doing, and the broad road that leads to moral degradation, into which young girls enter who are thrown upon the world unprotected by the love of friends, and that safety which home influences secure. They are led to believe, judging from what they see about them, that they will be measured and admired in proportion as they approach, in dress, those whom they seek to imitate. If the vail could be lifted, and the blightening temptations brought to view that first led to sin, I believe fully, that preponderance would lie in dress and gewgaws. Are we not commanded, "bear ye one anothers' burdens;" and where we feel and know that the tempter is strongest, should we not seek, by example at least, to strengthen the weak. Nothing depresses one's hopes and encourages one's fears more than to see women, who are candidates for useful occupations, dressed like that class who, like the lilies of the field, toil not, neither do they spin. How gorgeously arrayed they are, even in the early morning, in public places, with rings wearing to the flesh, with bracelets so massive that they are shackles, with balls and chains about the neck large enough, if about the ankles, to fetter them; the hair so frizzed that an African might even envy them their kinks. Saturated in perfumery as offensive to olfactories accustomed to pure air as the most repulsive of disinfectants. Seen upon the street in a European city, a woman dressed in a glare of brilliant colors, the jewels hung outside of her external garments, there would be but one opinion as to her place in the social scale.

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I remember walking up Broadway once with a recently arrived foreign friend, and he said: "How is it that these ladies are all going to the opera so early?" He had based his opinion of their destination by their dress.

In my opinion, the first and most important step toward rendering women competent to compete with men in all the varied fields of activity, lies in a fitness of dress in which to perform the duties assigned her.

LESSONS FOR THE CHILDREN.

BY THE EDITOR.

LESSON XVI.

Usually teachers begin their lessons on physiology by telling their pupils all about the bones first, and then they describe the muscles immediately afterward; but you see I quite alter this order of things, for this is the sixteenth lesson and I have said nothing about these organs yet. Suppose we talk about them to-day. Now I think a good way when talking about any subject is, first to find out the meaning of the word or words of which we are to speak, so let us find out what the word muscle means. If you were to turn in a medical dictionary to this word you would find that it was made from a Greek word *mus*, which means a rat, because the ancients often gave names to things from their appearances rather than their uses, and they thought that a muscle when uncovered looked like a flayed or skinned rat. Others think, however, that the word came from another Greek word which means "*to move.*" Which is correct is uncertain, but it is to be hoped the latter is. It would be very distressing to some nervous people to think that there were several hundred rats in their bodies. It is bad enough for them to take refuge in our cellars and muss over the cheese, apples and potatoes, and make us all sorts of trouble, without their getting into our bodies, even in name.

The use of the muscles, you must know, is to move the body, or parts of it; or to balance it, and to perform an endless variety of graceful and complicated movements. There are nearly 400 of them altogether in even the smallest babe, and no more in the largest giant.

You have just as many as your father has, but they are not so large or powerful. If you had no muscles you could not move yourself from one place to another; but you would be like a tree or stick, and have to stay in one place all the while, unless you were moved by some outside force. Now if you wish to go out or in, if you wish to play or work, to throw or bat a ball, to eat or drink, to even read or write, you must use certain muscles of the body. Straighten out your right arm at full length. (Roll up the sleeve first, so it will be bare). Place the left hand above the elbow on the front side, about half way to the shoulder, and press with the fingers rather firmly, while you bend the arm by bringing the right hand up nearly to the shoulder. If you are watchful you will feel something swelling gradually. What can it be? Only the belly of a large muscle. Notice how it acts as you bend the arm, especially if there be a heavy weight in the hand. On the back side are other muscles that straighten the arm again. If it were not for these, when once bent it would always remain so. For each muscle that bends a limb there are others that straighten it; a very important matter, is it not? The muscles have their attachment to the bones at each end—that is they grow onto them; but no single muscle has both ends attached to the same bone.

The ends of the muscles are sometimes called cords. These are very dense and tough. You can see the cords through the skin on the wrist and back of the hand, and also on the ankles and feet. These cords are white. The middle of the muscle is fleshy and red, and much larger than the ends. The only muscle in the body exposed to sight is the tongue. This is attached at only one end, the other being left free to move about. It is of great use in eating and speaking. The heart is also a hollow muscle, used to pump the blood to all parts of the body. The large muscle on the arm which you just felt, is called the *biceps*. The upper

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end is fastened onto the shoulder-blade bone by two cords instead of one. There is a very large muscle on each side of the chest, covering over parts of several ribs and attached to the bone of the upper part of the arm, called *pectoralis major*. It is used to carry the arm forward. Put your right arm out straight from the shoulder as far as you can. Now place the left hand in front of the right shoulder, while you carry the right arm forward rather quickly, and you will feel this muscle contract. There is a large muscle on the palm of the hand—on the thumb side—which draws the thumb in towards the little finger, which you can all feel of and study its action. When you draw the thumb down against the little finger see how it swells in the center and hardens; but how soft it is when not in use. Now when the thumb is drawn down tight against the little finger look on the opposite (back) side of the thumb, and then draw it back just as far as you can. There, do you see the two cords contract? How they form a ridge back of the thumb, running clear to the elbow. Each finger has a muscle or cord to draw the fingers in and out, which you can study also, while the thumb has two. I might go on and show you other prominent muscles of the body, and tell you their use; but it would make our lesson too long. The subject is a very fascinating one, and some day you must all master it in all its details.

The muscles are a little like the stays to the mast of a ship. They hold the body upright as well as move it about. You could neither stand nor walk but for your muscles. If you were hit on the head and knocked senseless you would at once fall to the ground as limp as a wet rag. When a man or woman faints away, or has apoplexy, the muscles fail to act, and the result is the body falls. The muscles of babies are small and weak, and uneducated so they cannot stand or walk; but by and by they grow large, and then the little ones can use them to creep, and after a while walk and run about. So when one goes to sleep his muscles are perfectly inactive, except the heart and some of the muscles that help us breathe. Did you ever go to sleep in your chair? Well, when nearly asleep your head nods down and, perhaps, wakes you. The muscles don't hold the head up then. One cannot sleep well in this way. Different people have their muscles developed differently; some are clumsy, slow and awkward, others quick, and move beautifully. Some have powerful muscles, others weak ones. Many animals have their muscles very wonderfully developed, and they are quick, graceful and agile; as, for instance, kittens, young lions and tigers, deer and the gazelle. Some horses are similarly developed, as the fleet race-horse; while some are developed for strength, as the dray-horse, and have muscles of wonderful size. I have seen an English dray-horse weighing 2,400 pounds, and his legs above the feet were three or four times as large as those of the race-horse.

What makes the muscles act as they do—shortening and lengthening and thus moving the body? This is a hard question. There is a current of blood carried to all the muscles, and this nourishes them and makes them capable of contraction, while the nerves going to them stimulate them. Without blood and nerve power they would not do much

Take care of the muscles by giving them regular exercise every day. This will make them plump and healthy.

Don't strain them too hard, or too long at a time. Don't make them unsteady by drinking or smoking. Don't make them weak by laziness and inaction, or sitting too long at your lessons. Use them properly in a great variety of ways. No part of the body yields in youth so easily to education as the muscles. They learn to dance, play various games, play the piano, gymnastics, and almost all kinds of muscular motion in a short time. But when old they become stiff, and then their education is slow and painful.

QUESTIONS.

1. What did the word for muscle mean in the Greek language?
2. Why a flayed rat?
3. What is the use of the muscles?
4. How many are there in the body?
5. Are there more in a a man than a babe?
6. What would happen if you had no muscles?
7. Can you find that muscle on the arm that bends it in?
8. What straightens it out again?
9. Where are muscles attached?
10. What are the cords?
11. Can you find the large muscle on the palm of the hand that moves the thumb in toward the little finger?
12. Where are those that pull it back?
13. What are muscles like?
14. Could you stand up without them?
15. Are the muscles all alike in all people?
16. What about kittens, lions and tigers?
17. What about the muscles of the race and dray-horse?
18. What makes the muscles act?
19. What about their care?

THE dearest object to a married man should be his wife, but it is not unfrequently her clothes.

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EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

I. Do you recommend apples as a portion of the regular diet?

ANSWER.—Yes, quite as much as potatoes. The Builder says: "Many persons do not value apples sufficiently as an important article of diet. Besides containing a large amount of sugar, mucilage, and other nutritive matter, this fruit contains vegetable acids, aromatic qualities, etc., which act powerfully in the capacity of refrigerants, tonics and antiseptics, and when freely used at the season of mellow ripeness prevent debility, indigestion, and avert, without doubt, many of the 'ills which flesh is heir to.' The operators of Cornwall, England, consider ripe apples nearly as nourishing as bread, and far more so than potatoes. In 1810, which was a year of much scarcity, apples, instead of being converted into cider, were sold to the poor; and the laborers asserted that they could 'stand their work' on baked apples without meat; whereas a potato diet required either meat or some other substantial nutriment. The French and Germans use apples extensively, as do the inhabitants of all European nations. The laborers depend upon them as an article of food, and frequently make a dinner of sliced apples and bread. There is no fruit cooked in as many different ways in our country, nor is there any fruit whose value, as an article of nutriment, is so great.

"An old gentleman recently stated to us that every fall he used to have a severe sickness, but since he bought, during the season, a barrel of good apples, for himself alone, and ate the whole barrel in two or three months, he had every year saved himself from this sickness, without wanting a doctor."

SKATING VS. WALKING.

II. Please decide for us which is the healthiest exercise, skating or walking.

ANS.—Used judiciously, both are good. Which is best must be decided by circumstances. Skating is very invigorating to vigorous people, but walking can be indulged in by all.

EARTH CLOSETS.

III. Do you recommend the use of the earth closet in place of the common privy, in the country?

ANS.—It should be introduced everywhere. The ordinary farm house privies are very dangerous. The Builder says: "It is now nearly four years since the dry earth system of sewage—the invention of the Rev. Henry Moule, of Fordington, England—was introduced into this country, under the auspices of the Earth Closet Company of Hartford.

"During the whole of this time the system has steadily and surely won its way to the favor of the people. All question as to its entire efficacy has long since ceased, and the only remaining obstacles to its universal adoption are the fancied one of the difficulty of providing earth, and the very serious one of the indifference of common people to the dangers and the annoyances of the common privy, which still stands as an emblem of our inherent barbarism.

"We have said that the question of earth supply is a fancied obstacle only, and the experience of all who have used the earth closet will fully sustain our opinion. The quantity of of earth required for a year's supply is trifling, and even this may be replaced, in whole or in part, by the coal ashes which constitute an almost universal annoyance in the household. Compared with the mere labor of going to a privy at a distance from the house, the labor of providing earth is nothing; and the fact that the product of the closet constitutes the best, the most powerful and the most cleanly of all manures, will, wherever the value of manure is at all appreciated, more than compensate for the little trouble that is required. The writer has now used the Moule system for over three years, and with four closets in constant use—three in the house and one in an adjacent street—he has never the least occasion for the preparation of earth. The ashes of the house fires furnish, without cost, all the material required for perfect disinfection.

"The popular indifference to cleanliness and decency is a more serious obstacle to the rapid adoption of the earth closet among the masses; but a powerful agent for overcoming this is now active in the frequent outbreak of typhoid and scarlet fevers, and other diseases whose fatality is in almost exact proportion to the neglect of proper sanitary measures. The most noted case of this sort that has arisen is to be found in the recent illness of the Prince of Wales, who barely escaped death from typhoid fever—

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a disease which caused the death of a friend and of his valet, who were poisoned at the same time and from the same source. The common privy, which is the curse of our country and village life, acts in a different manner, but no less fatally, by reason of its poisoning the water of wells. This subject can not be fairly discussed within the limits of this article, but it is a well authenticated fact, that nine-tenths of the typhoid fever and a large proportion of many of our other fatal diseases, are directly caused or are greatly increased in violence, by the criminal neglect to take proper care that human excrement be not allowed to endanger human life.

"The water closet, which although so dangerous to health and so wasteful of manure, has achieved an almost universal popularity, from the decency, comfort and convenience it secures, must give way to the earth closet; which, with all its advantages, has none of its objections.

"As to that 'relic of barbarism' which disfigures our country homes with its suggestive architecture, and whose stifling summer stench and chilling winter draughts make us daily ashamed of our human needs, it is doomed to disappear as fast as the people shall reach a point of refinement equal to that of the cats and dogs."

TREATMENT OF SCALDS AND BURNS.

IV. How shall we manage a scald or a burn?

ANS.—A simple burn, which does not form a blister, may be treated by a cold wet bandage, or a scraped potato poultice. Change often. After the pain abates, apply cotton wool to keep the part warm. Before doing this, apply soap lather, from shaving soap, and allow it to dry on. Or the parts may be painted over with several coats of liquid collodion, with a camel's hair brush. If the burn is more extensive, dredge it with very fine dry clay and wrap in a bandage of dry cotton. It is important to protect such burns from the air immediately. The dry earth helps to form a scab, which protects the flesh and allows healthy granulations to go on. It also absorbs any foul odors and prevents bad smells. If a large blister is formed, puncture it and apply a mixture of two parts of collodion and one of castor oil over this; dredge thickly with dry earth, or flour, and cover with carded wool. Do not change the dressings, after once properly applied, for several days.

A JOURNEY ON FOOT.

V. I expect to make a long journey on foot this year, and ask you for some hints about walking shoes, etc.?

ANS.—We cannot answer you better than in the words of a man who recently walked from San Francisco to Portland, over 1,500 miles. He says: "Before starting I was strongly urged to wear shoes—'English walking shoes'—and my own prejudices were in their favor, but careful deliberation told me of the fearful dust to be encountered, following, as we would have to, most of the way, a thoroughly traveled road that had not seen rain for months, and also of the necessity of having to take boots or shoes off many times each day to bathe the feet. This decided me in favor of high top boots, the wisdom of which I had no occasion afterward to doubt. The pants were also protected from the dust, by being worn inside of them. The feet can be saved much irritation and many blisters by the use of insoles—boots or shoes having been made large enough to admit them. The greater friction between an easy fitting boot and the foot is at the fore part of the front foot. Every time the heel raises the relative position of the foot and the sole of the boot must change, causing great friction, as the entire weight of the body is upon the foot at the time of change between foot and boot. An insole, if a trifle shorter than the boot, will take much of this friction from the foot, as it must then take place, to a great extent, between the insole and the sole of the boot. A second insole will relieve the foot still more. They will also furnish the additional advantage of relieving the feet when much swollen by taking them out. No matter how toughened the feet become, they will blister very readily if rapid walking is persisted in, say for three or four hours, while at a pace that is not unduly exhausting to the system they will not feel the slightest discomfort.

"We practiced bathing the feet, hands and heads very often, say from three to six times a day, when water was found, and when we were tired and exhausted it would have a very exhilarating effect.

"Rapid walking, 'spurts,' at the rate of four miles an hour, of two or three hours duration, or long marches—say twelve miles or more—without a halt, is very exhausting. If indulged in in the early part of the day, it will incapacitate one for the balance of the day, or if at the close of the day, its effects will be felt the following day. The same will apply to ascending high hills or mountains. Movements in such instances should be sufficiently moder-

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ate to avoid getting into a 'pud,' or perspiration, more than when moderately walking on a level.

"The Graham crackers, upon which we principally existed, were baked hard and dry like sea biscuit, and we found it necessary to moisten and soften them before eating; and we resorted to the use of boiling hot water, breaking the crackers into it, and allowing them to absorb all the water they would. The hot water seemed so grateful to us that we soon fell into the way of taking it freely, and were often astonished at the quantity we consumed. Its use did away with much of our thirst while walking, and was beneficent in all of its effects. I venture the assertion that there is a virtue in the use of hot water, where great exertion is to be endured, that is not generally understood. By hot water, I mean water that has been made to boil, and then taken as hot as it can be borne. Tepid water is unpalatable.

"In our preparations it was proposed that we carry sun umbrellas. I did not second the proposition, believing their use would not compensate for the trouble of carrying them. I yielded, however, and subsequent experience convinced me of their great value to us. Our estimate was that we could perform one-fourth more with than without them, whenever the temperature was above 90°."

BAKING APPLES.

VI. What is the best way to bake an apple?

Ans.—F. G. says, and we believe him, that to bake an apple perfectly can only be done by giving it time, keeping it under heat—steady at that—for from four to six hours, depending upon the size and quality of the fruit. It requires this length of time to reduce it to a fine pulp, and destroy all rawness. The flavor is changed and improved, making—if Spitzenburg or some other good fruit—one of the choicest and daintiest of dishes. The point in baking is to give all the heat that can be borne without bursting the skin, thus retaining the moisture.

TROUBLE WITH DRESSMAKERS.

VII. A lady correspondent complains that she would gladly wear her dress loose about the waist, but her dressmaker interferes and makes it from two to three inches too small. She asks, "What can I do?"

Ans.—We once had a friend who had great trouble in getting his shoes made to suit him. Finally he threatened to stand over his shoemaker with a shot gun in hand and shoot him if he disobeyed orders. We do not advise such measures, but those of another friend might be adopted, to refuse to pay for work that was not according to orders.

There are dressmakers who have a genius for clothing the person gracefully and artistically, without in the least interfering with its freedom; but these are few and far between. For the others, it behooves every woman to maintain her ground with them, and in every instance to give her influence in favor of the natural waist.

We look forward to the day when physical perfection shall be as seduously cultivated and as highly valued in this country as it was in ancient Greece. It will come slowly, as the result of woman's industrial and political enfranchisement when enjoying the sweets of freedom and equality, she will put far behind her every sign of her previous childishness and irresponsibility.

LICE.

VIII. How can lice be got rid of?

Ans.—"To kill lice," says The Edinburgh Medical Journal, "use a simple decoction of staves-acre (*Delphinium stophisgria*), or with a lotion made with the bruised seeds in vinegar, or with the tincture, or by rubbining a salve made with the seeds and four times their weight of lard very carefully beaten together. The acetic solution and the tincture are the cleanliest and most agreeable preparations; but all are equally efficacious in destroying both the creatures and their eggs, and even in relieving the intolerable itching which their casual presence leaves behind on many sensitive skins. The alkaloid *delphinia* may be also employed, but possesses no advantage except in the preparation of an ointment, when for any reason that form of application should be preferred. Any good druggist will prepare the compound."

MELANCHOLIA.

IX. What will cure melancholia?

Ans.—Go to bed and sleep it off, then get up and keep it off by work.

CURING WARTS.

X. How can I cure a large wart on my hand?

Ans.—Warts cannot very well be cured, but they may be killed or removed by applying carbolic acid daily for a few days. Do not let it get on the healthy skin.

The *highest* office within the gift of the people is the weather signal station on Pike's Peak.

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

HORACE GREELEY.

BORN FEBRUARY 3D., 1811.

How shall we measure on this natal day
The loss of our great friend?
There is none like him on the whole broad earth,
Look where you may,
Even the pitiless skies,
To our appealing eyes,
Seem paler as they bend
On so much less of human worth.

Think of his liberal love—
There was no end thereof.
It overleapt all boundaries and climes—
Beat with pathetic wave
(Mating the pity of his Lord above)
Around the poor, soul-beggared, helpless slave.
Whom with firm purpose it went forth to save,
All seasons and all times
Were sacred to this passion for his kind,
Nor age, nor rank, nor sex, nor color gave
A sense of difference to his mind.
The furthest, feeblest mortal of our race,
Held in his heart and sympathy a place.

Who can forget him now?
A face imperial, gracious, dear, benign;
A head to go with Goethe's, Shakespeare's line—
The high, Olympian brow.
Domed well our largest, quickest, fertil'st brain,
His broad benificence he showered like rain—
And if sometimes to worthless hands it rolled,
'Twere better thus, he thought, than some great want
undoled.
Who can forget his kindly-beaming smile?
Seal of a heart untinct with art or guile,
Whose warm wish uttered would
Fill the world's lap with good,
Cripple sin's fateful reign,
And crush the power of penury and pain.

The Pen in his right hand—
It was a royal wand;
A terribler and much more potent thing
Than the most purple edict of a king.
When on the wrong it fell,
Edged as with fire was every syllable
Of its stern logic, and such weight it bore
That even truth seemed truer than before;
Shadows of darkness went,
And Justice rose to crown the continent.

He lived for Duty, not Desire—
Up Toll's steep cliffs, higher and higher,
He climbed where none could follow; things that please
He loved with us—but never took his ease—
And wore a weariness that would no rest,
Loved joy, but others' weal he loved the best.

Poet or peasant, either could inspire—
While charmed with Browning's super-subtle speech
Not less the bronsed face taught him. Out of each
Came hints whereinto he would fain inquire.
Art won his homage, and to Nature's page
He turned, in constant, tender pilgrimage.
Had not some prompting, moral pulse of Fate
Kept him so long imbued
With plans for human good,
To take the plow he would have left the care of State.

Yet he was Nature's child—
Simple and undefiled,
He bore a child's heart in the ranks of men,
The instincts of his youth he kept unspoiled,
A woman's purity which nothing soiled—
When shall we see his wondrous like again?

Working for boundless good,
Maligned, misunderstood,
He was Detraction's shining mark;
The small-cur critics came with snarl and bark,
And when their purblind sight—
Far feebler than their bite—
Saw not his vision, they pronounced it dark;
As if the mole's dull eye
Should tell the eagle how to map the sky!

Not for a single cause, a partial end,
Did his sublime compassion bend.
Why should one segment of the sphere absorb
The heavenly dews meant for the rounded orb?
Though to the slave so deeply, loyally true,
He felt the South's grim wrongs and hardships too.
And when to us the final victory went
In battle's bitter, stern arbitrament,
He saw that Love must dawn and make increase,
Before transfiguring, came the spotless Dove of Peace.
Then rose the bigot's rage the henchman's strife—
The parasites who owed to him their life,
Who held the hour's weak scaffolding, for pelf,
Counting it more than the capped dome itself.

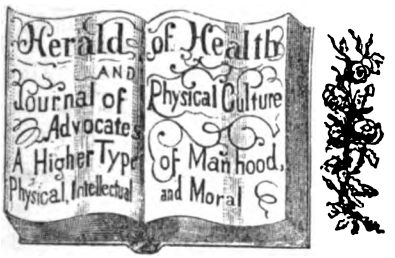
We pass the later, vitriolic days—
Even Shame turns from them with averted face—
From all Mephisto's inkpot could create
Of brutal, black ferocity of hate;
For Truth's untiring eyes
Have burned as chaff their mountainous calumnies.
What though they strut their hour,
The mob of little men puffed up with power?
Upon the crystal coast, beyond our line,
The benediction of his face divine
Shines like the brightness of the Morning Star—
Hail and Farewell, most noble Conqueror!
This is his Birth-day Morn,

We joy that he was born;
Spread odors of fair flowers
About this shrine of ours—
Bring forth the lily's whiteness and the rose
To deck his sweet repose—
For, far above Earth's strife, and Passion's roar,
He lives whom we must love, and learn from ever more.

Feb. 3d, 1873. Joel Benton.

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EDITORIAL DEPARTMENT.



NEW YORK, MARCH, 1873.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

☞ THE PUBLISHERS *do not hold themselves as indorsing every article which may appear in* THE HERALD. *They will allow the largest liberty of expression, believing that by so doing this magazine will prove to be more useful and acceptable to its patrons.*

☞ *Exchanges are at liberty to copy from this magazine by giving due credit to* THE HERALD OF HEALTH AND JOURNAL OF PHYSICAL CULTURE.

TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

EDUCATION AND HEALTH—TOUGHNESS OF HUMAN BEINGS.—In a recent report of the sanitary inspection of all the public school-houses in New York city, abundant evidence was found of the toughness of children to bear abuse, and of the amazing ignorance and negligence on the part of parents and the authorities of their duty to the young. Three physicians of eminence have given several days of their time to the investigation of the healthfulness of the places where the young are instructed. What do they find?

1. That not one of the public school buildings have adequate means of ventilation.

2. That the class-rooms are over-crowded; and in many instances so large is the number of pupils and so small the rooms they occupy, that there is not over fifty or sixty cubic feet of air to each child, when there should be ten times this amount.

3. That the water-closets and urinals in every instance are in close proximity to the building, and in a most filthy condition.

4. That the slop sinks give out most offensive odors which penetrate the school-rooms.

5. That the walls and ceilings are in a filthy condition.

6. That the supply of water in many cases is confined to the first floor.

7. That in many cases the rooms occupied by the children are in dark, damp basements, utterly unfit for human habitation, fit places only for bats and owls.

8. That the playgrounds are small, damp and often unclean.

Our inspectors do not report the amount of sickness, the number of pale faces, weak eyes hacking coughs, listlessness, poorly recited lessons caused by insufficient air and impoverished blood; bad behavior, caused not by natural ugliness, but by nerves in a state of disease that can give out only jangled music.

Now, a true education is a health improving process. The educated are healthier than the ignorant. They live longer and enjoy more. Education invigorates that great fountain of nervous energy, the brain; and this in turn reacts on the body, making it enduring, rendering it capable of warding off disease. In 1827 Double noticed the influence which education exercised on the public health; and, a year later, Melier showed that in those departments of France where the numbers of children at school were greatest the mortality was least, with a few exceptions which could be explained by the action of special influences. M. Du Mesnil has recently again investigated the subject, and has given the results of his observa-

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tions in the *Annales d'Hygiene Publique*. From a comparison of the reports on recruiting for the army with those on the progress of education, he has found that those departments in which the proportion of illiterate persons is greatest, present also the lowest duration of life, and the smallest average stature; while in those where primary instruction is most completely carried out, the people live longer and are of larger build. He finds, also, that the number of recruits rejected as unfit for military service, is greatest in those departments where education is most neglected.

Similar investigations by a former president of Harvard University brought to light similar facts. But does any one in his right mind believe that a tender child, a boy or girl in the period of most important physical development, can gain in physical and mental vigor by being educated in foul air, in damp rooms, in dark places, in surroundings more foul than stables? It costs millions of dollars every year to build up and equip our school-houses. If it cost millions more the benefits received would be cheap in comparison with that condition of ignorance which would otherwise result; but education under such circumstances as we have given, is an insult to children and a disgrace to civilization. And the intelligent, thoughtful people of New York ought to see to it that there is a reform. And it is not in New York alone that reform is needed. Other cities are many of them little better, and there is many a country school situated where the winds of heaven can blow over and around them without stint, that has a sanitary condition which is disgraceful to the people in the neighborhood. Heated by a stove, the air in the top of the room is hot and foul, while that on the floor is cold and damp. Many thousands of children lose their lives every year by colds caught in such places; many get other diseases quite as fatal.

Parents, will you stand idle while this state of things continues? Youth is the only period of physical growth, and it is quite as important that your children have pure sanitary surroundings, as wholesome moral and intellectual training. Better keep children from school entirely, than that it should dwarf them physically and intellectually, as it so often does.

SMALL-POX AND VACCINATION. — Many of our readers have begged of us to say something on this subject, more especially to let them know what are the arguments against vaccination. In another part of this journal the whole subject will be found presented by one fully capable of doing so in the ablest manner. Mr. Pickering is the editor of The Anti-Vaccinator, and well presents his side of the question. This subject is exciting great attention in England, mainly because there vaccination is compulsory. The puritan blood that yet courses in the veins of many Englishmen revolts at this, and is fighting it to the end. The result is that those who refuse to allow the public vaccinator to vaccinate their children are fined or sent to prison. And in many instances, just as soon as one prosecution is over, and the fine collected, another is begun; so that, really it amounts to a persecution—the same person being fined over and over again for refusing over and over again to allow his child to be vaccinated. Many of the foremost minds in England are in the anti-vaccination movement. In this country, there being no compulsory law, each person does as he chooses in the matter; and this is as it should be. The utter failure of the compulsory law in England in stamping out small-pox, or in satisfying the people, ought to prevent our making the same mistake in this country. Meantime let both sides of the subject be discussed, and the real truth discovered, if possible.

While on this point it may be observed that Mr. Pickering's argument, that vaccination only displaces mortality rather than diminishing it, seems to meet with confirmation in Philadelphia, for during the year 1871, when thousands of persons died of small-pox, yet the number of deaths for the year over 1870, when they had no small-pox, was less than 300. This last disease seemed to take off the weaker mem-

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bers of the community, who would otherwise have died of other diseases—diphtheria, scarlet fever, and the like. The fact also, that in spite of so much vaccination, small-pox has run riot all over America and Europe for a few years seems to indicate that we must look to a wise hygiene, to cleanliness in cities, pure air, sunlight, and natural sanitary measures, rather than to artificial ones.

CALIFORNIA AS A RESORT FOR INVALIDS—THIRD LETTER.—*To the Editor of the Herald of Health.*—Before saying anything about the climate of California, allow me to call your attention to the map of the United States. You observe that all the country lying east of the Rocky Mountains is, in one sense, a continuation of the great plains of British America—*i. e.*, there is no intervening mountain chain to separate one country from the other. The result is that the cold air from the north descends in a great wave upon the United States from Kansas to Maine, and extends its effects as far southward as the northern portion of the Gulf States. You notice that California is protected from these cold currents of air—first by the Rocky Mountains, then by a vast desert, destitute in the main of moisture, and which accumulates the solar heat very rapidly; and finally by the Sierra Nevadas, the great rocky wall along the eastern portion of the State. Observe that the Sierras are so high above the sea level as to effectually condense the major portion of the moisture in the westerly winds blowing from off the Pacific Ocean, and to precipitate it on their sides and summits as rain or snow. You will also notice a range of mountains near the Pacific, not as continuous or as high as the Sierras, and called the Coast Range, from the fact that it extends near the coast from the northern to the southern portion of the State. Between the Coast Range and the Sierras the country is divided by spurs of the Coast Range into what are called valleys, but which are really vast prairies, nearly level and usually drained by a stream passing through their middle. These leading features of the topography of California must be borne in mind in order to comprehend the peculiarities of the climate of different parts of the State, and to understand why places on the Atlantic and Pacific slopes, in the same latitude, have such different climates. The State extends from about the latitude of Springfield, Mass., to the latitude of Charleston, South Carolina; and this great extent of latitude, combined with its peculiar mountain system, and its location along the shores of an immense ocean, gives California a great range of climate. In some locations there is a marked difference in the climate of places but a few miles distant from each other. Air over land is heated much quicker by the sun's rays than air over deep water. This familiar fact is specially noticeable, and produces peculiar effects in California. Air in the interior becomes heated in the forenoon, and as it rises is replaced by a current of cooler air from the Pacific. In this way a daily westerly breeze, over most of the State, is created for a large portion of the year. San Francisco is situated at an opening in the Coast Range, and through this passage the cold winds and fogs from the Pacific sweep and extend inland for a long way, varying in force and degree with the distance from the ocean. Especially is this the case during the summer months, the force of the winds being, of necessity, in proportion to the degree to which the land air is heated. As a matter of course, locations sheltered by hills or mountains from these winds, have a much milder climate than those exposed to them. San Francisco and environs receive the full force of these unpleasant winds. In consequence, heavy woolen clothing is worn the year round in that vicinity; and the climate is well fitted for the production and aggravation of chronic catarrh, bronchitis, and kindred diseases of the air passages. This is peculiarly unfortunate from the fact that San Francisco, and its suburbs around the bay, to-day contains one-third of the whole population of the State; and its geographical and topographical position is such that it must always be the great center of population, com-

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merce and wealth of the entire Pacific coast.

Snow very rarely falls at San Francisco, and ice seldom forms one-fourth of an inch thick. Roses bloom throughout the year in the open air. All parts of the State, even the extreme southern portion, are subject to occasional light frosts in the low lands. The northern portion of the State is subject to snow falls and cold weather, owing to its high altitude above the sea. This is specially the case in the Sierras. At San Diego the mean range of the thermometer for January is 51°; May 62°, August 73°, and for the year the mean is 62°. At San Francisco the temperature is—January, 49°, May 55°, August 57°, and the yearly average 54°. At Sacramento the mean temperature is—January 45°, May 71°, August 73°; and the average for the year 59°. Except in the mountains in the northern portion, and the higher mountains in the middle and southern portion of the State, the mercury seldom falls to the freezing point, and then for only the coldest portion of the twenty-four hours. All over the State the nights are always cool. Sultry, sleepless nights are unknown. The month of January at San Diego is like the first of June in New York. As I write this letter I am sitting by the open window without a coat; the grass is a beautiful green, the birds are singing, and flowers of all kinds are in bloom in the open air. I can see a patch of peas in blossom, and standing four feet high. This morning I picked fresh, ripe tomatoes from the vines, and saw radishes and beets fit for use. To me the great attraction of the climate of California is the great amount of sunny days and clear, starry nights. Day after day the sun rises in a cloudless sky, and all day long sheds its genial rays. Imagine a series of one of the beautiful, balmy, cloudless days which you have occasionally in May in New York, and you then can form a correct idea of the usual winter and spring climate of Southern California. In the northern and middle portion of the State there are more cloudy days and less sunshine than here; still the total of sunshine throughout the State is far greater than in any of the States east of the Rocky Mountains. The rain-fall of the State is entirely unlike that of the rest of the Union. Rain seldom falls between May and October, and nearly all the rain fall of the entire year is in the months of December, January, February and March. Over the principal part of the State much less rain falls than in the Eastern States. At San Francisco the average fall for the year is 22 inches; at San Diego 9.45 inches, at Stockton 15 inches, and at Sacramento 20 inches. In the Sierras rain falls in enormous amounts—sometimes 96 inches in one season. As a rule, the fall of rain increases precisely with altitude and latitude; the southern portion of the State being almost rainless, while the northern portion and the high mountains have an abundance. In the summer the mercury, in the sun, stands at a high point throughout most of the State; but owing to the dryness of the air and and almost constant breezes, is not considered oppressive or dangerous.

In my next I will endeavor to give some practical suggestions to invalids, who may contemplate a visit to this State. Yours, etc.

JOHN P. PHILLIPS.

LETTER FROM A SUBSCRIBER.—*Gentlemen.*—I hereby send the amount of renewal of THE HERALD OF HEALTH for one year; as the only resource subscribers have, is either to stop or "sass back." I will choose the latter. I want all the information I can get on the subject of health; but I find it difficult to get it without investing in somebody's hobby, and sometimes in their scepticisms, either of which I don't wish. As to hobbies they are so numerous one can't carry all of them; and as to theology, New York is rather a loose place to give sentiment to the religious world. At your leisure I would like if you would give your opinion on the want of proper action of the liver, causes and cures, and oblige

Yours truly, B. D. B.

THE liver often gets blame for being lazy and torpid, when it should not. It is the scapegoat of any amount of physical suffering. A torpid

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liver is supposed to account for about half the ill health there is. Now, there is often a general torpidity of the whole system. The stomach don't digest, the heart's action is feeble, the bowels are constipated, the nerves are weak and the liver is lazy. The true course to pursue is to build up the system generally, by change of diet, more nutritious food, more rest, sleep, exercise, bathing, use of electricity, etc., and less waste of the energy of the body by over-work, overing-eating, bad food and anxious care. Don't blame the liver more than the stomach or nerves. They do the best they can always. We have no hobby about torpid livers being the cause of so much ill health. A torpid, half run down state of the system generally, and not a torpid liver, is what's the matter in nine cases out of ten.

Regarding hobbies, we can only say that our greatest hobby is to spread just as much reliable information as we possibly can. In doing so, we do not mean to preach theology to anybody. We leave this work to theologians. While we do not expect to please everybody, we hope and believe we shall please a very large class, even our correspondent, whose friendly letter we print, and whose name we gladly put on our list for 1873.

COMPLIMENTARY DINNER TO TYNDALL.—Tyndall, the great apostle of science, has just concluded his lecturing tour in America. Those who were privileged to hear him will never forget it. It was a treat of no ordinary kind to sit night after night listening to his words and seeing his wonderful illustrations. The result cannot but be favorable to the advancement of science in this country, particularly original scientific research, in which America is greatly behind other countries. As a closing compliment to Prof. Tyndall, a dinner by the *savants* of science was given him just before he parted with us for his home. At this dinner many pleasant things were said, and one portion of Tyndall's brief speech is so full of personal matters of interest to all, that we give it to our readers. He says:

"Not as a servant of Mammon do I ask you to take science to your hearts, but as the strengthener and enlightener of the mind of man. Might I now address a word or two to those who, in the ardor of youth, feel themselves drawn toward science as a vocation? They must, if possible, increase their fidelity to original research, prizing far more than the possession of wealth an honorable standing in science. They must, I think, be prepared at times to suffer a little for the sake of scientific righteousness; not refusing, should occasion demand it, to live low and lie hard to achieve the object of their lives. I do not here urge anything upon others that I should have been unwilling to do myself when young. Let me give you a line of personal history. In 1848, wishing to improve myself in science, I went to the University of Marburg—the same old town in which my great namesake, when even poorer than myself, published his translation of the Bible. I lodged in the plainest manner, in a street which, perhaps, bore an appropriate name while I dwelt upon it. It was called the Ketzerback—the heretic's brook—from a little historic rivulet running through it. I wished to keep myself clean and hardy, so I purchased a cask and had it cut in two by a carpenter. Half that cask, filled with spring water over night, was placed in my small bed-room, and never during the years that I spent there, in winter or in summer, did the clock of the beautiful Elizabeth-kirche, which was close at hand, finish striking the hour of six in the morning before I was in my tub. For a good portion of the time I rose an hour and a half earlier than this, working by lamp light at the differential calculus when the world was slumbering around me. And I risked this breach in my pursuits, and this expenditure of time and money, not because I had any definite prospect of material profit in view, but because I thought the cultivation of the intellect important—because, moreover, I loved my work, and entertained the sure and certain hope that, armed with knowledge, one can successfully fight one's way through the world. It is with the view

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of giving others the chance that I then enjoyed that I propose to devote the surplus of the money which you have so generously poured in upon me, to the education of young philosophers in Germany. I ought not, for their sake to omit one additional motive by which I was upheld at the time here referred to—that was a sense of duty. Every young man of high aims must, I think, have a spice of this principle within him. There are sure to be hours in his life when his outlook will be dark, his work difficult, and his intellectual future uncertain. Over such periods, when the stimulus of success is absent, he must be carried by his sense of duty. It may not be so quick an incentive as glory, but it is a nobler one, and gives a tone to character which glory cannot impart. That unflinching devotion to work, without which no real eminence in science is now attainable, implies the writing at certain times of the stern resolve upon the student's character: "I work not because I like to work, but because I ought to work." In science, however, love and duty are sure to be rendered identical in the end."

EMILY FAITHFUL.—Miss Emily Faithful, so favorably known in all intelligent circles as the leader of reform among working women in London, has lectured several times in New York, to large audiences of thoughtful, if not fashionable people. She is a very plain woman, wearing short hair and dressing with almost Quaker simplicity. In England she is held in high esteem by the queen, and the leaders in all educational and reform movements, numbering as her personal friends the most intellectual men and women of Europe. At a *matinée* lecture which she gave to over two thousand persons—mostly women—recently in this city, it was remarkable to notice how much larger and healthier she looked than almost any of her audience. We have not space to say much about her lecture, but we may remark that she believes that every girl should be made independent of fortune, by having a trade or profession in which they may earn their own livelihood, if necessary. The Queen of England, she declares, has educated all of her daughters to some useful art, and each of them could, if need be, earn a good living by labor in the occupation they are educated for. The Princess Louise, last year married to the eldest son of the Duke of Argyle is an artist of no mean order, and could not only support herself by her profession, but her family also.

We believe the visit of Miss Faithful to this country will be productive of much good in dignifying labor, and making it, if not more honorable, at least more respected.

WET FEET.—*To the Editor.*—THE HERALD is very satisfactory in its logic. I read it with implicit reliance. Here is a new subject. I have never seen it touched upon by any writer in the profession. I will look for your opinion in your next issue.

I have a better acquaintance with cold water than any of my physicians, or friends. For the last twenty-five years I have soaked my feet, night and morning, going to bed and getting up, in water of the weather temperature—as cold in winter as ice can make it, and in summer as cold as fresh-drawn water can be. I never dry them on going to bed, nor on putting on stockings in the morning. I wear woolen stockings in winter, cotton in summer; but the same shoes the year round, and no overshoes at any time. My feet are soaking wet whenever the walking is so, for my shoes are seldom water-tight. My stockings are now wringing wet. I have never taken a single cold in such a case, and have not had the symptoms of cold five times in twenty-five years, nor any other sickness. But my doctors impugn my habit, and so do all my friends and relatives; and, in reply to my questions for the true reason why they think as they do, all that they say is that "it is just awful," and that I "must bundle up my feet," as they do. The result is, I believe in wet feet and my doctor does not. Please give an opinion, with reasons, and much oblige. Truly, etc.

JOHN R. FREEMAN.

REMARKS.—We have known one similar case

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of an Irishman who was used to working with wet feet in boggy ground. He never had a cold. After a few years he changed his location and worked on dry ground, and soon took cold and became sick. Now, it is an excellent thing to bathe the feet daily in water, and get up a good reaction in them. Such a course would tend to toughen them, and fortify the system against cold. Still it is not necessary to do as our correspondent does, and keep the feet wet all the time. There is one other point connected with this subject, which we will notice: Air-tight boots are very unhealthy to the wearer; for they prevent the admittance of fresh air to the feet, and allow the accumulation of all the perspiration in the boots and stockings. In the end the feet become very debilitated, and any little wetting produces a cold. In the case above noticed this evil is avoided, though the discomfort of wet feet, even if they be clean, is not desirable. The true course to follow would be to wear large, airy boots or shoes, to wash the feet thoroughly every day in cool water, in a warm room, and to have a clean pair of stockings every morning. People who wear tight shoes and stockings over one day without a change, and never, or rarely wash the feet, know nothing of the comfort which these extremities may experience.

MR. DARWIN'S NEW BOOK.—Whatever may be the ultimate fate of Mr. Darwin's theories regarding man and his ascent from the animals below him, he certainly makes most instructive and valuable books. The one just issued by D. Appleton & Co., on Expression of the Emotions in Man and Animals, is no exception. The great charm about his books seems to consist:

1. In the simple, unpretending, modest way in which he writes.

2. And in the great amount of valuable information he imparts.

If he advances theories which you do not like, he never forces them on you; but leaves you to decide, as the judge does the jury, on the evidence. It is no wonder that his books sell largely; there is a charm about them never equaled by the best novel. And then you feel after reading his works that you have not only been entertained, but instructed.

The work before us contains some 400 pages, divided into fourteen chapters, and treating on the following subjects: General principles of expression, chapters one, two and three; means of expression in man and animals, special expressions of animals, and in man, chapters four and five; low spirits, anxiety, grief, dejection and despair, joy, high spirits, love, tender feelings, devotion, chapters six and seven; meditation, ill-temper, sulkiness, hatred, anger, disdain, contempt, chapters eight and nine; surprise, fear, horror, shame, shyness, blushing, chapters ten, eleven, twelve and thirteen; and in conclusion a summary. The illustrations are numerous and valuable. The book should find a place in every library. It is good reading for old and young.

LETTER FROM GEORGIA.—I feel much benefited by what I saw and learned at your worthy Health Institution. It is now more than two years since I was in New York, on my way to this State, Georgia. We have a fine climate here, and a settlement of fifty northern families here in Morgan county. Many have been benefited in health by coming here. The climate of this part of Georgia is very salubrious; but a large number of the southern people need to live very differently from the present to enjoy its full and best results. But I think it is easy to see that even the southern people of best intelligence are waking up to the subject of hygienic living, and becoming willing to learn. I see no reason why some right person could not come to this State and find good locations for a hygienic home. S. W.

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DUTIES OF PARENTS. — Our friend, J. Burns, of London, England, has sent us a copy of a book just published by him, entitled, Duties of Parents. It contains about 200 pages, and has chapters on responsibilities of parents, disqualifications for parentage, healthy reproduction and rearing, education, moral and physical, choice of vocation, and limits to the lawfulness of reproduction. It is written in a very earnest spirit, and ought to find thousands of readers.

TEMPERANCE MOVEMENTS. — Preaching temperance is good. If well done, it incites us to practice this most admirable virtue. But intemperance is so great a vice, and the need of the age is so great for its suppression, that something else is necessary besides preaching. In England and in Boston what are known as Holly Tree Coffee Inns are being established, where a wholesome lunch and cup of milk, chocolate, tea, or coffee can be had for the cost of supplying it. It has been found that where established, abstinence from strong liquors is promoted. The rooms might be hung with pictures, and papers might be supplied in addition. We wish something similar might be established wherever they are needed, in all the large cities and towns of the country. It would be practical benevolence. There is an immense amount of benevolent work wasted in this world. Beginning on the wrong end, it is like moving a great weight by taking hold of the short end of the lever. It don't work; but work of this kind will not be wasted, and might do great good. The cause of temperance seems to lag just now. The forces which would otherwise be employed in this field are, no doubt, doing good work in other departments of reform. Every paper brings us the sad intelligence of some new murder through the demon of drink. Saddest and most sorrowful is the last, of a Brooklyn father, who ordered his little child to go to the rum-shop and bring him his mug of beer. The child refused, when the worse than beastly brute of a father whipped the poor boy till he died. Was there ever depravity like this? that even innocent children are unsafe, wherever liquor is used. Thou demon of intemperance, the nation, the State, society, and the family, nay, even the guileless, innocent child, bears the marks of thy damning influence; and yet none of these things move society to arise and shake off this demon. Friends, let us each do something for the temperance cause. Our example, our influence, a word fitly spoken, the instruction of our children; in some way let us help to put down this demon, which is the cause of nearly all the worst crimes of our land, and which, if not destroyed, will destroy us.

THE USE OF OPIUM. — In the Third Annual Report of the State Board of Health of Massachusetts, we find many interesting facts, collected by Dr. F. E. Oliver. The questions sent by the Board to the physicians of the State were:

1. Are preparations of opium used by the people, except for the relief of pain?

2. Has the injurious use of opium increased of late, and if so, the cause of such increase?

The habit of opium eating seems to have originated about 1840. In that year 24,000 pounds were imported. Last year, with a population little more than double that in 1840, we imported about 246,000 pounds—ten times the amount imported in 1840.

Those best posted in the sale of the drug assert that thirty per cent. would cover all that is used in prescriptions. Allowing twenty per cent. for other legitimate purposes, we still have one-half unaccounted for.

Of the one hundred and twenty-five physicians heard from in answer to the first question, forty report that they knew of no case of opium eating. The remaining eighty-five state that opium is used to a greater or less extent in their circuits.

In the smaller towns the number given varies from one to twelve. In larger towns the number is large. Some druggists report no sales of opium without prescription. Others have from one to six regular customers.

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The daily amounts reported vary with each case. The largest amount of crude opium taken was eight ounces per month, or 120 grains daily. The largest amount of laudanum taken daily was one ounce; of morphia, one-third of a drachm. One case is reported in which thirty grains of morphia was taken at one dose, and an equal amount the next day; the latter being followed by an ounce and one-half of laudanum. No injurious effect was observed.

Among the causes of the opium habit are mentioned:

1. Opiate treatment of certain nervous and other chronic affections. This is the most common.

2. Injudicious and often unnecessary prescription by the physician, is often mentioned by the correspondents.

3. Depressed conditions of the nervous system, from various causes.

4 Simple desire for stimulation. Opium was often selected, because it was more "genteel" than alcohol.

5. Nursery medication by soothing syrups.

This condition of things should awaken the attention of every humane physician.

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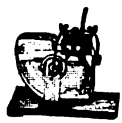
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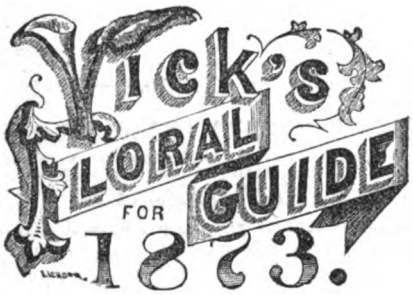
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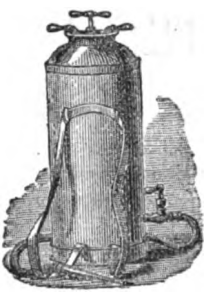
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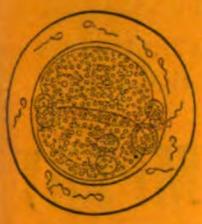
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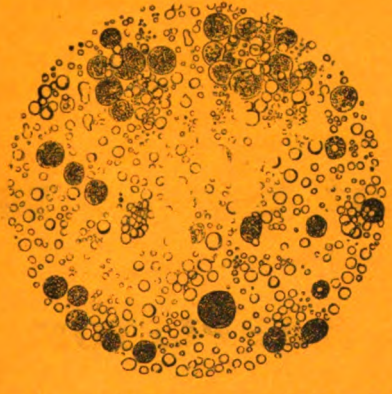
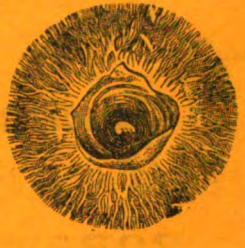



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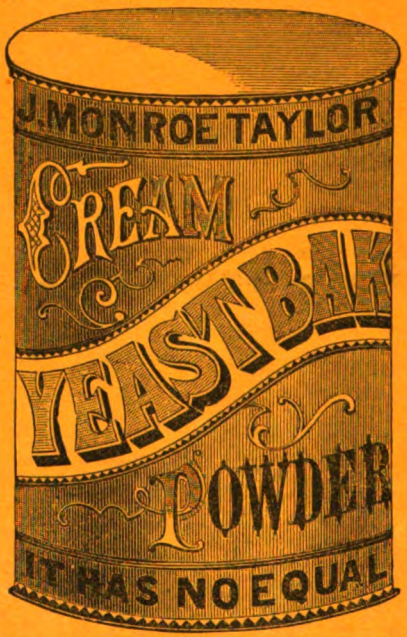
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COURTEOUS READER, I have heard that nothing gives an author so great pleasure as to find his works respectfully quoted by others. Judge, then, how much I must have been gratified by an incident I am going to relate to you. I stopped my horse lately where a great number of people were collected at an auction of merchants' goods. The hour of the sale not being come, they were conversing on the badness of the times; and one of the company called to a plain, clean old man, with white locks, "Pray, father Abraham, what think you of the times? Will not these heavy taxes quite ruin the country? How shall we ever be able to pay them? What would you advise us to?" Father Abraham stood up and replied: "If you would have my advice, I will give it you in short; 'for a word to the wise is enough,' as Poor Richard says." They joined in desiring him to speak his mind, and, gathering around him, he proceeded as follows:

"Friends," says he, "the taxes are, indeed very heavy, and if those laid on by the government were the only ones we had to pay, we might more easily discharge them; but we have many others, and much more grievous to some of us. We are taxed twice as much by our idleness, three times as much by our pride, and four times as much by our folly; and from those taxes the commissioners cannot ease or deliver us: 'God helps them that help themselves,' as Poor Richard says.

"I. It would be thought a hard government that should tax its people one tenth part of their time to be employed in its service; but idleness taxes many of us much more—sloth, by bringing on diseases, absolutely shortens life. 'Sloth, like rust, consumes faster than labor wears, while the used key is always bright,' as Poor Richard says. 'But dost thou love life? then do not squander time, for time is the stuff life is made of,' as Poor Richard

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says. How much more than is necessary do we spend in sleep; forgetting that 'the sleeping fox catches no poultry, and that there will be sleeping enough in the grave,' as Poor Richard says.

"'If time be of all things the most precious, 'wasting time must be,' as Poor Richard says, 'the greatest prodigality;' since, as he elsewhere tells us, 'lost time is never found again; and what we call time enough always proves little enough.' Let us then up and be doing, and doing to the purpose; so by diligence shall we do more with less perplexity. 'Sloth makes all things difficult, but industry all easy; and he that riseth late must trot all day, and shall scarce overtake his busines at night; while laziness ravels so slowly that poverty soon overtakes him. Drive thy business, let not that drive thee; and early to bed and early to rise, makes a man healthy, wealthy and wise,' as Poor Richard says.

"So what signifies wishing and hoping for better times? We may make these times better, if we bestir ourselves. 'Industry need not wish, and he that lives upon hope may die fasting. There are no gains without pains; then help hands, for I have no lands,' or, if I have, they are smartly taxed. 'He that hath a trade hath an estate; and he that hath a calling hath an office of profit and honor,' as Poor Richard says; but then the trade must be worked at, and the calling well followed, or neither the estate nor the office will enable us to pay our taxes. If we are industrious we shall never starve; for 'at the working man's house hunger looks in, but dares not enter.' Nor will the bailiff or the constable enter; for 'industry pays debts, while despair increaseth them.' What though you have found no treasure, nor has any rich relation left you a legacy, 'diligence is the mother of good luck, and God gives all things to industry. Then plough deep while sluggards sleep, and you shall have corn to sell and to keep.' Work while it is called to-day, for you know not how much you may be hindered to-morrow. 'One to-day is worth two to-morrows,' as Poor Richard says; and farther, 'never leave that till to-morrow which you can do to-day.' If you were a servant, would you not be ashamed that a good master should catch you idle? Are you then your own master? Be ashamed to catch yourself idle, when there is so much to be done for yourself, your family, your country and your king. Handle your tools without mittens. Remember that 'the cat in gloves catches no mice,' as Poor Richard says. It is true there is much to be done, and perhaps you are weak-handed; but stick to it steadily and you will see great effects; for 'constant dropping wears away stones; and by diligence and patience the mouse ate in two the cable; and little strokes fell great oaks.'

"Methinks I hear some of you say, 'must a man afford himself no leisure? I will tell thee, my friend what Poor Richard says: 'Employ thy time well, if thou meanest to gain leisure; and since thou are not sure of a minute, throw not away an hour.' Leisure is time for doing something useful; this leisure the diligent man will obtain, but the lazy man never; for 'a life of leisure and a life of laziness are two things. Many, without labor, would live by their wits only, but they break for want of stock;' whereas industry gives comfort, and plenty and respect. 'Fly pleasures and they will follow you. The diligent spinner has a large shift; and now I have a sheep and a cow everybody bids me good morrow.'

"II. But with our industry we must likewise be steady, settled, and careful, and oversee our own affairs with our own eyes, and not trust too much to others; for, as Poor Richard says,

'I never saw an oft removed tree,
Nor yet an oft removed family,
That throve so well as those that settled be.'

And again, 'three removes are as bad as a fire;' and again, 'keep thy shop and thy shop will keep thee;' and again, 'if you would have your business done, go; if not, send.' And again,

'He that by the plow would thrive,
Himself must either hold or drive.'

And again, 'the eye of a master will do more work than both his hands;' and again, 'want of care does us more damage than want of knowledge;' and again, 'not to oversee workmen is to leave them your purse open.' 'Trusting too much to others' care is the ruin of many; for, 'in the affairs of the world men are saved, not by faith but by the want of it;' but a man's own care is profitable, for 'if you would have a faithful servant, and one that you like, serve yourself. A little neglect may breed great mischief—for want of a nail the shoe was lost, and for want of a shoe the horse was lost, and for want of a horse the rider was lost,' being overtaken and slain by the enemy; all for want of a little care about a horse-shoe nail.

"III. So much for industry, my friends, and attention to one's own business; but to these we must add frugality, if we would make our

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industry more certainly successful. A man may, if he knows not how to save as he gets, 'keep his nose all his life to the grindstone, and die not worth a groat at last. A fat kitchen makes a lean will;' and

'Many estates are spent in the getting,
Since women for tea forsook spinning and knitting,
And men for punch forsook hewing and splitting.'

'If you would be wealthy, think of saving as well as of getting. The Indies have not made Spain rich, because her outgoes are greater than her incomes.'

"Away, then, with your expensive follies, and you will not then have so much cause to complain of hard times, heavy taxes, and chargeable families; for

'Women and wine, game and deceit,
Make the wealth small, and the want great.'

And farther, 'what maintains one vice would bring up two children.' You may think, perhaps, that a little tea, or a little punch now and then, diet a little more costly, clothes a little finer, and a little entertainment now and then, can be no great matter; but remember, 'many a little makes a mickle.' Beware of little expenses; 'a small leak will sink a great ship,' as Poor Richard says; and again, 'who dainties love shall beggars prove;' and moreover, 'fools make feasts, and wise men eat them.'

"Here you are all got together to this sale of fineries and nick-nacks. You call them goods, but if you do not take care they will prove *evils* to some of you. You expect they will be sold cheap, and perhaps they may, for less than they cost; but if you have no occasion for them they must be dear to you. Remember what Poor Richard says: 'Buy what thou hast no need of, and ere long thou shalt sell thy necessaries.' And again, 'at a great pennyworth pause awhile.' He means that perhaps the cheapness is apparent only, and not real; or the bargain, by straitening thee in thy business, may do thee more harm than good; for in another place he says, 'many have been ruined by buying good pennyworths.' Again, it is foolish to lay out money in a purchase of repentance;' and yet this folly is practiced every day at auctions for want of minding the almanac. Many a one for the sake of finery on the back, have gone with a hungry belly, and half starved their families. 'Silks and satins, scarlet and velvets put out the kitchen fire,' as Poor Richard says. These are not the necessaries of life, they can scarcely be called the conveniences; and yet only because they look pretty, how many want to have them! By these and other extravagancies the genteel are reduced to poverty, and forced to borrow of those whom they formerly despised, but who, through industry and frugality, have maintained their standing; in which case it appears plainly, that 'a plowman on his legs is higher than a gentleman on his knees,' as Poor Richard says; and then, 'where the well is dry they know the worth of water.' But this they might have known before if they had taken his advice. If you would know the value of money, go and try to borrow some; 'for he that goes a borrowing goes a sorrowing,' as Poor Richard says; and indeed so does he that lends to such people when he goes to get it in again. Poor Dick farther advises, and says,

'Fond pride of dress is sure a very curse;
Ere fancy you consult, consult your purse,'

And again, 'pride is as loud a beggar as want, and a great deal more saucy.' When you have bought one fine thing you must buy ten more, that your appearance may be all of a piece; but Poor Dick says, 'it is easier to suppress the first desire than to satisfy all that follow it;' and it is as truly folly for the poor to ape the rich, as for the frog to swell in order to equal the ox.

'Vessels large may venture more,
But little boats should keep near shore.'

It is, however, a folly soon punished; for, as Poor Richard says, 'pride that dines on vanity sups on contempt; pride breakfasted with plenty, dined with poverty and supped with infamy.' And, after all, of what use is this pride of appearance, for which so much is risked, so much is suffered? It cannot promote health or ease pain; it makes no increase of merit in the person; it creates envy, it hastens misfortune.

"But what madness it must be to *run in debt* for these superfluities! We are offered by the terms of this sale, six months' credit, and that, perhaps, has induced some of us to attend it, because we cannot spare the ready money, and hope now to be fine without it. But ah! think what you do when you run in debt; you give to another power over your liberty. If you cannot pay at the time, you will be ashamed to see your creditor; you will be in fear when you speak to him; you will make poor, pitiful, sneaking excuses, and by degrees come to lose your veracity, and sink into base, downright lying; for 'the second vice is lying, the *first* is running in debt,' as Poor Richard says; and again to the same purpose, 'lying rides upon debt's back; whereas a freeborn Englishman ought not to be ashamed nor afraid to see or

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speak to any man living. But poverty often deprives a man of all spirit and virtue. 'It is hard for an empty bag to stand upright.' What would you think of that prince, or of that government, who should issue an edict forbidding you to dress like a gentleman or gentlewoman, on pain of imprisonment or servitude? Would you not say that you were free, have a right to dress as you please, and that such an edict would be a breach of your privileges, and such a government tyrannical? And yet you are about to put yourself under that tyranny when you run in debt for such dress! Your creditor has authority, at his pleasure, to deprive you of your liberty, by confining you in jail for life, or by selling you for a servant if you should not be able to pay him. When you have got your bargain, you may, perhaps, think little of payment; but, as Poor Richard says, 'creditors have better memories than debtors; creditors are a superstitious sect, great observers of set days and times.' The day comes round before you are aware, and the demand is made before you are prepared to satisfy it; or, if you bear your debt in mind, the term, which at first seemed so long, will, as it lessens, appear extremely short; Time will seem to have added wings to his heels as well as his shoulders. 'Those have a short Lent who owe money to be paid at Easter.' At present, perhaps, you may think yourselves in thriving circumstances, and that you can bear a little extravagance without injury; but

'For age and want save while you may;
No morning sun lasts a whole day.'

Gain may be temporary and uncertain, but ever, while you live, expense is constant and certain; and 'it is easier to build two chimneys than to keep one in fuel,' as Poor Richard says: so 'rather go to bed supperless than rise in debt.'

'Get what you can, and what you get hold;
'Tis the stone that will turn all your lead into gold.'

And when you have got the philosopher's stone sure you will no longer complain of bad times, or the difficulty of paying taxes.

"IV. This doctrine, my friends, is reason and wisdom; but, after all, do not depend too much upon your own industry, and frugality, and prudence—though excellent things—for they may all be blasted, without the blessing of Heaven; and therefore ask that blessing humbly, and be not uncharitable to those that at present seem to want it, but comfort and help them. Remember Job suffered, and was afterward prosperous.

"And now, to conclude, 'experience keeps a dear school, but fools will learn in no other,' as Poor Richard says, and scarce in that; for it is true we may give advice, but we cannot give conduct. However, remember this: 'They that will not be counseled cannot be helped;' and farther, that 'if you will not hear Reason she will surely rap your knuckles,' as Poor Richard says."

Thus the old gentleman ended his harangue. The people heard it and approved the doctrine, and immediately practiced the contrary; for the auction opened and they began to buy extravagantly. I found the good man had thoroughly studied my almanacs, and digested all I had dropped on those topics during the course of twenty-five years. The frequent mention he made of me must have tired any one else; but my vanity was wonderfully delighted with it, though I was conscious that not a tenth part of the wisdom was my own which he ascribed to me, but rather the gleanings I had made of the sense of all ages and nations. However, I resolved to be the better for the echo of it; and though I had at first determined to buy stuff for a new coat, I went away, resolved to wear my old one a little longer. Reader, if thou wilt do the same thy profit will be as great as mine. I am, as ever, thine to serve thee,

RICHARD SAUNDERS.*

"IF I only had capital," said a young man as he puffed a cigar, "I'd do something." "If I only had capital," said another young man as he went out of a dram shop, "I'd go into business." Young man with a cigar you are smoking away your capital. You at the dram shop are drinking yours. Dimes make dollars. Time is money. Don't wait for a fortune to begin on. Our men of power and influence did not start with fortune. You, too, can make your mark if you will. But you must stop squandering your money and spending your time in idleness.

THE richest man, whatever his lot, is he who is content with what he has.

NOBILITY of mind is more honorable than nobility of birth.

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* Dr. Franklin for many years published the Pennsylvania Almanac, called *Poor Richard*, (*Saunders*) and furnished it with various sentences and proverbs on topics of industry, attention to one's own business, and frugality. The most important of these sentences and proverbs he afterward collected and published in the above form.

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Tobacco—Its Effects on the Human Constitution, Physical, Intellectual and Moral.

BY JAMES COULTER LAYARD, M. D.

THE EXPENSE.

THE question of expense presents itself to us under two aspects; first, the direct expense; that is, the cost to consumers, to individuals. Second, the indirect expense, that is, the loss to the country of the capital and labor absorbed in the cultivation, manufacture, and sale of tobacco, which might be more beneficently employed in other pursuits, and the loss to the country and the world at large of the thousands of acres devoted to its production, which might be devoted to the production of breadstuffs to feed the nations. This last includes also the impoverishment of the land devoted to its cultivation, which is greater beyond comparison than that resulting from any other crop. To the above may be added the loss of property by fires originating from lighted cigars and pipes.

We have neither the time nor the space here to enter into elaborate calculations with regard to the cost to the people of the United States of the tobacco they raise and consume; we will, therefore, avail ourselves, to some extent of the results of the calculations of others. The Rev. Dr. Hawes, of Hartford, Conn., in a sermon preached against the use of tobacco, estimates the direct expense to consumers at $40,000 000 annually. The people of the city of New York, according to his estimate, spent $10,000 a day for cigars, at a time when they were spending $8,500 daily for bread. These estimates were made years ago. Our population has increased rapidly since then, and it is agreed on all sides that the consumption of tobacco has increased even more rapidly. Besides that, tobacco has advanced in price and now pays a duty, which it did not then. These figures, then, have all been largely increased, and we therefore think it entirely safe to put down the sum now spent by our people for tobacco at $50,000,000 annually.

What an enormous sum to spend for the gratification of a morbid appetite! What a waste of property! Worse than wasted; for it is not only destructive of property, but, as we have seen, of life, health and morals as well. How many churches and school-houses would this sum build! "Give me," says the Rev. Dr. Berkeley, of Lurgan, "every tenth pipe in Ireland and I will erect 100 school-houses, and spend on each £500 ($2,500). The same illustration will apply with equal force to our own country, were the money spent for tobacco applied in this direction. We might have a school-house on every street. And if we had more school-houses we should need fewer jails.

We pay annually to all the lawyers in the United States $35,000,000; for maintaining our criminals, $12,000,000; and to ministers of the gospel $6,000,000; but we pay nearly as much for tobacco as for the whole. We are a law-abiding and justice-loving people, but we pay for tobacco one-third more than we pay our attorneys-at-law. We are a moral and an order-loving people, but we pay for tobacco more than four times as much as we pay for maintaining our criminals. We are a Christian people, yet we pay for tobacco more than eight times as much as we pay for the ministry of the gospel of the Son of God!

In the paragraph next before the last, we have given a hint as to what magnificent results might be achieved were the money directly spent by consumers of tobacco applied to more beneficent uses. But who can tell what might be accomplished were the capital and labor employed in its cultivation, manufacture and sale, also applied to other purposes? Few have any adequate idea of the number of persons engaged in these pursuits. How many are employed in the cultivation of tobacco we cannot even guess. As to the number employed in its manufacture, the following statistics will give a faint idea: At Manilla one cigar factory employs 7,000 women. Others there employ from 3,000 to 5,000 women. There are no manufactories of cigars in the United States on so large a scale as this; but we have some tobacco factories which count their employees, both male and female, by hundreds. If the men who now hoe tobacco were put to hoeing corn; if the men employed in tobacco factories were put to building railroads, the women transferred to cotton looms, and the boys sent to school; if all the tobacco plantations were turned into wheat farms, and the capital absorbed in the manufacture of and traffic in the weed, invested in any other commodity you may please to mention—save spir-

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ituous liquors—it would add to the wealth and property of the country immense sums annually.

Then there is the deterioration of the land devoted to its production, which, as we have already remarked, is greater beyond comparison than that resulting from any other crop. Any one who smokes a cigar will notice the large amount of ashes which is left. More ashes are left from the combustion of tobacco than from that of any other vegetable substances, 1,000 pounds of tobacco leave on an average 200 pounds of ashes. The oils, resins, and acids which tobacco contains are derived from the atmosphere, and hence cost nothing; but the ash is composed of mineral matters, and is hence made up from the available plant food of the soil. A crop of tobacco—2,000 pounds to the acre—withdraws from every acre of land on which it grows 400 pounds of this constituent. A crop of wheat—30 bushels to the acre—withdraws from the soil 36 pounds. Thus we see that one crop of tobacco does as much damage to the land on which it grows as would 11 crops of wheat! One year's farming of your land in tobacco injures it as much as 11 years farming of it in wheat! You can take but two or three crops of tobacco from your land before it is well nigh ruined; ruined for that purpose and for every other, until the soil has been renovated. And tobacco can be grown with profit on none but the best soils. Says Prof. Brewer, "A man may get rich raising tobacco, but a nation never will." A writer in Blackwood's Magazine years ago called attention to this matter, pointing to the blasted tobacco lands of Maryland and Virginia as examples. The Rev. Dr. Hawes, in his sermon before alluded to, predicted that the Connecticut Valley would, in time, become as barren as those.

As to the value of property destroyed by fires resulting from lighted cigars and pipes, and from the still burning matches which had been used to light cigars and pipes, we can form no reliable estimate, because we cannot tell with any degree of certainty to what extent conflagrations are due to this cause. We read nearly every week of fires, the origin of which si chronicled as unknown. How many of these result from the cause we are considering it is, of course, impossible to tell; yet the attempt has been made to estimate the amount relatively. "One-third, or more, of all the fires in my circuit," says an insurance agent, "have originated from matches and pipes! Fires in England and fires in America are kindled with alarming frequency by smokers casting about firebrands." Facts in abundance substantiate this. From Harper's Weekly we learn that in the forenoon of July 30th, last year, a workman on a canal boat lying at the dock of the Standard Oil Company, at Hunter's Point, lighted his pipe and threw the burning match on the floor. Every plank of the boat was saturated with oil, and the air was full of inflammable vapor. The boat was instantly enveloped in flames, which communicated to the works on shore, where were stored 14,000 barrels of oil, and all were consumed together.

A fire very similar to the above in its origin, progress and results, occurred about the beginning of the year 1870 at Marsoilles, France. A man standing on the deck of a vessel used to convey naphtha and kerosene, having lighted his cigar, dropped the burning match at his feet and thereby started a conflagration that consumed property valued at not less than a million of dollars.

A conflagration in San Francisco some years ago, kindled by a lighted cigar, destroyed millions of dollars' worth.

A most destructive fire occurred not long since in England, upon one of the Duke of Northumberland's farms, near Alnwick, in which barns, stables and other buildings, with their contents, also a large quantity of grain in stacks, were totally consumed. This was caused by some burning tobacco which fell from the pipe of a laborer upon the straw.

The magazine in the barracks of Buenos Ayres exploded on the 29th of December, 1869, killing 126 soldiers and many women and children. Just before the explosion occurred, one of the men was observed smoking in a room where several cases of powder were stored.

A great conflagration on land, wherein human life is endangered, is sufficiently appalling; but how much more appalling is a fire at sea, with the prospect on one hand of being burned to death and on the other of being drowned; in either case finding a watery grave. The steamer Glasgow was burned at sea on the 30th of July, 1869. The fire originated from a lighted fusee which one of the steerage passengers had used to light his pipe, and afterward thrown into the hold where cotton was stored. The passengers, 250 in number, were rescued by the Rosamond, Capt. Wallis, bound for New York. But the vessel and cargo proved a total loss.

These are but a few of the largest fires originating in the causes under consideration, accounts of which have come under our own immediate notice within three or four years

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only. We think it unnecessary for our present purpose to make mention of more, though we have a considerable list of such occurring since we commenced to collect statistics on this head; and we do not presume our list contains nearly all, accounts of which have been published—perhaps not the half of them. How many other great fires occurring within the same period, the causes of which are chronicled as unknown, had the same origin, who can tell? It is even surmised by some that the late great fire in Boston was kindled by a match which had been used by some laborer to light his pipe; and this is not improbable.

To the above might be added the amount spent for pipes, and tobacco and snuff-boxes. This, it might be perhaps said, is not much. It is still, in the aggregate, a large sum; especially that spent for pipes. A large proportion of these are of foreign importation. There are large establishments in Europe, sometimes whole towns, devoted almost entirely to their manufacture; which turn them out by thousands, costing from one cent to some hundreds of dollars each. Much of the money spent for pipes goes out of the country, and is just so much abstracted from the permanent wealth of the nation.

We have not yet taken into the account the value of the time spent in using tobacco. To be sure there is not much time lost in chewing. A Yankee is a man who must do two or more things at a time, consequently he chews tobacco and attends to his business at the same time. But with smoking it is somewhat different. A man most usually suspends all other business to attend to that. And so too of snuffing. In order to give our readers some idea of the amount of time spent in this titillating operation by a moderate snuff-taker in the course of a lifetime, we offer a single example: Mr. Edward C. Delavan says: "I once crossed the Atlantic with a venerable sea captain who had been a snuffer of tobacco for about fifty years. One of the passengers had the curiosity to ascertain the time he had consumed in the operation of taking the pulverized poison. Much to the amusement of the passengers and the mortification of the captain, it appeared that more than one year of the time allotted to him by his Maker had been occupied in plying his thumb and finger in supplying his nasal cavity with this odoriferous powder, and in taking care of the disgusting drippings it expelled from his nose—which had grown to the size of a knurly, pink-eyed potato, from the lengthened abuse of that organ."

The Earl of Stanhope once made the following curious calculation: "Every inveterate and incurable snuff-taker, at a moderate computation, takes one pinch every ten minutes. Every pinch, with their agreeable concomitants and their incidental circumstances, consumed a minute and a half. Deduct a minute and a half out of every ten and allow sixteen hours to every snuff-taker's day, and it amounts to two hours and twenty-four minutes out of every day, or one day out of ten, and thirty-six and a half days in a year—more than one-twelfth of a person's whole lifetime. Then there is the time spent in making purchases, and in going to make purchases. When all these items are footed up they make not a trifling sum."

It would be impossible to tell in dollars and cents just how much our tobacco does cost us. But if we add to the direct expense to consumers the indirect loss which results from so much land, capital and labor diverted from other branches of productive industry, the loss in deterioration of land, losses by fire and loss of time, it would amount to an immense sum. We hardly dare to even guess at it. If, however, we should venture on a guess we should say that the expense to the people of these United States, directly and indirectly, of the tobacco they consume is not short of $100,000,000 annually! What an immense sum to be spent yearly by a professedly Christian people on a VICE, for it is nothing else.

And yet the greatest element in the calculation has as yet been left out altogether. That is, the damage to life, health, and morals. If this could be turned into figures, it would amount annually to a sum greater than our national debt!

(*To be continued.*)

RICH WITHOUT MONEY.—Many a man is rich without money. Thousands of men with nothing in their pockets are rich. A man born with a good sound constitution, a good stomach, a good heart, good limbs and a pretty good head piece is rich. Good bones are better than gold; tough muscles better than silver, and nerves that flash fire and carry energy to every function are better than houses or land. It is better than a landed estate to have the right kind of father or mother. Good breeds and bad breeds exist among men as really as among herds and horses. Education may do much to check bad tendencies or to develop good ones; but it is a greater thing to inherit the right proportion of faculties to start with. The man is rich who has a good disposition—who is naturally kind, patient, cheerful and hopeful.

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An Unfashionable Summer.

BY MRS. CHAS. H. WRIGHT.

THREE girls were poring over one book. Three girls who might have suggested the Three Graces, had there been an observer to receive the suggestion, or had they attitudenized statuesquely for their own gratification. But no observer whispered "Graces," neither of the girls thought "Graces;" and all three, if I must say it, rather *sprawled* than reclined over an invalid chair, quite oblivious of all classicism of attitude.

The three were young; Sappho, the eldest, not yet twenty-two. Yet it was evident that they were all recruits of that great army of women over which floats the ghastly banner of disease. Somebody versed in the idiosyncrasies of our ladies tells us that to be conscious of the existence of an organ, proves that organ to be disordered in its functions. Therefore may it be asserted that Di had a vivid realization of stomach, Sappho of head, while melancholy Dillie had no inner consciousness of other spiritual conditions than those born of a sluggish liver.

Poor girls. Pretty, yet faded to the unmistakable demi-tint of complexion which shows that the ripe sensuousness of health has been touched with a blight; ambitious, yet fettered with the manacles of nausea, torpor and pain. With the dominant and vital mental faculties which make the mind a power; yet reduced to a swooning apathy of consciousness half the time, by the giant Nemesis which scourged them for their sins. For they were arrant sinners—all three—and no sorrowing angel could blot out their record with a tear; for the cataract of the Ganges could not furnish moisture enough to keep that spiritual guardian in lachrymose conveniences.

Neither thieves or liars, not bearers of false witness, or covetous, these girls came yet as much under the maledictions of breakers of a commandment as though they had bowed down to gods of wood andstone. For they worshiped style with a devotionwhich no acolyte in pagan temple could ever exceed. And their homage was unceasing before a perpetual apotheosis of self. But how they suffered—these poor girls—with corset strings drawn to a malignity of tension more torturing than the Mussulman's bridge over the abyss of hell. Every one of them with dainty foot-gear, crushing living tissues into proportions mercilessly at variance with Nature's rules of symmetry. All of them under constant flagellation of ease and comfort of body; martyrs ever to their insane passion to be showy and elegant, and "stylish," after the type of the world's adoration. Thus were they sinners against that part of their nature which the Great Architect has made the foundation of the edifice of character—the physical which underlies the intellectual and spiritual—as upon the unpolished stone is reared the stately temple.

It was a curious working of that mysterious power which our groping pessimism calls "chance," that put this book into the hands of those girls. Of course its title would naturally attract their attention; but it was a happy chance which had included that title within the scores of others which decorated the counters over which they had hung, searching for a new novel. It is a tastefully bound book, the richness of its green and gold encompassing the wealth of its practical contents, as a dainty aroma hovers about an epicurean viand. It is called "Hints toward Physical Perfection," and explains the eager interest of the girls who make the climax of many aspirations the perfection of their charms.

"Girls," exclaimed Di, involuntarily making a wry face as the scalding acidity of impeded digestion rose in her throat, "girls, I vow and declare I believe an 'Especial Providence' has sent us this book; for I've about made up my mind that we make mighty mistakes in our manner of beautifying ourselves. If tight lacing gives me this abominable sour stomach nine-tenths of the time, I count it a delusion and a snare. *I* can't keep a smooth forehead with my gastric fluids in a ceaseless bubble and ferment. I'm sure I'd rather never have a stylish form, than be compelled to pay for it with multitudinous wrinkles. Moreover, I saw in a late magazine, called THE HERALD OF HEALTH, that sallow complexions inevitably follow restricted breathing; and if tight corsets don't restrict our breathing compass, I'd like to know what does. As to sallowness, we all three have reached the superlative degree of comparison. I'll be kissed if I hadn't rather

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have the girth of a hippopotamus than to exist in the everlasting discomfort that I do from aching sides and an effervescing stomach."

"You have companionship in your misery, Di," answered the dark-eyed Sappho, laying with dramatic gesture, two rather scrawny hands over an an amber-tinted brow, beneath which large, earnest eyes overhung dusky hollows. "I bear the same burden, but on a different physological angle. The fiend tortures your stomach, but I carry him ever tearing at my brain. Here he sits day after day, night after night, thrusting hot javelins in and through till I cry out in spirit. 'Why am I mocked with death, lengthened thus to deathless pain?' Ah, but it is horrible to feel that this demon throws a paralysis over one's poetic power. Often a tender gleam of poetry floats upon iridescent bubbles of words through my mind. I reach out tenderly for a bright prism of rhyme, when lo! the foul fiend is before me, a dash of blinding pain overwhelms me; my tormentor exults, and my airy bubbles vanish. True it is, that, 'who breathes must suffer;' but I believe, as you say, that our normal heritage of misery is increased by our unnaturally compressed and overtaxed vital organs."

"Alas girls," sighed the tender Dillie—Dillie always said "alas," but few are there who say it outside of a story—"my sympathetic heart sinks beneath the salt waters of sorrow as I hear the tales of your anguish. You know, dear girls, that I, too, am but a fragile flower, that seems to have bloomed but for a little while to exhale its fragrance, then to bow its sweet beauty in the mold of death. I, too, am one of earth's weary ones. To me the grave has no terrors, for life has few charms. Often I dream that I stand beside the emerald-turfed mound beneath which weeping friends have laid away my snowy-robed and marble-sculptured form. I see the long willows reaching out slender arms to embrace my resting place. I see the white clouds tarrying in their aerial flight to cast a tender shadow over my grave; I hear the breeze making moan that one so young and so beloved should have perished, till I wake with regret again to my days and nights of languor, sleeplessness and nausea. But it is not in consequence of improper habits of life, I know, for I am a very humming-bird in my diet. I never exhaust my vital forces by over-exertion, neither do I retard their operation by tight lacing. Alas no! for if I did I could thwart disease by a complete revolution in my habits."

"What number corsets do you wear?" rather abruptly interposed the practical Diana.

"Sixteen," sighed Dillie, toying with pensive grace among the long brown tresses which shrouded her shoulders.

"Sixteen! Bless my boots! no wonder the grave has charms for you, for if you make a conscientious and well conducted corpse, you will get out of the awful bondage of sixteen-inch corsets. I should think that would be worth dying for. Here am I, corseted within two inches of my life—for I know a compression of two inches more would result in asphyxia—and I wear number eighteen, while I am an inch shorter than you are."

"What is your humming-bird diet, dear?" more gently inquired Sappho.

"Only buttered toast and tea. I never touch meat, it is far too gross. Cake and preserves I eat but once a day. I make my diet as etherial as possible to a nature by heritage refined, and by suffering purified to almost a preternatural spirituality, yet still hampered by a body which cries continually for material reenforcements."

"Oh Lord, oh Lord! how the world is given to lacing," declaimed Di, with a Fallstaffian air. "It's just as I thought, one and all of us, we are guilty of sinning against the God who made our bodies, by striving to make them over after models of or own. I wish to gracious—Di was oftener emphatic than elegant in her phraseology—that we could go somewhere this summer where we could live like disciples of nature, rather than the children of art that we are. I would rather go to some secluded farm-house where the fare is simple, the air pure, and where we would be free from the serfdom of fashion, than to take a trip to Europe. I'd rather have a horse to ride and to drive with my own unassisted paws, than to sit in state behind the most gorgeous coachman, or beside the most elegant Jehu in Central Park. Come, girls, what do you say, will you plan with me for a summer of physical restoration instead of dismantlement?"

"But, dear Di, you must remember that real farmers' homes are not the inspiration of modern Georgics. Pork and cabbage, hot bread and greasy vegetables are as repellant on a farmer's table as they would be in our own homes. I fear it would be difficult to find a place where such infelicities of diet are not common, and yet a place remote enough to allow such startling excentricities of dress, as you would perhaps wish to adopt, to pass without offensive comment," answered Sappho.

"Oh girls it would be *so* vulgar," murmured

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the patrician Dillie, "so carnal and earthly not to wear diaphanous drapery every day, *so* gross to sit down to the muscle-feed fare of yoemen."

"You needn't do it, Dillie," said Sappho. "You can wrap yourself in the fleecy vesture of the clouds, or dewy velvet of the sward, if so pleases you; and you needn't come to the table at all, but steal your food from the bee and the butterfly. But still, if we undertake such a scheme for the rehabilitation of our bodies in health and freshness, it won't do to have too great horror of the 'earthy.' For, after all, it is the coarse and vulgar earth from which our bodies draw support. It is the actual and tangible, not the ideal and impalpable, which nourish the concrete. Subjectively we, perchance, may flatter ourselves that no arbitrary limitations prevent our growing to the stature of the gods; but, objectively, we are dependent upon the common elements for even the small dimensions of humanity."

"I have it, girls! a glorious scheme," exclaimed Di, eagerly; "Pa has a cousin who lives on a farm among the mountains. This cousin has lately built a new house a short distance from the old one, which had become too small for his increased family. The old house is in perfect repair, has four rooms, and is situated in one of the most romantic hillside nooks in the world, with a superb view from the piazza. If you are agreed, and I can entice Pa to give his consent, I will write to cousin Joe, have him put the house in readiness, with such simple furniture as we would need for a semi-Arcadian style of housekeeping. We will take Jennie, our kitchen girl, with us, and go there to try all summer to replace our yellow roses with red and white ones, fill up the hollows under our eyes, and smooth away these horrid wrinkles which deform us. What say you?

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It was one of those peerless August days when a scarcely distinguishable mist hovers like an amber halo about the earth. A mellow richness was added to the summer's wealth of beauty, as the tender down softens the glowing peach. Sapphire and emerald and turquoise with which nature had adorned herself, gems which were revealed beneath the vaporous shimmer, as a bride's jewels gleam beneath her vail. The air was deliciously cool, for the mountain breezes, lulled now to their mid-day slumbers, had chased away every torrid sprite and imp of lassitude that infest the summer noons in the low lands.

A winding road, twisting in and out about the feet of the hills, stretched from the village on the plain to a cosy eyrie upon a mountain side. Like a silver ribbon, the road knotted itself about the pretty garden, the orchard and the fragrant thicket of shrubbery which separated the sylvan paradise from the prying gaze of any chance passer by. A tiny brown cottage, with sloping, moss-grown roof and vine-wreathed piazza was clasped in this arborescent embrace; while from its open doors and windows rang out such peals of merry, girlish laughter, that one listening might well believe that the Prince of Joy held court within.

The front room door opened from the shady piazza directly into a cool and perfumed room, where a snowy cloth overlaid a round table, now spread for dinner. The walls of this room were low, the fireplace wide and deep, and filled with piney boughs, which frittered away their resinous fragrance as from invisible censors swung by their myriad fingers. The high mantel was adorned with royally rich bouquets, which told of some nature-lover's rambles in the early day, where summer had scattered her floral gifts. On a square table beneath the old fashioned, oval looking-glass was a profusion of books and pamphlets, uppermost of which, as if most lately handled, might have been seen several numbers of THE HEALTH OF HEALTH. A corner whatnot, evidently of amateur workmanship—pine boards, ornamented with varnished acorns, pine cones, and leather leaves—held up its small burden of books. Among these we recognize the familiar "Hints toward Physical Perfection," also Dio Lewis's "Our Girls;" Mrs. Gleason's "Talks to My Patients," side by side with Mrs. Browning's Poems, Hamerton's works on art, and various volumes of Ruskin. A clean, cool straw matting covered the floor, cool cane-seat rockers still vibrated with the recent loss of their occupants, while the daintiest of white curtains draped the open windows. It was a very picture, this pretty room, and reached its acme of artistic charm in the presence of the three lovely girls, who, in faultlessly neat calico wrappers, drew chairs to the dinner table.

The overture to this opera of dinner was a confused jingle of dishes. Then came another of those silvery tinkles of laughter which so often swept out upon waves of air through the open windows, and a merry voice exclaimed:

"Well done, Dillie Dyaway! I am afraid you have ceased to dream of that emerald-turfed mound beneath which is laid your snowy-robed and marble-sculptured form; for since you have left off corsets, learned to ride Bucephalus on the keen run, and have shut down on

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fine flour toast and strong tea, you are becoming decidedly carnal, quite of the earth, earthy. If you eat another of those corn fritters, I know the sighing brook will soon make moan that one so young and so greedy should have perished. Actually your neck has grown so much the reverse of etherial since we came here, that I notice your wrapper doesn't meet by an inch at the throat, and you cover the gap with that blue bow."

"Alas," commenced Dillie, but correcting herself suddenly, with a laugh and a blush, said, "Laugh who wins, Di. I have eaten but three of these fritters, and I know my capacity has increased to such extent that if I consume half a dozen the white clouds won't tarry in their aerial flight to kiss my grave. I'm sure Sappho has reduced her third one to its least fractional proportion; why should my appetite excite your merriment?"

"Oh but you know, Dillie," spake the queenly Sappho, her mouth full of tender Graham bread and sweet cowslip butter, "that I never made my habits as etherial as was possible to a nature refined by suffering to almost a preternatural degree of spirituality. Di and I were always more given to pampering the poor body, which you were so anxious to convert into a calmly beautiful defunction."

"Well, who wonders that I crave something more substantial than toast and tea after sweeping the whole house, ironing two wrappers, and cooking these fritters. It doesn't pay to look seraphic in diaphanous drapery here, where I have to iron every blessed dud that I wear; and ceasing to be celestial about my costume, I become intensely human in my gastronomic appetites.

"Did *you* make these fritters, Dillie? I thought them Jennie's work. We were gathering the blackberries, and so did not know what fairy hand piled these golden gifts upon our plates. Brother Joe would call them 'busters.' Tell us how they are made," said Di.

"Sweet milk, eggs, flour, salt, grated corn, fried'n butter," muttered Dillie, earnestly discussing corn fritters and creamed potato. "I took recipe from 'Hygienic Cook Book'—you'll find it there."

"Dillie, your'e a brick! I tell you what I thought when I saw you dashing down the road last night like a mad amazon on Bucephalus. I thought surely Dillie must soon cease to bear her family name of Dyaway, for it has become an absurd misnomer. She will have to take mine, of Dashaway; and I know of no other way, dear, than for you to say 'yes' to my brother Frank."

"Sappho?" rather irrelevantly queried Dillie, "how surprised your fastidious brothers would be to sit down to such an epicurean repast as this, and realize that it is a tangible evolution of strictly hygienic theories. Nothing but vegetable food, yet by consummate culinary necromancy made to assume the most sybaritic guise. What would we have done with our intense desire to live right from the bosom of nature, to make over our bodies with pure blood and healthful tissues, if we had not found Mrs. Jones's 'Hygienic Cook Book?'"

"Yes," from Sappho, "the boys would laugh but feast upon our cleaned potatoes, our sweet Graham bread, corn fritters, fricasseed eggplant, fried apples, wheat pudding with cream, and rare-ripe blackberries. And then to think that we have never gnashed our teeth over flesh since we left the city. They would begin to feel my muscle, for proof of insidious decay. But how they would stare to hear that twenty-five pounds increased avoirdupois are divided between us three.

"All our brothers were so opposed to our 'wild goose scheme,' as they called it, that I really wish they could witness our rapid progress toward the consummation so devoutly wished for. To think of girls who never in their lives before left their beds earlier than eight o'clock, rising now at six, donning their old Vassar College gymnastic dress; two doing the sweeping or light work in the garden, while the other, with Jennie's help, prepares breakfast. Then with what keen zest we eat our Graham gems, barley coffee, enriched beyond the wealth of our city Mocha by such royal cream, our baked potatoes, fresh eggs, fried wheat, and golden honey. How the sausages and sizzling ham of cousin Joe's table disgust us by contrast. Then, after breakfast, how blithely we make arrangements for our dinner, and then hie away for long hours in the fields or among the woods, seeking flowers, mosses, cones, ferns, gnarled roots and knotted stems for our rustic flower-stands. Then our pleasant readings in the woods, sitting on queen thrones of verdure. Our bath comes next, just before dinner—nothing but a wash-tub, a chain-pump and empty wood-shed for conveniences—but with more exhilarating results than our marble and zinc arrangements at home. Then such dinners as these, fresh from the garden, succulent and sweet, with incorporated sunshine and assimilated dew. After dinner our hour of rest in our rocking chairs, with light sewing and

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cheery conversation; then our hour of siesta, after which our invigorating canter over hill and dale, to the three miles away post-office. No wonder our slumbers are refreshing, our appetites astonishing, and our waists, *sans* corsets, *sans* whalebone, *sans* everything but perfect liberty, are rapidly expanding, while our complexions, although tanned, are fairer than ever before since we wore long dresses."

"And to think," added the calculating Di, "that the whole expense of our summer's campaign, with hire of Joe's three horses two hours a day, the wages of one servant, house rent and all, is less than the expenses of one of us at a fashionable watering place. Our dress costs us nothing; using neither tea, coffee, vinegar, spices, and but little sugar, our grocery bills are light; so that, really, our bodies grow heavy faster than our bills. Dillie, how far have you outgrown those sixteen-inch corsets?"

"By five inches," proudly responded Dillie; so that now my circumference is just twenty-one, with a promise of an inch of increase a week till I reach the natural span of a healthy woman."

"And I am twenty-three," said Di. "I the same," echoed Sappho.

"Charming dimensions to embrace," cried a masculine voice at the door, and the Philistines were upon them. Three great, bearded, handsome brothers, brown with the travel of their college vacation, strong with that rich vitality which is drawn from breezy hills, from briney waters, from unobstructed sunshine, and unpolluted air. Three brothers, healthy, happy, good; three brothers to be proud of; and Sappho's and Di's and Dillie's brothers, to be kissed with warm affection. And kissed they meant to be; but can any one explain how it happened that each fair girl received her kiss, but—why didn't Dillie exclaim 'alas!'—each from *somebody else's brother*.

Ah, Dillie!" exclaimed Di, to cover her blushes as she emerged from the shadow of a blonde moustache, "I see, you'll be a Dash-away after all."

California as an Invalids' Resort.

A SERIES OF LETTERS TO THE EDITOR, BY JOHN P. PHILLIPS, M. D.

I INTENDED to write you a large number of letters about the climate, soil and people of this State, but find that they would in great measure be a repetition of what you have already read, I shall, therefore, in future chiefly confine myself to the disadvantages of California; topics that have not usually been spoken of. One of the first questions asked of a person that has been in this State is, "Has California a good climate for invalids?" To this I must answer, that depends altogether on what kind of an invalid is referred to. This is a good place for some persons to come, and a bad place for others. As a general statement, the advantages of California, both as a sanitarium for chronic invalids and as a home for emigrants, have been overestimated and too highly colored. I have heard numbers of invalids complain bitterly that they had been cruelly deceived by Nordhoff's writings on California, and had been thereby induced to undertake a long, expensive, tedious, and utterly useless journey. In my opinion the majority of books and newspaper articles about California convey incorrect and false ideas concerning this State, from the fact that they paint the favorable and attractive features of the State, to say the least, in as bright colors as facts will warrant, and almost, or at least in part, ignore and omit the disagreeable and lamentable deficiencies and defects of this country. The work containing the most information about California that I have seen—excepting, of course, the geological reports of the State—and at the same time the fairest and most judicial statement is "The Natural Wealth of California," by Titus F. Cronise, published by Bancroft & Co., 113 William street, New York. And even this work omits to state some points that weigh heavily against this State as an eligible place for emigration. Moreover, the disappointment of many who come here is largely owing to themselves. In reading accounts of the State they seize and dwell upon the many attractive features which really exist and are not the offspring of the writer's imagination, and do not give due

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weight to other and more somber facts, which a moment's reflection would convince them are of great importance.

You know it has been truly said:

"'Tis distance lends enchantment to the view,
And clothes yon rugged heights with robes of azure hue."

A large number of consumptives and other invalids have come to California this winter, in the hope of being restored to health by the climate. Some have died on the way; many die shortly after their arrival; others remain a few weeks or months, and then, homesick, disheartened, and worn down in body and mind, return home to die. The minority are improved in health. Doubtless an account of one recovery will do more to bring invalids here next winter than a correct history of ten persons whose lives were shortened by the journey hither and its attendant fatigue, anxiety, and deprivation of home comforts, will do toward deterring others from an inconsiderate, foolish grasping at straws, like drowning men. Now this state of affairs might be remedied, and an immense amount of expense, annoyance, and positive suffering prevented by two things; first, a correct knowledge and appreciation of the facts relative to this State, and, second, by a judicious discrimination and selection of persons who ought, and who ought not, to come to this coast. Many of the invalids that come to California are consumptives, who are led here by the idea of finding an exhilarating atmosphere that will impart fresh recuperative power to an impaired constitution. Indeed, the idea has been disseminated that California has a peculiarly anti-consumptive climate. The fact is, that the climate has no attributes specially healing to diseased lungs. On the contrary, consumption originates here, and proves fatal among residents and natives to a considerable extent in all parts of the State. I judge that consumption prevails to a less degree than in the Northern and Eastern States; and to about the same extent that it exists in Tennessee and North Carolina. Consumption, chronic catarrh, bronchitis, and all kinds of diseases of the air passages are specially prevalent in San Francisco and suburbs.. As remarked in a previous letter, this is peculiarly unfortunate from the fact that the region about San Francisco Bay is the garden of the Pacific coast, and is so situated, topographically, that it now does, and probably always will contain nearly one half the population of California. The heavy, cold, damp winds and dense fogs from the Pacific pour through the Golden Gate, and every other depression in the Coast Range, and extend inland for a long distance. The winds and fogs produce a much greater sensation of cold than would be inferred from the state of the thermometer—doubtless owing to their extreme dampness. I have walked out in San Francisco and even in San Jose, 50 miles distant, feeling as great a degree of cold as I would have done, with the same amount of clothing, in New York with the mercury only 20° above zero. At the same time the grass was green, and the dooryards brilliant with flowers blooming in the open air. The ocean winds and fogs prevail all along the coast and spread far inland, wherever the topography of the country will admit their entrance.

Californians are more liable to rheumatism and paralysis than residents of the Atlantic slope. During the long, dry summer the sun shines brightly most of the time, in an unclouded sky. At the same time the earth, instead of being clad in verdure, is parched, dry and brown, and does not afford a pleasant, mild view. Added to this clouds of dust, much of which is partly alkaline, are raised by passing teams and the regular afternoon breeze. As a consequence diseases of the eye are very common.

Many people in the East suppose California to be exempt from malarious diseases. The fact is that a large portion of the State, and that the fairest and most fertile portion, is subject to fever and ague and other fevers, in which the malarious poison plays an important part. The broad, level plains styled the Sacramento and San Joaquin valleys are specially subject to malarious diseases; and even more elevated portions of the State are occasionally subject to virulent malaria. Residents of the low, rich lands in the interior of the State, where the summers are long and hot, are liable to be much debilitated in autumn from the combined effect of heat and malaria, even if they escape a positive attack of fever. I have been repeatedly asked by consumptives, "Do you think it advisable for me to spend some time in California?" In answer to this I would say, that depends altogether on your strength of constitution, the progress of the disease, and your pecuniary and social circumstances and surroundings.

Let us for a moment sketch the malady under consideration: Consumption is essentially a disease of debility. Hereditary weakness or taint, excessive physical or mental labor, care, grief, and anxiety, insufficient and imperfect food, air, light, and exercise; in short any-

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thing which lowers, impairs, or drains a person's vitality is a predisposing cause of consumption. The malady begins, palpably, by the engrafting of a local disease upon a weakened organization. Tubercles are a local manifestation of impoverished and tainted blood. Akin to a parasite, they infiltrate the air cells, generate a low form of inflammation; and, like a corroding ulcer, slowly spread through and destroy the lung tissue. Hemorrhages result from the ulceration of the coats of the blood vessels of the lungs. A person in an advanced stage of consumption is already virtually dying, and no remedies or change of climate avail to arrest the progress of the disease. Remedial measures should be directed simply and solely to assuage the patients sufferings and render his remaining life as comfortable as possible. Under such circumstances it is the height of folly for an invalid to undertake a journey of 3,000 or 4,000 miles, and to exchange old friends and home comforts for strangers and the cheerless rooms of a hotel or boarding-house. There are, however, many invalids that are much benefited by a six months' or a year's visit to California. Their improvement is partly due to a change in climate, but principally to the relaxation and mental diversion incident upon travel amid new scenes and associations. It should constantly be borne in mind, and this fact cannot be too strongly impressed upon the minds of patients, that climate is only one of the many conditions that may deteriorate, or improve the health and strength. Chronic diseases are usually caused by the slow and insidious operation of a number of agencies, a single one of which may be more potent for evil than the climatic influences. In fact the ill health of multitudes is not produced by the climate in which they live at all; but by their own bad habits. At the same time, this class are often benefited by a change of residence, as the climate, in their morbid condition, may aggravate a disease originally the result of other than climatic agencies. No one can make a general statement that will apply to all particular cases. Hence it is impossible to enunciate any rule by which to determine what invalid, or even what class of invalids can advantageously spend a winter in California. Each case must be carefully judged and weighed by itself, and all the facts taken into account. Generally speaking, the classes most benefited are persons worn down and debilitated by excessive labor and care; those afflicted with chronic laryngitis and those with premonitory symptoms of incipient consumption. In a word, those who are urgently in need of an entire change of surroundings in order to break up a treadmill round of care and toil, and present novel scenes to divert the mind and lift it out of, its accustomed ruts.

There is, however, one class of persons in reference to whom a general statement can be made that is of almost universal application. I allude to poor persons, or to those in straightened circumstances. It is usually folly for an individual to incur expenses for a journey in quest of health that are so great as to cause constant anxiety. The expenses of travel are usually more than previously estimated; and, even when benefit to health is obtained, a longer time is generally required to effect it than was at first supposed. Constant worry about the cost of a trip will completely neutralize any good effect that it would otherwise produce. There is no more pitiable object than an invalid, far from home and friends, compelled by poverty to live in a way far more comfortless than he had at home; disappointed in his hopes of obtaining health and heart-sick at the thought that his scanty means are fast melting away, and that he must return home and spend the balance of life in a worse condition than he would have been had he never left home. Now, as of old, "the destruction of the poor is their poverty." A physician, in recommending remedial measures, should always remember that his patient's pecuniary affairs forms an important part of the dose; and especially so when a journey as expensive as that to California is under consideration.

As chronic diseases are generally produced by the slow and long continued operation of bad habits, and other agencies that undermine health, their cure usually requires a correspondingly long period of time. Many expect to be cured in a few weeks, or months, when in fact one or more years are necessary, under the most favorable conditions. As a general rule, a person once a chronic invalid is never restored to health in the full sense of the term. He may apparently appear as healthy as before his illness, but a portion of his life power is gone, his hold on life and power to resist disease is weakened, and greater care of health and more favorable circumstances are imperatively demanded for the remainder of life. Ignorance of this fact paves the road for a quack's pecuniary success, as it leads many persons to spend their lives in medication of one kind or another, and to travel from place to place seeking what, in the nature of the case is an impossibility, *i. e.* to restore a weakened constitution to its original

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strength. All curable chronic diseases are so only up to a certain point, varying, of course, with the individual and the kind and stage of the disease. Beyond that it is impossible to go, and much harm is often done by attempting it, to say nothing of the attendant expense and disappointment. A change of climate, if necessary at all, is often required for a number of years. To do this, and at the same time surround the patient with other desirable conditions, it is sometimes best, and often necessary, that a change of home should be made, and the invalid become a resident instead of a visitor of the new location. This leads to the question as to the desirability of California as a home for emigrants, which I will write you about in my next.

Eating and Drinking.

BY THE EDITOR.

MINERAL MATTER CONTINUED.

IN our last article the functions of mineral waters were discussed; before closing this subject we desire to add a few words concerning common salt. The value of this mineral has been stoutly denied by a few modern hygienists, and there are no doubt many readers of this journal who are inclined to take this view of the question, and perhaps many of them never use it. It is not our intention to enter into any discussion on this subject, but to present briefly the points in its favor put forward by those who maintain that it has a normal relation to the healthy action of the body. Salt does not enter into the composition of the tissues, but it is a large constituent of every one of the secretions, the saliva, gastric juice, bile, sweat, and exists in the blood in larger amounts than any other mineral matter. Indeed, about one half of the mineral matter of the blood is salt. This amount in the blood cannot be much increased. If one should use a very large amount of it with his food, any excess beyond a certain amount is immediately thrown out in the excretions. Lotheby says: "It is a curious fact that common salt has the faculty of forming crystalizable compounds with most of the organized and effete constituents of the body;" and inquires, "May it not therefore be an important agent of diffusion? and be thus concerned in the phenomena of absorption and secretion; for albumen and fibrin cannot pass through the walls of the intestines, or the blood-vessels. It may well be that through the agency of common salt and the free acid of the gastric juice, they temporarily assume a condition in which they can be absorbed and secreted."

The same author also adds that "The experiments of Boussingault on animals have shown that, although salt mixed with the fodder does not much effect the quantity of flesh, fat, or milk obtained from them, yet it seriously affects their appearance and general condition; for animals deprived of salt other than that naturally contained in the food, soon get heavy and dull in their temperament and have a rough and staring coat."

Reulin states that animals which do not find it in their food or drink become less prolific, and the breed rapidly diminishes in number.

Dr. Le Saine says that salt increases the fertility and doubles the power of nourishing the fetus, and renders the milk more abundant and nutritive. It also gives a finer condition to the skin, and the flesh of animals is more digestible and better flavored which partake of it. Probably one use of salt is to increase the amount of saliva and gastric juice secreted. That it does this is certain. Salty food is sure to excite the salivary glands to intense action, they throwing out large quantities of saliva. If the amount of salt in food, however, is too great, this object is partly defeated, as we are apt to swallow the food too rapidly and before it is well chewed and incorporated with the juices; and this is a serious evil.

Such are a few of the views of eminent writers on the value of salt.

The instinct for salt, seen almost everywhere, is vividly related by many writers. It is said that on the coast of Sierra Leone brothers will

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sell their sisters, husbands their wives, and parents their children for it. Another writer adds, that on the gold coast of Africa a handful of salt will buy one or two slaves. It is said, in barbarous times the most horrible of punishments was to feed criminals on food without salt. We are, however, inclined to believe that there is a good deal of extravagance of statement in all such stories. At any rate, what is true of savages and of animals, whose choice of food is narrow and meager, is no rule for civilized beings who have a great variety of food, rich in mineral matter. At any rate, we have known many persons to refuse to eat salt with their food for weeks and months, and declare they were improved by abstinence from it. We are of the opinion that while a moderate use of salt may be advisable, that most people eat far too much of it; in this way corrupting the appetite and taste, and taxing to far too great an extent the excretory organs in getting rid of it. Then, too, those who live on foods rich in mineral matter would naturally need less of this mineral. So, too, a constantly improving agriculture improves our foods. By using salt largely on certain crops as a fertilizer they may probably be made to contain more of it, and thus it will be introduced into our systems as a constituent of our food, and not as a condiment. That its use on almost everything, and the unsavoriness of foods without it, is a mere habit, and not an instinct, cannot be doubted. In America, for instance, everybody salts their butter; in Europe they do not. Now when a European comes to America, he finds the use of so much salt butter exceedingly disagreeable to him until, by long use, he becomes accustomed to it.

In using salt, therefore, we advise moderation. Learn to use some articles of food without it, and others with but little; and make up for any deficiency of this article by such foods as are rich in mineral matter, of such kinds as are important in the animal economy.

CONDIMENTS.

A discussion of foods and drinks which should omit condiments would be very incomplete. According to Dr. Letheby, "they are merely stimulants of the digestive organs, promoting the flow of saliva, gastric juice, and other intestinal secretions, and increasing the peristaltic movement of the viscera. Thus they aid in the processes of digestion, and by giving flavor to the food they whet the appetite and so increase the relish for it. Food is made more palatable, and digestion promoted.

Many eschew condiments entirely, and to manifest advantage. William Cullen Bryant, in a letter published a couple of years ago in THE HERALD OF HEALTH, said: "Even with my food I do not take the usual condiments, such as pepper and the like."

They contain no nutriment. Where used, they should be free from adulteration, of the best quality, and of the finest kinds. Pot herbs are used often for condiments, especially for broths and soups. The best of condiments used in moderation are doubtless useful, though not essential to high health. Flint, in his great work on physiology, says of them: "The refinements of modern cookery involve the use of articles which cannot be classed as alimentary principles. Pepper, capsicum, vinegar, mustard, spices, and articles of this class, which are so commonly used, with the various compound sauces, have no decided influence on nutrition, except in so far as they promote the secretion of the digestive fluids. * * * The various flavoring seeds and leaves, truffles, mushrooms, etc., have no physiological importance, except as rendering articles of food more palatable."

In addition to the above we give the following from Professor F. W. Newman. It appeared in the January number of The London Dietetic Reformer. "In the writings of several leading vegetarians it is noticeable that they profess to take no condiments but salt. Mr. G. Dornbusch does not even take salt. I feel that this subject needs more light thrown on it. Salt being a mineral seems, at first sight, to need a justification. I find it (1) in the fact that horses and cows love grass which has a taste of salt, and the American bisons make long pilgrimages to lick the salt rocks; (2) in the notorious fact that it kills worms in children. Hence it may be inferred that a certain portion of it is healthful, and preservative from ailments. When instinct and common sense point to a conclusion it is satisfactory to have corroboration from science. And here we find that the gastric juice is reported to us as containing muriatic acid, for which salt, being muriate of soda, gives a supply. Besides, salt is one of the ingredients of blood. Thus salt is really food, though any excess of it is of course mischievous.

"But that vegetarians should sweepingly renounce *vegetable* condiments comes to me as a paradox. So much of condiments as tends to thirst I warmly deprecate, and with difficulty bear a very minute taste of cayenne pepper or curry. But are we to foreswear mint, sage,

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mace, cloves, cinnamon, caraway, ginger, pepper, and all spices? Where shall we stop? What of mustard and cress, and watercress, celery, orange and citron peel? As a special example, rice is so tasteless that the hardiest rustics (Turks and Arabs) reject it unless some condiment be added. Salt and butter are their ordinary demand, and then they call it *pilau* (pronounced *pilow*). The English generally expect milk with it, or milk and sugar. All watery vegetables seem to need *some* condiment. Salt may suffice, but it is difficult to understand why other tasty articles are to be banished from our tables. Melons are apt to cause ague, unless duly spiced. Ginger seems to be highly valuable with melons, with cold baked apples or pears, also with rhubarb stalks; useful also against windy food. But I throw out these remarks for discussion."

VALUES OF FOOD.

At this point of our studies it will be well for us to carefully look into the heating power derived from food, as well as the mechanical force extracted from it. We shall draw freely from the works of Frankland, Letheby, Parkes, and other writers, whose experiments are of recent date and most reliable.

HEATING POWER OF FOOD.

NAME OF FOOD.	Lbs. of water 10 grs. will heat 1° when burned in the body.
Butter	18.68
Cheshire cheese	11.20
Oatmeal	10.10
Wheat flour	9.87
Pea meal	9.57
Ground rice	9.52
Yolk of egg	8.50
Lump sugar	8.61
Grape sugar	8.42
Boiled eggs	5.86
Lean beef	3.66
Lean veal	3 01
Potatoes	2.56
White of egg	1.48
Milk	1.64
Carrots	1.33
Cabbage	1.08

Theoretically, the amount of work which can be done by foods, that is, the number of pounds that can be raised one foot high is just 772 times the number of pounds of water it will, by burning, heat one degree. Therefore, to find the comparative value of foods to support strength, multiply the above figures by this sum. It must not be supposed, however, that these figures are yet fixed beyond improvement, though it is certain they are very nearly correct. It is, of course, understood that when these values are got out of foods they must be all digested, and completely absorbed and converted into nutriment; and this is never done. No invention ever made is so perfect as this. The human body, perfect as we think it is when in robust health, is not perfect enough to get all the virtue out of food. A working diet of 4½ ounces of perfectly dry nitrogenous matter, and 22¼ ounces of dry carbonaceous matter—equivalent to a daily allowance of some six pounds of ordinary food—possesses, theoretically, a working value sufficient to raise 10,874,136 pounds one foot high, yet the most work that can actually be got out of this amount of food is—including the beating of the heart and respiration—not over 1,610,206 pounds. From this it will be seen that there is a vast difference between the theoretical and the actual value of food in work. No allowance, however, is here made for the food used up in thought, in feeling, emotion, and the molecular movements of the body. This cannot, in the present state of science, be calculated—if they ever can.

It has been found by experiments on a large number of men, that the carbonic acid exhaled and urea secreted daily in the amount of food mentioned above really, should supply force sufficient to raise 7,720,000 pounds one foot high, while the actual work is only about one-sixth of this amount. What becomes of the other force? Is it lost, or used up in mental and molecular labor, which cannot be measured? It must be the latter.

AN INTERESTING COMPARISON.

Letheby in his work says: "In the steam engine, according to Sir William Armstrong, only a tenth part of the actual power of the fuel is realized in work. The human machine is therefore more economical of its force than a steam engine; in fact it is assumed by Heidenham that less than half the force applied to the living muscles, as it is developed in their tissues, is realized. But although the animal machine is so much more economical of force than the steam engine, yet on account of the costliness of its food (fuel), it is far more expensive." Taking, for example, a steam engine of one-horse power, it will take two horses to do the same work for ten hours a day, or twenty-four men. Now, the cost for fuel for the engine will be about twenty cent's worth of coal; for the horses, about $2 worth of hay and oats; and for the men about $10 worth of bread, butter and meat."

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Composition of Fruits.

BY C. D. HUNTER, F. C. S.

COMPARATIVELY little attention has been devoted in this country to the chemistry of the fruits. So great is our ignorance on this subject that writers on food topics generally say as little about them as possible. And what they do say is generally a simple recast in their own phraseology of some ancient statements about the healthfulness and wateryness of fruits.

In Germany, where chemistry has been long naturalized, and where numerous experimental agricultural statistics exist, aided by the government, much has been done in the scientific examination of plants, etc. We, in consequence, owe to Germany much of our knowledge about agriculture and its kindred sciences. The authorities quoted in scientific works and lectures on these subjects are chiefly German. Liebig and Fresenius are familiar examples of this; but their names are legion in every department of science and art.

The following table of the "Composition of Fruits" is condensed from a list of fifty-one analyses made by the celebrated chemist Fresenius, and reprinted in Johnson's "How Crops Grow," from the "Ann. Chem. u. Pharm. ci, p. 219." The original gives the result of each analysis separately, a minuteness of detail necessary in a purely scientific paper, but very inconvenient for general purposes. These have been averaged wherever the nature of the analysis permitted of so doing; but as in the original they are not all given in equal detail, several had to be omitted. The Riessling Grape, the first on the list, is an example of an analysis imperfect in detail; no determination having been made of the albumenoids, etc., and but for its position as first in the scale this analysis would have been omitted.

The fruits are arranged in the table according to the percentage of soluble matter. This, other things being equal, is a fair measure of their comparative values for food. The percentage of water does not show this value so well, because of the great difference between the fruits in the percentages of insoluble matters. This latter item consists chiefly of seeds and skins, with a small quantity of insoluble cellulose and pectose; the latter rarely amounting to one-fifth.

The sugar in the first column includes both saccharose and fructose.

The acid in the second column is expressed as hydrated malic acid.

COMPOSITION OF FRUITS.

Number of Analyses.	KIND OF FRUITS.	SOLUBLE MATTERS.						Insoluble matters.	Water.
		Sugar.	Free Acid.	Albumenoids.	Pectine bodies, Gum and Organic Acids in Combination.	Soluble Ash ingredients.	Total soluble matters.		
2	Grapes, Riessling.....	14·33	·60				18·70		75·21
2	Apples, English Reinette.	6·40	·62	·48	7·04	·29	14·83	3·13	82·04
2	Grapes, Austrian White..	12·18	·91	·75	·36	·37	14·57	3·03	82·40
4	Cherries.....	10·29	·79	·94	1·83	·65	14·49	6·01	79·50
3	Greengages.....	3·32	·80	·36	9·18	·43	14·09	5·04	80·93
1	Mulberries, black.....	9·19	1·86	·39	2·03	·57	14·04	1·25	84·71
2	Prunes, sweet large.....	6·27	·90	·82	3·88	·62	12·49	5·89	81·62
1	Apples, white.....	7·58	1·04	·22	2·72	·44	12·00	2·96	85·04
2	Pears, sweet red.....	7·47	·04	·25	3·84	·28	11·88	4·63	83·49
2	Pears, large Holland....	1·57	·67	·62	8·30	·67	11·83	7·40	80·77
2	Apricots, large.....	1·34	·84	·61	7·60	·78	11·17	5·34	83·48
6	Gooseberries.....	7·12	1·43	·42	1·18	·38	10·53	3·42	86·21
6	Currants.....	6·38	2·15	·50	·15	·59	9·77	5·42	84·81
1	Strawberries, Ananas....	7·57	1·13	·36	·12	·48	9·67	2·86	87·47
1	Whortleberries.....	5·78	1·34	·79	·56	·86	9·33	13·12	77·55
2	Plums, blue and black..	2·13	1·30	·45	4·08	·52	8·48	4·52	87·00
2	Raspberries, garden.....	4·20	1·23	·60	1·58	·43	8·05	4·58	87·37
1	Blackberries.....	4·41	1·19	·57	1·44	·41	8·00	5·59	86·41
1	Raspberries, wild	3·60	1·98	·55	1·11	·27	7·51	8·64	83·86
2	Strawberries, wild	3·90	1·49	·59	·10	·67	6·75	6·10	87·15

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The foregoing table shows strikingly how inaccurate is the common notion about fruits. It also shows that the proportion of solids is much larger than it is generally stated to be in the brief and superficial sentences devoted to this subject in many works on food.

The improvement in the nutritive value of fruits effected by cultivation, is strikingly seen on comparing the composition of the garden strawberries and raspberries with that of the wild varieties. The increase of the soluble or easily digestible matters is very considerable; amounting in the case of the strawberry to nearly fifty per cent. In the case of the raspberry comparison is less easy, the garden specimens containing less solid matter. Glancing, however, at the insoluble matters, it will be seen that these have diminished nearly one half in the cultivated variety.

Judged by the old standard of the amounts of nitrogenous, albuminous, or so-called flesh forming constituents, fruits occupy a very low position indeed. But this now disproved standard condemned also the meats and oily substances found by cattle feeders to be so superior for feeding purposes to any of the so-called flesh formers.

Judging by the more rational view now entertained by our best chemists and physiologists, that the true measure of nutritive value is the force, or potential energy of the substance, fruits occupy relatively a much higher position, and can no longer be classed as "anti-scorbutic drinks."

In Dr. Frankland's Royal Institution Lectures on the source of muscular power, he gives a table showing the actual energies developed by various foods when oxidzed in the body. A sample of apples containing the same proportion of solids as the Reinettes in the foregoing table bore the following relation to other foods, taking one pound of wheat flour as a standard.

Flour	1 lb.	0 oz.
Apples	5 lbs.	15½ oz.
Veal, lean	3 lbs.	4½ oz.
Beef, lean	2 lbs.	11 oz.
Rice, ground	1 lb.	0½ oz.
Hard boiled egg	1 lb.	11 oz.
Bread	1 lb.	12½ oz.
Potatoes	4 lbs.	12½ oz.
Milk	6 lbs.	1¾ oz.
White of egg	6 lbs.	10¾ oz.
Carrots	7 lbs.	6½ oz.
Cabbages	9 lbs.	3¼ oz.

Grapes would probably stand about five pounds two ounces, and the other fruits in proportion to their quantity of solid matters. It must always, however, be borne in mind, that all comparisons of the nutritive value of foods are only reliable in so far as the foods compared are equally digestible. Of invalids it may be said that what is food to one is poison to another, and with them each case has a law to itself. With the ordinarily healthy the results are more uniform; but unfortunately we know more of the relative digestibility of foods for cattle than of those for men. Experiment has, however, shown that nearly one half of our ordinary daily food escapes complete digestion and assimilation. In the light of this fact the fruits occupy a very favorable position, the great majority of them showing a very high proportion of soluble matters. This in the more common fruits ranges from two-thirds to five-sixths of the total solids, and must, in comparison with many foods, more than double their nutritive value. This also partly explains the value to invalids of such fruits as grapes and strawberries, both of which contain relatively but a small proportion of insoluble matters.

The term "anti-scorbutic drinks" shows in what high estimation fruits have always been held as health-preserving agents. And now that more accurate analyses and a better understanding of the nature and values of food show them also to be highly nutritious, it is evident that they should be used as foods. Fruits, from a false idea of their natures, have too frequently been used as drinks, and taken at improper times. They have in consequence received a bad name, and apprehensive mothers warn their children against fruit; visions of diarrhea, cholera, etc. being held up as bogies to enforce obedience. But let them give extract of beef, or any other of the supposed concentrated nutritious flesh foods, and watch the result. They will not have long to wait before the same stomach ailments begin to show themselves; and that in forms more dangerous than ever followed the use of ripe fruit at equally unseasonable hours.

Fruit should be used as part of a meal. With children and healthy adults, just before breakfast and dinner are the best times. Invalids will find it safer, especially with juicy fruits, to take it about the middle of the meal—other dishes preceding and succeeding it. This refers chiefly to uncooked fruit. When cooked and served hot fruit may be safely taken at any period of the meal. Invalids will also generally find the more acid fruits less digesti-

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ble, and especially so when preceded in the same meal by potatoes.

Fruits, especially when not quite ripe, are generally rendered more digestible by cooking. Stewing is the general, and a good method; but roasting is preferable. This may be done in an oven, or before an open fire. Apples tightly wrapped in paper are easily and pleasantly roasted before the parlor fire. Done in this manner they will generally be found to require little or no sugar—a decided advantage with invalids.

Unripe fruits should not be eaten; many of the acids found in the green fruits being poisonous. Unfortunately no analysis of green fruit is at present available. The following, however, shows the changes which take place in a year from ripeness to mellowness, and finally to decay:

PEARS.	Ripe and Fresh.	Kept till Mellow.	Kept till Brown.
Resinous coloring matter..	0.08	0.01	0.94
Sugar	6.45	11.52	8.77
Gum	3.17	2.07	2.62
Lignine	2.80	2.19	1.85
Albumine	0.08	0.21	0.23
Metapectic Acid	0.11	0.08	0.61
Lime	0.03	0.04	—
Water	86.28	83.88	62.72
	100.00	100.00	76.84

It will be noticed that as the pear mellows the sugar increases in amount, chiefly at the expense of the gum and indigestible lignine. The rotting pear again shows a decrease in all the more important constituents; the sugar has in part fermented and gone off as carbonic acid and moisture, there being a loss in weight of about 23 per cent. A sour acid of decay has also been generated, called metapectic acid.

Much more of interest might be added, but enough has been said to show that the more accurate and extensive our knowledge of food and its properties becomes, the more highly will we value the fruits as healthful and nutritious food.

Precautions Against Small-Pox.

BY ALFRED POWER, COMMISSIONER OF POOR LAW, IRELAND.

NO. I.—THE SKIN.

THERE'S a skin without and a skin within,
A covering skin and a lining skin,
But the skin within is the skin without
Doubled inwards and carried completely throughout.

The palate, the nostrils, the windpipe and throat,
Are all of them lined with this inner coat;
Which throughout every part is made to extend—
Lungs, liver and bowels, from end to end.

The outside skin is a marvelous plan
For exuding the dregs of the flesh of man;
While the inner extracts from the food and the air
What is needed the waste in his flesh to repair.

While it goes well with the outside skin,
You may feel pretty sure all's right within;

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For if anything puts the inner skin out
Of order, it troubles the skin without.

The doctor, you know, examines your tongue,
To see if your stomach or bowels are wrong;
If he feels that your hand is hot and dry,
He is able to tell you the reason why.

Too much brandy, whisky, or gin,
Is apt to disorder the skin within;
While, if dirty or dry, the skin without
Refuses to let the sweat come out.

Good people all! have a care of your skin,
Both that without and that within;
To the first you'll give plenty of water and soap,
To the last little else beside water, we'll hope!

But always be very particular where
You get your water, your food and your air;
For if these be tainted, or rendered impure,
It will have its effect on your blood—be sure!

The food which will ever for you be the best
Is that you like most and can soonest digest;
All unripe fruit and decaying flesh
Beware of, and fish that is not very fresh.

Your water, transparent and pure as you think it,
Had better be filtered and boiled ere you drink it,
Unless you know surely that nothing unsound
Can have got to it over or under the ground.

But of all things the most I would have you beware
Of breathing the poison of once breathed air;
When in bed, whether out, or at home you may be,
Always open your window and let it go free.

With clothing and exercise keep yourself warm,
And change your clothes quickly if drenched in a storm·
For a cold caught by chilling the outside skin
Flies at once to the delicate lining within.

All you who kindly take care of your skin,
And attend to its wants without and within,
Need never of small-pox feel any fears,
And your skin may last you a hundred years.

NO. II.—THE BLOOD.

Six thousand years after this era began
The astonishing fact was discovered by man,
That the blood in his body does not remain still,
But rushes along like the race from a mill.

Certain vessels call'd arteries, hidden within
The body, conduct from the heart to the skin;

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While others, called veins, throughout every part
Of the system conduct from the skin to the heart.

The heart every instant gets fill'd with new blood,
Prepar'd, as you'll see, from the air and the food;
And this new blood is driven throughout the whole frame
As from a force-pump, by the force of the same.

The blood in its passage leaves everywhere
Some of what it has got from the food and the air,
Which is all taken up, ere a moment be gone,
To replenish the tissue, the fat, and the bone.

Throughout the whole structure—bone, muscle, or skin—
Where the arteries end the veins begin;
And changing its color from red blood to black,
The blood enters the veins and is so carried back.

When the old blood arrives by the veins at the heart
It is mixed and churned up, in a chamber apart,
With a thick milky fluid, nutritious and good,
Which the stomach and bowels have drawn from the food.

It is then driven off by a similar force
To the lungs, where the air cells receive it, in course,
Where, at every breath, it takes up through the skin
The material parts of the air within.

Thus regenerate, vigorous, lusty, and red,
And once more forced back on its fountain-head,
To the artery chamber it rushes amain,
And is ready to start upon service again.

What we get from the air is equal in weight
To what we derive from the food which we eat;
But what we breathe out, I must tell you once more,
Is of poisons the worst, as I told you before.

In a much clearer light you may now perceive
What it is hoped you'll hold fast and devoutly believe,
That for health and enjoyment the very best fare
Is the soundest of food and the purest of air.

Then show that you value your blood and your skin,
Remove every nuisance without or within;
Obey all the laws that are made to that end,
And regard the inspector of health as your friend.

If your house has a taint, employ in good time
Either carbolic acid or chloride of lime;
But of all disinfectants the earth is the best—
Smells cover'd by earth are forever at rest.

With all these precautions don't fear any harm,
And yield to no panic or foolish alarm;
When the enemy comes, be brave but prepared—
Survey your defences and stand on your guard.

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Women in Council. No. 2.

EDITED BY HOWARD GLYNDON.

THREE women are sitting together in a pretty, quiet sitting-room, about eight o'clock on a stormy evening in March. The room is in every sense of the word a woman's sojourning chamber. A healthy man compelled to live in it would feel much like a bull in a china shop; and, perhaps, something like a fly under a receiver from which all the air has been exhausted. To account for this last comparison I must state that the thermometer in this room stands between 70° and 80°; that the air is heavy with the combined emanations from the four gas burners and a register, which is in full blast, while every window is hermetically sealed and draped in thick curtains; and that there is practically no inlet for fresh air and no outlet for foul. The first comparison is explained by the fact that the room, which is very nice in its way, is filled with a legion of those trifles and nick-nacks which always betray the domination of woman. There are hanging baskets, and fern cases and ornamental flower-pots. But the plants in them look only half alive. There is a canary in a gilt cage; but it is sick, poor thing, and no wonder. There are embroidered sofa-cushions and footstools, and no end of anti-macassars in crochet work. There are brackets in tapestry; and upon the wall flower pieces, interspersed with innumerable smaller pictures in ornamental frames. The easiest of easy chairs are scattered about. At this moment the most superlatively comfortable of these are occupied by our three ladies. You will be at no loss to single out from among them the presiding spirit of the room. It must surely be that small, delicate woman, with a complexion like yellow wax; with fine, thin, smooth hair, not dressed in the very latest style. The furnace heat has melted away all her flesh. She is really skin and bones; but her eyes are large and unhealthily bright, and the ever active fingers, just now employed with a bit of tatting, are like the talons of a bird. In her dress she is as neat as a pin—looks as if she had just stepped out of a band-box. She is perfectly amiable; in many ways very sensible; her great want is vitality. But how can you expect any woman who lives habitually in an artificial temperature of 76°, and who has made a roomful of anti-macassars, and sofa-cushions, and lambrequins, and toilet-mats, and footstools, and enough tatting besides to set up a small retail shop in that line, to have any vitality left worth mentioning? She sits by the drop light, which is upon a round table in the center of the room. This table is well covered with the latest periodicals, so you may know that the hostess is a reader as well. Next to her is a woman who is almost her antipodes. A stout, matronly-looking personage, with a full, good-natured face, and a comfortable way about her. She hasn't brought her sewing work—not she! She sits back at her ease, with her plump hands folded, and chats with the worker of tatting. On the sofa is a bright little body, neither fat nor thin; not as young as the one nor as old as the other of the first two, but looking the youngest of the trio. Neither of these three women are dressed in the extreme of fashion; but by garb, appearance and bearing they are all evidently ladies. The one last mentioned is turning over the leaves of the March number of THE HERALD OF HEALTH.

"Why, here is something new," she exclaims. "I was just wondering if our friend Howard Glyndon had anything in this number, and I have just found an article signed with her name; but it has the strangest title—'Women in Council.'"

At that very moment there is a slight tap at the door; and just afterward, as if completely oblivious of the prompt "Come in!" which springs from two pairs of lips at once, the person outside opens the door hesitatingly and says: "May I come in?" Then she sees in the faces of all three that she is welcome, and so she comes in.

"No intrusion, I hope," she says, after greeting the hostess as "Mrs. Frailhold," and sitting down on the sofa beside Mrs. Younglove, who still holds THE HERALD OF HEALTH open at the page where she was interrupted.

"We were talking of you, just as you came in," says Mrs. Middleweather.

"And we're glad you're come, because you can tell us all about it," says Mrs. Frailhold.

"And isn't it strange that people so often come just as you are talking of them?" inter-

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polates Mrs. Younglove, precisely at the moment when it is on the tip of the new comer's tongue to ask, "All about what?"

"Mrs. Younglove was about to read us your article headed 'Women in Council,' when you came in," says Mrs Frailhold, resuming the inevitable tatting.

"Well, do not let me interrupt you. Read on, please, and ask me any questions you choose when you have done;" says H. G., taking up the *Christian Union* and scanning its table of contents.

Mrs Younglove proceeds to read, while Mrs. Middleweather stops rocking herself, the better to listen. Mrs. Frailhold, however, does not relax the rigid attention which she gives to her tatting, but works and listens at the same time. H. G., deep in the *Christian Union*, is fortunately spared the infliction of hearing one of her own articles read aloud. Mrs. Younglove reads half a dozen lines and then stops and looks imploringly at H. G., who drops the *C. U.*, and taking up *Harper* says: "Well?"

"*Do* tell us first, why you call it 'Women in Council.'"

"But that is exactly what the article itself is intended to explain."

"But do tell me first; then I can read it so much better."

"Well, it just means women in council, as we are now—we four in this sitting-room."

"Oh!"

"*Are* we in council?" says Mrs. Middleweather.

"Yes," responded H. G.; "I mentally improvised a council of you the moment I came into the room, and joined myself to it. We are a self-constituted Council of Four, to discuss the scheme which is proposed in this article, after you have heard it read."

"Do go on, Mrs. Younglove!" says Mrs. Frailhold, a little impatiently; "I am curious to know what it is all about."

So Mrs. Younglove reads on, aloud; and H. G. resumes her occupation of skimming over the literary contents of the *Round Table*.

"H. G., do you really mean to say that you think we women can't come together to discuss any matter without breaking up in a squabble?" interrupts Mrs. Middleweather indignantly, at a certain point in the reading.

"I don't say you can't—but do you?" (This between cutting two pages of the *Atlantic*).

"And you a woman, too!" says Mrs. Younglove, reproachfully.

"Alas!" responds H. G., pathetically.

"There is a grain of truth in what she says," puts in the reflective worker of tatting. "I have been wondering myself why women can hardly ever come together in a separate body in public without some noisy or disgraceful scene taking place. Don't you remember the experiment that was made at the Institute of Technology, in Boston, last fall? There was a course of lectures exclusively for women, and at some of them most disgraceful scenes occurred. On one occasion the whole audience of women was in commotion; those in the front seats standing up, and those behind them shouting 'down! down!' These women were cultured, intelligent, refined, with a thirst for knowledge. In private they were low spoken, delicate in their habits, quiet in their movements; but once brought together in one large mass they behaved like a party of noisy school-boys, or wild students. And yet on this occasion there was but slight provocation, comparatively."

"Oh!" says Mrs. Younglove, doubtfully.

"And men never do such things?" says Mrs. Middleweather, in a slightly sarcastic tone.

"Oh, yes, they do," says H. G., taking up the word, "under adequate provocation. But their word battles are not so likely to be *fruitless*. They talk that they may act. Thus great associations are organised, cities planned, railroads built, manufactures introduced. But women do not so often get beyond the talking; and that is to say that the squabbles of men are more to the point than those of women."

"Yes!" puts in Mrs. Frailhold, doubtfully. "But talking of squabbles, are they ever to the point?"

"Not womens', surely!" says Mrs. Middleweather, laughing and dropping her *role* of defender of her sex.

"Mens' squabbles are but too often to the point," suggests Mrs. Younglove. "Now, I have noticed particularly, that when there is bad feeling among men they avoid talking over the subject which excites it, if that is possible; because they realise instinctively that with them words usually lead to acts."

"While women might go on talking over a grievance till doomsday, and in most cases never get beyond word fighting!" says Mrs. Frailhold, looking up from her tatting for a moment.

"It is my firm belief," says H. G., "that when women are able to come together in large bodies to discuss subjects of peculiar interest to them, in a grave, decorous, sensible manner—when their talking shall be to the point, and their words concise, conciliatory and well chosen, the offspring of much thought and

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the predecessors of judicious action—they will rise, as a constituency, ten per cent. in public estimation. Then, and not till then, will popular opinion respect their sayings and have great expectations of their doings, separate from those of men."

"Ought the sayings and doings of women in bodies ever be separate from those of men?" asks Mrs. Younglove, a little timidly.

"In some cases I think—yes!" says Mrs. Frailhold, appropriating the question.

"The rule works both ways," says H. G. "There are occasions when men require to go separately into council, and there are occasions when women require to go separately into council."

"Oh, I see now!" says Mrs. Younglove. "It is because there are some things in which women are much more nearly interested than are men, and *vice versa*. And of course those most nearly interested in a thing ought to understand it best and discuss it first."

"But isn't it a question whether women always do understand best the things in which they are most nearly interested?" says Mrs. Middleweather, treacherously.

"Side shots are not fair, just now," remonstrates H. G., with a smile.

"They surely could, if they would only try," says Mrs. Frailhold; "but they fritter away their time in so so many lesser affairs. For instance, if a woman aspires to be fashionably dressed now-a-days, the doing of that takes up nearly all her available time."

"And how about fancy work?" says H. G., slyly.

There is a momentary flush on Mrs. Frailhold's sallow cheek, as she answers:

"At least it does not prevent me from thinking."

"My dear friend, I know it doesn't. Whatever should we do without your advice and suggestions whenever we four meet here for discussion of womanly matters? It keeps you from having good health, however; a matter in which *you* are vitally interested. But more of that by-and-by—we won't dispute about it now."

"And do you know?" says Mrs. Frailhold, adroitly changing the subject; "I have an idea that most of the discussions of men and women should be regulated on the principle of a parliament, as it were, composed of two houses; each, however, having equal privileges and prerogatives; each assembling for separate discussion, but coming together, whenever necessary, in one common assemblage to discuss and decide unitedly upon the questions which they have been working upon separately. It seems to me that this is the only way in which we shall ever arrive at a truly popular opinion upon any great subject."

"And the woman who has this bold idea made all these fancy things!" exclaims H. G., glancing around the room aghast.

"And pray why shouldn't she?" says Mrs. Middleweather, again on the defensive, while Mrs. Younglove contents herself with a sly little laugh.

"Are mens' thoughts any weaker because many of them spend all of their spare time in some recreation more fitted to their sex, but certainly not more intellectual than crochet or tatting work?" persists Mrs. Middleweather.

"Hum!" says H. G., doubtfully. "However here is another subject for future discussion."

"I am wondering," says Mrs. Younglove, "if women will ever be able to come together and discuss matters of interest to themselves without getting unduly excited and making a mountain of every mole-hill."

"Yes," responds H. G., emphatically; "I think they will."

"And when will that be?" says Mrs. Frailhold, sceptically.

"When they have been educated into self-control; when they have learned to look dispassionately and fairly at all sides of a given case; when they have discovered that defense of a principle does not consist in calling an opponent hard names, nor impugning his motives; when they have learned to keep Feeling a little in the background and to let Reason have fair play," responds H. G., promptly.

"And when will they learn to do all these things?" says Mrs. Middleweather, doubtfully.

"When that small minority of women who are a step ahead of the others shall undertake to educate the great majority in these principles."

"And when will that be?" persists Mrs. Middleweather, while the other two listeners turn their faces in the direction of the coming answer.

"It will begin to be when a few such women as I have described break ground, and in council discuss the preliminary conditions necessary for the success of this movement. The preliminary for any sort of moral or intellectual reform among women is a healthful physical condition. Sound reasoning powers are to be found conjoined with firm nerves, with trained muscles, and a perfect

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circulation We shall have to take the mole-hills in hand before we can conquer the mountains. All the bad little habits of woman's daily life are the mole-hills. Let us begin with those. But suppose we finish reading the first installment of 'Women in Council,' before we talk any more. It is so late that I fear we shall not have time to do much more to-night. In the meanwhile I have in my pocket some letters from women, provoked by this first article, which I meant to read to you, and then ask you to discuss. They must, however, lie over till our next meeting."

LESSONS FOR THE CHILDREN.

BY THE EDITOR.

LESSON XVII.

THE BONES.

I suppose every one of you knows how a bone looks. Nearly every one of you has had a chance to see and handle them. Being so firm and hard they do not quickly decay, but often last for years and years, even when exposed to rains and snows, heat and cold. Boys who live in the country have good chances to study the bones of animals. They can often find the entire skeleton of a horse, or other creature, after the flesh has decayed and been eaten away. In a dead animal, after a year or two the flesh is entirely consumed, and the bones become bleached white by the sun. Did you ever notice how after the flesh of an animal has decayed, the bones nearly all fall apart? You see they do not grow together; but, except a few of them, are held together by the flesh, or muscles, and when this is gone they all tumble down like so many bricks not cemented by mortar. It would not do at all to have the bones of the body grow tight to each other, except those of the head and a few others. If they did you would all be as stiff as a poker. The arms and legs, and hands, feet and back would not bend as they now do. The bones are fitted together by joints which move on each other—some like a hinge—and by this wonderful arrangement we are enabled to walk about and bend our limbs in a most remarkable manner. The next time you see a skeleton observe how the joints fit each other and work upon each other.

The bones are made in considerable part of earth, or mineral matter. If you will put a bone in a very hot fire for a while it will crumble to pieces like so much ashes. Most of this ash left is nothing but lime. If, on the other hand, you will put a bone into dilute muriatic acid it will dissolve out this earthy matter and leave the cartilage in just the shape of the bone. This is soft and flexible, and can be twisted, or tied into a knot even. So bones are not all earthy matter, as they look to be; but partly animal or fleshy matter. In the bones of children there is more of this soft, cartilaginous animal matter, than in old people. For this reason their bones are not so easily broken. In very old people, on the other hand, the amount of earthy matter is very great; and hence their bones are apt to be brittle. In healthy children if a bone is broken it grows together again very quickly; in old people it takes a long time. Both these kinds of matter are useful in bones. The earthy matter gives them solidity, hardness. The animal matter gives them strength, toughness and the power of growth.

The bones are all covered with a sort of skin—a tough, white membrane called periosteum. You can all get a sight of this some day when you have roast beef for dinner and will get the bone and separate it away. In the young this membrane is easily separated and torn off; but in the old it is almost impossible to separate it. This membrane is filled with little bloodvessels which go into the bone itself, carrying nutriment to make it grow, or for repairs.

The long bones are hollow, and the center is filled with marrow, a kind of oil or fat.

There are in the body 240 bones. This includes thirty-two teeth. Boys and girls, who have not got thirty-two teeth, and old people who have had some of theirs pulled out, have a less number.

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Eight of these are bones of the skull. Fourteen are bones of the face. Thirty-two are bones of the mouth (the teeth). One is a bone of the tongue. Eight are bones of the ear. Twenty-four are bones of the spine (back bone). Twenty-five are bones of the chest and sides (ribs and thorax). The hip, or pelvis, bones are two. The shoulder bones are four. There are two arm bones and two fore-arm bones. Then there are fifty-four bones for the wrists and hands; and six for the legs, and fifty-six for the ankle and foot.

Bones are of three kinds. There are the long bones. These form part of the limbs, and act as posts, or columns, to support the weight of the body, and as levers to move it. Then come the flat bones—the ribs, skull bones and hip bones. And then come the short bones of the feet and hands.

The bones give shape to the body; they hold and protect the internal organs, stomach, lungs, heart and brain, and act as levers for the muscles. They do not need the same care as the other organs of the body; but we should be careful not to break or fracture them.

QUESTIONS.

1. Did you ever see a bone?
2. How does it look?
3. How does a bone feel?
4. Will a bone decay or last a long time?
5. Did you ever see a skeleton?
6. What kind of a skeleton?
7. Do the bones grow together?
8. What holds them in their places?
9. Suppose all the bones were in one piece, what then?
10. What are bones made of?
11. Is a bone all earthy matter?
12. What about broken bones?
13. What covers the bone?
14. Does blood enter the bones?
15. What is inside the long bones?
16. How many bones are there in the body?
17. What can you remember of the lesson?
18. What about the care of the bones?

EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

CURE FOR CORNS.

I. What will cure a corn on the foot?

ANSWER.—Dr. Barbier, says The Lyons Medical Journal, reports the cure of the most refractory corns by the morning and evening application, with a brush, of a drop of a solution of the per-chloride of iron. After a fortnight's continued application, without pain, a patient who had suffered martyrdom for nearly forty years from a most painful corn on the inner side of each little toe, was entirely relieved. Pressure was no longer painful, and Dr. B. believed the cure radical. Two other similar cases were equally successful.

CURE FOR DISHONESTY.

II. What is the hygienic treatment for a tendency to dishonesty?

ANS.—Thomas Jefferson's advice was: "If ever you find yourself in any difficulty, and doubt how to extricate yourself, *do what is right* and you will find it the easiest way of getting out of the difficulty." To his nephew he wrote: "Give up money, give up fame, give up science, give the earth itself and all it contains, rather than do an immoral act. And never suppose that, in any possible situation or any circumstances, it is best for you to do a dishonorable thing."

SHAKESPEARE ON DRINKING.

III. Was Shakespeare a temperance man?

ANS.—Probably not, in the modern acceptation of the term; but who has equalled his presentations of the evils of drink? No descriptions outside the Bible are so intensely true. "Who hath woe? who hath sorrow? who hath contentions? who hath babbling? who hath wounds without cause? Who hath redness of eyes? They that tarry long at the wine. At the last it biteth like a serpent, and stingeth like an adder" (Prov., xxiii. 29-32). "Wine is a mocker, strong drink is raging; and whosoever is deceived thereby is not wise." (Prov., xx. 1).

For lay sermons on these texts turn to Shakespeare's pages. When the villain Iago wishes to make Cassio the tool of crime he presses him to drink: "Come, Lieutenant," says Iago, "I have a stoup of wine, and here without are a brace of Cyprus gallants that would fain have a measure to the health of black Othello.

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"Not to-night, good Iago; I have a very poor and unhappy brains for drinking. I could well wish courtesy would invent some other custom of entertainment."

It is to this custom of "entertaining" by drink and revelry that Hamlet alludes when he says to Horatio: "It is a custom more honored in the breach than in the observance."

And Apemantus says to Timon of Athens, of his wines and the custom of "drinking healths:"

"Those healths will make thee and thy state look ill.
Here's that which is too weak to be a sinner,
Honest water which never left man i' the mire."

When Cassio is persuaded to drink, and is amused by Iago's drinking song, the villain says: "I learned it in England, where, indeed, they are most potent in potting. Your Dane, your German, and your swag-bellied Hollander —drink, hoa!—are nothing to your English."

Afterward, when Cassio has come to his senses and his conscience begins to awake, he says:

"Drunk! and speak, parrot! and squabble, swagger, and discourse fustian with one's own shadow! O thou invisible spirit of wine, if thou hast no name to be known by, let us call thee devil!"

Iago.—What was he that you followed with your sword? What had he done to you?

Cassio.—I know not.

Iago.—Is it possible?

Cassio.—I remember a mass of things, but nothing distinctly; a quarrel, but nothing wherefore. Oh that men should put an enemy in their mouths to steal away their brains! that we should with joy, pleasance, revel, and applause, transform ourselves into beasts!

And again:

"It hath pleased the devil drunkenness to give place to the devil wrath; one imperfection shows me another, to make me frankly despise myself." Othello, act v., sc. 5.

Shakespeare makes even his clowns and fools expose the vice of intemperance, and the degradation of drunkards:

Olivia.—What's a drunken man like, fool?

Clown.—Like a drowned man, a fool and a madman. One draught above heat makes him a fool, the second mads him, and a third drowns him.

What a sermon, too, on the blessings of temperance is contained in the few lines in the third scene of the second act of "As you Like It," when Adam says to his young master:

"Let me be your servant!
Though I look old, yet I am strong and lusty;
For in my youth I never did apply
Hot and rebellious liquors in my blood;
Nor did not with unbashful forehead woo
The means of weakness and debility;
Therefore my age is as a lusty winter,
Frosty but kindly; let me go with you,
I'll do the service of a younger man
In all your business and necessities."

LESSONS FROM SICKNESS.

IV. Does sickness teach us any valuable lessons?

ANS.—The one lesson of every sickness, every pain, every trouble, every catastrophe, is to learn how to prevent its recurrence. Cure is a good thing, but prevention is a thousand times better. The best possible use of the physician is to keep people well. The lesson of every trouble is to keep out of trouble. The moral of misfortune is to shun whatever can possibly invite it. Every evil we endure is a Providential pinch of our flesh, or nudge at our elbow, or blow on our head, to compel us to open our eyes to the immutable laws of the universe and the penalties that result inevitably from their violation. In every fire it would seem that Heaven tried to burn a lesson of caution and watchfulness, of safe construction and agencies for its extinguishment.

MELANCHOLY.

V. Should persons with melancholy try to chase it away by amusements?

ANS.—They may, to a certain extent, provided they sleep a great deal. Dr. Mendel, of Paukow, says that it is a mistake to treat melancholy by means of concerts, society, theaters, and the like. It is caused by hyperæsthesia of the brain, and requires rest from all kinds of excitement. The patient should reside in some very quiet and retired country place. This often produces a rapid cure, and sleep returns to the patient who has long suffered from insomnia. Warm baths are also to be recommended. A great proportion of such cases get well spontaneously, and do not require any medicine internally.

SLEEP FOR STUDENTS.

VI. How many hours should students sleep?

ANS.—About eight hours. Students, as a class, do not sleep enough. There is no law so fundamental and imperative on the student as the law which requires him to sleep, and no other law does he so systematically and recklessly ignore.

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It is a popularly accepted fallacy that students and literary men do not require as much sleep as mechanics and laborers. Physiology shows us that during the operation of the intellect rapid changes of tissue take place, and that a few hours of close application to thought and study exhaust the system more than two or three times the same period devoted to manual labor. It is evident, then, in order to compensate for this greater waste of tissue, that the brain worker will require more sleep than the muscle worker.

In the violation of this first great hygienic commandment is found the secret of most of the special diseases to which the student is liable. To this cause can be traced the eye affections that are so common. By neglecting to obtain sufficient rest the system becomes relaxed and its tone lowered, thereby inviting disease; of which these organs, being especially overtasked and weakened, are the first to become sensible.

ACIDS IN THE TOMATO.

VII. What are the names of the acids found in the tomato?

ANS.—According to S. D. McElhenie (Journal of Pharmacy), the acids of the tomato are citric, oxalic, malic, and tartaric.

MIND IN DISEASE.

VIII. Has the mind any agency in producing disease, when not overworked?

ANS.—Yes. When not worked at all the effects are worse than when overworked. Dr. Flint says, in The American Practitioner:

"Physicians, sanitarians and moralists have of late, had much to say respecting the evils of over-exertion of the intellect, and of mental strain; and there has been much occasion for speaking of these sources of injury to mind and body in our country, especially during the past few years. But there is another aspect of the etiology of morbid mental conditions concerning which much less has been said, namely, deficient exercise of the intellectual powers, or insufficient activity of the mind as a source of morbific agencies. Observation will, I think, show the evils of both body and mind originate quite as often in a want of the proper action of the intellectual and moral faculties as in their over use or excitation. Occupations which employ the intellect are likely to prevent inordinate attention to the bodily functions, and herein their influence is prophylactic. Abundant illustrations of the evils of deficient activity of the mind are to be found among those who, under the delusive expectation of enjoying leisure and rest, have relinquished pursuits which involved a habitual exercise of the mental faculties."

KILLING FLIES.

IX. How can house flies be killed?

ANS.—Time will soon be here when we shall be annoyed by house flies. They may be captured and killed by thousands in the following manner: Boil together equal parts, by weight, of glue and molasses, spread it over common brown paper, while, hot, with a brush. Place a sheet of paper in every room in your house. It will capture many flies in the room within the day. The paper can be thrown in the fire, and a new one used, when covered with the captured flies.

WINE MAKING.

X. Is making wine a success in California?

ANS.—Judging from the following the The California Agriculturist does not think that wine making in that State adds anything to its prosperity. It says:

"Those who have been longest in the wine-manufacturing business are the poorest; and besides, many of them, with their sons and daughters, have contracted a taste for strong drink which is fast bringing them to destruction. It is a fact that wine can be bought in many of the older wine-producing districts, for the cost of the cask in which it is stored—say ten or twelve cents per gallon, or less; and complaint is made that there is no market for it at any rate."

In another article it says: "M. George G. Briggs, of Oakland, who owns large orchards and vineyards near Davisville, Solano county, informs us that several of the wine-growers there are destroying their vineyards, as the business has proved to be unprofitable. He says that Mr. S. Wolfskill, who had 10,000 vines, and had tried wine and brandy making, has pulled up his vines in disgust, and now uses the land for grain.

DISINFECTING ROOMS.

XI. How can a foul room be most thoroughly disinfected?

ANS.—Dr. Derby says: "Among aerial disinfectants chlorine and sulphurous acid are most useful, but neither of these gases can be added to the air of a room in sufficient amounts to destroy the specific poison of small-pox without making the air irrespirable. Organic impurities of all kinds attach themselves to moist surfaces, and sulphurous acid gas seizes with avidity upon everything holding moisture. To completely disinfect a room, including

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ts carpets, furniture, and wall paper, close the doors, windows, and chimney; put from one to two pounds of brimstone (according to the size of the room) in an iron pot, pour over it a little alcohol, set it on fire, and leave the room for four hours. This process is injurious to the colors of many fabrics, and to gilded articles; and this injury corresponds, in degree, with the amount of moisture present in the room.

"When disinfection by sulphur fumes is impracticable, the next best thing to do is to wet the carpet, furniture and walls with a strong solution of carbolic acid—one part in fifty of pure acid.

"Clothing which can be washed may be disinfected by boiling in water for one hour.

"Bedding and clothing which cannot be washed, may be disinfected by exposure for four hours to dry heat at a temperature of 225° to 300° Fahr. This can be done in a large brick oven, but every city should have attached to its hospital for infectious diseases an oven specially arranged for the purpose."

Of course great care should be exercised in going into such a room when filled with these disinfectants.

SOOTHING SYRUP.

XII. Is Mrs. Winslow's soothing syrup good for babies?

Ans.—We have more than once condemned this preparation. The original receipt is kept secret, but the results of analysis have been made known. It has been shown that one ounce of the syrup contains one grain of morphia. If, then, Mrs. Winslow's instructions be followed, the dose for an infant three months old contains an equivalent of ten drops of laudanum, and this Mrs. Winslow recommends to be repeated every two hours! The injury that may be done by the ignorant use of such a nostrum is hardly to be estimated; and yet a calculation has been made that not less than fifteen million ounces of the syrup are annually sold in the United States; in other words, that the children of this country are dosed every year with as many million grains of morphia!

TYPHOID FEVER.

XIII. Is typhoid fever preventible?

Ans.—Typhoid fever is as preventible as ague, and two hundred and fifty years hence deaths from it will be as rare. The disease is caused by a virus of nature which may get into the healthy body, increase in it, and destroy it. It is an accidental condition, and not one of the ordinary processes of nature. The origin of the disease is somehow or other connected with drainage; it has therefore been called the filth fever, and to get rid of the filth is to get rid of the fever. This was illustrated in the case of the Milbank prison, where typhoid and dysentery were once thoroughly established, but where both almost wholly disappeared when the water supply was changed and efficient drainage provided.

WHAT IS THOUGHT?

XIV. Is thought made out of the heat of the body?

Ans.—Many writers think that the thoughts and feelings that proceed from the brain are transformed heat, but in the course of a very able essay on Pulmonary Respiration and Animal Heat, M. Ch. Blondeau incidentally considers this question, and answers it in the negative. "Brain work," says he, "is accompanied by phenomena much the same as those attending manual labor. The tension of the brain, no less than the tension of the muscles, give rise to heat, as may be ascertained without a thermometer. When a man is deeply intent on writing or thinking his circulation grows more rapid, the arteries pulsate with increased force and the brow is sometimes covered with perspiration; in short, it is clear that the nervous excitement under which he labors produces in his body a great amount of heat. Are we to suppose that thought is the result of this development of heat, and that it will gain in force in proportion to the heat generated? We do not believe that any such relation subsists between heat and intellectual phenomena, and propose a physical interpretation for the increase of temperature accompanying cerebral action, which appears to be more rational. The tension of the nervous system, and in particular of the encephalic mass, produces a kind of paralysis of the great sympathetic nerve. The functions of nutrition are retarded, but at the same time there occurs a dilatation of the blood vessels, and consequently an increased afflux of blood, which is diffused in great quantity through the entire system. The result is, a sufficiency of heat to facilitate the play of the organs; and then the mind is left free to give itself up to the subjects which engross it. The heat which is felt while the brain is active renders thinking easier, but has no part in the conception or creation of the works of the intellect. This view of the increased circulation accompanying intellectual labor is confirmed by the results which we observe flowing from excessive brain work, namely, heaviness, trouble in the head, which can only be accounted

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for by a flow of blood to that region; then if in spite of this admonition one continues still to work, the consequence generally is cerebral congestion or apoplexy, caused by protracted tension of the brain."

ENDURANCE OF HUNTERS.

XV. Are hunters more enduring of cold than other people?

ANS.—People who accustom themselves to exposure are generally more hardy, providing they keep within certain constitutional limits. An exchange cites the following on this point:

"And how little cold—mere absence of heat—affects men and animals, when well fed, I have had special instruction on within a couple of weeks. On the morning of the 29th of January, at Greenville, Ill., fifty miles east and ten miles north of St. Louis, I met a party of Indianians returning from Colorado. They came to the tavern for breakfast, without overcoats, without gloves, and with no more than the ordinary clothing of average November weather, and the mercury marked 28° below zero. They were as hearty as bucks, thought the morning a little chilly, and ate a breakfast which would have been respectable for the big-feeding heroes of Rabelais. Their story was that they had left Indiana October 22d, gone west on a pleasure trip through Northern Kansas to Colorado; had shot on the plains, and returned through Southern Kansas, along the north line of the Indian territory. Since their start they had not slept more than six days under cover, and had been five continuous days without fire. The men had gained in flesh, the one weighing 190 against 175 pounds when he started, and the other 170 against 150; the mules were thin and tired-looking, but after ten days fresh feeding and rest would be able to kick the head off anything offensive coming near them. The bull-dog tied under the wagon seemed to have been worse affected than his companions and masters. Though fat and hearty his temper was highly irritable, and he would suffer neither man nor beast to approach within fifty feet without a hostile demonstration. About buffalo shooting on the plains, they expressed themselves disappointed. In their minds it was a cowardly and contemptible business—like riding into a herd of cows and oxen and shooting down the timid and unresisting creatures.

HOW DOES A PERSON FEEL WHEN POISONED WITH STRYCHNINE?

XVI. ANS.—Dr. Harris, an assayer, residing at Gold Hill, Nevada, in the following communication from him, tells the story: "Last night I felt a pain in my knee, caused by rheumatism. I got up at 10 o'clock and took a dose of rheumatism medicine prescribed by Dr. Toland, of San Francisco. There was only one dose left, and not at the time thinking of the sediment at the bottom of the vial, I took it. Half an hour after, as I was lying in bed with a candle in hand, reading, I was struck senseless and speechless.

"The candle fell on the bed, and I could neither stir nor cry out for a second. Luckily the shock terminated in time to let me put out the light, or the house and all would have been consumed. More and stronger shocks and convulsions then followed, and from the symptoms I knew that I had taken strychnine. My wife brought sweet oil, of which I took two doses. But great God! what a torment! Shocks and convulsions followed from half past 10 to 12 o'clock, when the death throes set in. I was convulsed, and felt five shocks like a man broken on a wheel, and the last shock made me helpless and stiff. I felt the earth give way, and called my wife to me.

"My hands were crossed, but I could not move them, nor any part of my body. I bade them all good-by, and swooned. My wife sent the children for a doctor, and Dr. Kirby came about 12 o'clock, and found me still alive and somewhat rational, as the oil had its effect. From then until 6 o'clock this morning I had shocks like from a galvanic battery every few minutes. I could not stir hand or foot, and any attempt to turn my head brought a shock. To tell what I suffered is impossible, and I had given up all thoughts of life; but soon I began to recover, and now—10 oclock A. M.—I am able to write you this, in order that you may warn persons using this medicine to beware of over-doses, or settlings."

We might add, to beware of poisonous medicines generally.

SULPHURIC ACID IN VINEGAR.

XVII. When sulphuric acid is added to vinegar is it injured?

ANS.—Yes. Sulphuric acid is hurtful in the system, because it tends to unite with the lime in the blood, thus forming sulphate of lime, an insoluble salt, useless for nutrition and difficult of removal. Sulphuric acid is a very strong acid, and exceedingly hurtful to nutrition.

IF we would build on a sure foundation in friendship, we must love our friends for their sakes rather than for our own.

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

THE STUBBORN BOOT.

"Bother!" was all John Clatterby said!
His breath came quick, his cheek was red,
He flourished his elbows and looked absurd,
While over and over his "Bother!" I heard.

Harder and harder the fellow worked,
Vainly and savagely still he jerked,
The boot, half on, would dangle and flap—
"Bother!" and then he bursted the strap.

Redder than ever his hot cheek flamed,
Harder than ever he fumed and blamed—
He wriggled his heel and tugged at the leather,
Till knees and chin came bumping together.

"My boy," said I, in a voice like a flute,
"Why not—ahem!—try the mate of that boot,
Or the other foot!" "I'm a goose," laughed John,
As he stood, in a flash, with his two boots on.

In half the affairs
Of this busy life
(As that same day
I said to my wife),
Our troubles come
From trying to put
The left hand shoe
On the right hand foot,
Or *vice versa*,
(Meaning reverse, sir).
To try to force,
As quite of course,
Any wrong foot
In the right shoe,
Is the silliest thing
A man can do.

IDOLS.

I made an idol fair,
Set it on high;
With pearls adorned its hair;
Then the bright sky

Shimmered its gold and blue
On arms, face, neck.
Of dust with earthy hue
There was no fleck.

Of truth I wove a chain
Studded with stars,
Arrayed my god—in vain
I looked for scars.

"A lovely, perfect thing."
Whispered my pride.
What could a shadow fling
Close to my side?

The sun came slowly up
Bringing the day.
Oh, disappointment's cup!
My idol clay! L. E. A.

LOW FLYING.

Low flies the summer swallow—scenting rain,
And low my heart from prescience of pain;
When the clouds scatter both will meet again.

The summer swallow skims so low for flies,
And finds in cloudy, not in sunny skies;
So I by being sad, may grow more wise.

Nor men nor swallows can soar every day,
And men and swallows should not, if they may,
And well for both that skies are sometimes gray.

For though this world is dull without the sun,
More sweetly shines he after showers are done,
And eyes are gladder when the tears have run.

Therefore to-day, I would not, if I could,
Forego my grief and be of merry mood;
As well might swallows rise and miss their food.

Fraser's Magazine.

A BOY'S PLEDGE.

A little boy was once possessed
Of thoughts like these within his breast;
Taste of tobacco I will not,
Unless I am a finished sot.

Quite boys enough now smoke and chew;
The filthy thing I'll never do—
Tarnish nice parlors, streets and pews,
While I maintain my present views.

GIVE UP.

Give up in a trifling question,
'Twixt good-will and self-will choose
Good-will rather than contention—
You will gain more than you lose.

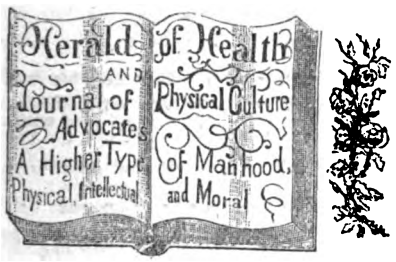
In a thing of little matter
What if you don't win the day?
Is it worth your while to shatter
Love, that you may have your way;
Will it pay?

Fall in gladly with another;
Push his plans as if your own;
You will make thereby a brother,
Where you else might stand alone.

'Tis a secret worth the knowing,
How to sweetly bend and yield;
Triumph may not show in sowing,
But 'tis reaped in later field.

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EDITORIAL DEPARTMENT.



NEW YORK, APRIL, 1873.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

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TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

MORE ABOUT OUR DEFECTIVE SCHOOL-HYGIENE.—Last month we printed an editorial on the defects in the hygienic management of schools, not only in New York, but even in the small country schools in the country. Since then the Board of Health have been examining the schools of New York with reference to ventilation. The result is most astonishing. In the first place only about fifty cubic feet of air is allowed to each pupil, on the average; this being less than four feet each way—length, breadth and height. Then again, so ineffective is the ventilation that carbonic acid and other animal matter escapes from the lungs so much faster than fresh air is supplied, that in a short time the whole space of the school-room contains from four to ten times as much of this gas as can be breathed with safety. Such air only stupefies the brain, and makes the rapid acquisition of true knowledge impossible. Half the stupidity and laziness of schools comes from this source. The great cry just now for compulsory education cannot be right, with this state of things. Better compel children to stay away from school; or first compel Boards of Education and teachers to pay due respect to the laws of hygiene in the school-house, or else drive all the children home and let their parents educate them.

But there are other evils quite as alarming as those above enumerated. The Tribune says:

"Armies of stupid, sickly and lazy scholars, and years of time worse than wasted, ought to be a sum total sufficiently startling to frighten parents and social philosophers into an immediate reformation of the school-houses. But there is a more appalling sequence. The public schools of a great city are, to-day, hot-beds of vice. Babies go to them, and boys and girls who are almost men and women. In ten thousand of these there shall not be found ten who have been purely taught the marvelous mysteries of their bodies. Alas! there shall hardly be found ten who have not arrived at coarse and evil surmises, or partial and harmful discovery thereof. With the anterior brain stupefied by bad air, with the posterior brain tingling with its undue pressure from bad blood, with no healthful relief of hard study and free exercise in a pure atmosphere, stealing from one another a guilty knowledge which ought to have been the free and innocent gift of mother love, whither must the thoughts of these boys and girls tend? Their poisoned blood will some day have its bad satisfaction of drink and sensuality. Their poisoned minds will find and take the only answer to their demands. The wonder is not that the poorer classes afflict

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society with drunkards and debauchees. It is rather that so many of them overcome the tendencies of their blood and the traditions of their school-days, and live clean and honest lives.

"The remedy lies with mothers. When they permit themselves to bear children they give bonds to Heaven for the childrens' souls. It is their solemn duty, as it should be their fine privilege, to teach their little ones the religion of the body, even before they attempt to expound the subtler obligations of the spirit. That ignorance which is called the protector of innocence is its deadliest foe. If only the mothers who read this appeal would demand wholesome school-rooms we should have them within a month. If they would insure their childrens' purity by loving confidence and warning, there need be no risk to these in their inevitable daily contact with the base. The healthy brain will not delight in grossness. The pure soul in the pure body will grow to full stature in pure air. And then our common schools will be, indeed, the bulwark of liberty, and not the cradle of license."

These statements are perfectly true, not only for New York, but for all parts of the country. The duty of reform, however, does not lie alone with mothers. It rests on fathers as well. It rests on our leaders in education, and on the press and people.

In our next we shall have something more to say on this subject.

THE LAW OF SEX.—In the latter half of the year 1866 the editor of this journal engaged Mrs. Mary Treat to write a series of articles for THE HERALD OF HEALTH, on the methods by which invalids might pursue the study of botany as a means of health. These articles, six or more of them, were rich with most valuable suggestions, and showed in the writer a knowledge of her subject; for she was an enthusiastic botanist. These articles were, we believe, the first she had ever written for any magazine, and some time during the same year Mrs. Treat became an inmate of our institution, to rest and recreate, where she soon became greatly loved and respected. Since this time she has lived mainly in Vineland, pursuing enthusiastically her studies in botany and entomology, writing for various papers and magazines, corresponding with leading scientists and making new discoveries. We have just received from her an advance proof of some of her experiments which will, we are sure, interest every reader of this journal. Asa Gray, the great American Botanist, has manifested great interest in these experiments, and so has that great naturalist, Darwin. While they are not put forward yet as scientific certainties, and will need still further verification, yet they possess sufficient interest to warrant our giving them to our readers. Whether the same law would hold good in the case of animals is a question which we, at least, are not prepared to decide. Now for the article, which, if verified, contains one of the greatest discoveries of science, and adds another crown to woman's brow:

CONTROLLING SEX IN BUTTERFLIES.

"That sex can be controlled in butterflies, I think I have demonstrated by careful experiment the past season. Accident first prompted the experiment. Two years ago this past summer I was feeding a few larvæ of *Papilio Asterias* for the cabinet, when one of my specimens wandered from its food and rested upon a book, to undergo its transformations. Not feeling inclined to give up the book to this purpose, I placed the larva on a fresh stem of caraway. Upon removing it from the book I found its feet were entangled in silk, and that it was in position for a chrysalis, but not yet fastened; so I was surprised to see it commence eating. It continued eating some days longer, before changing to a chrysalis. I then tried others in the same way, and also took off quite a number of larvæ, shutting them away from food. Some of the larvæ that I deprived of food in this first experiment died, but all that completed their transformations were males; while those that I induced to go on feeding, by tempting them with the best and freshest food, proved to be females.

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"This season (1872) I commenced with the larvæ the 17th of June, and continued feeding broods of different ages through the month of July. Early in July I had about two hundred larvæ feeding at the same time. The room in which I conducted my experiment faced east and south, and toward noon of each of those excessively hot days in the early part of July, it was several degrees warmer than in the outside air. The food-plant on which I fed the various broods was placed in jars of water, which were set in a large box partly filled with earth, the whole being covered with deep blue mosquito-netting. Heat and moisture seemed favorable to health and rapid growth.

"On the 25th of June one lot of eggs hatched, on the 10th of July they were chrysalides, and on the 18th of the same month the butterflies appeared—only requiring twenty-three days for the complete transformation. On the other hand, I have had this same Asterias butterfly eleven months in coming to maturity. Some larvæ that hatched in August, 1871, I fed eight weeks; but the nights were cool, and some days were absolutely cold, when the larvæ would not eat. These chrysalides I preserved during the winter, and early in June, 1872, I put them in this same warm room in which the larvæ grew so rapidly, and they were in this room some two weeks before the first larvæ of this season were hatched; and strange as it may appear, some half dozen butterflies of this year's brood came out before these last year's chrysalides produced butterflies.

"Very soon after the last moult I shut a number of the larvæ away from food, putting them in paper boxes, from five to ten in a box, carefully labelled. If at the end of two or three days the larvæ were still wandering about, I fed them sparingly. In this way I did not lose a single specimen in the larvæ state by shutting away from food. A few of the chrysalides died.

"It was with the most intense interest that I watched the coming forth of the butterflies, which began to appear in about eight days after assuming the chrysalis stage. Thirty-four males came from my male boxes, and then a rather small female made its appearance. Out of seventy-nine specimens that I labelled males, three females were produced. On the other hand, those that I fed up, keeping them on a good supply of fresh food, I labelled females, and placed them in separate boxes. Out of these boxes sixty-eight females came and four males.

"There were some boxes that I marked doubtful, which I do not include in the above figures. For instance, I took five larvæ that were eating vigorously; if let alone they probably would have eaten a day or two longer, but I wished to try them in all stages of growth, and these were of quite a large size. Out of these five four were females.

"Soon after the last moult I took twenty larvæ and shut them away from food for twenty-four hours. At the end of that time I replaced ten on a supply of food, watched them carefully, and kept them eating until they attained a large size; they became chrysalides within a few hours of each other, and emerged as butterflies eight days after. One of these chrysalides was accidentally crushed; the remaining nine were females. Of the starved, eight males came out; the remaining two chrysalides died.

"The butterflies, as fast as they made their appearance were killed and pinned up, the males arranged on one side, the females on the other—a most brilliant display, covering a much larger space than one would be apt to imagine.

"It would seem, then, as the result of the whole experiment, that sex is not determined in the egg of insects, and that the female requires more nourishment than the male. Nor does this appear strange when we consider the reproductive nature of the female. It has frequently been said to me, 'If your theory is true it makes the female superior to the male.' I believe it has always been admitted that the female gives birth to the young. If this is considered superiority, then the female is superior; but if beauty of form and color is taken into account, then the male insect is superior—the same as with birds and the higher animals. Carry the analogy further—up to human beings—and still we find the principle holds good.

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To which sex belong all our great inventors, statesmen and philosphers? I believe woman is physically incapable, other things being equal, of becoming as profound a philosopher, as deep a thinker, as man. I do not wish it understood that I deem woman inferior to man; there is no inferiority, no superiority. If this matter were better appreciated we should hear less of woman's rights and equality of the sexes, and woman would quietly take her place by the side of her brother, with no contention for rights.

"But to return to some corroborations. Toward the last of May some twenty half-grown larvæ of *Vanessa Antiopa* were brought to me. I placed the branch on which they were feeding in a jar of water, turning a wooden box over them, and thought no more of them for a week, when I uncovered them and found the branch had fallen from the jar, and the leaves were so dry I could powder them in my hand. More than half of the larvæ were dead; eight poor, starved-looking specimens were alive, and completed their transformations. With this butterfly it is difficult to distinguish the sex by the marking on the wings; so I dissected them, and the result proved them males.

"Again, I found a larvæ new to me, feeding on the soft maple. I obtained thirty-three good specimens. I was very anxious to rear these, so I watched them closely and plied them with fresh, good food. If one fell or wandered from its food I replaced it, and continued this treatment until they would eat no longer. They went into the earth to undergo transformation, and in ten or twelve days thereafter the rare, beautiful moth, *Dryocampa rubicunda*, made its appearance. Of these there were twenty-nine females and two males; the remaining two either escaped or died in the earth.

"About the time these moths came out another lot of the same *Dryocampa* caterpillars was brought to me, but these were purposely neglected. I found them more than once wandering about the box in quest of food. Some of these were killed by a parasite, others died from lack of food; so that the result proved only seven males, and no female."

House Drains.—By the use of water-closets and their attendant conveniencies of fixed wash-bowls, and bathing-tubs and kitchen sinks, our city houses are brought into close communication with the sewers, and their occupants are thereby exposed to special dangers.

Whatever gases are contained in these underground passages seek not only to diffuse themselves under the law of nature with regard to gaseous bodies, but are also frequently subjected to severe pressure. These gases are dangerous to health. What the specially noxious element in them is no one can define. It is evidently neither carbonic acid nor sulphuretted hydrogen, nor any other of the gases with which chemists are familiar in the laboratory. There is something beyond all this, coming from the decay of organized substances in a closed, pent-up position, without the free access of light and of air, which at times gives rise to the most virulent poison and to the most destructive forms of disease.

The sensible properties of sewer air are quite remarkable. It is by no means fetid, as many people suppose, neither is it pungent or ammonical. It is rather negative in character, faint in odor, mawkish, smelling perhaps more like soap than any other familiar substance.

Sewer air may escape very frely in our dwellings before its presence will be suspected, and that this happens very often there can be no sort of doubt. There are many reasons for this belief. One cause for such escape, and a very active one, is found in the difference of temperature between the interior of our houses and the interior of the underground sewers. A rarefaction of air and an upward current are thus induced. The joinings of the soil pipes are imperfect from alternate expansion and contraction by exposure to hot and cold water, and unless a free and safe vent is provided above there must be a leakage at these points.

The air of the sewers is also subject to pressure from the sudden influx of water in rain-storms, and in seaboard towns from the action of the tide. In New York and Boston all, or nearly all of the outlets of the sewers are be-

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low the level of the sea at high water. As the tide rises it displaces sewer air, which is pressed inwards, and must inevitably escape at some of the sewer inlets. There can be no doubt that the rain-conductors often serve the purpose of conveying safely away the imprisoned air thus seeking a vent—an office not generally thought of in their construction. But their usefulness in this way depends upon their being left untrapped, which is not always the case. Frequently, instead of passing directly to the principal house drain without obstruction, the enter a water-sealed cesspool. But the rain conductors, while sometimes acting as drain ventilators, are inoperative when the house gutters and pipes are filled with water in a heavy rainstorm. Neither do they relieve the pressure on the soil pipes within the house, caused by expansion of the enclosed air by heat. We have then remaining only the water-traps of sinks, bath-tubs, wash-basins and water-closets as defenses against the air of the sewers.

There is another risk to which the health of the family is exposed through these contrivances, in addition to those which come from upward pressure, or from defective construction of the traps, or from unsoldering of their connections of iron and lead, or from their corrosion and decay by time and use. Whenever a large amount of fluid is thrown down the soil-pipe, whether from the bath-tub or any other opening, the tendency is to the formation of a vacuum behind it, and atmospheric pressure causes a suction upon every trap which is at a higher level. This may be shown at any time, by pouring down a bucketful of water and observing the commotion which ensues in all the traps above it. It not unfrequently happens that the water of the trap is in this way sucked or "syphoned" out, and the pipe consequently remains open to the sewer, and the trap empty until filled again by the next use of the water.

There is also an obvious escape of the air of the soil-pipe corresponding with its constant daily use. Whenever fluids are introduced air is displaced, and must go somewhere. Unless other vent is provided, it flows directly upward.

For all these reasons we would advise giving the whole drainage plan of a dwelling the freest possible communication with the outer air at a point so elevated that the sewer gases can not fail to be diffused and got rid of. This can readily be done while building, by carrying the soil-pipe—made of iron—at full size through the roof, and leaving it open like a chimney. By this arrangement all stagnation is prevented, the contents of the house drains are constantly exposed to the oxidizing and purifying influence of currents of air; when rain-conductors are filled with water there is still free escape for the sewer gases; and the water traps throughout the house are relieved from pressure, both of the pent-up sewer air on the one side, and of suction or atmospheric pressure on the other.

In houses already built a lead pipe may be readily carried from the highest point of the soil-pipe directly through the roof; but the larger the pipe and the straighter its course, the better. In one instance, at least, where this latter plan has been adopted, a constant current is found to flow outwards through the pipe. GEORGE DERBY, M. D.

WHAT TO DO IN CASE OF ACCIDENT.—Prof. Wilder, of Cornell University, gives these short rules for action in case of accident. It would not be a bad thing to cut them out and carry them in one's pocket-book, or commit them to memory:

For dust in the eyes, avoid rubbing; dash water in them; remove cinders, etc., with the round point of a lead pencil.

Remove insects from the ear by tepid water—never put a hard instrument into the ear.

If an artery is cut, compress above the wound; if a vein is cut, compress below.

If choked, go upon all fours and cough.

For slight burns, dip the part in cold water; if the skin is destroyed, cover with varnish.

For apoplexy, raise the head and body; for fainting, lay the person flat.

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TEMPERATURE OF THE BODY.—The temperature of the human body taken in the armpit or under the tongue is a trifle less than 100 degrees. It varies in different parts of the body. The skin and extremities are the coldest, and sometimes even in health the temperature of the hands is very low. We have recorded a temperature of 70° in the hand of a healthy woman after half an hour's vigorous work with hands and arms. The temperature rises as we go below the surface, and at the heart is about six degrees higher than under the tongue. The brain temperature is lower than the other organs; the fatty tissues lower than the muscles. The blood is cooled in passing through the lungs.

Birds have a higher temperature by several degrees than man. In cold-blooded animals the temperature is slightly above that of the element in which they live. In fish and frogs, for instance, it varies with the temperature of the water; and in snakes it varies with the temperature of the air. The heat of the body is generated in it—not in any part of it, but in all parts. All the glands, muscles and viscera are in a constant state of burning.

The amount of heat developed in a body depends on its vigor, on the amount and kind of food consumed, and on the quantity of air breathed and exercise taken.

The heat of the body is thought to be the source of all its movements. The work a man can do depends on the amount of heat he can produce and turn to good account.

When a person has imperfect nutrition, or goes without food, the amount of heat generated is very small, and the amount of labor performed slight. In some diseases there is great depression of bodily temperature—the hands and feet become as cold as marble.

In other diseases the animal heat is increased, as in fevers. There can be no fever where the temperature is natural. The natural heat of the body has a very slight variation. If it falls below a certain standard it is evidence of something wrong, and if it rises above a certain point there is trouble. Variations in the temperature of the body manifest themselves often before any sense of illness occurs; and by a knowledge of this fact we might, by aid of a thermometer, know in advance if any illness is threatening. In children this is important, and parents who have delicate children might to advantage test daily the temperature of their bodies, and feed, or bathe, or exercise or treat so as to check in the beginning any tendency to a morbid condition. For instance, if the temperature was below a certain point means might be taken to increase it, and if above a healthy standard to diminish it.

SOAP-STONE STOVES.—A new and valuable branch of industry has been developed by Hyren Henry, of Perkinsville, Vermont, in the manufacture of stoves composed of an iron frame and soap-stone panels, which are not liable to many of the objections to their use that are so strongly urged against the use of those constructed wholly of iron.

No one can deny that there is a peculiar effect produced upon the air of a room heated by an iron air-tight stove; and by most of people it is ascribed to "burnt air," but the nature of the change is not fully understood. The common stove heats very quickly, so that a few moments inattention will allow some parts of it to become red, and then the air in contact with it is heated to that unhealthful, unwholesome condition. Also the fine particles of animal or vegetable matter—more or less of which are always floating in the atmosphere of our rooms—when brought in contact with the iron are burnt, filling the air with the noxious products of combustion.

The stone stove, however, cannot be raised to so extreme a degree of heat as easily as iron, and does not cool as quickly; so the injurious alternations of heat and cold are avoided, besides radiating heat so slowly, the fine particles of dust in contact with them are not burned, and as far as the condition of the air is concerned, stone stoves give warm air in as perfect a state as it can be produced. If any one expects to warm a room in a few moments

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with one he will be disappointed, for the stove warms up slowly and gives off a steady heat. Those now manufactured by Mr. Henry are designed to burn wood only, but we learn that he intends to construct one for burning coal also.

In another column will be found the sizes and prices of the stoves, delivered at the railroad station there. Any further particulars can be obtained by addressing the manufacturer as above.

KILLED BY KINDNESS is a phrase which has just been luridly illustrated by statistics in England. Who would have believed, save upon the authority of the great Dr. Lankester, the London coroner, that not less than 3,000 tender infants are annually smothered to death by their mothers, who fall asleep in bed while nursing their pledges? Unfortunately mothers involuntarily kill their children in a great many other ways—by absurd indulgence in diet, by foolish exposure in dressing, and through utter ignorance of the laws of the human system. The only wonder is that the race, or at least the civilized portion of it, was not long ago utterly exterminated. Babies are called tender; it strikes us that they are remarkably tough.

BRAIN-WORK AND BRAIN-WORRY.—From this text has proceeded much profitable hygienic discourse of late in foreign journals. The conclusion reached is this: Brain-work is conducive to health and longevity, while brain-worry causes disease and shortens life. The truth of the statement, and its application to what we see around us, is evident enough; yet it is well that such subjects should be continually discussed. Intellectual labor, although severe, like that performed by the judges of our highest courts, or by scholars and persons devoted to literary pursuits, if unmixed with excitement and followed with regularity is seen to promote bodily health and long life. On the other hand, mental cares, attended with suppressed emotions, and occupations which from their nature are subject to great vicissitudes of fortune and constant anxiety, break down the lives of the strongest. Every one has seen a class of men whose early mental training was deficient, and to whom the writing of memoranda was irksome, engaged in middle life in great undertakings, and taxing the memory with a mass of complicated business accounts, simply because they could more easily remember than write. Their power of memory for a certain kind of facts is often truly astonishing; but the strain is at last too much and they die before their time. The brain-worry of our school children might furnish useful illustrations of the truth of the same general proposition, but we forbear.

MIRTH AT MEALTIME. — Everybody should plan to have pleasant conversation at the table, just as they do for having good food. A little story-telling, a little reading—it may be of humorous things, anecdotes, etc.—will often stimulate the joyous element of the mind and cause it to act vigorously. Try and avoid going to the table all tired out. Let all troublesome topics be avoided. Don't scold domestics. Don't discipline children. Think and say something pleasant. Cultivate mirth, and laugh when anything witty is said. If possible never eat alone. Invite a friend of whom you are fond, and try and have a good time. Friendship and friendly intercourse at table whets the appetite and promotes the flow of animal spirits.

USE OF COLD ABLUTIONS IN FEVERS BY THE FRENCH.—In a valuable article contributed to one of the French medical journals by Dr. L'Ambert, he presents the following conclusions concerning the use of cold ablutions in fever, as practiced in France: They are especially useful in typhoid and eruptive fevers, and strongly indicated in malignant cases. They act upon the chief and most constant phenomena of these

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diseases, are especially anti-febrile, and reduce temperature materially. They favor the re-establishment of a full, profound, regular perspiration; render the secretions more active, make the skin supple, moist and fresh, favor the outcoming of the eruption; allay cerebral and other nervous excitement, suppressing headache, coma, delirium, restlessness, and inducing sleep; cause the pulse to fall from eighty to thirty beats. From two to eight hours is the duration of their action, the ablutions to be repeated two to four times in the twenty-four hours. They have no influence upon the length of the sickness, but render it milder; and are readily applied as cold baths, or by wrapping the patient in a cold wet sheet.

BOOKS.—The Mother's Work with Sick Children, by Professor Foussagrives, translated from the French by E. P. Foster, M. D., and published by G. P. Putnam & Son.

If the care of children improves with the number of good books written on the subject it will not be long before these little buds of promise will be so reared that they will be as likely to live to mature age as the young of animals. This book contains a great deal of very valuable matter. The author starts out with the idea that it is better to prevent disease than cure it, and places great reliance on hygiene.

Advice to a Mother on the Management of her Children, is another book by Dr. Pye Henry Chavasse, and published by J. Lippincott & Co. This book is a large one, of some six hundred pages, and covers a much wider field than the work first named. Part first treats of infancy, and the management of infants; part second, of childhood and of bathing, clothing, diet, exercise, amusements, education, sleep, etc.; and part third of boyhood and girlhood. One feature of this book is new and valuable, for the subjects are treated in the form of questions and answers, very much like our Studies in Hygiene in THE HERALD OF HEALTH. Here, for instance is a specimen:

"*When ought a child to commence to dine with his parents?*

"ANSWER.—As soon as it is old enough to sit up at the table, provided the father and mother either dine or lunch in the middle of the day. I always prefer having children about me at mealtime. I think it improves them as nothing else will." And here is another:

"At what age do you advise a child to begin his course of education—to have his regular lessons?

"ANS.—In the name of the prophet, figs, fiddlesticks! about courses of education and regular lessons for a child! You may as well ask me when he, a child, is to begin Hebrew, Sanskrit, or mathematics. Let him have a course of education in play, let him go through regular lessons in foot-ball, marbles, riding a rocking-horse, velocipede, etc. Begin his lessons, begin brain-work, and make an idiot of him. Oh! for shame, ye mothers. You who pretend to love your children so much, and to tax—otherwise to injure, irrepairably to injure their brains, and thus their intellects and health, and shorten their days. And all for what? To make prodigies of them? Forsooth, to make fools of them in the end."

The Popular Science Monthly for March contains among others an article on the "Epileptic Origin of Islamism." The writer cites some curious facts in illustration of the development of religious emotions in persons suffering from epilepsy. He thinks there is good evidence that Mohammed was an epileptic, and asserts that he founded his pretensions as a medium of revelation on visions which appeared to him during epileptic trances; and goes on to remark that: "It seems incredible that a religion which sways the minds of 200,000,000 of the human race at the present day, should have no better foundation than the visions and dreams of an epileptic." In this connection the writer refers also to Ann Lee, and thinks that Shakerism most likely had a similar origin. In the scientific miscellany we have space to notice but a single item, an account of an operation for dropsy of the heart. This consists in the

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introduction of a trocar into the sac of the pericardium, that the fluid may be drawn off. This operation, though regarded as extremely hazardous, has been recently performed by Dr. Chairou, of the Paris Academy of Medicine, upon a young soldier just recovered from pleurisy, and resulted in complete success.

PROF. MOSES COIT TYLER.—The Christian Union has been blessed in the acquisition of Prof. Moses Coit Tyler as one of its prominent editors. It never did a better thing, even when it secured the name of Henry Ward Beecher to place at the head of its editorial columns, or that of Oliver Johnson as managing editor. The readers of THE HERALD OF HEALTH, who for years have read his contributions to our pages know this. In looking over The Union for March 5th, we see unmistakable evidence of his work in the new department called the "Outlook," and in the other department, headed "Books and Authors," and in leading editorials.

With the name of Beecher at the head of this paper, to give it a world-wide reputation, and such men as Johnson and Tyler, and others to edit it, how can it fail to receive an immense patronage?

THE GUARDIAN ANGEL.—There are a thousand little things necessary to the general comfort, which no one but a mother thinks of doing—a thousand such little things which no one can ever do just as she does them. You thought it was "Mary" who kept the children quiet, but you will find out your mistake if mother goes away. Poor little things! they wander about the house, calling out, "Where's mother? I want mother! Why doesn't mother come home?" And then they get into hitherto unknown mischief, and do all sorts of wrong things, and make themselves and everybody around them uncomfortable—get their clothes torn and dirty, and their faces, too; and by the fact of their heads being in a state of permanent uncombedness, as to hair, you may know that "mother" is away from home. And the baby! Did you ever see or hear of a baby that wouldn't cry all day—and all night, too—when mother's gone away? I don't care if it is the brag baby of the world, and a big two-year-old at that, it cannot get along without mother; and it has too much sense to try to do so. Very, very dreary is the family hearth-stone when her place is unfilled! Very dismal are the rooms of the household when she moves not through them with her matronly step and air, unconsciously dispensing cheerfulness and light, and beautifying the humblest duties by the sweet, womanly way in which she performs them. Bear in mind that I speak always of the HOME-MOTHER.

HOWARD GLYNDON.

SELF-HELP.—People who have been bolstered up all their lives are seldom good for anything in a crisis. When misfortune comes they look around for somebody to cling to or lean upon. If the prop is not there, down they go. Once down they are helpless as a capsized turtle, and they cannot find their feet again without assistance. Such persons no more resemble men who have fought their way to position, making difficulties their stepping-stones and deriving determination from defeat, than vines resemble oaks, or sputtering rush-lights the stars of heaven. Efforts persisted in to achievements train a man to self-reliance, and when he has proven to the world that he can trust himself the world will trust him. One of the best lessons a father can give his son is this: Work; strengthen your moral and mental faculties as you would strengthen your muscles, by vigorous exercise. Learn to conquer circumstances; you are then independent of fortune. The men of athletic minds, who left their mark on the years in which they lived, were all trained in a rough school. They did not mount to their high position by the help of leverage; they leaped the chasm, grappled with the opposing rocks, avoided avalanches, and when the goal was reached, felt that but for the toil that strengthened them as they strove it could never have been obtained.

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To Remove the Odor of Perspiration.—The unpleasant odor produced by perspiration is frequently the source of vexation to persons who are subject to it. Nothing is simpler than to remove this odor much more effectually than by the application of such costly uguents and perfumes as are in use. It is only necessary to procure some compound spirits of ammonia and place about two tablespoonfuls in a basin of water. Washing the face, hands and arms with this leaves the skin as clean and sweet as one could possibly wish. The wash is perfectly harmless, and very cheap. It is recommended on the authority of an experienced physician.—*Exchange.*

[We cannot understand why any unpleasant odor should arise from the perspiration of persons in health. That the pores of the skin furnish an outlet through which is discharged a greater amount of the impurities of the body than by all the other emunctories combined, we know quite well; yet if people will eat proper and wholesome food, drink cold water alone, and take a warm bath, with plenty of soap, once a week, we guarantee there will be no unpleasant odor arising from the perspiration.—L.]

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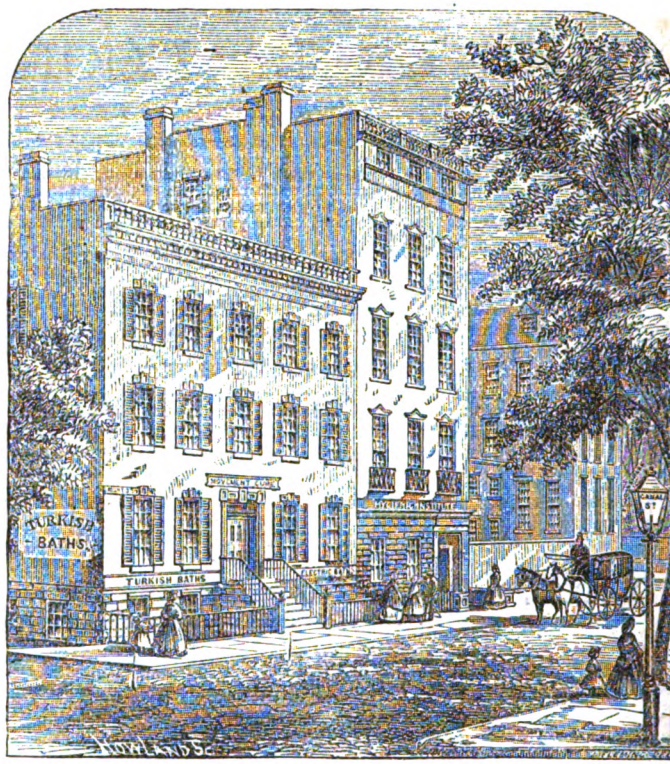
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I would therefore respectfully state for the benefit of all concerned, that I have several new and improved processes which are only known and used by me, by which I am enabled to manufacture both Saleratus and Bi-Carb. Soda in the greatest perfection. By means of these processes all the alkalies used in my various brands of Saleratus and Bi-Carbonate of Soda are not only thoroughly refined but the Carbonic Acid Gas thoroughly cleansed and filtured of all impurities before being charged into any of the various brands of Saleratus and Bi-Carbonate of Soda manufactured by me, thus rendering them entirely healthy and more efficient than any other article of their class manufactured in either Europe or America.

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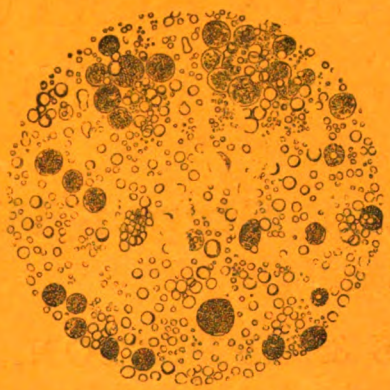
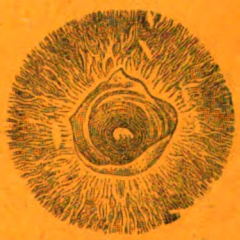



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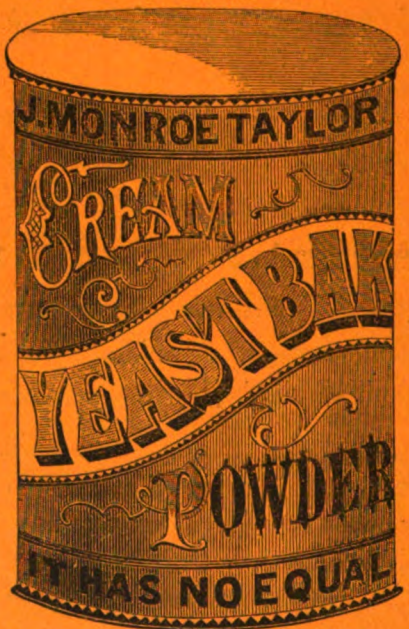
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REMARKABLE ESSAYS ON HEALTH AND MORALS,

By Ancient and Modern Writers.

The Blessings of Temperance and Moderation.

BY SENECA.*

THERE is not anything that is necessary to us but we have it *cheap* or *gratis*, and this is the provision that our heavenly Father has made for us, whose bounty was never wanting to our needs. It is true the belly craves and calls upon us; but then a small matter contents it. A little bread and water is sufficient, and all the rest is superfluous. He who lives according to reason shall never be poor, and he who governs his life by opinion shall never be rich; for nature is limited, but fancy is boundless. As for meat, clothes and lodging, a little feeds the body, and as little covers it; so that if mankind would only attend human nature without grasping at superfluities, a cook would be found as needless as a soldier. For we may have necessaries upon very easy terms, whereas we put ourselves to great pains for excesses. When we are cold we may cover ourselves with skins of beasts, and against violent heat we have natural grottoes; or with a few osiers and a little clay we may defend ourselves against all seasons. Providence has been kinder to us than to leave us to live by our wits, and to stand in need of invention and arts. It is only pride and curiosity that involves us in difficulties. If nothing will serve a man but rich clothes and furniture, statues and plate, a numerous train of servants, and the rarities of all nations, it is not fortune's fault but his own that he is not satisfied. For his desires are in-

* Seneca was by birth a Spaniard, of Cordova, a Roman colony of great fame and antiquity. He was about twenty years old in the fifth year of Tiberius, the year the Jews were expelled from Rome. He was a philosopher of great piety and virtue, and lost his life by the secret conspiracy of Nero, who was jealous of his fame and feared he would from his popularity have the empire delivered up to him. The most valuable of his writings are his morals. The chapter here presented, on the Blessings of Temperance and Moderation, shows what a noble old heathen philosopher could say on the subject nearly 2,000 years ago.

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satiable, and this is not a thirst, but a disease; and if he were master of the whole world he would be still a beggar. It is the mind that makes us rich and happy in whatsoever condition we are; and money signifies no more to it than it does to the gods. If the religion be sincere, no matter for the ornaments. It is only luxury and avarice that makes poverty grievous to us, for it is a very small matter that does our business; and when we have provided against cold, hunger and thirst, all the rest is but vanity and excess; and there is no need of expense upon foreign delicacies, or the artifices of the kitchen. What is he the worse for poverty, who despises these things? Nay, is he not rather the better for it, because he is not able to go the price of them? for he is kept sound whether he will or not; and that which a man cannot do looks many times as if he would not.

When I look back into the moderation of past ages it makes me ashamed to discourse as if poverty had need of any consolation; for we are now come to that degree of temperance that a fair patrimony is too little for a meal. Homer had but one servant, Plato three, and Zeno—the master of the masculine sect of Stoics—had none at all. The daughters of Scipio had their portions out of the common treasury, for their father left them not worth a penny. How happy were their husbands, who had the people of Rome for their father-in-law? Shall any man now contemn poverty after these eminent examples; which are sufficient, not only to justify, but to recommend it? Upon Diogenes's only servant running away from him, he was told where he was, and urged to fetch him back again. "What," says he, "can Manes live without Diogenes, and not Diogenes without Manes?" and so let him go. The piety and moderation of Scipio has made his memory more valuable than his arms; and more yet after he left his country than while he defended it; for matters were come to that pass that either Scipio must be injurious to Rome, or Rome to Scipio.

Coarse bread and water to a temperate man is as good as a feast; and the very herbs of the field yield a nourishment to man as well as to beast. It was not by choice meats and perfumes that our forefathers recommended themselves, but in virtuous actions and the sweat of honest military, and of manly labors.

While nature lay in common, and all her benefits were promiscuously enjoyed, what could be happier than the state of mankind when people lived without avarice or envy? What could be richer than when there was not a poor man to be found in the world? So soon as this impartial bounty of Providence came to be restrained by covetousness, and that particulars appropriated that to themselves which was intended for all; then did poverty creep into the world, when some men, by desiring more than came to their share, lost their title to the rest; a loss never to be repaired, for though we may come yet to get so much, we once had all. The fruits of the earth were in those days divided among the inhabitants of it, without either want or excess. So long as men contented themselves with their lot there was no violence, no engrossing or hiding those benefits for particular advantages which were appointed for the community; but every man had as much care for his neighbor as for himself. No arms or bloodshed, no war but with wild beasts; but under the protection of a wood or cave they spent their days without cares and their nights without groans; their innocence was their security and their protection. There was as yet no beds of state, no ornaments of pearl or embroidery, nor any of those remorses that attend them; but the heavens were their canopy, and the glories of them their spectacle. The motions of the orbs, the courses of the stars and the wonderful order of Providence was their contemplation. There was no fear of the house falling, or the rustling of a rat behind the arras. They had no palaces then like cities, but they had open air and breathing room, crystal fountains, refreshing shades, meadows dressed up in their native beauty, and such cottages as were according to nature and wherein they lived contentedly, without fear either of losing or falling. These people lived without either solicitude or fraud, and yet I must call them rather happy than wise. That men were generally better before they were corrupted than after, I make no doubt; and I am apt to believe that they were both stronger and hardier, too, but their wits were not yet come to maturity; for nature does not give virtue, and it is a kind of art to become good. They had not as yet torn up the bowels of the earth for gold, silver and precious stones; and so far were they from killing any man, as we do for a spectacle, that they were not as yet come to it, either in fear or anger; nay, they spared the very fishes. But after all this they were innocent, because they were ignorant; and there is a great difference betwixt not knowing how to offend and not being willing to do it. They had, in that rude life, certain images and resemblances of virtue; but yet they fell short of virtue itself;

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which comes only by institution, learning and study, as it is perfected by practice. It is indeed, the end for which we were born, but yet it did not come into the world with us; and in the best of men, before they are instructed, we find rather the matter and the seeds of virtue, than the virtue itself. It is the wonderful benignity of nature that has laid open to us all things that may do us good, and only hid those things from us that may hurt us; as if she durst not trust us with gold and silver, or with iron, which is the instrument of war and contention, for the other. It is we ourselves who have drawn out of the earth both the causes and instruments of our dangers, and we are so vain as to set the highest esteem upon those things to which nature has assigned the lowest place. What can be more coarse and rude in the mine than those precious metals, or more slavish and dirty than the people who dig and work them? And yet they defile our minds more than our bodies, and make the possessor fouler than the artificer of them. Rich men, in fine, are only the greater slaves. Both the one and the other wants a great deal.

Happy is that man who eats only for hunger and drinks only for thirst, who stands upon his own legs, and lives by reason, not by example; and provides for use and necessity, not for ostentation and pomp. Let us curb our appetites, encourage virtue, and rather be beholden to ourselves for riches than to fortune; who, when a man draws himself into a narrow compass, has the least mark at him. Let my bed be plain and clean, and my clothes so, too; my meat without much expense, or many waters, and neither a burden to my purse nor to my body, nor to go out the same way it came in. That which is too little for luxury is abundantly enough for nature. The end of eating and drinking is satiety; now what matters it though one eats and drinks more and another less, so long as the one is not hungry nor the other thirsty? Epicurus, who limits pleasure to nature, as the Stoics do virtue, is undoubtedly in the right; and those who cite him to authorize their voluptuousness do exceedingly mistake him, and only seek a good authority for an evil cause; for their pleasures of sloth, gluttony and lust have no affinity at all with his precepts or meaning. It is true that, at first sight, his philosophy seems effeminate; but he who looks nearer him will find him to be a very brave man, only in a womanish dress.

It is a common objection, I know, that these philosophers do not live at the rate they talk; for they can flatter their superiors, gather estates, and be as much concerned at the loss of fortune, or of friends, as other people—as sensible of reproaches, as luxurious in their eating and drinking, their furniture, their houses, as magnificent in their plate, servants and officers, as profuse and curious in their gardens, etc. Well! and what of all this, or if it were twenty times more? It is some degree of virtue for a man to condemn himself; and if he cannot come up to the best to be yet better than the worst, and if he cannot wholly subdue his appetites, to check and diminish them. If I do not live as I preach, take notice that I do not speak of myself, but of virtue; nor am I so much offended with other mens' vices as with my own. All this was objected to Plato, Epicurus, Zeno. Nor is any virtue so sacred as to escape malevolence. The cynic Democritus was a great instance of severity and mortification, and one who imposed on himself neither to possess anything, nor so much as to ask it. And yet he had this scoff put upon him, that his profession was poverty, not virtue. Plato is blamed for asking money, Aristotle for receiving it, Democritus for neglecting it, Epicurus for consuming it. How happy were we, if we could but come to imitate these mens' vices; for if we knew our own condition we should find work enough at home. But we are like people who are making merry at a play, or a tavern, when their own houses are on fire and yet they know nothing of it. Nay, Cato himself was said to be a drunkard, but drunkenness itself shall sooner be proved to be no crime than Cato dishonest. They who demolish temples and overturn altars show their good will, though they can do the gods no hurt; and so it fares with those who invade the reputation of great men. If the professors of virtue be, as the world calls them, avaricious, libidinous, ambitious, what are they then who have a detestation for the very name of it? But malicious natures do not want wit to abuse honester men than themselves. It is the practice of the multitude to bark at eminent men, as little dogs do at strangers; for they look upon other mens' virtues as the upbraiding of their own wickedness. We should do well to commend those who are good; if not, let us pass them over. But, however, let us spare ourselves; for beside the blaspheming of virtue our rage is to no purpose. But to return to my text:

We are ready enough to limit others, but loth to put bounds and restraints upon ourselves; though we know that many times a greater evil is cured by a less, and the mind

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that will not be brought to virtue by precepts, comes to it frequently by necessity. Let us try a little to eat upon a joint stool, to serve ourselves, to live within compass, and accommodate our clothes to the end they were made for. Occasional experiments of our moderation give us the best proof of our firmness and virtue. A well-governed appetite is a great part of liberty; and it is a blessed lot that, since no man can have all things that he would have, we may all of us forbear desiring what we have not. It is the office of temperance to overrule us in our pleasures. Some she rejects, others she qualifies, and keeps within bounds.

Oh the delights of rest, when a man comes to be weary! and of meat, when he is heartily hungry! I have learned by one journey how many things we have that are superfluous, and how easily they may be spared; for when we are without them upon necessity, we do not so much as feel the want of them. This is the second blessed day that my friend and I have traveled together. One wagon carries ourselves and our servants, my mattress lies upon the ground and I upon that; our diet answerable to our lodgings, and never without our figs and our table-books. The muleteer without shoes, and the mules only prove themselves alive by their walking. In this equipage I am not willing, I perceive, to own myself; but as often as we happen into better company I presently fall a blushing, which shows that I am not yet confirmed in those things which I approve and commend. I am not yet come to own my frugality, for he who is ashamed to be seen in a mean condition would be proud of a splendid one. I value myself upon what passengers think of me, and tacitly renounce my principles; whereas I should rather lift up my voice to be heard by mankind, and tell them, you are all mad; your minds are set upon superfluities, and you value no man for *virtues*. I came one night weary home and threw myself upon the bed, with this consideration about me, there is nothing ill that is well taken. My baker tells me he has no bread; but, says he, I may get some of your tenants, though I fear it is not good. No matter, said I, for I will stay until it be better—that is to say, until my stomach will be glad of worse. It is discretion sometimes to practice temperance and use ourselves to a little, for there are many difficulties, both of time and place, that may force us upon it. When we come to the matter of patrimony how strictly do we examine what every man is worth before we will trust him with a penny? Such a man, we cry, has a great estate, but it is shrewdly encumbered; a very fair house, but it was built with borrowed money; a numerous family, but he does not keep touch with his creditors. If his debts were paid he would not be worth a groat. Why do we not take the same course in other things, and examine what every man is worth? It is not enough to have a long train of attendants, vast possessions, or an incredible treasure in money and jewels; a man may be poor for all this. There is only this difference at best, one man borrows of the usurer and the other of fortune. What signifies the carving or gilding of the chariot—is the master ever the better for it?

We cannot close up this chapter with a more generous instance of moderation than that of Fabricius. Pyrrhus tempted him with a sum of money to betray his country; and Pyrrhus's physician offered Fabricius, for a sum of money, to poison his master. But he was too brave either to be overcome by gold, or to overcome by poison; so that he refused the money, and advised Pyrrhus to have a care of treachery; and this in the heat, too, of a licentious war. Fabricius valued himself upon his poverty, and was as much above the thought of riches as of poison. Live Pyrrhus, says he, by my friendship, and turn that to thy satisfaction which was before thy trouble—that is to say that Fabricius could not be corrupted.

LIGHT.—According to the theory generally received at present, the whole universe is an immeasurable sea of highly attenuated matter, imperceptible to the senses, in which the heavenly bodies move with scarcely any impediment. This fluid, which is called ether, fills the whole of space—fills the intervals between the heavenly bodies, as well as the pores or interstices between the atoms of a substance. The smallest particles of this subtle matter are in constant vibratory motion. When this motion is communicated to the retina of the eye it produces, if the impression upon the nerves be sufficiently strong, a sensation which we call light. Every substance, therefore, which sets the ether in powerful vibration is luminous; strong vibrations are perceived as intense light and weak vibrations as faint light, but both of them proceed from the luminous object at the extraordinary speed of 186,000 miles in a second; and they necessarily diminish in strength and proportion as they spread themselves over a greater space. Light is not, therefore a separate substance but simply a motion of the imponderable ether.

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Tobacco—Its Effects on the Human Constitution, Physical, Intellectual and Moral.

BY JAMES COULTER LAYARD, M. D.

WE trust that those who have followed us thus far through these pages are by this time convinced that the habitual use of tobacco is a curse, second only to the rum plague; and that its entire abandonment by us as a people, both individually and collectively, is a consummation devoutly to be wished for. How is this to be accomplished? We have little hope that by the penning of these lines we can induce any great number of those votaries of the weed who shall read them, to reform their habits in this respect. Though an angel guided our pen, they are too securely bound by the chains which hold them in a slavery so ignoble to heed anything we can write. Our chief hope, then, lies with those who have not yet become slaves to a tyrant so merciless, and especially with our youth. "An ounce of prevention is worth a pound of cure."

It is a fact that very few have ever commenced the habit of using tobacco in adult age, unless per advice of some stupid physician. With most persons the habit has been formed in youth, and when arrived at man's estate they most bitterly repent of their folly; but they are now too much enslaved to regain their freedom. No one either commences the practice with the consent of his parents, for it is a practice which no man, however much addicted to it himself, ever recommends to his son. In fact, it is almost always in direct opposition to and in disregard of parental authority that such habits are formed. If we could stay this plague but for one generation the victory would be secure.

Every effort, then, must be made to impress upon our youth the consequences of their forming such habits. Especially must they be taught that it is a matter of regret with every right-minded man who uses tobacco (this is especially true of tobacco chewers), that he was in his youth betrayed into such habits, and that thus it will be with them.

But to parents we would say, that in dealing with the young in this matter, as in most others, practice is a great deal better than preaching. Of what use is it for a parent to dilate to his son upon the evils of intemperance, and then illustrate his teachings by coming home drunk once a week. In many cases, indeed, no amount of parental precept will be of much effect unless accompanied and enforced by parental example. If you wish to save your sons from a slavery so debasing, from a tyranny so galling, as that of tobacco, you must yourselves first set the example. If, then, influenced by this or by other considerations which we have in this paper endeavored to present, there be any who have determined to break their fetters, the question arises—how is this to be done?

Many of you are not yet so enthralled but that you can, with a little self-denial, succeed in giving up the use of tobacco if you will only try. There are many, indeed, upon whom the chains of the tyrant sit yet lightly, and who assert that they can give up tobacco at any time. To all such we say, then proceed to do so speedily. Do not let this idea that you can give up at any time deter you from making the experiment at once; for however easy that may be now it will not be always thus; for the time will most assuredly come when, if the habit be continued, you will be bound by adamantine links. And it may come sooner than you expect. In such cases it almost always does. But there are those to whom the the relinquishment of the habit will be no easy task. And those who find the most difficulty in breaking off are the very ones with whom—for their own sake—there exists the greatest necessity for the reformation of the habit. For you may regard it as an axiom that those who suffer the most in the breaking of their bondage to any particular drug, whether it be tobacco, alcohol, or opium, are those whose constitutions are being most injured by the use of that drug, whatever it may be.

To those with whom the relinquishment of the habit is likely to be a matter of some difficulty we say, be firmly persuaded in your own minds of the advantage, nay the necessity, of what you are about to do. What a man makes up his mind to do, that, in nine cases out of ten, he succeeds in doing. "Where there's a will there's a way." We have unbounded confidence in the all-conquering power of an iron will. We have known men who entered upon their every undertaking with such indomitable energy, firmness of purpose, and de-

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ermination to succeed, that nothing human could prevent the accomplishment of their ends. Such men, when victims of the tobacco plague, will not fail in the effort to rid themselves of it, if they will but make the effort. In order to induce them to do this they only need to have an adequate motive set before them. That motive we have endeavored in these pages to present.

Now as to the method of procedure. One plan is to break square off, giving over the use of the vile thing at once and forever. Another way is to diminish gradually the amount of tobacco used daily for a few weeks, until you get down to a minimum quantity; and finally to none at all. A third plan is the substitution, for a time, of some other nervine in place of the tobacco. Each of the above methods has its adherents among medical men. Some there are who advocate the first method as a general principle, whether the subject be the victim of tobacco, alcohol, or opium; but we think they are the minority.

Prof. John King, of the Eclectic Medical College, Cincinnati, O., thus advises: "Snuffers and smokers may stop at once, but old chewers should gradually lessen their quids; and at the same time acquire the habit of chewing chamomile flowers, boneset leaves, or the inner bark of the wild hickory.

Rev. George Trask, of Fitchburg, Mass., who may justly be called the chief apostle of the anti-tobacco reform, recommends that when one stops chewing tobacco, he take, after each meal, or oftener, as much gentian root, coarsely ground as would amount to the bulk of a common quid of fine-cut or cavendish, and chew it well, swallowing the saliva. He offers as a reason that gentian is a tonic, one of the bitter tonics, and the use of it in the way and manner indicated will do much to neutralize and allay the taste for tobacco. It is also a nervine, and has a good effect in bracing up the relaxed nervous system, and thus preventing, to some extent, the awful feeling of *goneness*, as he calls it, to which a tobacco chewer, retiring from business, is subject. And another thing it does—perhaps not so unimportant a matter either, as it might at first blush seem to be—it employs the mouth and beguiles the attention.

Dr. Wilson of Owego, N. Y., professes to have found a remedy for tobacco chewing in the leaves of the common red plantain. He says that after chewing these for three or four days and swallowing the juice, which is harmless, it will be impossible to use tobacco without sickening.

Those of our readers who have seen Mr. Parton's article, "Will it pay to smoke?" in The Atlantic Monthly, will remember how he quieted his nerves with whisky when he quit smoking. The nervous excitement continued but a few days, and less than one bottle of whisky was required.

We have thus given the opinions and suggestions of others as far as we have been able to collect them, selecting those which seemed to be of value in this connection. We have thought it our duty to give to users of tobacco, who wish to reform their habits, all the information and assistance in our power, to enable them to do so with the least amount of suffering and inconvenience, and with the greatest certainty of success. But in regard to the plan of substituting some other nervine for the one withdrawn, although it may be of advantage in some instances, we must say, that upon the whole, we have very little confidence in it. Every drug has its own specific effect on the human system, and no other can be a complete substitute for it. Opium-eaters, upon relinquishing their habit, are sometimes given alcoholic stimulants. Such, though, would rather have one grain of morphine than a demijohn of fourth-proof brandy. And an old tobacco chewer, under the same circumstances, would rather have a quid of fine-cut than a barrel of chamomile flowers or a ton of gentian root.

From all that we are able to learn, the habit of chewing tobacco is much more difficult to reform than that of smoking; but in most instaces smoking can be substituted for chewing, without serious inconvenience. If a man who smokes wishes to rid himself of the habit, let him diminish week by week the number of cigars or pipes smoked daily. If he smoked regularly six cigars a day it does not seem to us that it would be any very great hardship to bring down the number to five. After smoking five cigars daily for a week, let him reduce the number to four, and after the lapse of another week to three; and so on, reducing the daily allowance each subsequent week by one cigar, until he comes down to none at all.

If the subject be a chewer of tobacco instead of a smoker, let him quit chewing and take to smoking for a month, or such length of time as may be necessary to make him feel quite as comfortable as before the change was made. From this point let him proceed as in the first example.

But suppose the offender chews and smokes both. This is truly a bad case, still not quite desperate. To such a one we should say, First stop your smoking; then, after a few weeks of

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chewing only, quit that and substitute smoking in place of it. This accomplished, you can proceed as in the first example.

Some men there are who can quit the use of tobacco at once, without the intervention of any such tapering-off process as that described above. When this can be done without suffering or other inconvenience, we say, by all means do it. Such, however, is not the case with the majority. But most persons, at least those who have not made an immoderate use of the weed, may give it up by following the plan we have recommended, without much difficulty, and while still following their ordinary business; thus losing no time. There are some persons, though, who have used tobacco to excess, and for a long period at that, who cannot by either of the methods suggested above, or by any method that we know of, relinquish the habit without experiencing such a reaction of the nervous system as to unfit them for the time being for business pursuits. Such should choose for the experiment a time when their presence can, with the least inconvenience, be spared from their business, and take a furlough for this purpose. Had we hospitals for the reception and treatment of patients of this character, they would meet a great public want. We have inebriate asylums for the cure of the intemperate, in which also opium eaters are sometimes received for treatment; but we have nothing of the kind specially adapted to the cure of users of tobacco. Such usually resort, when it is a case demanding treatment, to some water cure. And upon the whole we think they could not do much better than this; for the water treatment is well calculated to allay the nervous irritation they will experience.

There is one symptom which is very likely to appear early in the process of quitting the use of tobacco, that is *insomnia*—sleeplessness. For this the best remedy is hydrate of chloral, from 15 to 30 grains, dissolved in water; one drachm by weight of the chloral to 16 fluid drachms of water, or to 12 drachms of water with 4 drachms of syrup of orange peel, or lemon syrup, to flavor it.

A period of illness from acute disease affords a good opportunity to break off the habit of using tobacco. A man may be taken down and confined to bed with an attack of fever, or some other disease, of three or four weeks duration, and will not use, nor wish to use, tobacco in any form during the whole time he is ill. It is doubtless true that when convalescent, when the patient is becoming himself again, and his old feelings and appetites begin to return, the appetite for tobacco will doubtless, to some extent, return with the rest. But we can not believe that after having been without the weed for, say a month, the craving will come back with anything like its former power. In this length of time the nervous system must have undergone a complete revolution with respect to the drug, but any perturbation caused by its absence has been lost sight of in the prevailing malady, and in the effects of other drugs administered for its cure. We would say then, to any user of tobacco to whom such an incident may occur, seize the golden opportunity; such may never happen again. And if you do thus take advantage of it you will be richly repaid for all you may have suffered otherwise by your illness, and may thank Heaven for it. Do not, though, wait for a period of illness to reform, for that may be a long time in coming—may never come in season to do you any good. Reform now. "Now is the accepted time, now is the day of salvation."

In entering upon an undertaking of this kind much assistance is sometimes to be derived from association. This was a power in the days of the temperance reformation. Many a poor sot was enabled, by the moral support he obtained in this way, to resist and finally to conquer his craving for strong drink, who could never have done so otherwise. We have no anti-tobacco societies in this country, but if you can associate yourself with a circle of acquaintances each of whom is equally anxious with yourself to be freed from the tobacco plague, and each pledge the other to "touch not, taste not, handle not," the vile thing; or if you can find but a single friend willing to join you in declaring yourself free from this unmanly bondage, you will perhaps, be much assisted in so doing.

Another element enters into the play now, that of love of approbation. No man likes to fail in an undertaking where another succeeds. No one of a party, and neither one of two likes to be the first to give over the battle. The consequence then, may be that all, or both, hold out till the victory is won.

We have now suggested all the expedients to aid you in overcoming the habit of using tobacco of which we have a knowledge at present. You can try some one or other of these methods, or each and all of them in turn; and if you are really in earnest, and are persevering enough, you will surely find some way out of the difficulty. What is required is pluck and persistence; in other words, courage and constancy. With these qualities in moderate de-

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velopment, all that is now wanted is the will. And so we will conclude this paper, and the series, by repeating what we said not long back: "Where there's a will there's a way."

ADDENDUM.

Just as we were about finishing the last paper in this series, we happened to open a late newspaper when our eye fell upon an item which had we had it in time might have found a fitting place in the section which treats of the poisonous properties of tobacco. But that was impossible; the incident herein detailed having occurred since that section was published. It is, however, so striking an illustration of what we have therein attempted to teach that we cannot refrain from introducing it here, though somewhat out of place. Verily the victims of the tobacco plague seem to be increasing in number, notwithstanding our efforts. If, in addition to what has been said already, the perusal of this item will have no effect in restraining young men in the excessive use of the weed, then nothing will that we can say. But here is the item. It is a case of

DEATH FROM SMOKING.

The New York correspondent of The Buffalo Commercial Advertiser writes: "A case in my own intimate acquaintance has this very week appalled a very large circle of friends in this city. The victim was exactly of my own years, and a companion from early boyhood. For thirty years at least he has been a daily smoker of the choicest cigars, but in all his other habits temperate and regular, and of excellent constitution; one who, of all men, would have laughed at the suggestion that tobacco was killing him. A week ago last Sunday night he was stricken with the progressive paralysis characteristic of nicotine, and on Sunday night he died. His death was most pitiful. First, sight was lost, then speech, then motion of the neck, then motion of the arms, and so on throughout the body; and he lay for a fortnight unable to move or make a sign, save a pitiful, tongueless, inarticulate sound, which sometimes rose to almost frantic effort, all in vain, to make known what he wished to say to his family or friends; for his consciousness and mental faculties were left unimpaired till within two hours of the last, to aggravate to the uttermost the horror of his situation—a living soul in a dead body. The sense of hearing was left unimpaired, so that he was conscious of all around him, while as incapable of communication with them as if dead, save by a slight sign of assent or dissent to a question. The doctors were fully agreed that tobacco was the sole cause of the stroke."

The Cocoa-Nut Tree.

BY E. RAWDON POWER, F. R. G. S.

THIS invaluable palm, the gift of a beneficent Providence to the inhabitants of tropical climates, is very extensively cultivated in Ceylon, especially on the southern and western coasts. From Columbo to Galle and Matura, a stretch of upwards of 100 miles, one uninterrupted cocoa-nut garden is presented to view. These gardens, or "topes," as they are called, belong to natives. There are cocoa-nut plantations held by Europeans in the districts of Negumbo and Chilaw in the western province, in Batticaloa in the eastern, in Jaffua and its neighborhood in the northern, and also near Galle and Matura in the southern province of Ceylon. Island tradition, handed down by the priests of Bhudoo, says that the discovery of the cocoa-nut tree in Ceylon, and of its wonderful general utility, was made by a rajah of the Kandyan provinces, or interior of the island, who became suddenly attacked with a cutaneous disease which covered him from head to foot, and occasioned fearful agony. His people strove, by offering up sacrifices to the Maha Yaka, or Great Demon, as a fancied originator of the fell disease, to appease his anger and thus to cure their beloved king. The king did not personally aid in such sacrifices, but humbly resigned himself to the fiat of the Supreme Being. After having said his prayers and made his offerings of flowers to Bhudoo, the king fell one afternoon into a deep sleep, under the shade of the sacred Bo-tree. This

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sleep continued for two days, during which he beheld a large extent of water, of a blue color, which, on examining, he found to be both salt and nauseous. On the shores of this water there appeared to the amazed king thousands of trees of a character he had never before seen, of very formidable height, and, with the exception of large leaves near the top of each tree, apparently destitute of foliage. An old man, the Maha Sudona, the father of Bhudoo, now appeared, and addressed the king as follows: "In that direction," pointing to the south, "will thy cure be found. One hundred hours' journey will bring thee to those trees, the interior of the fruit of which must be thy only food till the Maha Handah, or great moon, has given and refused her light. This do, and after due offerings of sweet-smelling flowers and fruits to Bhudoo thou wilt recover thy health."

The rajah, on awakening from his protracted sleep, and having communicated to his favorite followers the supernatural message he had received, made the usual propitiatory offerings to Bhudoo, and proceeded toward the south. The one hundred hours' journey having been duly performed, without accident, the king beheld before his anxious and delighted eyes a vast expanse of blue sea, and fringing its far-stretching shore countless trees, similar to those he had seen in his dream; immensely high trees, with branches only at the top, and what appeared to be fruit nestling in the branches The only denizens of the country were the mighty elephant and the stealthy bear, and they were most numerous. These animals did not attempt to injure the king or his followers, as they were under the protection of Bhudoo. To obtain the coveted fruit, which was to restore the rajah to health, appeared to be impossible, from the height, straight, and naked character of the trunk of the trees which bore it. The attendants thought, at last, of applying fire to one of the trees, and having made a small hole in the middle of a dry stick for the reception of the pointed extremity of another stick, fire was thereby produced, by friction, and by the application of dried leaves the fire thus became active and fierce, and was applied to the trunk of the tree. While this was being done, the awe-stricken rajah had gone down to the sea and tasted the water, which he found to be salt and disagreeable, as his dream had foretold.

An hour or two after the application of the fire to its trunk the stately tree fell to the ground with immense force. The fruit was opened, not without difficulty; and as rice was not to be met with in the locality, both king and attendants lived solely on the delicious fleshy portion of the nut, while the pure and sweet water within it satisfied their thirst. Within a short time the rajah's health was quite restored, and, as a mark of gratitude, his highness carved on a lofty rock, which rose mystically from the sea, a gigantic statue of himself; observing that the great height would demonstrate the miraculous recovery from illness of a most distressing and dangerous character he had met with, he being a man small in size; for that by the wonderful kindness of Bhudoo he had risen to a state of unmerited felicity and strength, the testimony of which would thus be handed down to all posterity.

The rajah, on his return to his own dominions, duly promulgated the virtues of the wonderful palm, which led to the migration of numerous people to the south of the island, and thereby to its colonization. The image, carved on the rock, is to be seen at the fishing hamlet of Bellegan, a few miles from Galle, in the southern province of Ceylon.

There is great difficulty in fixing upon the birthplace of the cocoa-nut tree. It is said to be indigenous to Asia and Africa, and is met with in the tropical portions of South America. There are four varieties of the cocoa-nut met with in Ceylon. The first, called the king's cocoa-nut, which is generally found in the gardens of the Bhudist priests, and native lay Headmen, and is presented to the European visitor as a complimentary offering, the water within the nut being very grateful to the taste; the second kind is different in shape to the former, and the rind is reddish and edible, after the epidermis has been removed; the third is the cocoa-nut of commerce, and is most largely consumed in the island and exported to other countries; the fourth variety is the dwarf, or Moldivian cocoa-nut—more curious than useful.

The double cocoa-nut is only found in the Seychelles group of islands, and brought occasionally to Ceylon. Numerous medical virtues are attributed by the natives to these latter nuts. The Ceylonese cocoa-nut of commerce prefers a sandy soil to any other, and delights in proximity to the sea; for, as Bertolacci says, "it flourishes so very near the sea that its roots are, in many places, washed by its waters, without injury to the tree, until it is actually undermined." When the cocoa-nut topes are formed in districts remote from the sea, a little salt is generally thrown into each hole prior to the plant being deposited.

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The Ceylon cocoa-nut tree—the cocoa-nut tree of commerce, is henceforth the only one alluded to—grows to a great height, *i. e.*, from 65 to 95 feet. Its roots are flexible; the majority of them creep along the surface of the ground, while a few strike deeper. Its branchless stem is surrounded by annular indentations. The stem is nearly the same size from the root to the top, from which a crest of large pinnated leaves radiate, about a yard in breadth and four yards in length. The leaf is separated by a strong woody fibre, from which smaller ones are produced on either side. The nuts grow in clusters within the leafy crest, and each tree produces from fifteen to twenty good nuts. In favorable situations the tree will yield three or four crops in each year. In congenial soil the cocoa-nut will blossom in from four to five years, but where the soil is hard they do not blossom under six or seven years. About twelve months after the first blossoming the tree commences to bear fruit, and for fifty years will continue to bear abundantly. After that period the yield gradually diminishes until it becomes fruitless, when it is cut down—yielding at its decease the heart of the crest, or cabbage, which is composed of the "leaves to be" of the next year. Made into a pickle, or boiled as a vegetable, in either case it is delicious. When the nuts, which have been retained for forming a nursery, seem by the brownish appearance of the husk to be duly ripe they are removed from the trees, and in about ten days they are placed in rows and partially covered with soil. In about fourteen weeks' time the nut will have germinated; in a further period of five months the young plants will have obtained a height of eighteen inches, and three or four branches will have made their appearance. The natives generally plant the cocoa-nuts in the wet season, in holes in direct lines, about twenty-four feet apart and two feet deep, and the same diameter at top. The young plants require much watering until about the seventh or eighth year. They have also many enemies to contend against; first, the wild elephant, in localities that are sparsely inhabited by man; secondly, cattle, which involves the absolute necessity of fencing in the young trees for four or five years. The porcupine is also very destructive in the infancy of the plant, but its most deadly and persevering enemy is a beetle which gains access to the cabbage, or heart, that contains the vital principle of the tree, by a process of undermining. After the eighth year the tree requires no further care in the shape of fencing or irrigation, and yields, as above shown, abundantly to its fortunate native possessor; who is frequently found to indulge in the luxury, dear to an Asiatic, of a lawsuit to recover or defend, as the case may be, a tenth or twentieth share of *one* cocoa-nut tree—a kind of litigation the writer of this paper has, on more than one occasion, in a judicial capacity, been called upon to adjudicate.

In a brochure, which was published in London about the period of the International Exhibition of 1862, it was stated that "the laborious duty of collecting these nuts is the province of a certain caste in Ceylon; but in many parts the inhabitants have trained monkeys to gather them, which they do with great dexterity, selecting those only that are ripe, and gathering no more than the quantity which is required;" the fact being, however, that, although there is a distinct caste, called the toddy-drawer caste, for drawing the toddy from the tree, the picking of cocoa-nuts can be and is pursued by any of the laboring population of the island; and the said picking or collecting is not a very laborious employment. In regard to the trained monkeys plucking the nuts, the Shingalese Jacko is too knowing to allow himself to become an expert of this type. Dr. Heyne mentions, in Letters on Sumatra, that monkeys had been trained in Sumatra, by the Malays, to fetch cocoa-nuts from the trees as they were required. I suspect the worthy doctor must have been deceived in this particular. In the excellent account of Ceylon by the late Sir J. E. Tennent, he mentions that he was told by a native the one hundred uses for which its products were made available. They were as follows: The nut and its juices for food, for drinking, for oil, curries, cakes and cosmetics; the shell for cups, lamps, spoons, bottles and tooth-powder; the fibre which surrounds it for beds, brushes, nets, ropes, cordage and cables; the fruit sap for spirits, sugar and vinegar; the blossoms for preserves and pickles; the web, sustaining the foot-stalks, serves for strainers and flambeaux; the leaves furnish twenty-seven appliances for thatch, matting, fodder, baskets and minor utensils; and, lastly, the trunk yields fourteen appliances for building, furniture, firewood, ships, fences and farming implements.

The natives of Ceylon, in their intense love for the wonderful palm, state their conviction that it is so much the friend of man that it grows far less abundantly if planted at a distance from human habitations. The real cause, doubtless, is that the cocoa-nut, in common with

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other vegetable productions, flourishes better in the immediate vicinity of the houses of the natives, owing to the soil being rendered far richer by artificial means; and, especially in the case of the cocoa-nut tree, the soil is more moist. On the coast of the island native houses are, close to the sea, embosomed in the cocoa-nut topes.

No tax is paid in Ceylon upon the cocoa-nut tree. In 1793 an *émeute* of a serious character nearly took place from an attempt to impose such a tax.

In regard to cocoa-nut oil, which it will be seen by the returns hereinafter detailed, forms a large item of the exports from Ceylon, the history of the rise and progress of this article illustrates the beneficial results of the action of government in a tropical and recent agricultural colony—for prior to 1830 Ceylon could only be regarded as a military post of importance—up to a certain point in producing new articles of export. The local government of the day imported a steam engine from England, manufactured the oil in Columbo, and consigned it to its own agent in London, where it was sold and carried to the credit of the government.

In 1831, Governor Sir R. Wilmot Horton directed that the account sales of the oil should be duly published in The Government Gazette, with a note that the engine, etc., were for sale. A highly respectable firm purchased the engine, etc., and from that period commenced the export, by private individuals, of the cocoa-nut oil, which has reached so high a figure at the present time.

From Ferguson's Ceylon Directory for the years 1871-72, a most valuable compendium of Ceylon statistics, issued from time to time, and which has just reached England, it would appear that there are in the

Eastern Province 23 estates,	acreage	5,073
Western Province 68 estates,	"	16,808
North-western Province 11 estates,	"	3,285
Northern Province 33 estates,	"	10,467
Southern Province 26 estates,	"	12,875
In all, 161 estates,	acres	48,508

This does not include estates of *less* than 100 acres in extent.

In addition to these estates must be added the *very* large area of small gardens under cocoa-nut cultivation, appertaining to the natives, in the several provinces of the island.

COCOA-NUT OIL.

In the five years from 1837 to 1841, both years inclusive, 2,036,608 gallons were exported; value £128,129. In the five years from 1862 to 1866, both years inclusive, 7,777,156 gallons were exported; value £780,837. In 1870, the last year for which a return has been published, the total quantity exported, reduced to cwts., was 135,658 cwts. and 2 casks; value £170,217.

COIR.

In the five years from 1837 to 1841, both years inclusive, 128,912 cwts. were exported; value £39,717. In the five years from 1862 to 1866, both years inclusive, 222,758 cwts. were exported; value £168,809. In 1870, 63,623 cwts. were exported; value £45,904.

In 1870, 5,478,677 cocoa-nuts, valued at £17,185, were exported.

There were, in 1870, 1,567 oil mills in Ceylon.

In an estimate framed some years ago, but which will have to be largely added to, owing chiefly to the enhanced cost of suitable land, labor, etc., the expense of bringing into full bearing a cocoa-nut plantation of 300 acres was, in round numbers, put down at £2,800, including commission, etc.; and the gross receipts, the tenth year, when the estate was in full bearing, were given at £5,800. This would yield a net income of £3,000 per annum. It is to be feared, however, that such satisfactory results have hardly been arrived at by the planters.

BENEFIT OF LAUGHTER.—Probably there is not the remotest corner or little inlet of the minute bloodvessels of the body that does not feel some wavelet from the convulsion of hearty laughter. The blood moves more lively—probably its chemical, electric, or vital condition is distinctly modified—it conveys a different impression to all the organs of the body as it visits them on that particular mystic journey when we are laughing, from what it does at other times. And so, we doubt not, a good laugh may lengthen our lives, conveying a distinct stimulus to the vital forces. And the time may come when physicians, attending more closely than they are apt to do at present to the innumerable subtle influences which the soul exerts upon its tenement of clay, shall prescribe to a torpid patient, "so many peals of laughter, to be undergone at such and such a time," just as they now do that far more objectionable prescription, a pill or an electric or galvanic shock; and shall study the best and most effective method of producing the required effect in each patient.

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Eating and Drinking.

BY THE EDITOR.

SOURCE OF MUSCULAR STRENGTH.

IN a general way we have already shown that our strength of body comes from our food. It is proper now for us to inquire whether it comes from the proteids, fats, amyloids, or salts. Liebig taught us that all muscular strength exerted was at the expense, the breaking down, using up, metamorphose, or oxydation of the muscular tissue. So much muscle destroyed, so much strength exerted. Now the *proteids*, that is the albumen, fibrin, gluten in our food go to make up muscular structure; and Liebig taught, and all physiologists accepted his doctrine, that during exercise the destruction of the muscles was the source of the strength exerted. This would be very much like a theory that a saw-mill received all its power to saw logs from the wear and tear of itself. His theory made it necessary that the proteids of our food should be converted into muscle, and then during exertion destroyed, and new proteids constantly, during rest, being converted into muscle for further use. Liebig also taught that the fats and amyloids were only necessary to supply heat for the body; but it seemed never to have entered his head that they were the source of muscular power.

In the present state of science this is all changed. Now the muscles are not regarded as the *source* of strength, but the *vehicle* to convey or exert it. That in exercise they are not metamorphosed, or oxydized, or used up to an extent sufficient to account for all the strength; but their destruction is comparatively small. Now the theory is that the *proteids* supply the material for building up, *constructing* the body, and especially the muscles; but the main source of muscular strength is the fats and amyloids.

How came about this change of view? In this wise. It was found that men could do very hard work for awhile when deprived of proteids in their food. It was also found that the urea in the urine was not in sufficient quantity to account for all the force exerted, nor was it much more (often less) during long-continued exercise than during repose. As long ago as 1861 Troube asserted that all muscular strength was derived from the oxydation of the fats and hydro-carbons; and in 1864 Donders was convinced that the transformation of muscle was not sufficient to explain all the force exerted in the body. Soon after, Dr. Edward Smith showed that while the amount of urea in the urine (urea is the product of the oxydation of muscle) was not increased by exercise the amount of carbonic acid (carbonic acid is a product of the oxydation of the carbon of the fats and hydro-carbons) was greatly increased, showing that during the manifestation of muscular power there was a great increase in the destruction of fats and amyloids. The most powerful argument, however, against Liebig's theory was yet to be given, one which Liebig himself saw the force of, and has never yet satisfactorily answered. It is the argument, or rather the result of the experiments of Fick and Wislicenus, made in August, 1866. The results of these experiments were carefully and elaborately printed in THE HERALD OF HEALTH for September of that year, long before any other American journal had them; and in the year 1867 still further discussions of the subject were made, by Professor Rufus King Browne. In order to make the subject clear, a very brief statement of these experiments is necessary. On the 29th day of August, 1866, these gentlemen prepared themselves for the work of climbing to the top of one of the Bernese Alps mountains, called the Faulhorn, 6,417 feet above Lake Brientz. Their object was to see if their muscular strength could be supported in this arduous undertaking on fats and amyloids and without nitrogenous food, which could be converted into muscle and then oxygenized. To prepare themselves for the work, for seventeen hours before they commenced their ascent they ate only solid food, composed of starch, fat and sugar, compressed into solid cakes. They began their ascent by the steepest and most dangerous route at 5.30 in the morning, and at twenty minutes past one in the afternoon they had, *without fatigue*, finished their journey. Now what was the result?

1. That they had, without a nitrogenous diet, easily accomplished their task.

2. That the amount of nitrogen excreted was one-third less during the hours of vigorous exercise than the hours before and afterward.

This not wholly unexpected result was almost conclusive proof that the source of mus-

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cular power is mainly found in fats and amyloids, and not in the proteids.

Now let us glance at the work done.

Fick, weighing 145½ pounds, had climbed 6,417.5 feet high. This was equivalent to raising 933,746 pounds one foot high. Wislicenus, weighing 167.5 pounds, had climbed to the same height, which was equivalent to raising 1,074,931 pounds one foot high. In addition, however, to the mere labor of ascending the mountain, was the labor of the beating of the heart, and respiration. Now, according to the calculations of Donders, each heart beat is estimated to be equal to raising 4.65 pounds one foot high, and each respiration equal to 4.56 pounds one foot high. Let us then add this to the other work done. Fick says that during his ascent the heart beat at the unusual rate of 120 per minute, while his respirations were 25 per minute. There then must be added to the other work for this man 220,968 pounds for heart and respiration work; and if Wislicenus was in the same proportion there must be added for him 257,796 pounds. Adding these sums together we have the work done as follows:

Fick, in 5½ hours' work, 1,154,714 pounds raised one foot high; Wislicenus 1,332,727 pounds one foot high. Now the amount of urea excreted in Fick shows a destruction of muscle which, perfectly oxygenized, would only have raised 498,525 pounds one foot, while Wislicenus shows the destruction of even less, namely sufficient to only raise 481,618 pounds one foot high. These results show conclusively that, in their cases at least, by far the larger source of muscular strength was derived, not from the destruction of muscle and nitrogenous food, but from the destruction of fats and amyloids; the proportion being about two-thirds of the latter to one-third of the former.

Recent experiments confirm the general result of those above given. From an economical point of view, these results are interesting. If the source of muscular strength was entirely the destruction of muscular tissue, then the labor of assimilation, the constant repair of destroyed muscle would be very much greater than economy would dictate, for all the nitrogenous food would have to be converted into muscle before available. But if the source of strength is largely fatty and amylaceous matter, then much is saved, for they become oxydized and give out their virtues in the capillaries when they meet the oxygen.

Whether brain and nerve energy has the same origin is not yet settled, but there is little doubt but, to a certain extent, they have; though it is likely the addition of phosphorus, and perhaps other substances, are necessary for this work.

The practical value of these facts might be very great, if properly applied. We shall discuss this point as we proceed.

Who is to Blame?

BY XENA VERNET.

"COME Rob, spend the evening at home, won't you?"

Rob, who was lighting a cigar preparatory to his evening departure, paused and looked at me with a slight stare of astonishment.

"Couldn't possibly, have an engagement."

I smiled.

"Fact. Now look here, aunt Leah, I hope you will pardon me, but the truth is, it is just a trifle dull here."

He was looking so tremendously in earnest, taking a whiff at his cigar and gazing at the ceiling. I laughed.

"But you expect to marry one of these dull people, don't you?"

"You mean Lulu. Yes, bless her."

"She will be just as dull, I fancy, after marriage as she is now. Oh Rob, I see in my mind's eye, the charming picture of your domestic life. The cares and business of the day over, you return home. Lulu and Robbie, and three or four stout fellows more are put away for the night. Then sitting by your cosy fireside, your wife with her sewing, you with your books and papers, will read choice extracts from favorite authors, or the latest news, she listening, or—"

"Interrupting me in the midst of a sentence to whisper to you, perhaps, or ask me for the cotton, rolled over on my side of the table, as she did the other night."

"That was nothing, you were not in the least annoyed."

"Aunt Leah—I won't confess it to any one

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else—but I was; and when we are married—"

"Say to her just as you did then, as you jumped up and gave chase after the rolling spool as it wandered off toward the door. No trouble, Lulu! But I remember you suddenly recollected that you had business down town that evening, and did not read to us any more."

"How could I, when she did not show any more interest than it it was Choctaw?"

"But you love her, for all her little failings?"

"She is a sweet, pure little creature, and as good as an angel."

"I am glad you know something about the goodness of angels."

"Why you are one, you blessed aunty."

"Yes, I have been told so, but then I knew it was only a figure of speech. We have lots of fine things said to us."

"Aunt Leah, I would rather have Lulu as she is, not brilliant, as we know, than one of your sharp, smart women. I know as well as you, that there are women who can stand side by side with their husbands and help with their wise counsel, and all that; but I don't expect to marry such a one. I am satisfied. Now I must go."

"Come back sir!"

"Couldn't possibly." Bang went the street door, and I stood alone with my thoughts, a crowd of them; and they were not pleasant company. Here was Rob, my nephew, a quick-tempered, fiery youth, who never hesitated at any time in letting us know the state of his mind. And being an only son, the doubt that his word was not law never for a moment crossed his mental horizon. It was generally understood that he was a little wild. He never came home intoxicated that we ever knew, though he was sometimes a little gay. His mother loved him devotedly, and he allowed himself to be made an idol of, without the slightest hesitancy as to his own merit. I was the Mordecai, who sat at the gate. But when he found he could not make me bow down and worship, he looked the truth in the face. We shook hands mentally, and were fast friends.

Lulu, Rob's betrothed, was the orphan daughter of a distant relative—a pretty, blue-eyed blonde of the type of girls one sees every day.

They rode out to the park together, and went to church. They were a nice looking couple, and Rob knew it was so. He never annoyed her Sundays by asking any vexed questions concerning the sermon, because he knew she could not have told a word if it was to save her life. What they did talk about was a wonder to me, for Lulu, with all her goodness and gentleness, was very slow in comprehension, while Robert was as quick as a flash of lightning. Verily thought I, they start on life's journey with a meager capital.

When a man finds he is going onward in mind while his wife is standing still, he don't always try to help her faltering steps; but as the light grows brighter and clearer he hurries on toward it, looking back, it may be, with a regret that he is alone. Failing to see any injustice he may do her, he whispers to his unsatisfied heart: "Woman are inferior mentally to men."

It is a mystery to me that men can look down and love. I don't believe it possible for a woman to love a man she thinks beneath her, mentally. And Lulu, when the rose on cheek and lip is faded, when the thoughtless, girlish expression, so charming now, is changed to anxious worry and care. When she finds that Rob is not a "mangodkin," what will sustain her then? How can I help her? If I should tell her she was throwing away golden hours. If I should plead with her to give earnest thought to mind and body, that she might gain knowledge which would be useful to her as a wife and mother, she would listen attentively, I doubt not, and then as soon as possible change the subject. And so in time she will take her place among the young mothers, as ignorant of the laws of life and health as the frail, delicate baby she holds in her arms.

Rob is looking forward to the time when he will be a husband. He has selected his future wife. He knows he is worshiped, and that charm veils all imperfections. Does it ever cross his mind, I wonder, that he should make his life purer and better for this worship? And Lulu, has she ever questioned in her heart the quality of the love that is offered her?

We see Rob every day. His mother and Lulu listen to his words as if they were inspiration. His aunt Leah criticises and questions him. And what a stranger he is to us all! How little we know of Rob! He is away all day at his business. He never talks to us about his plans, his hopes, his dreams. When evening comes, I believe the boy really thinks he is doing us a favor if he prefers our hum-drum society to that which he finds away from home. And I have to confess in my own heart it is stupid. It has never crossed my mind till lately that we ought to make home more entertaining and agreeable. We all sit round the work-table with our knitting or sewing, so busy we hardly say a word to each other. Lulu

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plays and sings when we insist upon it, but there *is* no heartiness in it. I would as soon hear a hand organ in the street, there is just as much soul in it. Rob reads to himself or to us, feeling that our thoughts are half with him, half with the work that is never finished; or he goes out and spends the evening somewhere, and the mother sighs as she hears his retreating steps, and Lulu looks up sadly from her sewing, but neither seems to think it can be any different.

Ah me, I suppose I must banish the shadows. Go into the sitting-room and watch Lulu making a pretty picture of herself, bending toward the light and weaving brilliant mosses of color into worsted flowers, while I go on with my knitting and thinking.

It seems to me we are making grave mistakes in the education of our girls and boys. We have only to look at the drooping figures, pale faces, lack of strength and vitality, to realize that there is a great wrong somewhere. Are the mothers blameless? Who bring up their daughters in total ignorance of all the laws of life and health? Who see their sons grow up to manhood careless of their approval, reckless in habit, and preferring any place rather than home.

Lulu, with the violet eyes and golden hair, and Robert, I wish I could save you from the tears and heartache in store for you. I wish I knew of some rose-lined path that you could take through life, without having to pass through the inevitable slough of despond.

Fungus as an Article of Food.

THE ignorance which people of all grades show about fungi is the more extraordinary, seeing that the question has been most ably written upon by various scientific writers, such as Badham, Worthington Smith, Berkeley and others. But it takes a great many books to overcome an old-established prejudice, and while people would read and be interested, they hesitate to break through the ordinary habits of living, and to experiment upon a new food. More recently, however, a great move in this direction has been given by a Natural History Society in the West of England, called the Woodhope Field Club, which was started several years ago at Hereford to explore the geology and botany of that beautiful county. Now Herefordshire happens to abound in mushrooms and fungi, and Dr. Bull, one of the members of the club, arranged that one day in every year should be devoted by the society to the search after these fungi, one of the conditions being that at the dinner which followed they should form the principal articles of diet. From having partaken myself in these banquets, I am able to speak of the great gusto with which the fungi were swallowed, and the exceedingly nice dishes which they made, and the Woodhope Club in their annual volume of transactions have followed out their good work by detailing the characters of the edible fungi, and giving a variety of recipes as to the modes of dressing. Now this is a really important contribution to the economy of our food supplies, for few people have any idea that a wealth of eatables is lying wasted under the woodland trees. Dr. Badham speaks of it as follows:

"In my autumn rambles I have seen whole hundred weights of rich, wholesome diet rotting under the trees; woods teeming with food and not one hand to gather it; and this, perhaps, in the midst of potato blight, poverty, and all manner of privations, and public prayers against famine."

According to Mr. Berkeley, there are about 2,380 different kinds of British fungi, without including those which require a microscope to distinguish their characters. It is not all these that are edible, but very much to the contrary, being anything but nice or nutritious; but, on the other hand, the great majority are not poisonous, Berkeley marking only ten out of the lot as poisonous, and six as edible. But Dr. Badham gives a list of forty-eight as being wholesome, and as these are nearly all common species it shows what an immense quantity of food we neglect. Of course there is something to account for this neglect more than the mere ignorance or prejudice, and it probably is the fear of being poisoned. From one's earliest childhood one has learned to have a wholesome terror of puff-balls, toad-stools, devil's apples, and all the genus which inhabits fairy rings

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and circles; and with most people the fear of eating anything but true mushrooms has grown up with them from infancy. Our very potatoes belong to a tribe of poisonous plants, but who would consent to live without his potato? The most objectionable feature in the fungus is that the poisonous kinds, although comparatively very few, are yet common inhabitants of our woods and forests; and, therefore, without instruction as to what is poisonous and what is not, a random gatherer would possibly come to grief. Dr. Bull, speaking for the Woodhope Club, says:

"There is scarcely a field, and not, perhaps, a single wood in the country that does not abound with several varieties of the *coprinus*, the *agaricus fascicularis*, the beautifully colored *russula emetica* and several others. Since they are so abundant, it is particularly the province of this, and other natural history societies, to encourage the study of mycology, and thus lessen the prejudice existing against them all, by clearly showing the means of distinguishing which are good, and which are bad. This is often a matter of some difficulty, for the scientific differences are too minute for ready distinction, and there are no general rules for guidance without numerous exceptions. We cannot be guided by the place in which the fungus grows, nor can we eat after slugs, as we do after wasp and birds with fruit, for slugs seem to enjoy the most poisonous kinds. Color gives no distinction, nor is the smell or taste of a fungus an infallible guide. To those who know London streets and markets, and the enormous quantity of rubbish and unwholesome material that is bought up by the poor from the costermongers, it is a matter of surprise that there is not more accidents arising from the use of mistaken mushrooms. In the autumn of 1868 several deaths took place from this cause, and it was ascertained that whole cartloads of putrid mushrooms and suspicious looking fungi had been dispersed through the streets of the poorer quarters. Even the genuine mushroom when eaten in a state of decomposition becomes a rank poison; and it only shows how much we are in want of some system of proper inspection of food sold in our streets. They have such a system in most Continental countries, and especially in Italy, where immense quantities of fungi are eaten."

In Milan fungi are regularly sold under the restrictive powers of the market inspectors, who have a right to restrain the sale even of any kind which they do not know. Any infringement of the regulations is punishable by fine and imprisonment. Some persons advise the trial of fungi by the taste. Mr. Bull says that if a piece is bitten off it has a pungent taste in the mouth, if it is of a poisonous kind; but this test does not always hold good, and is, moreover, rather a dangerous one; for many species which are highly poisonous are perfectly mild when first eaten, and the deleterious qualities are not manifested till the fungus has been in the stomach for some little time. The true mushroom is the *agaricus campestris*, and is rarely, if ever, found growing in woods, but in rich open pastures. It is, generally speaking, easily distinguishable from all others, except, perhaps, the horse mushroom (*agaricus arvensis*), which is frequently seen in Covent Garden, and is distinguished from the former by its more robust growth, a whiter top and paler gills; whereas the true mushroom is fleshy, has a peculiarly delicate odor, a dry, whitish top, and an irregular ring of color round the upper part of the stem. If the stem is cut off and the top gills laid on a sheet of writing paper, a profuse brownish-purple dust will be deposited from the gills, which consists of the seeds or spores of the fungus. These distinguishing marks are recommended by Mr. Worthington Smith.

The following are amongst some of the most common edible species: *Agaricus zamboous* is a perfectly white fungus, something like a custard, and grows in April in exposed pasture fields. The *agaricus procerus* is an excellent fungus, and grows tall, with the pileies white and scaly. It is called the parasol fungus in Italy, where it is in great request, and is considered by all authorities to be one of the greatest delicacies of the whole tribe. There is another, the *agaricus rachodes*, which turns red when bruised, and is similar in taste to the preceding one, though of coarser quality. The *agaricus deliciosis* is characterized by exuding a bright orange-colored blood when broken, which soon turns to a bright green. This looks so suspicious that cooks and others into whose hands they may fall have the utmost horror of dressing them, feeling positive that they will be brought in as accessories to the crime of poisoning. Not a school but should have these common things taught by means of colored charts and engravings, and the teaching would have a double effect—first, that the children should be taught what to eat and what to avoid; second, that their attention should be attracted to the subject itself, and the poor would find that fungus gathering was a paying occupation.

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The Necessity of Solitude for Women.

BY ELEANOR KIRK.

IT is not unusual for an English woman to start off alone for a tramp of a dozen or fifteen miles in the country. In her heavy calfskin shoes and plainest of walking-dresses, she is not certainly so picturesque and altogether lovely an object as the daintily clad, kid-fitted, slender American woman; who, generally speaking, arrays herself for admiration and not comfort, and whose short shopping excursions on Broadway and an occasional ramble in the Park, make up the sum total of exercise partaken of from one year's end to the other. That our American sisters are naturally less strong than those on the other side of the water will, of course, be admitted by all who have had a fair opportunity of contrasting the two. The reason of this very marked difference is also plainly and painfully apparent—painfully, because there seems to be no immediate way of remedying the evil. The work of unearthing and developing the latent common sense of the American people must appear to even the most hopeful mind a task almost herculean. What does this not include? The work of subordinating show to comfort, the inculcation of the Gospel doctrines of the fitness of individuals for their respective professional and social positions, the thorough physiological disciplining of both sexes, and—but what use to go on? The subject is too comprehensive for a bird's eye view, even; but as it is true of all development, all upward climbing, that one step at a time can only be taken, and that our mistakes must also be rectified separately—to this end I would like to point out the reason of the first and greatest difference between the physical conditions of the typical English and American woman. To begin with, the English woman *walks*, and in so thorough and vital a manner as to send the blood rushing to every part of her body. In this way her digestion is kept healthy, and the rare roast beef and potatoes, with dessert of plain pudding and fruit, which make up her common sense dinner, are easily assimilated; and the result is elastic muscle, rosy cheeks, an active brain, and sound children. Then the thorough bred English woman *prefers*, for the most part, to walk alone; and right here, in this little nut-shell of solitude is hidden the very essence of the law and the prophets. A lady from a very aristocratic quarter of London was visiting, not long ago, a Boston family, famous far and wide for their powers of entertainment. She was feted, driven out, called upon, and so hospitably "done for," that for several days after her arrival she had hardly a moment she could claim as her own. After a while the hostess grew embarrassed, her guest seemed ill at ease, and notwithstanding the immense efforts put forth to make her stay enjoyable she seemed to pine for something, which her friends finally concluded was home. One morning she appeared at breakfast dressed in a very plain traveling dress, drab lisle thread gloves, heavy boots, and in her hands an exceedingly unpretentious bonnet. Her hostess surveyed her in amazement, and inadvertently expressed by her look the question she was too polite to put into words.

"You wonder at my toilet," said the lady, smilingly, "but I have dressed for a long tramp. If you will be kind enough," she continued, with heightened color, "to point the way out of the city, I shall be very much obliged."

"Why, certainly," replied her astonished companion; "I will accompany you with great pleasure. We will ride out in the carriage, and then we can roam wherever you please."

"I hope you will excuse me," interrupted the London lady; "but I find that, in order to be well and happy here, I must speak very plainly. I have always been accustomed to spending a certain portion of each day alone. At home I walk a great deal, and on account of my family and society duties have been obliged to select these hours spent out of doors for my own private and especial use. I *must* be alone at certain times each day. It is a habit I have formed, and, perhaps," she added, half apologetically, "it may seem to you a very unnecessary one; but I assure you that three months of this kind of life, necessitating as it does the entire shutting out of one's inner life, would quite use me up. So, please, my dear friend, do not judge me unkindly if I persist in going alone."

"This little episode," said the Boston lady, "opened up a new field for thought; and very soon after, for action. I tried my friend's recipe, and six months after I scarcely knew myself. I wasn't the same woman at all. I was

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a better wife, a better mother, a better housekeeper, a better friend."

Surrounded, as most women of family are, it is almost impossible for them to fix upon any stated time for solitude at home. Interruptions are constantly occurring, against which the conscientious woman can not shield herself. It is the husband, the baby, the cook, the dressmaker, the neighbor, the fashionable friend; and in this ceaseless round of ministering and entertaining, the days, months and years of our women are spent. Among these are good women, loving women, earnest in everything they undertake, devoting themselves, body and soul, to the best interests of their families. They work, and droop, and fret, and die; and the majority of those who, by reason of a stronger constitution, are enabled to hold out for a longer period are so wrinkled and cadaverous with the everlasting tread-mill they have made, set going, and kept going themselves, that their husbands are invariably ashamed of them; and have been known, for no better reason, to turn to the society of more beautiful women.

"Shameful!" do you say? Of course; but after all, decidedly human. A fresh, bright face must from the very nature of things, from the longing for the beautiful that God himself has implanted, be an object of attraction; and woe betide the woman who, desirous of retaining her husband's admiration—I use admiration instead of love, for the man who admires his wife generally loves her—neglects, from whatever cause, the care of herself, which defined, means the steady, persistent watching of her inner life, its desires and its necessities. Men hang over their wives' coffins and, with faces drawn down for the occasion, talk about "wife's unselfishness, devotion and self-sacrifice," they erect huge monuments, setting forth the domestic virtues of the dear departed, and straightway proceed to solace themselves with the society of the best looking woman they can find—*perhaps* the one they admired most before the funeral. Who can blame them? Women hold these matters in their own hands, and by deliberately ignoring the vital considerations of health, the foundation of all beauty, have only themselves to blame when set aside for others

There are reasons physiological and psychological why women should spend certain portions of their time in solitude. The society of the best, the purest, the healthiest, is not always desirable, any more than it is proper to be constantly stuffing the stomach with food. In this the appetite, when it has not been perverted from its natural channel, is always a safe and reliable guide. This is exactly the case with our mental and spiritual appetites. When those have not been corrupted by a false society life they can always be depended upon. Under such circumstances a woman knows when she has had company enough, and understands the proper way to withdraw herself when she finds it necessary; but such specimens of womanhood are exceedingly rare, as we all know. The American woman is constantly complaining of being overworked. This is true, no doubt, of many; but I firmly believe that three-quarters of the fatigue and exhaustion which overtake our women early in life, can be traced directly to the drain upon the constitution which invariably attends a constant blending of magnetisms—or rather the attempt to blend. The invalid cannot bear to be left a moment in solitude. She is very low spirited and must be entertained. If physicians and nurses would insist upon their patients spending certain portions of each day alone—the attendant, of course, keeping within easy calling distance—convalescence would, in nine cases out of ten, be wonderfully accelerated. At present sick-rooms are filled with visitors, and from the best possible motives. Women are made ill and kept ill from the very same cause—too much company; and so it goes. There are few among us who seem to know that we make our own conditions, and are compelled to accept the result of our spiritual architecture, so far as living in the mansion we build is concerned. We want to be able to step entirely out—at least once in the twenty-four hours—of our social and domestic swaddling clothes. We want to so organize and direct our forces that we may be able to reach down and probe our inmost motives and desires. What the women of America need is more oxygen, more muscular exercise, and most of all, more solitude. Those recipes have been tested by a few and found infallible. Try them and note the results.

BE FIRM.—Let the winds and waves of adversity blow and dash around you, if they will; but keep on the path of rectitude and you will be firm as a rock. Plant yourself upon principle and bid defiance to misfortune. If gossip, with her poisoned tongue, meddles with your good name, heed her not. Carry yourself erect; let your course be straightforward, and by the serenity of your countenance and the purity of your life give the lie to all who would underrate and belittle you.

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Free Parks and Camping Grounds for Sick Children.

BY J. M. TONER, M. D., WASHINGTON, D. C.

THE great mortality which has occurred among children in most of our large cities during the recent "heated term," although, perhaps, not much in excess of the ratio of previous years during the summer months, has, fortunately, however, this season, attracted the attention of the public and the press. I am, therefore, hopeful that good will result from the very general discussion the subject of the health of children in large cities has received.

Many admirable articles and valuable suggestions in the interest of the health and lives of these little ones have appeared in magazines, and in the daily papers of the cities of New York and Philadelphia, from physicians, sanitarians and philanthropists.

It is to be hoped that the consideration of this important question will not be dropped until the public are made familiar with the facts of the perilous risks that exist to infantile life in populous and crowded cities, and the inauguration of some measures adequate to arrest or greatly lessen the frightful mortality.

A careful examination of the published reports of the Boards of Health of the cities of New York, Chicago, Philadelphia, Boston and Baltimore, and others, show that about one-half of all deaths reported as occurring in them are of children under five years of age. It is also noticeable that a large percentage of these deaths are attributed to cholera infantum and other summer complaints.

This waste of human life in its early years is unnatural. Humanity demands that the causes of it be inquired into, and, as far as practicable, removed.

In the published reports of the Board of Health of New York city from 1804 to 1853, inclusive, there were 365,508 deaths reported, of whom 184,534 were under five years of age; which is 50.49 per cent of the whole. For the three years, 1866, '67 and 1869, the whole number of deaths reported was 69,816, of whom 35,301 were under five years of age; which is 50.57 per cent. of the aggregate mortality.

In the city of Chicago, from 1843 to 1869, inclusive, the published reports give 63,538 as the whole number of deaths, of whom 32,550 were under five years of age; which is 51.24 per cent. of all deaths reported.

In Philadelphia, from 1858 to 1870, inclusive (except 1859), or in 12 years, 175,683 deaths were reported, of whom 79,519 were under five years of age; which is 45.26 per cent of the whole number.

In Baltimore in 1860, '62, '65, '66 and 1869, five years, the reports of the Board of Health give 26,854 deaths, of whom 12,636 were under five years; which is 47.06 per cent. of the whole number.

In Rhode Island in 1852, '53, '54, '64, '65 and 1868, seven years, the reports give 16,060 deaths, of whom 5,545 were under five years; which is 34.52 per cent. of the whole number.

In the city of Providence in 1865, '66, '67 and 1870, four years, the reports give 4,470 deaths, of whom 1,540 were under five years; which is 34.45 per cent. of the whole number.

I have not within my reach complete files of the Boards of Health of our different cities, or I might give a synopsis of them bearing upon this point; but the results would be simply cumulative of those given, and of what has been stated.

Fortunately, for our race and the country, this decimating rate of mortality among the young is not equally great in the smaller towns and in the rural districts of the United States. Indeed, the healthfulness of the country as compared with the cities is in such marked contrast in this respect that, instead of the percentage of all deaths being greater under five years of age, as in cities, the percentage is largely reversed; and even when the whole mortality of the United States is considered in the aggregate, the small mortality among children in the rural districts is sufficient to overcome the unfavorable reports of cities, and presents the following proportions as shown by the United States census:

Census.	Total mortality of the U. S.	Mortality under five years.
1850	323,272	123,211
1860	392,821	168,285
1870	492,263	203,213

It is, therefore, fair to infer from these data, which confirm individual experience, that there are causes operating in cities unfavorable to the health and lives of children that do not exist, or manifest themselves so disastrously, in

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the country. The causes that enfeeble or destroy human life in infancy are so manifold—constitutional, moral and hygenic—that I will not attempt to enumerate them here; they are patent to all reflecting minds, and are constantly referred to in health reports.

That a considerable percentage of the infantile mortality of cities could, under more favorable circumstances, be prevented, is, I believe, the settled conviction, not only of physicians, but of the parents of these innocent victims.

A great part of this mortality, which I believe to be avoidable, occurs in what is known as the "heated term"—a period of special dread to parents with young children—comprising the months of June, July, August and September.

Whenever the thermometer rises and remains for any considerable length of time above 80°, derangement of digestion among infants living in such an atmosphere is very liable to occur. Milk and all animal substances used as food rapidly deteriorate in quality in regions of high temperature, and unless great care is taken become unfit diet for infants. The infantile stomach is particularly susceptible, and the child, by its sufferings, will speedily show the bad effects of the least departure from pure, fresh and wholesome food or water. Persistence in the use of food that has caused disordered digestion is sure to develop cholera infantum, or some other grave form of disease. High temperature is everywhere recognized as one of the chief provoking causes of diseases of stomach and bowels, particularly among children under two years of age, whether nursed at the breast or artificially fed. These diseases in their inception are frequently mere disturbances of digestion, caused by heat, or by the deterioration of food or the unsuitableness of their diet.

According to the weekly mortuary reports of our large cities, the diseases of this class alone are referred to as the cause of over twenty-five per cent. of all deaths occurring during the summer months; and the mortality among children under five years of age alone increases the death-rate in cities from one-fourth to one-half over the other months of the year.

As heat seems to be the constant attendant, if not the chief cause of the "summer complaints" of children, and consequently great mortality among them, it is obviously an element to be taken into special account; and, therefore, it is desirable to provide at least for those who are actually sick, quiet apartments or homes, where they can have free ventilation and pure air, of a moderate temperature.

Whenever these conditions can be secured for such patients their digestive functions are quickly restored, and the child is no longer sick. The free excursions of a day to the country, or the public parks, for the poor with their sick children, recently inaugurated in the city of New York and in Philadelphia, will, if the exposure and fatigue is not too great for the suffering little ones, be of infinite service to them, restoring health to many a languishing child, that may be thus rescued to live and bless the promoters and benefactors of this charity.

At all events, this movement has, in a special manner, directed attention to the great want, and to the dangers of infantile life in our cities. But the measure does not go far enough. The child has to return at night to its home in the heated city, which is, perhaps, a small, crowded, badly ventilated room, with furniture and clothing saturated with foul smells, where it will soon lose any benefits it may have derived from the day's airing.

If these excursions prove to be of any benefit to sick children, as I believe they will, how much more positive and substantial a result would be gained by a residence of a couple of months in the country, where pure air, good water and wholesome food, with out-door life, could be enjoyed until the oppressive warm weather should have passed.

At first it would seem impossible for the poor to avail themselves of any mode of life—even if it should prove efficient for the preservation of the lives of their children—that must take the child with its mother or nurse away from their homes and out of the city.

But perhaps the first point of importance to be settled in such a question is, would a removal from the city to a healthy rural district preserve the lives of any considerable number of children, who if not removed would perish? This inquiry will be promptly answered by nearly every one familiar with the course and treatment of infantile diseases, in the affirmative.

If, then, the measure proposed has real merit, and gives reasonable promise of lessening infantile mortality in cities, it is the duty of some one to point out a feasible plan for carrying it into practice.

Is it probable the poor would avail themselves of such means as are here suggested for the preservation of their children, at a nominal cost or without expense, when it would disarrange their ordinary domestic plans, and sepa-

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rate the wife temporarily from the husband, to whom her services are essential in the mode of life?

My judgment is, that the parental instinct will always be found equal to the necessities of the occasion, ready to accept and endure any temporary inconvenience, and to act in accordance with the best matured judgment of the profession for the preservation of the lives of their children.

Next, what kind of an institution or scheme commensurate with the wants of a large city, in this regard, could be inaugurated that is really practicable and worthy of the indorsement of the medical profession, the encouragement and patronage of legislators and philanthropists?

I believe that a free park or camping ground, a sort of sanitarium of one or two thousand acres in extent, selected with reference to its healthfulness—at an elevation above malaria—its accessibility, the abundance of pure water, with well shaded walks and play-grounds, to be improved by cheap tenements free to all who have such children, as a summer residence, would in a great measure supply the *desideratum*.

The rich can always leave the cities and find healthy country retreats for their children, but the poor cannot without aid. No special interest has hitherto been manifested by any city for the health of the families of this class of the community, and no boarding-houses or summer resorts suited to the wants of the poor, as far as I am informed, have ever been opened, and it is very questionable if they, with their manners and style of dress could at present find accommodations in any considerable number near any of our cities.

Where could sites suitable for the purposes indicated be found? I would answer that a search will develop the fact that there are plenty of them sufficiently accessible to all our cities.

A situation on navigable water, or on a line of railroad, should be preferred. Elevation, too, is particularly desirable, as it removes the danger from malaria and secures a cooler temperature for the greater part of the twenty-four hours.

Every 400 feet of altitude above tide in this region approximates to being in a temperature equal to that found at one degree of north latitude. It has been ascertained that the thermometer falls one and a quarter degree for every 300 feet of perpendicular ascent.

It is probable that the best results would be obtained for a sanitarium of this kind on some elevated ridge, or mountain spur, above the line of malarial influence, where the air is pure and cool, the water good and abundant, where provisions are cheap, and where the normal temperature during the summer months does not for any considerable period of the day range above 85 degrees.

I feel that it is the duty, not only of large cities, but of individual states and the nation, to do whatever is possible to preserve the lives of the great army of innocents that are now annually sacrificed by a disregard of the laws of health, and the impecunious condition of a majority of parents of the laboring class in our large American cities, who are unable to remove them, even when sick, to the country during the heated term.

I therefore suggest as a measure to meet this urgent want, that each of our large cities secure one or more extensive tracts of land suited to the purpose, in an elevated region, and improve them in a manner suitable for a free park for the purpose here indicated.

Special care should be taken with all the improvements, so as to insure free and complete ventilation. Good underground drainage should be made, so as to keep the park free from any annoyance from closet deposits, slops and waste water.

The parks should be under the immediate supervision of a medical and civil police, to preserve order and salubrity, and should either be so large or so numerous as never to be crowded (as that would establish the evils of city life); and all the improvements of the grounds should be made with a view to encourage and enable the children to be kept most of the time in the open air.

The grounds should be properly laid out with shady walks and drives, and improved in every way that could conduce to health, by the erections of cabins, cottages and boarding-houses, for the accommodation of mothers and nurses, with their sick children, during the summer months.

It might and would be proper for cities to contribute means to send patients to the park; and in some cases support by contributions sick and destitute children and their mothers while there.

The opening of free parks as summer resorts for the poor is, I believe, entirely feasible, and in a humanitarian view deserving of the most serious consideration. To the statesman the measure must present an encouraging prospect for the preservation of human life, the increase

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of population aud national prosperity. When we consider that the census of 1870 shows that there is in the city of New York but one child under 15 years of age to every woman between the ages of 15 and 50, when there ought to be three, this question assumes a still greater importance.

In the selection of suitable sites for such parks, much valuable information as to elevations, temperatures, humidity, etc., of the various localities near our Atlantic cities may be had by consulting the records of the U. S. Signal Service Bureau.

My idea is, that the park should be free to all who have sick children, and that persons while there should be permitted to live in tents or cottages, and in such style as their means and tastes might justify, if they do not violate the laws of health or incommode their neighbors—the main purpose of the institution being to secure, by a healthy rural residence, the restoration to health and the preservation of the lives of the children of the poor suffering from, or threatened by, diseases incident to, and aggravated by the excessive heats of summer in cities.

It has long been the practice of city physicians to send their young patients to the country during the summer, whenever their parents can afford the expense, as almost the only means of saving their lives.

At Oakland, on the Baltimore and Ohio R. R., where the elevation is 2,700 feet above tide, and at least 1,700 feet above malaria, there were on the 18th of July 12 or 15 infants, with their mothers or nurses, sent there by physicians of Baltimore, Washington, Cincinnati and other cities, in a most debilitated and dangerous condition from cholera infantum, all of whom made recovery without the aid of medicine.

Mr. Daily, who keeps the Glade House, and has resided there for the last 14 or 15 years, tells me that great numbers of infants are brought there every season, in a rapidly sinking condition from cholera infantum and its kindred diseases; and in all his superintendence of the house but two children have died of these complaints, they expiring within the first twenty-four hours after their arrival, It is a common remark at the hotel, that a child will recover who lives over the first day after its arrival on the mountain.

The physicians of the place, Drs. McComas and Bartlett, the first of whom has practiced there for 13 years, corroborate these statements, and further assure me that cholera infantum as a disease is unknown among the children of the resident population.

Although the Glade region of the Allegheny Mountains is undoubtedly healthy, and would possess many advantages for a summer residence, I do not think that I would recommend the selection of a site for a park of the kind suggested so remote from the Eastern cities, or at a point where the rainfall is so great during the summer.

It is probable that a region, or regions, every way suitable for the purpose, can be found at points either on the Blue Ridge or some of the mountain spurs nearer our coast cities.

The table supplies in the Allegheny and Blue Ridge districts of Pennsylvania and Maryland are abundant, and of the best quality, and furnished at exceedingly moderate prices. The best of butter costs there from 15 to 20 cents per pound, eggs from 8 to 12½ cents per dozen, beef and mutton 7 cents per pound. These or very similar prices rule in other mountain districts.

The views advanced in this paper I have in various ways and at different times brought to the attention of physicians and others, and here present them more in detail, in the hope that they may be subjected to the judgment of others, and to assist in solving the important problem of how to lessen the great waste of human life that is annually taking place among young children in American cities.

Human Friction Matches.—Of phosphorus, every adult person carries enough (1¾ pounds) about with him in his body to make at least 4,000 of the ordinary two cent packages of friction matches, but he does not have quite sulphur enough to complete that quantity of the little incendiary combustibles. The phosphorus exists in the bones and in the brain, and is one of the most important constituents in the body. Every school-boy is acquainted with those strange metals, sodium and potassium, for he has seen them flash into a brilliant flame when thrown upon the water. The body contains 2¼ ounces of the former, and half an ounce of the latter metal—enough for all needed experimental purposes in the schools of a large city. The 12 grains of magnesium would be ample in quantity to form the "silver rain" for a dozen rockets, or enough to create a light which, under favorable conditions, could be seen for a distance of twenty miles.

When two men quarrel both are in the wrong.

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The Song of Cold Water.

TRANSLATED FROM THE *Naturarzt*.

WATER-HATER! water-hater!
Let us now thy creed assail;
God the Lord created water—
Who makes coffee, wine and ale?
Can, then, what is made by creature
Better than God's works avail?

Drink pure water, healthy water,
If from pain and grief you'd fly;
Drink pure water, freshest water,
If sweet health you would enjoy;
Clear and cold and sparkling water,
From God's spring without alloy.

Wait for spoon? no! seize the treasure,
'Tis life's beverage so bright;
Drink it with o'erflowing measure,
Drink by day and drink by night;
Drink in evening's quiet leisure,
Drink when breaks the morning light.

Wash yourselves in coldest water,
Old and young, and man and wife;
So shall all rise clean and cleaner
Every morning of their life;
Shrink not from the flowing stream,
With life, and health and beauty rife.

Use yourselves to coldest bathing,
Man and wife, and young and old;
Strong in health, it shall not hurt you,
Try it with a spirit bold;
Bathe, then, where it coolest welleth,
Out in mountain, wood and wold.

Thus they bathed, our strong forefathers,
In Arminius' epic time,
When Rome's eagles vainly battered
'Gainst Germania's youthful prime,
And a Cæsar's empire, shattered,
Bloomed again in Northern clime.

Far too long ago this custom
Vanished from the German race,
And with it the mighty sinews,
And the freshness of the face;
Chills us every wind that blows
In winter's cold and dark embrace.

True it is that thousand doctors
Reign supreme o'er great and small,
Manfully they hold stout battle
With the pains that us enthral;
Yet it seems to me that knowledge
Without water soon would fall.

Now see how the doctors gather,
Multiplying by our pain;
When with one disease they grapple,
Oft they sow the seeds of ten;
All their knowledge seems directed
To effeminate our men.

Is there nothing, then, shall save us
From the universal pain?
Is this world ruled by the demons?
Lies its Maker 'mongst their slain?
Can the curse not be evaded
Which life's errring path doth stain?

No!—He lives, the wise Creator,
Nothing has He made in vain;
Once o'er water moved His Spirit,
Still It hovers in the rain;
Water had Its earliest blessing
For man's use, not for his bane.

No room now for hesitation,
Sternly check temptation bold,
Swear to hate the baleful goblet,
Drink pure water, bathe in cold;
Earth its use shall then recover,
Germans shall be those of old!

* Dr. Wolbold, the editor of the *Naturarst*, adds the following note: "In the year 1865 I gave a biographical memoir of Dr. Oertel, Professor at Ansbach, on the occasion of the centenary of his birthday. He was a skillful hydropath of the first excellence, and died on the 16th of May, 1850. I now present to the readers of the *Naturarst* a "Poetical Greeting in Praise of Water," written by his eldest son, Charles Oertel, a youthful-hearted old man of more than seventy years, who has both theoretically and practically walked in his father's footsteps, and is at present living at Wursburg. I hope it may meet with their indulgent approbation."

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The Cure of the Insane.

BY WILLIAM R. ALGER.

THE question arises, what can be done to cure, or at least benefit, the unfortunate victims of mental maladies? I will contrast that which is done—which ought not to be done—with that which ought to be done—which is not done—in the interests of humanity. In the first place, the tendency is to crowd the insane in large numbers into great castles of agony and terror, growing constantly larger and larger, where affliction is hidden from the gaze of society, and sorrow forgotten. In a single instance in Great Britain, fifteen hundred demented ones are herded together in one asylum. The agglomeration of such vast masses of morbid states in the whole gamut of disorder, madness and disease must be productive of evil, and only evil. Dr. Connolly says that human life could not furnish any condition so malignant and frightful as that of a man, or number of men of all states of disease, plunged into one of these vast receptacles of disorder. And yet when a man is untuned in his present state you cast him into one of the direst confusion, to harmonize him!

And then the patients have too general treatment, when each case really demands special study. Two or three physicians, with three or four or five hundred patients—every one of whom through routine it is made a point to visit every day—cannot, of course, give to each new case the care and investigation which it rightfully demands. The attempt is put forth at first to classify the new patient as to whether he be a maniac of the dangerous or incipient order or not, and his symptoms are afterward watched from day to day, but without sufficient time being allowed the physician to take up and unravel the intricacies of this disturbance in the unwinding thread of human life.

The third great evil and wrong in our asylums is, that economy is made the first consideration in all things; economy of expense, of sympathy and care. The first consideration ought to be the comfort and cure of the patients, treating each one's case on its own peculiar merits. Those in authority should ever make use of the best means, or openly confess that they cannot be got, and not mislead the public with the idea that everything *is* furnished and done in the asylums for the comfort of the insane, when comparatively nothing is really done there in this direction.

In the next place I complain that these sad retreats are made doubly repulsive by their being converted into prisons—far, far more prisons than hospitals. High walls, keys and bolts at every turn, keep up the illusion of fixed confinement for crime, rather than temporary retention for purposes of cure. Why, sometimes a patient, in order to obtain a little walk in the open air, has to pass through eight or ten doors, in each of which the key grates with a harsh and melancholy sound. It is fearful! The sternest and most vigilant watch is kept up at all times, and at every point, to such an extent that a universal and chronic sense of suspicion and fear belongs to the sphere of an asylum, where charity and love should be the predominating principles. A patient invited to go a few days for a rest in some quiet country retreat, is astonished and terrified to find himself a helpless prisoner, confined with bolts and bars from freedom and hope. There is no reason for this state of affairs save the traditional rule of these institutions. It is enough to make a sane man mad! The more he complains the worse for him; every new complaint being set down as additional evidence of his aberration and madness. It is a cruel wrong, in most cases, to imprison the insane. Friendly kindness and persuasion are generally sufficient, and have failed only in the rarest instances of correctly governing the subjects of insanity. To be freed from the terrible pressure of a forcible coercion would be the divinest boon to the majority of these unfortunates. None should be committed to prison simply because insane. They should be confined only when dangerous to themselves or friends; and when confined it should be in hospitals, if possible, of their own choice, but never as prisoners. Ten times the liberty now allowed in our asylums could be beneficially given; and I hope the day will finally arrive when the asylum system will itself give way to a better state of dealing between man and man concerning the subject of insanity and the insane.

Again, not only are asylums abused by making prisons of them, instead of hospitals, in the treatment of the insane, but a darker use sometimes converts them into veritable prisons indeed. There are many cases where persons not insane are wickedly committed by fraud, and

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held in the closest incarceration there. What abuses may not be expected under such a state of things? I do not impugn the integrity of the trustees of our asylums; but where the numbers to be attended are so vast, and the system of routine is so firmly rooted, the opportunity for abuse is frightful, even under the most careful surveillance on the part of the managers.

That perfectly sane persons have been frequently incarcerated in these prisons is a fact too patent to admit of denial. In July, 1872, an article was published by Dr. R. W. Parsons, Superintendent of the New York State Lunatic Hospital, in the Psychological Journal, wherein it is stated that "since the year 1847 no less than one hundred and twenty-five persons who have been committed to the New York Lunatic Hospital as insane, have been discharged as perfectly sane. During a single year forty persons have been discharged from American Asylums as not having been insane at the time of their admission." This is authority which would seem quite to the point. One of these cases was that of a man who was induced to sign a check for his savings in favor of some person who had rendered nothing in return; he was confined at the instigation of said person receiving the money; was discharged after several weeks incarceration as not insane in the full sense of the term; went to the individual who had defrauded him of his property and demanded his money, and was immediately reincarcerated as a lunatic through the influence of that worthy personage. Several other parallel cases have occurred, proving that the arrest and virtual imprisonment of persons of property by interested parties was a perfectly feasible plan. The State of Massachusetts says through it laws that if a man be incarcerated in an asylum he may have judgment passed upon his condition provided he will demand a writ *de lunatico inquirendo*. But how is he to get it? The man is perfectly helpless if the principal of the asylum sticks to it that he is insane. The man is locked up as securely as if in a prison, denied access to friends, and surrounded by keepers and others already prejudiced against his sanity by all the power which traditional usage brings in its train. More safeguards are needed, for once inside the asylum every presumption is against the patient, and there is virtually no help. It would seem that a law upon the statute book should carry with it also the means of its own enforcement.

The inauguration of a reform in the management of asylums, whereby men who understood correctly the business for which they were engaged should be chosen for visiting trustees. Those now occupying that post were, in the majority, *dead heads*. They came, hurried acquiescently through all the departments, took the word of the physicians without a murmur, as if supreme authority, and would give no ear to the complaints of the patients, who had a right to expect from them sympathy and assistance. There should be a board of visiting trustees, who should have the freedom of all the asylums at all times. The more wealthy, the more respectable, the higher the social position and intelligence of the trustees, they less fit they are for the duty laid upon them, because they impose upon the public through their supposed importance and acumen. What is needed is a class of intelligent men who will look at things not from the fashionable view, or through the prejudices of steady routine and fixed custom, but upon their merits at first hand.

The deadly idleness and monotony which prevail in our asylums induce a condition not only unfavorable to cure, but which is the fruitful parent of added forms of disease and aberration. Visitors from outside, who go in by chance and see each man in his place, say how charming and beautiful it is; but let them be subjected to the same stagnation, the same unbroken, monotonous round of duty for a week or a month, and its charm would be lost to them. The patients, left to themselves, to the action of every morbid fancy or passion, and the reflex action of the atmosphere of suspicion which surrounds them on every side, cannot fail of wandering further from that harmonious action of bodily and mental functions which it is the avowed purpose of the hospital to restore.

The next thing in the treatment of patients in our asylums, is the total suppression of the individual will to the dictation of others, whereby he is forced to do everything in accordance to rule, and in obedience to prescribed and unyielding forms. The *will* was the weak point in the insane, and it was of the greatest importance that it should be strengthened by cultivation. The will, representing the *consensus* of the brain, is disturbed or lost. It needs to be revived. Give him something to choose; let him do what he desires, if he does not do harm. I would recommend some plan, such as gymnastics, military drill, etc., which should break the deadly monotony, and awaken the dormant powers of the individual, thus giving vent to the accumulated nervous energies which, if not thus guided off in safe chan-

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nels, make their appearance eventually in explosions and outbreaks which, under the present system, met at once with the most violent and barbarous repression, which was the worst thing that could be done. If a straight jacket were put upon a man, and his hands tied to his side, when he was being wrought upon by the over stimulated nerve centres of his being, the harmonious co-ordination sought to be brought about would fail of being attained; the pressure would increase with mathematical precision, and it was a wonder if the superexcited patient did not die under the murderous outrage.

Take a poor fellow whose pulse is at one hundred and forty a minute, who has not slept for eight days, and tell him to keep still, and what is the result? He says he cannot. What then? Instead of endeavoring to calm his feelings, to soothe his terrible agitation, he is seized and held forcibly, while his strength is sufficient to tire two or three powerful men, or bound in some immovable position, which, under the circumstances, is enough to kill him. It is a murderous outrage which can be witnessed as still in vogue in our best asylums. I do not rehearse these scenes to the prejudice of the honest intentions of the heads of these institutions, but they were inevitable as long as, under the present system, one man was placed at the head of several hundred, and so much had to be left to the attendants, who, instead of receiving a proper and systematic training for their work, or possessing any adequate knowledge of the simplest disease, were mostly raw men hired at twenty-five dollars per month from the surrounding country. Instead of this violent repression and prison-like discipline and confinement, a spirit of kindness should be brought into play. Perfect freedom should be allowed the friends and relatives to see the patients; and they should be allowed, as far as is safe, to go out at will. Open the windows and draw up the curtains; let in the light and fresh air; and, above all things, do away forever with the chronic suspicion and terror which surround and pervade these institutions, and bring in a system for the amelioration of the patient where rule and usage will no longer supersede thought and action, and formality take the place of soul!

Dr. Legrand Du Saulle, of Paris, a celebrated French physician, author of some fourteen works on the subject of insanity, has said in one of his volumes, published in 1871, that "the doctrine of classification and cause of mental diseases has made immense progress in the last thirty years, but the doctrine of their cure is still in the background. Many more of the insane can be cured, I believe, and that rapidly, if the physicians will consent to make a clean slate of the traditions of the past, and resolutely abandon the beaten paths of unintelligent routine." The first step to a cure, I consider, would be a regular and disciplined life which should stimulate the patient to self-exertion in the desired direction; walks in the free air, the enjoyment of gardens, and whatever else might be calculated to develop the latent powers of reaction. This is lamentably missing in the present system, where, abandoned to their own morbid imaginings, the patients found their world in long, dim corridors, flanked by doubt and distrust and canopied with fear and repression. At Somerville it is customary to furnish, by way of amusement for the patients, one ball in a month for six months in the year, during which the inmates, accustomed otherwise to stillness and quiet, were suddenly precipitated into a startling maze of glaring lights, whirling figures and exciting music. This, I think, is of no advantage to those under treatment, because of the shock inevitably attending it, which disturbs and aggravates their symptoms, instead of allaying them. If the plan were followed of giving them music and dancing half an hour twice a day, it would tell, and some good results would be produced.

The motto written over the door of every asylum should be: "Earnest to cure, reluctant to retain;" but in my opinion the one which would most clearly convey the operation of the present system would be: "Obedient to routine; anxious to retain to the last possible moment."

Another difficulty in the case is, that the form of medical practice with reference to the insane was so widely different from that applied to any other grade of sufferers, that it led to the establishment of a class spirit, which naturally brought on a conflict between the superintendents of the asylums and the professional gentlemen outside. The superintendents take the position of defenders of their patients in our criminal courts, and deserve great credit for their divine work in this particular. But they are addicted to too great an extent to prejudice against practicing physicians outside their jurisdiction. I think one of the bad phases of the present hospital system was the denial by the constituted authorities of the

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entry into our asylums of family doctors, whose presence was desired by those who, perhaps, had been accustomed to their treatment for years. This is wrong, and in some cases results in extinguishing in the breast all hope of recovery. If the patient has a family physician, and desires his presence, he should be allowed to visit him. This clique spirit has attained to such dimensions that the doctors making insanity a specialty had withdrawn themselves from the great American society of medicine, in establishing one for themselves.

The spirit of investigation is not to be reprehended, neither is the pride of acquired learning and experience to be held as culpable; but I would have these great special departments of science—which should be cultivated to the utmost—meet once each year and compare views, to the improvement and widening out of the conceptions of their disciples through such mental contact, that all might be co-ordinated together in systematic harmony. This is the great *desideratum*.

The human race, if ever brought to its redemption, will be brought there by the universality of points in which all can agree. Science is the one thing in which all who know it agree; the laws of mathematics are the same to the Christian and the Pagan, the bond and the free, the rich and the poor. Beginning on that centre of universal co-ordination, the particular knowledge developed by each specialty, blending with all the rest in a harmonic sum, will at last bring the whole human race into one family, one solidarity, in which the redeeming power of the whole will operate in every component atom.

LESSONS FOR THE CHILDREN.

BY THE EDITOR.

LESSON XVIII.

THE GLANDS.

Our lesson to-day is about the glands. Which of you boys and girls can tell what a gland is? Very few, I think. Did you ever have a good crying spell? No doubt you have—every child knows what it is to cry. The great tears will come in spite of every effort. Now where do tears come from. From the eyes you say? True enough they do seem to come from the eyes; but I am afraid that this is not quite true. Where in the eye is there any cup to hold tears, any spring running over with them? There is a tear fountain over each eye, rather out from the middle, and this tear fountain is a gland. The word gland is from the Latin word *glandula*, which means an acorn. They are more or less round, soft, and exist in various parts of the body.

A gland is any organ which secretes from the blood any fluid, such as the tears, or the saliva of the mouth. The name of the gland which secretes the tears is the lachrymal gland. The word lachrymal means tear, and so the two words together mean tear-acorn, or tear-gland. It is about as large as an almond, but lying between a hard bone above, and the hard eyeball it is flattened out some. A little artery brings blood into the gland, and a little vein carries away what is not needed. The work of the gland is to secrete, or separate, from the blood the tears. Tears are mainly water, and a little salt, and perhaps a trifle of other matter in addition. The tears after they are made are carried by several little ducts, or channels, onto the eyeballs. Their use is to keep it moist; but when we cry more tears are secreted than are needed to keep the eyeball moist, and so they run over. There is another duct in the lower inner corner of each eye to carry the tears down into the nose. Did you never notice after crying how the nose often runs, too?

Now I have given you a pretty good idea of what a gland is. I will tell you of some of the other glands.

1. There are about twenty very small glands in the lower eyelid, and thirty in the upper one, which have an opening on the edge of the lid. These glands secrete a thick fluid, that spread out on the lid tends to keep the tears from running over too easily.

2. The mouth, too, is abundantly supplied with glands. Every part of the lining mem-

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brane of the mouth is supplied with small ones that pour out a fluid; but there are several large ones. There is the parotid situated near the angle of the lower jaw, which sometimes gets inflamed and gives you the mumps. Then on the inside of the lower jaw there is another large gland, and under the tongue still another; all together secrete the fluids of the mouth which we call the saliva. The saliva, as you can easily see, is different from the tears in taste and quality. It is estimated that about three pints of saliva are secreted in a healthy man daily. When we eat it flows very abundantly. Take a hard, dry cracker into your mouth and see how soon it is made moist and fit to swallow. The use of the saliva is to dilute the food and begin the process of digestion. Then away in the back part of the mouth are glands that secrete a kind of fluid which coats over the food as we swallow it, so it may pass more easily into the stomach.

3. The largest gland in the body is the liver. It weighs several pounds and secretes bile.

4. The kidneys are two large glands situated on each side of the spine. They secrete the urine.

There are a multitude of small glands located in different parts of the body; but those I have told you about are quite as many as you need to know of now.

QUESTIONS.

1. Where do the tears seem to come from?
2. And where do they really come from?
3. What is a gland?
4. From what is the word derived?
5. And what does that mean?
6. What does lachrymal mean?
7. What then does lachrymal gland mean?
8. How big is it?
9. How is it supplied with blood?
10. What duty does it perform?
11. What is the composition of tears?
12. What is done with the tears after they are made?
13. What is their use?
14. How are they disposed of afterward?
15. How is it about crying?
16. How many glands in the lower eyelid?
17. What do they do?
18. What are the large glands in the mouth called?
19. What have they to do?
20. What is the mumps?
21. How much saliva is secreted daily?
22. What is the use of it?
23. Which is the largest gland in the body?
24. What does it do?
25. What is said of the kidneys?

EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

LEAVES AND HEALTH.

I. In what way do leaves on growing trees influence health?

ANSWER.—In various ways. First, in absorbing the carbonic acid and giving out oxygen. The air of forests is thus clearer and more invigorating than the air of towns, and it is partly for this reason that city people love in summer to go to the woods. Then, again, the shade of trees is grateful in summer to the tired and weary. So, too, the eye grows strong from the effect of trees. Nor is this all. It has been demonstrated that every square inch of leaf lifts 3-500 of an ounce every twenty-four hours. Now a large forest tree has about five acres of foliage, or 6,272,640 square inches. This being multiplied by 3-500—the amount pumped by every inch—gives us the result—2,252 ounces, or 1,176 pints, or 294 quarts, or eight barrels. The trees on an acre give 800 barrels in twenty-four hours. An acre of grass or clover, or grain, would yield about the same result. The leaf is a worker, too, in another field of labor, where we seldom look, where it works for the good of man in a most wonderful manner. It carries immense quantities of electricity from the earth to the clouds, and from the clouds to the earth. Rather dangerous business transporting lightning; but it is particularly fitted for this work. Did you ever see a leaf entire as to its edges? It is always pointed, and these points, whether they be large or small, are just fitted to handle this dangerous agent. These tiny fingers seize upon and carry it away with ease and wonderful dispatch. There must be no delay; it is "time freight." True sometimes it gathers up more than the trunk can carry, and in the attempt to crowd and pack the baggage the trunk gets terribly shattered, and we say the lightning struck the tree. But it had been struck a thousand times before. This time it was overworked.

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DECAYED TEETH.

II. Should a decayed tooth be filled before the cavity becomes large?

ANS.—Yes. It is very injurious to the living pulp of a tooth to be exposed, and this will surely result from a large cavity.

BOILS AND TOOTHACHE.

III. Do boils ever cause toothache?

ANS.—Rarely; but a boil on the lip, or over some of the branches of nerves that supply the teeth might cause toothache, even if the teeth are sound. In such cases do not pull the tooth, but wait till the boil is cured, when the trouble will disappear.

TREATMENT OF TUMORS AND CANCERS.

IV. What treatment is advisable for tumors and cancers?

ANS.—This varies with circumstances, but in a general way electricity is one of the most useful agents in their removal and cure. So useful is this agent in not only tumors and cancers, but in many other affections.

ELECTRICITY.

V. Can an intelligent person learn to use the electrical machine to advantage?

ANS.—Yes, with study and practice; and it would be well for persons not physicians to own and learn to use the machine. In many conditions of debility great benefit come from it.

John Wesley said, over one hundred years ago: "How much sickness and pain may be prevented or removed by this unparalleled remedy."

There should be an electrical machine in every family where there is intelligence enough to learn to use it.

ELECTRICITY IN THE HUMAN BODY.

VI. Is there any electricity in the human body?

ANS.—Yes, but in a state of disease less than in health. Healthy persons do not part with the electricity of the body so readily as sickly ones do. In cholera the electricity of the body passes off so rapidly that death soon intervenes.

PASSING ELECTRICITY FROM ONE BODY TO ANOTHER.

VII. Can one person give off his own electricity to another?

ANS.—Some persons have the power to generate a great deal of electrcity in their own persons, and give it off by contact with those who generate less. In this way often magnetizers may cure the sick.

ARTIFICIAL SUPPLY OF ELECTRICITY.

VIII. When the electricity in a body is insufficient is there any source of artificial supply?

ANS.—Yes, just as there is an artificial supply of heat when we are cold, in the fire. Many persons are benefited by a daily dose of electricity. Others are not benefited.

TEMPERATURE.

IX. Is the temperature of the body the same in Greenland as in the Torrid zone?

ANS.—Nearly the same. There may be one or two degrees of difference. In all warm-blooded animals the temperature is nearly the same in all climates and seasons; but in cold-blooded animals the temperature varies with the temperature of the medium in which they live.

WHERE IS HEAT GENERATED?

X. Where is the heat of the body generated—in the lungs, heart, brain, or where?

ANS.—There is no fireplace in the body for generating all the heat, but the power exists in every tissue and organ. Every part performs its share, and this is why the heat of the body is so uniform.

AMOUNT OF HEAT GENERATED.

XI. How much heat is generated in the body daily?

ANS.—This differs with different persons, and in different climates and conditions of health; but in the climate of Paris a man weighing 140 pounds would, on the average, generate enough daily to raise seven pounds of water from the freezing to the boiling point.

EATING AND WORKING.

XII. Are great workers great eaters, too?

ANS.—Generally they are, though the amount of food taken is no index to the amount of work that can be done. Great eaters, however, are not always great workers.

BANGING THE DOOR.

XIII. Why does an angry man or child when going through a door bang it after him?

ANS.—To use up a certain excess of nervous force that has been generated in the brain. It is much better to let off the steam in this way than to repress it. It is better still to use up this force in work than in banging the door, or in any other way.

WHAT IS THE ELECTRIC CAUTERY?

ANS.—When a very intense current of electricity is passed through a short wire it heats it to a very high degree of heat. In this state it is used as a cutting instrument for removing tumors, which it does as well as with a knife, more quickly, and with less pain and no bleeding.

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UNCONSCIOUS STRAIN.

XIV. Is unconscious strain of the eyes injurious?

Ans.—The eyes may, like a rope, be strained for a long time without one feeling it, but all such strain is bad for them; and so is unconscious strain of any kind, on any part of the human frame. Avoid all unconscious straining, either of the eyes, or nerves, or muscles.

ACUTE MANIA.

XV. What is the hydropathic method of treating acute mania?

Ans.—By hot foot baths, hot sitz baths, cold applications to the head, and the wet sheet-pack. Dr. Shepherd, of Colney Hatch Asylum, reports a case treated by the wet sheet pack with perfect success, as follows: "A lady 19 years of age, who had recently recovered from scarlet fever, was attacked by acute mania. Previous to the attack of scarlet fever she had always enjoyed good health. Her family relations were happy, and there was no hereditary tendency to insanity. I was called on the second day of the attack, as the local practitioners had been baffled in their attempts to meet the emergencies of the case. As I ascended the staircase I heard vehement declamations and shouts, associated with as obscene language as the nastiest mind could desire. The bed-room was strewn with different articles; one of the windows had several panes broken; the mirror was also broken; the whole place was a Babel of confusion. Wild and flushed, this young, mad and furious lady, with disheveled hair and torn night dress, sat up in the middle of the bed. As I approached her she sprang out of bed, and ordered me to leave the room instantly. With a menacing aspect, spitting at me, she stood with dilated nostrils and heaving breast, fierce as a lioness at bay; the incarnation of ungovernable passion. After a half hour's exertion we succeeded in packing her in wet sheets. Five minutes afterward she asked for water, which was eagerly gulped down. It was the first, either of liquids or solids, that she had taken for two days. In ten minutes our young lioness was asleep, and breathing calmly. At the end of two hours she was unpacked, rubbed dry, and put in clean linen. She refused nourishment, but fell asleep quickly, and slept quietly for five hours."

TURKISH BATH FOR CANCERS.

XVI. Would it be dangerous for a person with cancer to use moderately the Turkish bath?

Ans.—No. The following cure has recently been reported in The Kansas City Times:

"Mr. A. C. Chace, a well-known resident of Kansas City, discovered about six years ago a small red spot growing upon his left cheek immediately below the eye, which soon developed into an undoubted cancer. For two years past Mr. Chace has had the best medical advice, and tried every remedy suggested by his physicians, without gaining any benefit, the cancer continually increasing in size until it threatened to eat away his face. Finally a council of physicians recommended the use of the knife as the only means of relief; but this resort involved so much danger that it was not employed. At this point the proprietor of the Turkish baths in Kansas City thought that he could benefit the cancer, and Mr. Chace determined to try the effect of his treatment. He was placed in the Turkish bath for two hours each day for seven days, with a temperature at 170, when it was found that the cancer was loosening. A poultice was then applied, and in a few days the ugly protuberance dropped out, root, fangs and all, leaving nothing except the indentation in the face where the cancer had been. The cure was pronounced complete.

HINTS ABOUT DIET.

XVII. Please give us a few brief hints about diet.

Ans.—The following from The World are worthy of attention: "Most chronic diseases, and many acute ones, are produced at the table. As a rule, no fluid of any kind should be taken at the table, especially if the stomach is weak. The stomach should never be overloaded; not more than two or three articles should be taken at one meal; no stimulants used before eating. Tobacco arrests digestion. Milk is the best diet for infants and children. Tomatoes, with cream and sugar, are healthy and nutritious. Bread and butter is the staff of life, and easily digested. Too much salt irritates the stomach. Colds are frequently produced by drinking hot tea, and exposure afterward. Late suppers induce heart disease. Pastry and cake constipate the bowels. Boiled potatoes are not so healthy as baked ones. Fruits are to be eaten at breakfast and dinner. The stomach requires much rest to be healthy. Purgative medicines weaken the bowels. Cheerful conversation promotes digestion, and anger prevents it."

OUT OF MISCHIEF.

XVIII. How can I keep my children out of mischief?

Ans.—The surest and easiest way to keep children, and grown folks, too, for that matter,

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out of mischief is to keep them busy. Require a certain amount of work, and provide an abundance of recreation. The trouble is, that babies begin to throw out the hands and feet after things within reach, and we begin by saying "No!" and holding them back; and by-and-by, when the little ones get out of our arms, and we say "No, no!" they turn faster than we can follow them to something else, only to be again reproved, until they are glad to get out of our sight and find vent for their activity in liberty.

Begin rather by supplying the out-reaching fingers, and as the desires develop and enlarge, keep the busy brain and body interested in harmless ways, and there will be little cause to fear that they will go far astray. Does the task seem irksome? It can be made so, but even then is it not better to be wearied in seeking employment than to be broken-hearted over a ruined son or daughter? And it need not be so irksome. Let mothers and fathers interest themselves in their childrens' tasks and sports, and the elders will keep young and the children will keep happy.

HALLUCINATION.

XIX. Does the use of tobacco ever produce hallucination?

Ans.—Yes. Blatin quotes from Erhart some curious cases of this nature: "M. X., 46 years old, nervo-sanguine temperament and apparent good health, had often experienced embarrassment in speech and motion after indulging in tobacco. One fine day in the country, when the air was calm and the sun was shining brightly, he was astonished to see a heavy rain shower, which appeared to be driven towards him by a violent wind. He extended his hand, no drops were falling, his clothes were quite dry; but at the same moment he was struck with violent palpitation. He threw away his cigar, the violent beating of his heart ceased, and the vision disappeared. Many times this phenomenon recurred. He abandoned tobacco, and the accidents quickly disappeared. Thinking himself perfectly cured he commenced again to smoke, but the palpitations and visions reappeared. Complete abstinence was his only safety. The step from temporary hallucination to chronic lunacy is not very great, and we find on record the case of a man who became insane, and whose recovery was due to a lucky accident which barred him from access to his usual indulgence." Druhen narrates another noteworthy case. A middle aged man, in good health and of steady habits, was sent by his employer to Paris, charged with papers of considerable value. The importance of the trust preyed very much upon his imagination, and led to an attack of melancholy mania. He was under medical treatment for about three weeks, during which time his natural desire for tobacco disappeared. On his recovery he again commenced smoking moderately. A few months after another attack commenced, and he began to talk once more of the (imaginary) risks and dangers he had encountered on his journey to Paris. Druhen saw he was upon the brink of insanity, and his first prescription was "no tobacco." Under this regime the man has since enjoyed the best health.

HYDROPHOBIA.

XX. Was ever a person with hydrophobia cured, and how?

Ans.—Joseph Bell, aged 38, a man of sound health, was attacked in the month of June, 1836 with the current symptoms of hydrophobia. A consultation of several physicians were called, and the following treatment adopted: The patient was placed on a straw bed—with four assistants to hold him during his paroxysms—in a small bedroom, a large kettle of hot water placed at the foot of the bed, and hot bricks thrown into the kettle; and in the course of twenty minutes the temperature of the room was 140° Fahrenheit. A sweating followed, which, in half an hour, was profuse. The paroxysms, which had occurred once in fifteen or twenty minutes, began to abate in frequency and violence, and after one hour entirely ceased. Cold water had been frequently offered him, which he could not swallow, and which invariably threw him into fits; but after an hour sage tea, with milk in it, was given him, which he swallowed easily; and in the course two hours he drank two quarts. The sweating continued profuse for four hours, when the heat was diminished; but the sweat was not allowed to entirely subside for four days. No medicine was given during the treatment, excepting an injection to move the bowels on the second day. After the first five hours an eruption appeared over the whole surface, which exfoliated and disappeared in about four days. Mr. Bell remained in his usual health till about four years since, when he died from congestion of the lungs.

We have no doubt but similar treatment would cure other cases, if taken in time.

It has been beautifully said that "the vail which covers the face of futurity was woven by the hand of mercy."

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

TIT FOR TAT.

I met a maid on yon hill-side,
And she was fair to see—
"Give me a kiss, fair maid," I cried—
"Give me a gift," said she.

"A gift within a purse I have,
The purse is in a pack,
The pack in keeping lieth safe
On my good charger's back.

"And my good charger cometh not,
While on the hill I roam,
He lieth in his stall, I wot—
My charger is at home."

"And yet thou'dst have a kiss, good sir
My lips would give it thee,
But they are locked full fast good sir,
My mother has the key.

"And my good mother is not here,
While on the hill I roam,
Just as your trusty steed, good sir,
My mother is at home." [Once a Week.

LEARN TO WORK.

Let us make our best exertion,
Wheresoe'er our lot is cast;
Real greatness lies in action,
Not in idleness or rest.

All the world's great benefactors
Were its hardest workers, too,
And the record of their labors
Shows to us what we might do.

'Tis not possessions that ennoble,
Not earthly riches, or worldly gear;
But a mind that meets all trouble
Without faltering, without fear.

Better, then, give over whining
At what may seem a hapless fate;
Learn to work, leave off repining,
And on fortune cease to wait.

William J. Larmer.

WHERE HAST THOU STAYED SO LONG?

No one is so accursed by fate,
No one so utterly desolate,
But some heart, though unknown,
Responds unto his own.

Responds, as if with unseen wings,
An angel touched its quivering strings,
And whispered in its song—
"Where hast thou stayed so long?"

LINES TO MY LADY-LOVE.

By a Common-place Person.

"To thee, were I a humble bee,
I'd hourly wing my honeyed flight.
To thee, were I a ship at sea,
I'd sail, though land were in my sight.
To thee, were I a pussy cat,
I'd spring, as though 'twere on a rat!

"To thee, were I a stickleback,
I'd swim as fast as fins could move.
To thee, were I a hunter's hack,
I'd gallop on the hoofs of love.
But, as I'm but a simple man,
I'll come by train, love—if I can!

Punch's Almanac.

FOUR DOCTORS.

Four doctors tackled Johnny Smith,
They blistered and they bled him;
With squills and anti-bilious pills,
And ipecac they fed him.
They stirred him up with calomel,
And tried to move his liver;
But all in vain—his little soul
Was wafted o'er the river.

BE NOT IMPATIENT.

Be not impatient, O, soul!
Thou movest on to thy goal.
In the universe thou hast thy share,
Be not afraid, but trust;
Thou wilt suffer nothing unjust.

DISCONTENT.

Abuse and selfish discontent
From hell is sent.
A noble discontent is given
Direct from heaven.
That cowardice and low desire
Fill with unrest;
This the soul's longings that aspire
To find the best.

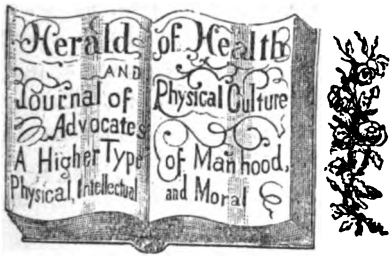
DEVOTION.

Devoutly look, and naught
But wonders shall pass by thee;
Devoutly read, and then
All books shall edify thee;
Devoutly speak, and men
Devoutly listen to thee;
Devoutly act, and then
The strength of God acts through thee.

Ruckert.

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EDITORIAL DEPARTMENT.



NEW YORK, MAY, 1873.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

☞ THE PUBLISHERS *do not hold themselves as indorsing every article which may appear in* THE HERALD. *They will allow the largest liberty of expression, believing that by so doing this magazine will prove to be more useful and acceptable to its patrons.*

☞ *Exchanges are at liberty to copy from this magazine by giving due credit to* THE HERALD OF HEALTH AND JOURNAL OF PHYSICAL CULTURE.

TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

SMILES AND FROWNS.—Herbert Spencer defines laughing to be the overflow of nervous energy produced by a sudden check of its flow in its accustomed channels of thought and emotion. The excess must discharge itself in some other way, and so it produces the delightful convulsion of laughter. Laughter and smiles indicate a pleased state of the mind, and the ability to maintain through life a face beaming with delight, is a trait of character more desirable than the possession of all the gold of Ophir. But it is not so much of laughter and smiles that we propose to write, as of frowns. Laughter is a thoughtless expression; a frown is a thoughtful one, mingled with slight rage. For instance, if a person gets into his mouth any bad tasting article of food, he is quite sure to frown. A man who encounters any difficulty in carrying out a pet scheme, or is foiled in his efforts, frowns. Stammerers generally frown in speaking. The obstacle to free speech annoys them. A man frowns in putting on a tight boot, and keeps on frowning as long as the boot pinches his tender foot. Men of all races frown when bothered and perplexed in thought, and some people are such habitual frowners from habit that they are a nuisance wherever they go. The origin of frowns is in infancy. The babe frowns before it laughs. It frowns when unwell, when angry, hungry, in pain, jealous and displeased. It is no wonder that little children frown when things go wrong with them, just as they scream and cry; but it is a great wonder that in after years, when they give up screaming and crying, when they would be ashamed to go about bawling and whining, that they keep on frowning worse than when they were babies. Now a moderate amount of frowning may be good, as is a very small amount of crying; but we are of the opinion that the world would be quite as well off a thousand years to come, if on the 1st day of May, 1873, every man and woman should vote frowning a nuisance, and make up their minds to have no more of it. Those in favor of this method of procedure will vote "Aye."

We have one friend—only one—whom we have never seen frown. He is a large man, weighing nearly two hundred pounds, has good digestion, and enjoys, as most people do when they have it, good health. His face always beams with joy, and he carries a smile or a laugh into every waking hour. Wherever he goes people gather around him to catch the beams of light and joy that stream from his countenance. Like the great sun he warms and invigorates all who go near him. He is

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not learned in art and science. He knows lit- of the great intricacies of nature, or the ways of the world. He knows how to laugh, but not how to frown. We never saw the latter on his face. He sees fun and frolic in everything. What most people would cry over he laughs over. He never tells sober stories, but only funny ones. If he were to write a book (we wish he would) he would have it bright and cheery, not sad and sorrowful. In the most profound thought he would mix a bit of pleasantry—something to bring a smile. We wish we knew more such men, but they are scarce. Nature is lavish of frowning men and women, but not of sunny ones. Would it not be well to petition her for a larger supply.

THE CHARITY OF THE FUTURE.—Charity differs in different ages and climes. In one it gives indiscriminately to all who ask; in another it gives little or none, and only to those who are worthy of it. Among certain savage tribes it is considered a charity to let the aged and infirm die, rather than live on in weakness and misery after the bodily powers have failed. Among the ancient Greeks charity did not forbid, but allowed the killing of weakly children, that they might not burden the state. Indeed charity, which is only another word for love to mankind, approved of it. There is now agitating the public mind in England a new form of charity, which proposes to deal kindly with paupers, incurables, lunatics and hopelessly diseased persons by sending them away from this world of tears to the sunny land beyond the skies. In this way England is to be relieved of a great burden. So absurd seems the whole scheme to most people that it excites a smile rather than indignation; but nothing is more certain than that the movers of this plan are in earnest. One eminent physician read a paper not long ago before the Anthropological Society, in which he argued that it would be a mercy, a real charity, to give chloroform, or nitrous oxide, or some other anæsthetic to all the incurable maniacs in England, and set their fettered spirits free. Humanity stands back aghast at the idea. It is so different from the spirit of Christianity which bids us bind up the broken spirit and heal the sick body. For our part we have little sympathy with the method of dealing with the poor and downcast which is now proposed. True, we must do something to rid the world of lazy, worthless human beings; and in the charity of the future this will gradually be brought about by putting an end to the propagation of rascals and paupers. How it will be done is not yet certain; but we believe it will be done. Meanwhile let us "labor and wait."

TEACHERS OF HEALTH.—In the year 1856, Dr. Powell wrote for the editor of The Scalpel an article ending with these sentences: "Oh, that we had as many teachers of human science as we have clergymen, what an increase of health, happiness, longevity and practical morality society would soon display. Men and women would soon learn to marry, multiply and live according to physiological law, and to die as faithful servants to law as they now do criminals to it." Nearly twenty years have passed since Dr. Powell wrote these lines. It is true the number of health teachers and health journals have greatly increased. Books are multiplying on every subject connected with human life, and methods of living have been greatly improved; but still there is need of more teachers, who shall go to every town and hamlet, and carry the knowledge of the laws of life to every human being. Not every one is called to do it, not every one is fitted to do it; but are there not some of the readers of this journal who, from love and from talent can enroll themselves in this list.

The qualifications for teachers of health are many. They should possess good health and the gift of teaching, and abundant knowledge.

No more useful and honorable employment is open to the right person than this.

It would not be out of place for ministers and physicians to enter this field. The former, with their great zeal for doing good, could often

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preach sermons of greatest value on those topics connected with health and temperance. Many of them now do, and we hope their number will greatly increase.

EMOTIONAL EXCITEMENT.—Serious and calm intellectual work is only very slowly destructive to the nervous health, while emotion, unless directed into proper chanels, is highly destructive to the nervous system. The conventional ideas as to the propriety and utility of certain kinds of emotional excitement do visibly bear, in the experience of medical men, the very worst fruit possible. It is true that the emotion of repentance for real guilt is not a thing to be shunned; but the habit of self-torturing introspection, which has been so often and so earnestly recommended as a means of spiritual purification, is so far from promoting the existence of a high and pure standard of ethics, that it ruins both body and soul, in the majority of cases, wherever it is applied on a large scale. More especially the habit of inducing unnecessary emotional excitement in young persons who are just entering the dangerous period of commencing sexual life, is so morally and physically injurious to a large number of individuals, that it may well be questioned whether those individuals might not have been more safely left in total neglect and ignorance.. Persons who are very emotional should develop the muscular system very carefully, and thus furnish an easy outlet to the nervous energy which would otherwise produce exhausting emotions.

NURSERIES.—In the large cities the houses of the wealthy classes, where there are children, have nurseries. They are rooms appropriated to the care, and the sports of children. They may be elegant or plain; filled with toys and childrens' playthings, or free from them. They are the places for much or little sport, as the nurse is wise and the children many and healthy, or few and sickly. In the city a nursery is almost a necessity; but in the country such a thing is hardly known except where there is great wealth and city customs have been adopted. Most country children have the kitchen for a nursery, and the barn or yard for a play-house. It is not difficult to decide which is best. Both have advantages and disadvantages; but all things considered the child of the country, other things being equal, is greatly favored over his city cousin, and grows up more sturdy, if less mannerly and graceful. When city and country life can be combined the advantages are still greater. It is an old adage that "God made the country, but man the city;" but we do not think this altogether true. God dwells in both places, and most where there is most goodness and least evil.

LOSS OF HEAT IN COOKING.—It has been computed that, in common domestic fires, seven-eighths and even more of the heat capable of being evolved from the coal passes up the chimney unapplied, so far as mere warming is concerned. About half of the heat generated by the fire is supposed to be carried off with the smoke, about one-fourth in the constant current of the warmed air of the room into the chimney, between the mantelpiece and the fire, and the remainder of the loss of heat is represented by the unburned particles of carbonaceous matter in the smoke.

COMPANIONSHIP AND HEALTH.—To be perfectly healthy and happy, one must have friends. They need not be in large numbers, but one, two or three kindred spirits with whom one can commune, share joys and sorrows, thoughts and feelings. In choosing friends great care is necessary. There must be some common bond of sympathy. It may be moral, intellectual, or social; but even these bonds are not sufficient. A weakly person, an invalid, needs healthy friends; a timid one, brave friends. Those who are blessed with good friends are healthier and happier than those who have none.

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DRY EARTH DISINFECTANT.—The dry earth cannot be surpassed as a disinfectant, and possesses many advantages over all others. It is the cheapest material, without odor, does not contain poisonous salts as do all other disinfectants, is an excellent fertilizer, requires but a small quantity to effect the object, and the apparatus may be easily applied in sick-rooms, both in public, private, and school-houses. Common street earth, charcoal, peat, bone-black and clay are all good materials for the absorption of bad odors, and for promoting the decay of organic matter. Dry earth acts both physically and chemically, for it absorbs the water which would otherwise assist in fermenting the organic matter. If dry earth is intended to be used as manure, plaster of Paris, burnt lime and similiar vehicles may be mixed with the street earth.

BREAD MADE WITH SEA WATER.—M. Rabuteau calls attention to the importance of this article. In the first place it is very pleasant eating, also increasing the appetite and stimulating digestion. On board ship bread so prepared has been found very conducive to the preservation of health during long voyages. It also exerts important medicinal effects, especially in dyspepsia. In phthisis and in scrofula it is said to be a powerful adjuvant.

FALSE TEETH.—According to The British Medical Journal, these caused the death of Cuvier, and were a source of discomfiture to Lord Brougham.

Cuvier, impatient at the interruptions of that perpetual interrupter, M. Glais-Bizoin, in the National Assembly, rose so impatiently to answer him that he jerked his teeth out on the floor, and stooping not less precipitately to pick them up fell head foremost and struck his head against the floor so heavily as to give rise to the illness which proved fatal to him. M. Glais-Bizoin, then a very young man, promised himself to abstain from his fatal habit of incessantly interrupting; but he was incorrigible.

Lord Brougham, during the proceedings of a great meeting of the Social Science Association, of which he was president, was stopped in the middle of a speech by his teeth falling out. After groping on the floor, and on presently resuming his speech, he made the best of the incident by observing, "our teeth are sources of trouble from infancy to old age."

THE WOUNDED IN BATTLE.—A meeting has been held lately in London, for the purpose, amongst others, of urging upon the different governments of the civilized world a plan for the amelioration of the sufferings of the wounded in battle. The sentiment of the age certainly demands that the wounded shall receive every possible succor as well from enemies as friends; but without a definite understanding between the combatants as to the means to be employed this succor must always be precarious and ineffectual. The medical department should, under all circumstances, be regarded as neutral, and permitted to discharge their duties undisturbed by either the victory or the defeat of their respective armies. Let this principle be adopted by all the nations and held inviolate, and much useless suffering will be avoided.—*Medical Journal.*

This is good as far as it goes; but humanity demands that nations should settle disputes so as to avoid wars, and then there will be no wounded in battle to look after.

COLD BATHS IN RHEUMATIC FEVER.—Dr. Sydney Ringer, in The Practitioner, reports the case of a girl aged 22, in whom rheumatic fever was treated by means of cold baths, and by the application of large-sized ice-bags, with evident benefit and an entirely successful result.

Twenty-five years ago, when the hydropaths introduced this method, they were considered fanatics and quacks. How time changes our beliefs and practices.

"WOMEN IN COUNCIL."—This article came to late for insertion in its proper place. It will be found at the end of our Editorial Department.

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Books.—What Women Should Know, by Mrs. E. B. Duffy. Philadelphia; J. M. Stoddart & Co.

This is emphatically what its sub-title indicates, "A Woman's Book about Women." To make an extract from its synopsis of contents: "This book tells women simply what they ought to know, and without knowing which they cannot perfectly fulfill their womanly destiny."

It begins with the physical development of the girl into womanhood, and points out all the dangers which attend it, and mistakes which may be committed. It treats of love, courtship and marriage; of maternity, and the rearing of children. It discusses fully marriage and its relations, and does it in a style pointed and forcible, and at the same time void of offence. Its instructions to the young wife and expectant mother are more full and minute than are to be found in any other book of its class which we have examined. It teaches how many of the inconveniences and much of the suffering and distress incident to the parturient state may be avoided. In this connection we may say that it indorses the doctrines laid down in the little book issued from this office, entitled "Parturition Without Pain." It is a book which contains many new ideas and explodes many old ones, and which we should think no married woman can afford to be without.

Expression, its Anatomy and Philosophy, by Sir Charles Bell. New York; Samuel R. Wells.

This is a new American edition of a work of which the first edition was published in England about half a century ago. The observations of the author which he gave to the public in the earlier editions are further verified in those more recently issued, by the study of the works of the old masters in painting and sculpture; for which purpose he visited Italy in 1840. A new impulse has been given to studies of this kind by the publication of Mr. Darwin's book on Expression of the Emotions in Man and in Animals, noticed in the March Herald of Health. This edition of the work of Sir Charles Bell is handsomely printed, on tinted paper, and contains a great number of illustrations in the best style of the wood engraver's art.

Bacchus Dethroned, a Prize Essay, by Frederick Powell. New York; National Temperance Society and Publication House.

This is the essay which took the first prize (of seventy guineas), offered by Mr. James Teare for the best essay on the subject of which it treats. It forms a book of 268 pages, appears to be an exhaustive treatise, and as such is really worthy of a much longer notice than our space at present will allow us to give it. We may say, however, that this is not a mere rehash of the hackneyed and stereotyped arguments with which the readers of temperance literature are familiar; and that, although some things are said here which we have heard before, there are also many things which are new, and some old arguments presented in a new light. The conclusion to which the author comes is that intemperance can be prevented only by legislative action. The book will doubtless do good, but we question whether intemperance can be eradicated by the means proposed. The only way to cure intemperance is to discover and remove the causes upon which it depends. These are many and various; but the doctrine advocated by ourselves, and by most people of the hygienic school, is that there is an intimate connection between the eating of stimulating and highly seasoned food and the drinking of stimulating beverages. We do not look for any very great reform in the drinking usages of society, until their dietary habits can be reformed and placed upon a more physiological basis.

The Mother's Register—From the French of Prof. J. B. Foussagrives, New York; G. P. Putnam & Sons.

This is the title of a unique little book, the object of which is to induce mothers to keep an accurate account of the state of health of their children, and any variations therefrom. It

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teaches the manner, the system, after which this is to be done. The book is divided into two parts, the one being a register for the boys of the family, the other a register for the girls. Here are to be recorded under their appropriate heads, first, the descent and consanguinity of the child; then its birth, nursing, weaning, teething, learning to walk, etc., with their incidental circumstances, follow in their proper order. It is a system of bookkeeping as applied to the health and development of the children of the family household.

Family Thermometry, by Edward Seguin M. D. G. P. Putnam & Sons.

This is a little treatise which might suitably accompany the work last noticed. It is intended for the use of mothers, and teaches them how to use the thermometer in ascertaining the temperature of the human body, and what the variations above or below the normal standard indicate. The thermometer used is one made expressly for the purpose, in which the *norme*, or health point, the zero, occupies the center of the column of mercury, and is termed the physiological thermometer. Besides its practical teachings the book contains much valuable information in regard to temperature in its relations to health.

HEALTHFULNESS OF MELONS.—There are many persons who think that melons are unwholesome during the heated term, but there really is no more wholesome fruit. They should, however, be eaten fresh and fully ripe, and then they will make a most agreeable addition to the breakfast and dinner table of every family in the United States.

VARIETIES.—The chief variety of watermelon grown for the New York market is the Mountain Sweet, which is thought to equal, if not to excel all others, in size, quality and productiveness.

The Persian watermelon was introduced by Bayard Taylor, from the shores of the Caspian Sea, and it possesses a delicious flavor, while its rind is only half an inch thick. If taken off from the vine before it is quite ripe it will keep far into the winter.

The Russian-American is a hybrid melon, produced from the Persian and the Mountain Sweet, and it is unsurpassed in size, sweetness and crispness of flesh by any other variety. It ripens three weeks later than the Mountain Sweet, and is invariably solid, while the rind is very narrow.

Japanese Cream-fleshed is an entirely new variety, with a very thin rind, and its flesh is of a light lemon color, while the seeds are mottled, white and black. Its flavor is most delicious, its flesh very solid and sweet, and it bears profusely and keeps well. I have tasted these melons on the prairies of Nebraska, and can vouch for their superiority. No garden should be without them.

Muskmelons yearly increase in flavor and in size. Sill's Hybrid is a new variety, with salmon-colored flesh. It is early, very sweet, and of a fine flavor, and should always be cultivated in preference to any other bright-fleshed variety.

The green-fleshed varieties are, however, much the most desirable for home or market culture. The Hackensack is the variety most raised for the New York market. It is of a large size, bears well, and is in every way desirable.

Skillman's Fine Netted is the earliest of all the green-fleshed melons. Its flesh is very sugary, firm and thick, and of a fine flavor.

Sutton's Tom Thumb melon is the smallest variety grown, and also the handsomest, as it is marked like a pomegranite, with alternate stripes of claret color and orange. Its flesh is green, and very juicy. It fruits plentifully.

Alton Nutmeg melon is a large and very productive fruit, of good quality, and has found much favor at the West.

Allen's Superb is a green-fleshed melon, very sweet, and of a delicious flavor.

By a careful selection of seeds, all varieties

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can be much improved in the space of two or three years.

Don't let the planting season for melons pass without preparing the ground for a large supply.

Life of a Queen.—Queen Victoria, at Balmoral, has good times in a quiet way, much as other well-to-do people have; goes out driving with only one attendant, smiles and nods to those she meets, many of whom she knows; and is never annoyed by gazers, unless they happen to be strangers eager to behold the face and form of royalty. Accompanied by her ladies, she makes frequent picnic excursions in the woods, or on the hillside should it be handier. Materials to make a fire and cooking utensils are taken in the carriage, and tea is made on the greensward and handed round, without any ceremony. At these afternoon "teas" the Queen has no special chair of honor, her seat often being on the trunk of a tree, with her cup in her hand, or any other casual resting-place that may turn up conveniently. In this way every corrie and glen within reach of Balmoral has been visited by the royal family.

Poisonous Effects of Zinc Utensils.—The Union Medical calls attention to a new source of danger, caused by the substitution of zinc for tin in the manufacture of pots and cans by traveling tinmen. Zinc sheet can be had at seventy centimes the killogramme, while tin costs three or four francs; so that it is often substituted in the making of kitchen utensils. The fraud cannot be detected by the eye, but a little vinegar boiled in the vessel will immediately corrode the surface; and if done in the process of cookery, will give rise to symptoms of poison.

Who Live Longest?—A recent paper read to the Institute of Actuaries, of Great Britain, on the influence of occupation on health, shows the ratio of mortality per thousand persons from 25 to 60 years of age to be, of gardeners, 10.4; masons, 17.6; beer-sellers, 21.5 wine and spirit merchants, 25; inn and hotel keepers, 27. Between the ages of 45 and 65, 32.2 hotel keepers die for every 14.5 gardeners.

If you want to live long don't sell liquors for a living.

Summer Boot.—The bottoming of the boot for summer should be of medium thickness; but rather thicker than thinner so that the surface of the sole of the foot may be thoroughly protected from the ground and stones.

The disadvantages of a thin sole is that it produces callosities at the bottom of the foot, at the parts corresponding to the bones where they are formed.

A Gymnastic Teacher.—An insane woman rushed into a school-room in Richmond, Va., a few days ago, and told the affrighted teacher that she had been sent to teach the children gymnastics; and the teacher being afraid to object, she put the children through a series of the most extravagant antics, after which she quietly departed.

Vigor of Old Age.—It is related of Arnauld, the Jansenist, that he wished his friend Nicole to assist him in a new work. Nicole replied: "We are now old, is it not time to rest?" "Rest," exclaimed Arnauld, "have we not all eternity to rest in?" Dr. Samuel Miller says: "There is no doubt that the premature dotage of many distinguished men has arisen from their ceasing, in advanced life, to exert their faculties, under the impression that they were too old to engage in any new enterprise of industry."

Number of Physicians.—According to the last census there are in the United States 61,858 male physicians and surgeons, 525 female physicians. How many persons are there in the United States who are teachers of the laws of health? The census makes no reply.

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Women in Council. No. 3.

EDITED BY BY HOWARD GLYNDON.

THEY met in the room described in No. 2 of these articles, and they are the same ladies, with the exception of Mrs. Younglove, whose baby has just been vaccinated, and the addition of two others, whom we are yet to learn about. Eight o'clock in the evening is the hour, this having been agreed upon at the breaking up of the party whose sayings were described in the April number, as the regular hour of the monthly meetings; it to break up about nine, or half past nine, in order to allow prudent mothers and housekeepers to be home betimes. Mrs. Frailhold might have been sitting by the drop light doing tatting ever since the last we saw of her, for all the change there is in her external appearance. Mrs. Middleweather is comfortably established in the same chair which she sat on then; but Mrs. Younglove's place is occupied by a youthful looking married lady, addressed as Mrs. Furbelow; and close to her sits a still younger lady, Miss Leda Lovelace. Their presence is explained by the fact that they have heard about the "Council" from Mrs. Frailhold, and have asked permission to come to this sitting.

Before H. G., who arrives last of all, has time to say a word she is assailed from all sides thus:

"Has anybody written you any letters to be read in the Council?"

"May we see them?"

"How many are there?"

"The letters! the letters! let us have the letters."

"It has been always said," remarks H. G., slowly and with deliberation producing a little case, "that curiosity is a predominant trait in the feminine character."

"Oh, we haven't got a bit more of it than men have," says Mrs. Middleweather, laughing. "But we do want to see those letters."

"Well, your undue interest in the subject makes me think of great cry and little wool, for I have received but few so far that are at all worth reading. I hope we shall have more when the ladies who read THE HERALD OF HEALTH shall have become familiarized with the plan of our Council.

Now for the first one:

Philadelphia, March 16, '73.

HOWARD GLYNDON: I notice that one of the subjects that you propose to talk about in your department of THE HERALD OF HEALTH, called "Women in Council," is dress. Will you allow me to suggest that we take it up at once, and make it the first question to be discussed. I say "we," because I suppose this letter will constitute me one of the Council, to which you have invited all women. I have not many ideas of my own that are worth putting on paper, and I am not experienced in writing them out; but I will suggest a subject for discussion, and I hope to be benfited by what I may elicit from others on the subject. So far as I understand it, I think that there is something wrong on the dress question among women in most civilized countries, but especially in our own country. Allow me to ask that the subject be first discussed from this standpoint: Do not American women, of all classes, devote too much time, thought and money to dress?

Sincerely yours, ALICE FAIRVIEW.

Immediately there arose among the ladies a series of half audible confidential remarks, freely exchanged and provoked by the letter just read, which was interrupted by the reader with:

"Well, will you have the other letters? or has this one furnished you with sufficient material for discussion this evening?"

"Read them all," says Mrs. Frailhold, "and then we will decide as to what we will talk about first."

This being agreed to, the reader proceeds:

New York, April 12, 1873.

DEAR HOWARD GLYNDON: Shall our first Council talk be about housekeeping? I am a weary woman, worn out by "the greatest plague of life," and I should like to tell of my trials and struggles. We are about to give up our house and go to boarding, because the drawbacks to having a home of our own worry our lives out of us. I feel deeply interested in the first article of "Women in Council," and the second has excited my curiosity. Have you had many letters yet? Mine, I fear, is not good enough to be published. I do not give help; I ask for it. MARTHA MUCHTHOUGHT.

"Let us talk about housekeeping," says Mrs. Middleweather, eagerly.

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"No, let us talk about dress," says Mrs. Furbelow, who looks as if that were the subject she could fully appreciate.

"I think I should like to talk about dress," says the sympathizing Miss Lovelace, seconding her friend.

"Please don't let us talk about anything till the letters have all been read," says Mrs. Frailhold, a little impatiently.

"I think I will not read them all this time, the diversity of subjects will only confuse us," says H. G., folding up the letter just read.

"We cannot possibly discuss more than one subject in an hour, and shall probably want to carry the discussion on, when very important, from sitting to sitting, until we have made something of it. An indiscriminate reading of the various letters would distract our attention from the subject under discussion. Therefore I propose, if you have no objection, to docket them as they come; putting all those relating to some one particular subject under one head and in one package by themselves. For instance, hereafter I shall put all the letters about housekeeping together, and all the letters about dress together; and when a particular subject is under discussion we will first bring out and read the various letters pertaining to it. Then we will talk them and the subject over together. I suppose there will be some letters which won't class, so we will arrange them under the head of 'miscellaneous,' and read them as occasion may require. This one I now hold in my hand comes under that head, I think, and I will read it for your refreshment before we proceed to more serious business. Perhaps, indeed, I should have read it first; but better late than never."

Boston, March 20, 1873.

To the Editor of "Women in Council:"

SIR, OR MADAM—You call yourself Howard Glyndon, I see, and that doesn't indicate whether you are "fish, flesh or fowl," but it isn't hard, from your style of writing, to imagine you striding along in top boots; and from the twang of your talk I have nearly come to the conclusion that you must be a man, although you say "our" two or three times in your last conceited article about *us*, called "Women in Council." Your presumption in trying to talk to women about things that they know much more about than you do, is simply unbearable. I remember your "Corset" article very well, and it shows that you haven't got a grain of sense on the subject. My advice to you is to stop talking about things that you don't understand and to adjourn your council, and either "go west," or take to stump speaking. We women are tired of being talked to, and talked at; we want to be let alone; that's what's the matter with us. We are doing very well by ourselves, and a heap better than you men are, You have an idea that you know everything, and that *we* don't know anything. But just wait till *we* get into the Boston State House, and we'll teach you a thing or two!

ARTEMESIA AYRES.

The person at whom this heavy shot was addressed having somehow managed to keep her mouth sufficiently straight to read distinctly till the signature was reached, now laid down the letter and joined in the general laugh with which it was received; and this was neither low nor short. Mrs. Frailhold at length, with a sudden effort, put on an exceedingly grave face, and called out:

"Ladies! ladies! have we any business in hand, or have we not? How much of the allotted hour have we allowed to slip by without having done anything of importance?"

"Ah," said Mrs. Middleweather, maliciously, "I thought that as it was to be President Glyndon's office to have a sort of general supervision of these discussions, to make talk when it flags, or to hold it in when it overflows limits, that we might run on as we pleased till we were called to order. But I see she isn't any better than the rest of us."

"Indeed," put in Miss Lovelace, "she's worse than any of us, for here she has been tempting us to dilatoriness by furnishing us food for laughter, instead of preserving a judicial dignity of deportment and adhering strictly to the grave duties of women in council."

"We have our reputations to retrieve," said Mrs. Frailhold. "Already we have been accused in the public prints of giving too much time to sentiment and too little to facts."

"Ladies," said the unfortunate H. Glyndon, sadly, "when I proposed, in digger parlance, to 'boss this camp' it was in default of a better head. Since I have borne my honors so illy I propose, for this sitting at least, to abdicate them in favor of Mrs. Frailhold, who has had much more executive experience than I have—seeing that her ability in this way has been cultivated and kept in practice by the simple fact that she has a husband who is very difficult to manage, but whom, nevertheless, she manages admirably."

"Yes, by letting him alone," said Mrs. Frailhold, placidly.

"However that may be," said Mrs. Middle-

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weather, "we all know that you are—what every woman ought to be in her own house—the power behind the throne."

"But," said H. G., "I forgot that the managing of husbands is a tabooed subject in this council. We only aim to fit women to do it. There we stop. Now, Mrs. Frailhold, since you are President *pro tem*, please put the question: What shall we talk about?"

"Dress," says Mrs. Furbelow, who again finds her voice now that something that she can talk about comes up.

"Dress," says Miss Lovelace, reflectively smoothing down a flounce.

"I would prefer to talk about housekeeping first," says Mrs. Middleweather, whose plain black silk, not very new, and made in the most unnoticeable of manners, proclaims that she does not worry her life out on the subject advocated by the other two.

"May be we had better take dress first, on the principle of first come first served; as the first letter that we received was about dress," said H. G.

"I had thought we should get more good out of a long talk about housekeeping in the first place, as it seems to me a more important subject," said Mrs. Frailhold; "but it may be best to adopt the system you propose and take the subjects in the order in which they come—when they are at all worthy of discussion."

"I think," said H. G., "that you are mistaken in supposing housekeeping a more important subject than dress to American women, especially if we look at it from the standpoint proposed by Alice Fairview."

"*Do not American women, of all classes, devote too much time, thought and money to dress?*"

"Things *are* so dear," said Mrs. Furbelow, ruefully.

"Yes," said Miss Lovelace, reflectively taking the olive-green cashmere of her over-skirt between her thumb and fore finger and feeling it with the air of a connoisseur, "to think that this stuff cost me two dollars a yard."

"Ladies," said H. G., deprecatingly, "let us not plunge indiscriminately into this subject, or we may get stuck before we do anything of importance."

"I think," said Mrs. Frailhold, coming up promptly at a meaning glance from the ex-P., to reinforce this last position, "that we had best discuss first the question of Time; secondly, that of Thought; and, lastly, that of Expense."

"Well, if other women give as little of their time to dress as I do," says Mrs. Middleweather, "we should soon settle that part of the subject."

"Tell us how you manage, please," suggests H. G.

"For dresses? Well, whenever I have a new one I have a dressmaker to make it up. But I notice there is not a woman of my acquaintance who has a new dress as seldom as I do. As for the reasons for this, in the firs place, I long ago discovered that it was poor economy to get anything but the best materials. Bargains have no temptations for me. One of my dresses, in the piece, costs from two to three times as much as the goods worn by most women ordinarily. But the materials which they reserve for more ceremonious occasions I wear every day, simply because I find these materials more durable; so that, in the end, it pays me in time, thought, and even money saved, to buy an expensive material for an every-day dress. If I cared to wear a more flimsy material at all, I think I should show better judgment in reserving it for occasional use only, and in not putting it to continual wear and tear, since it would hardly pay for the cost of making; it would give out too soon. On the other hand, by having a dress of a rich, costly material I almost save the price of an inferior one in the making of it; as its very richness necessitates from one-half to two-thirds less trimming than a cheap dress, and it may be made in a plainer style. Having come to an age when display is not expected of me, I have long been accustomed to confine my wear mostly to heavy black silks. The making of a dress costs me but little time. I buy the stuff and the furnishing myself, and my dressmaker has become used to my ways. The dress is made as plainly as is consistent with the prevailing styles; but I affect no eccentricity in the matter of cut or fit. My ambition is simply to pass unnoticed at first sight; but if subjected to a close scrutiny to have everything about me found to be neat and in good order, though in no way *outre*. However, my dressmaker dare not, for her life, make a dress to pinch me the hundredth part of an inch, for I will be comfortable, and I will *not* be the slave of my clothes! When I have worn a black silk for a year or so as a best dress, it is then ready to be transformed into 'a second best.' I don't think it necessary to go to my dress-maker on this occasion. The dress is unpicked; if necessary cleaned, and then a seamstress, who comes to the house in the spring and in the fall, easily makes it over in the more subdued style befitting a second best. When it is too shabby for a second best I have it

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made over again for rainy days, or as a what you might call a *third best*. Sometimes two old dresses are taken for this purpose. I have also a very comfortable wrapper of black silk, made from the remains of black silk dresses which I considered no longer fit to appear outside of the privacy of my home. But you must bear in mind that all these dresses being originally of the best material, will look well as long as a thread of them is left."

"But, dear Mrs. Middleweather, I should think you would get tired of so much black silk," exclaims Mrs. Furbelow in consternation, glancing complacently at her own rich, plum-colored *gros grain*.

"I should get tired much sooner if a spot on a new dress necessitated turning it, or sending it to the cleaner. If I could not take a splash of mud without ruining it; if, in short, my whole time and attention had to be devoted to keeping my clothes clean. I always pitied the poor children who had to do that; and when, as a girl, I was subject to the same sort of thralldom, I determined that as soon as I was at liberty to dress as I liked I would choose clothes that should be as little trouble as possible to keep clean, while still being lady-like and in good taste."

"Do tell us, Mrs. Middleweather," began Miss Lovelace, when a tap was heard at the door and Bridget opening it and putting her head in, announced: "A gentleman below is waiting for two of the ladies."

"It is Mr. Furbelow, who has come for us," said Mrs. F. to Miss Lovelace, hastily rising.

"And our time is up," said H. G.

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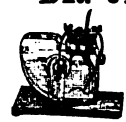
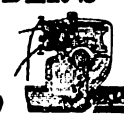
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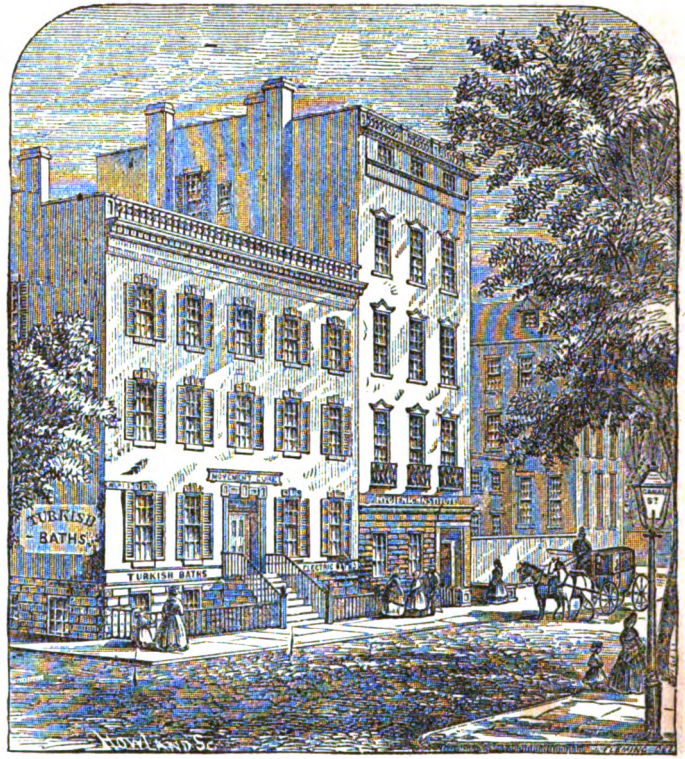
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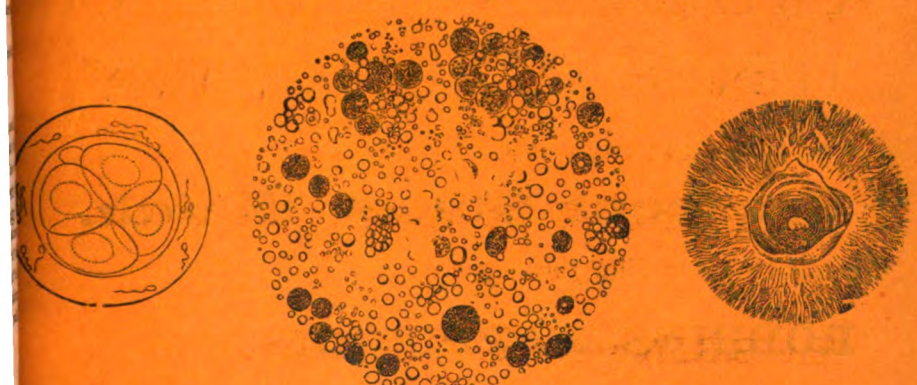


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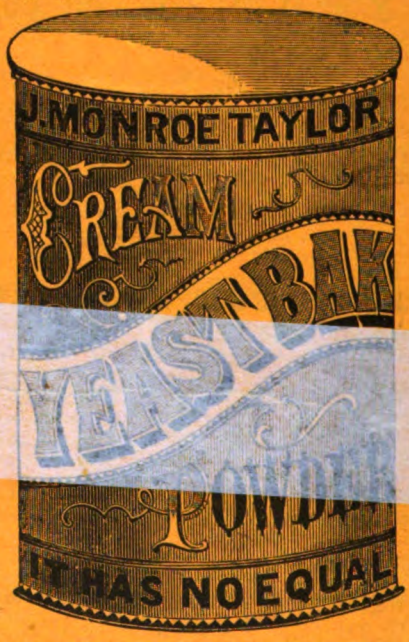
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THE HERALD OF HEALTH,

DEVOTED TO

THE CULTURE OF BODY AND MIND.

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REMARKABLE ESSAYS ON HEALTH AND MORALS,

By Ancient and Modern Writers.

A Covnterblaste to Tobacco.

BY JAMES VI OF SCOTLAND, I OF ENGLAND.*

THAT the manifolde abuses of this vile custome of Tobacco taking may the better be espied, it is fit that first, you enter into consideration both of the first originall thereof, and likewise of the reasons of the first entry thereof into this countrey. For certainely as such customes, that haue their first institution either from a godly, necessary, or honorable ground, and are first brought in by the means of some worthy, vertuous and great Personage, are euer and most iustly holden in great and reuerent estimation and account, by all wise, vertuous and temperate spirits: So should it, by the contrary, iustly bring a great disgrace into that sort of customes which, hauing their originall from base corruption and barbarity, doe in like sort, make their first entry into a Countrey, by an inconsiderate and childish affectation of Noueltie, as is the true case of the first inuention of Tobacco taking, and of the first entry thereof among vs. For Tobacco being a common herbe, which (though vnder diuers names), growes almost euery where, was first found out by some of the barbarous Indians to be a Preseruatiue or Antidot against the Pockes, a filthy disease, whereunto these barbarous people are (as all men know,) very much subiect; what through the vncleanly and adust constitution of their bodies, and what through the intemperate heat of their Climat: so that as from them was first brought into Christendome that most detestable disease, so from them likewise was brought this vse of Tobacco, as a stinking and vnsauorie Antidot for so corrupted and

* We give the above article *verbatim* as it was printed in the year 1604; so our readers can judge of the progress which the English language has made since that time. Many will, no doubt, think there has been more progress in our language than in doing away with the use of tobacco. Even the king's Counterblast proved futile; but his essay is a remarkable one, and will repay a careful reading notwithstanding the quaint language. We are indebted to G. P. Putnam's Sons for a beautiful English edition of this Counterblast, which contains much additional matter on the early history of the weed.

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execrable a Maladie, the stinking Suffumigation whereof they yet vse against that disease, making so one canker or venime to eate out another.

And now good Countrey men let vs (I pray you) consider what honour or policie can mooue vs to imitate the barbarous and beastly manners of the wilde, godless and slauish Indians, especially in so vile and stinking a custome? Shall wee that disdaine to imitate the maners of our neighbour, France (haning the stile of the first Christian Kingdome,) and that cannot endure the spirit of the Spaniards (their King being now comparable, in largenes of Dominions, to the great Emperor of Turkie.) Shall wee, I say, that haue been so long ciuill and wealthie in Peace, famous and inuincible in Warre, fortunate in both, we that haue been euer able to aide any of our neighbors (but neuer deafed any of their eares with any of our supplications for assistance;) shall wee, I say, without blushing, abase ourselues so farre as to imitate these beastly Indians, slaues to the Spaniards, refuse to the world, and as yet aliens from the holy Couenant of God. Why do wee not as well imitate them in walking naked as they doe? in preferring glasses, feathers, and such toyes, to golde and precious stones, as they doe? yea, why do wee not denie God and adore the Deuill, as they doe?

Now to the corrupted basenesse of the first vse of this Tobacco doeth very well agree the foolish and groundlesse first entry thereof into this Kingdome. It is not so long since the first entry into of this abuse amongst vs here, as this present age cannot yet very well remember both the first Author, and the forme of of the first introduction of it amongst vs. It was neither brought in by King, great Conquerour, nor learned Doctor of Phisicke.

With the report of a great discouery for a Conquest, some two or three Sauage men were brought in, together with this Sauage custome. But the pitie is, the poore wilde, barbarous men died, but that vile, barbarous custome is yet aliue, yea in fresh vigor: so as it seemes a miracle to me how a custome springing from so vile a ground, and brought in by a father so generally hated, should be welcomed vpon so slender a warrant. For if they that first put it in practice heere had remembered for what respect it was vsed by them from whence it came, I am sure they would haue bene loath to haue taken so farre the imputation of that disease vpon them, as they did by vsing the cure thereof. For *Sanis non est opus medico*, and the counter poysons are neuer vsed but where poyson is thought to precede.

But since it is true that diuers customes, slightly grounded, and with no better warrants entered in a Commonwealth, may yet in the vse of them thereafter prooue both necessary and profitable; it is, therefore, next to be examined if there be not a full Sympathie and true Proportion betweene the base ground and foolish entrie and the loathsome and hurtfull vse of this stinking Antidot.

I am now, therefore, heartily to pray you to consider, first, vpon what false and erroneous grounds you haue first built the generall good liking thereof; and next, what sinnes towards God, and foolish vanities before the world, you commit in the detestable vse of it.

As for those deceitfull grounds, that haue specially mooued you to take a good and great conceit thereof, I shall content myselfe to examine here onely foure of the principals of them; two founded vpon the Theoricke of a deceiuable apparance of Reason, and two of them vpon the mistaken Practicke of generall Experience.

First, it is thought by you a sure Aphorisme in the Physickes, That the braines of all men, beeing naturally colde and wet, all dry and hote things should be good for them; of which nature this stinking suffumigation is, and, therefore, of good use to them. Of this Argument, both the Proposition and Assumption are false, and so the conclusion cannot but be void of itself. For as to the Proposition, That because the braines are cold and moist, therefore things that are hote and drie are best for them, it is an inept consequence: For man beeing compounded of the foure Complexions (whose fathers are the foure Elements,) although there be a mixture of them in all the parts of his body, yet must the diuers parts of our *Microcosme*, or little world within ourselues, be diuersly more inclined, some to one and some to another complexion, according to the diuersities of their vses; that of these discords a perfect harmonie may bee made vp, for the maintenance of the whole body.

The application, then, of a thing of a contrary nature to any of these parts is to interrupt them of their due function, and by consequence hurtfull to the health of the whole body. As if a man, because the Liuer is hote (as the fountaine of blood,) and as it were an ouen to the stomacke, would therefore apply and weare close vpon his Liuer and stomacke a cake of lead; he might, within a very short time (I hope,) be susteined very good cheape at an Ordinarie, beside the cleering of his conscience

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from that deadly sinne of gluttonie. And as if, because the Heart is full of vitall spirits, and in perpetuall motion, a man would therefore lay a heauy pound stone on his breast, for staying and holding downe that wanton palpitation, I doubt not but his breast would bee more bruised with the weight thereof, then the heart would be comforted with such a disagreeable and contrarious cure. And euen so it is with the Braines. For if a man, because the Braines are colde and humide, would therefore vse inwardly by smells, or outwardly by application, things of hot and drie qualitie, all the gaine that he could make thereof would onely be to put himselfe in a great forwardnesse for running mad, by ouerwatching himselfe, the coldnesse and moistnesse of our braine beeing the onely ordinarie meanes that procure our sleepe and rest. Indeed, I do not denie but when it falls out that any of these, or any part of our bodie growes to be distempered, and to tend to an extremitie beyond the compasse of Natures temperate mixture, that in that case cures of contrary qualities, to the intemperate inclination of that part, being wisely prepared and discreetely ministered, may be both necessarie and helpefull for strengthning and assisting Nature in the expulsion of her enemies; for this is the true definition of all profitable Physicke.

But first, these cures ought not to be vsed but where there is neede of them, the contrary whereof is daily practised in this general vse of Tobacco by all sorts and complexions of people.

And next, I deny the Minor of this argument, as I haue already said, in regard that this Tobacco is not simply of a dry and hot qualitie, but rather hath a certaine venemous facultie ioyned with the heat thereof, which makes it haue an Antipathie against nature, as by the hatefull smell thereof doeth well appeare. For the Nose being the proper Organ and conuoy of the sense of smelling to the braines, which are the onely fountaine of that sense, doeth euer serue vs for an infallible witnesse whether that Odour which we smell be healthfull or hurtfull to the braine (except when it fals out that the sense it selfe is corrupted and abused through some infirmitie and distemper in the braine.) And that the suffumigation thereof cannot haue a drying qualitie, it needs no further probation, then that it is a smoake, all smoake and vapour, being of it selfe humide, as drawing neere to the nature of the ayre, and easie to be resolued againe into water, whereof there needes no other proofe but the Meteors, which being bred of nothing else but of the vapours and exhalations sucked vp by the Sunne out of the Earth, the Sea and waters, yet are the same smoakie vapours, turned and transformed into Raynes, Snowes, Dewes, hoare Frostes, and such like waterie Meteors, as by the contrarie the raynie cloudes are often transformed and euaporated in blustering winds.

The second Argument, grounded on a show of reason, is, That this filthie smoake, as well through the heat and strength thereof as by a naturall force and qualitie, is able and fit to purge both the head and stomacke of Rewmes and distillations, as experience teacheth, by the spitting and auoyding foame immeadiately after taking of it. But the fallacy of this Argument may easily appeare, by my late preceding description of the Meteors. For euen as the smoakie vapors sucked vp by the Sunne, and staied in the lowest and colde Region of the ayre, are there contracted into cloudes and turned into raine and such other watery Meteors. So this stinking smoake being sucked vp by the Nose, and imprisoned in the colde and moist braines, is by their colde and wett facultie, turned and cast foorth againe in watery distillations, and so are you made free and purged of nothing but that wherewith you wilfully burdened your selues; and therefore are you no wiser in taking Tobacco for purging you of distillations, then if for preventing the Cholicke you would take all kinde of windie meates and drinkes, and for preuenting of the Stone you would take all kinde of meats and drinkes that would breede grauell in the kidneyes, and then when you were forced to auoyde much winde out of your stomacke, and much grauell in your Vrine, that you should attribute the thanke thereof to such nourishments as bred those within you, that behoued either to be expelled by the force of Nature, or you to haue burst at the broad side, as the Proverbe is.

As for the other two reasons founded vpon experience, the first of which is, That the whole people would not haue taken so generall a good liking thereof if they had not by experience found it verie souraigne and good for them. For answer thereunto, how easily the mindes of any people, wherewith God has replenished this world, may be drawen to the foolish affectation of any noueltie, I leaue it to the discreet iudgment of any man that is reasonable.

Doe we not dayly see, that a man can no sooner bring ouer from beyond the Seas any new forme of apparell, but that hee can not bee thought a man of spirit that would not presently imitate the same? And so from hand to hand it spreades till it be practised by all

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not for any commoditie that is in it, but only because it is come to be the fashion. For such the force of that naturall Self-loue in euery one of vs, and such is the corruption of enuie bred in the brest of euery one, as we cannot be content vnlesse we imitate euery thing that our fellows doe, and so prooue our selues capable of euery thing whereof they are capable, like Apes counterfeiting the maners of others, to our owne destruction. For let one or two of the greatest Masters of Mathematickes in any of the two famous Vniuersities but constantly affirm, any cleare day, that they see some strange apparition in the skies, they will, I warrant you, be seconded by the greatest part of the Students in that profession. So loath will they be to bee thought inferiour to their fellowes, either in depth of knowledge or sharpnesse of sight. And therefore the generall good liking and imbracing of this foolish custome doeth but onely proceed from that affectation of nouelty and popular error, whereof I haue already spoken.

The other argument drawen from a mistaken experience is but the more particular probation of this generall, because it is alleaged to be found true by proofe that by the taking of Tobacco diuers and very many doe finde themselues cured of diuers diseases, as on the other part, no man euer receiued harme thereby. In this argument there is first a great mistaking, and next a monstrous absurditie. For is it not a very great mistaking to take *Non causam pro causa*, as they say in the Logicks? because, peradventure, when a sick man hath had his disease at the height hee hath at that instant taken Tobacco, and afterward his disease taking the naturall course of declining, and consequently the patient of recouering his health, O then the Tobacco, forsooth, was the worker of that miracle. Beside that, it is a thing well knowen to all Physicians that the apprehension and conceit of the patient hath, by wakening and vniting the vitall spirits, and so strengthening nature, a great power and vertue, to cure diuers diseases. For an euident proof of mistaking in the like case, I pray you what foolish boy, what sillie wench, what olde doting wife, or ignorant countrey clown is not a Phisician for the toothach, for the cholicke, and diuers such common diseases? Yea, will not euery man you meete withal, teach you a sundry cure for the same, and swear by that meane either himselfe or some of his neerest kinsmen and friends was cured? And yet I hope no man is so foolish as to belieue them. And all these toyes do only proceed from the mistaking *Non causam pro causa*, as I haue already sayd; and so if a man chance to recouer one of any disease after he hath taken Tobacco, that must haue the thanks of all. But by the contrary, if a man smoake himselfe to death with it (and many haue done,) O then some other disease must bear the blame for that fault. So doe olde harlots thanke their harlotrie for their many yeeres, that custome being healthfull (say they) *ad purgandos Renes*, but neuer haue minde how many die of the Pockes in the flower of their youth. And so doe olde drunkards thinke they prolong their days by their swine-like diet, but neuer remember howe many die drowned in drinke before they be halfe olde.

And what greater absurditie can there bee, then to say that one cure shall serue for diuers, nay contrarious sortes of diseases? It is an vndoubted ground among all Phisicians, that there is almost no sort either of nourishment or medicine that hath not some thing in it disagreeable to some part of mans bodie; because, as I haue already sayd, the nature of the temperature of euery part is so different from another that, according to the olde prouerbe, That which is good for the head is euill for the necke and the shoulders. For euen as a strong enemie that inuades a towne or fortresse, although in his siege thereof he doe belaie and compass it round about, yet he makes his breach and entrie at some one or few special parts thereof, which hee hath tried and found to bee weakest and least able to resist; so sicknesse doth make her particular assault vpon such part or parts of our bodie as are weakest and easiest to be ouercome by that sort of disease which then doth assaile vs, although all the rest of the body by Sympathy feele it selfe to bee, as it were, belaid and besieged by the affliction of that speciall part, the grief and smart thereof being by the sense of feeling dispersed through all the rest of our members. And therefore the skilfull Phisician presses by such cures to purge and strengthen that part which is afflicted, as are only fit for that sort of disease, and doe best agree with the nature of that infirme part; which, being abused to a disease of another nature, would proue as hurtfull for the one as helpfull for the other. Yea, not only will a skilfull and warie Phisician bee carefull to vse no cure but that which is fit for that sort of disease, but he will also consider all other circumstances, and make the remedies sutable thereunto; as the temperature of the clime where the Patient is, the constitution of the Planets, the time of the Moone, the season of the yeere, the age and complexion of the Pa-

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tient, and the present state of his body, in strength or weaknesse. For one cure must not euer be vsd for the self-same disease, but according to the varying of any of the foresaid circumstances. that sort of remedie must be vsed which is fittest for the same. Whear by the contrarie in this case, such is the miraculous omnipotencie of our strong tasted Tobacco, as it cures all sorts of diseases (which neuer any druggo could do before) in all persons, and at all times. It cures all maner of distillations, either in the head or stomacke (if you beleeue their Axiomes,) although in very deede it doe both corrupt the braine, and by causing ouer quick digestion, fill the stomacke full of crudities. It cures the Gowt in the feet, and (which is miraculous) in that very instant when the smoake thereof, as light, flies vp into the head, the vertue thereof, as heauie, runs downe to the little toe. It helpes all sorts of Agues. It makes a man sober that was drunke. It refreshes a weary man, and yet makes a man hungry. Being taken when they goe to bed, it makes one sleepe soundly, and yet being taken when a man is sleepie and drowsie, it will, as they say, awake his braine and quicken his vnderstanding. As for curing of the Pockes, it serues for that vse but among the pockie Indian slaues. Here in England it is refined, and will not deigne to cure heere any other than cleanly and gentlemanly diseases. O omnipotent power of Tobacco! And if it could, by the smoake thereof, chace out deuils, as the smoake of Tobias fish did (which I am sure could smel no stronglier,) it would serue for a precious Relicke, both for the superstitious Priests and the insolent Puritanes to cast out deuils withall.

Admitting then, and not confessing that the vse thereof were healthfull for some sortes of diseases, should it be vsed for all sicknesses? should it be vsed by all men? should it be vsed at all times? yea should it be vsed by able, yong, strong, healthful men? Medicine hath that vertue, that it neuer leaueth a man in that state wherin it findeth him; it makes a sicke man whole, but a whole man sicke. And as Medicine helpes nature, being taken at times of necessitie, so being euer and continually vsed, it doth but weaken, wearie and weare nature. What speake I of Medicine? Nay, let a man euery houre of the day, or as oft as many in this countrey vse to take Tobacco, let a man, I say, but take as oft the best sortes of nourishments in meate and drinke that can bee deuised, he shall with the continuall vse thereof weaken both his head and his stomacke; all his members shall become feeble, his spirits dull; and, in the end, as a drowsie, lazy belly-god, he shall euanish in a Lethargie.

And from this weaknesse it proceeds that many in this kingdome haue had such a continuall vse of taking this vnsauorie smoake as now they are not able to forbeare the same; no more than an olde drunkard can abide to be long sober without falling into an vncurable weaknesse and euill constitution; for their continuall custome hath made to them *habitum, alteram naturam;* so to those that from their birth haue bene continually nourished vpon poison and things venemous, wholesome meats are onely poisonable.

Thus hauing, as I trust, sufficiently answered the most principall arguments that are vsed in defence of this vile custome, it rests onely to informe you what sinnes and vanities you commit in the filthie abuse thereof. First, are you not guiltie of sinnefull and shamefull lust? (for lust may bee as well in any of the senses as in feeling) that, although you bee troubled with no disease, but in perfect health, yet can you neither be merry at an Ordinarie, nor lasciuious in the Stewes, if you lacke Tobacco to prouoke your appetite to any of those sorts of recreation, lusting after it as the children of Israel did in the wilderness after Quailes. Secondly, it is, as you vse, or rather abuse it, a branche of the sinne of drunkenness, which is the roote of all sinnes; for as the onely delight that drunkards take in Wine is in the strength of the taste and the force of the fume thereof that mounts vp to the braine; for no drunkards loue any weake or sweet drinke; so are not those (I meane the strong heate and the fume) the onely qualities that make Tobacco so delectable to all the louers of it. And as no man likes strong headie drinke the first day (because *nemo repente fit turpissimus*) but by custome is piece and piece allured, while in the ende, a drunkard will haue as great a thirst to bee drunke as a sober man to quench his thirst with a draught when hee hath need of it. So is not this the very case of all the great takers of Tobacco? which therefore they themselues do attribute to a bewitching qualitie in it.

Thirdly, is it not the greatest sinne of all, that you, the people of all sortes of this Kingdome, who are created and ordeined by God to bestowe both your persons and goods for the maintenance both of the honour and safetie of your King and Commonwealth, should disable your selues in both? In your persons hauing by this continuall vile custome brought your selues to this shameful imbecilitie that you are

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not able to ride or walke the iourney of a Iewes Sabboth, but you must haue a reekie cole brought you from the next poore house to kindle your Tobacco with, whereas he cannot be thought able for any seruice in the warres that cannot endure oftentimes the want of meate, drinke and sleepe, much more then must hee endure the want of Tobacco. In the times of the many glorious and victorious battailes fought by this Nation, there was no word of Tobacco. But now, if it were time of warres, and that you were to make some sudden *Cauakado* vpon your enemies, if any of you should seeke leisure to stay behind his fellowe for taking of Tobacco, for my part, I should neuer bee sorie for any euill chance that might befall him. To take a custome in any thing that cannot bee left againe, is most harmfull to the people of any land. *Mollicies* and delicacie were the wracke and ouerthrow, first of the Persian, and next of the Roman Empire. And this very custome of taking Tobacco (whereof our present purpose is) is, euen at this day, accounted so effeminate among the Indians themselues, as in the market they will offer no price for a slaue to be sold, whome they find to be a great Tobacco taker.

Now how you are by this custome disabled in your goods, let the Gentry of this land beare witnesse, some of them bestowing three, some foure hundred pounds a yeere vpon this precious stinke, which I am sure might be bestowed vpon many farre better vses. I read, indeede, of a knauish Courtier, who for abusing the fauour of the Emperor Alexander Seureus, his Master, by taking bribes to intercede for sundry persons in his Masters eare, (for whom he neuer once opened his mouth) was iustly choked with smoake, with this doome, *Fumo pereat, qui fumum vendidit;* but of so many smoake-buyers as are at this present in this kingdome I neuer read nor heard.

And for the vanities committed by this filthie custome, is it not both great vanitie and vncleanenesse that, at the table, a place of respect, of cleanlinesse, of modestie, men should not be ashamed to sit tossing of Tobacco pipes, and puffing of the smoake of Tobacco one to another, making the filthy smoake and stinke thereof to exhale athwart the dishes and infect the aire, when very often, men that abhorre it are at their repast. Surely Smoake becomes a kitchen far better then a Dining chamber, and yet it makes a kitchen also oftentimes in the inward parts of men, soiling and infecting them with an vnctuous and oily kinde of Soote, as hath bene found in some great Tobacco takers, that after their death were opened. And not only meate time, but no other time nor action is exempted from the publike vse of this vnciuill tricke; so as if the wiues of Diepe list to contest with this Nation for good maners, their worst maners would in all reason be found at least not so dishonest (as ours are) in this point. The publike vse whereof, at all times and in all places, hath now so farre preuailed, as diuers men, very sound both in iudgement and complexion, haue been at last forced to take it also without desire, partly because they were ashamed to seeme singular (like the two Philosophers that were forced to duck themselues in that raine water, and so become fooles as well as the rest of the people,) and partly to be as one that was content to eate Garlicke (which hee did not loue) that he might not be troubled with the smell of it in the breath of his fellowes. And is it not a great vanitie, that a man cannot heartily welcome his friend now, but straight they must bee in hand with Tobacco? No, it is become, in place of a cure, a point of good fellowship, and he that will refuse to take a pipe of Tobacco among his fellows, (though by his own election he would rather feele the sauour of a Sinke) is accounted peeuish and no good company, euen as they doe with tippleing in the cold Easterne Countries. Yea, the Mistresse cannot, in a more manerly kinde, entertaine her seruant then by giuing him out of her faire hand a pipe of Tobacco. But herein is not onely a great vanitie, but a great contempt of Gods good gift, that the sweetnesse of mans breath, being a good gift of God, should be willfully corrupted by this stinking smoake, wherein, I must confesse, it hath too strong a vertue; and so that which is an ornament of nature, and can neither by any artifice be at the first acquired, nor once lost, be recouered againe, shall be filthily corrupted with an incurable stinke, which vile qualitie is as directly contrary to that wrong opinion which is holden of the wholesomnesse thereof, as the venime of putrifaction is contrary to the vertue Preseruatiue.

Moreover, which is a great iniquitie, and against all humanitie, the husband shall not be ashamed to reduce thereby his delicate, wholesome, and clean-complexioned wife to that extremitie, that either shee must also corrupt her sweete breath therewith, or else resolue to liue in a perpetuall stinking torment.

Haue you not reason then to bee ashamed and to forbear this filthe noueltie, so basely grounded, so foolishly receiued and so grossly mistaken in the right vse thereof? In your

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abuse thereof, sinning against God, harming your selues both in persons and goods, and raking also thereby the markes and notes of vanitie vpon you; by the custome thereof making your selues to be wondered at by all forraine ciull nations, and by all strangers that come among you, to be scorned and contemned. A custome lothsome to the eye, hateful to the Nose, harmefull to the braine, dangerous to the Lungs, and in the blacke, stinking fume thereof, neerest resembling the horrible Stigian smoake of the pit that is bottomeless.

Mysticism in Ancient Medical Practice.

BY PROF. E. P. EVANS.

ÆSCULAPIUS, the god of medicine, was commonly represented by the ancients with a serpent by his side and an owl at his feet, symbols of the magic and mystery which surrounded the healing art. The cunning reptile, which to the popular imagination was the fullest embodiment of sorcery, and the bird of night, which delights in darkness and closes its blinking eyes to every ray of light, were strikingly significant of the state of medical knowledge to which the world had then attained. How far medical science has advanced beyond this state of superstition and mysticism, and what is its rate of progress in comparison with kindred sciences, are questions which we do not purpose to discuss, and concerning which every intelligent reader has, doubtless, formed very positive and satisfactory opinions of his own. We may safely affirm, however, that the science of medicine (if it can be called a science in the strictest sense) is constantly growing less mystic and more rational; the physician is more and more losing the reputation of a wizard and acquiring the character of a *savant*, so that the old symbols of Æsculapius receive a new interpretation, which points to the bird of Minerva as the emblem of wisdom, and the sloughing serpent as the type of rejuvenation and health. (See "*Ueber Aberglauben und Mysticismus in der Medizin*," by Siegmund Rosenstein, Professor in Groningen. To this scientific lecture we are indebted for many of the facts contained in the present article.) The art of healing has no longer anything to do with witchcraft, the invocation of saints or the propitiation of demons; and it is only in a purely figurative sense, without the remotest implication of magic, that a dose of physic, or any other curative agent, is said to act like a charm. Yet we need not go very far back into the past to find an almost universal prevalence of the belief that sickness was cured and could be cured only by supernatural influences; that every disease was the effect of sorcery or the arbitrary penalty of sin, and every act of healing a disenchantment or a miracle. In our own day we have a marked illustration of this tendency as regards the still younger science of meteorology, where the simplest phenomena of the physical world, rain, drought, etc., are thought to be produced or prevented by the intercession of higher powers. Is it to be wondered at, then, that in darker times of ignorance the mysterious forces of disease, that torture the human body and dry up the fountains of life, should be looked upon as divine visitations or as the direct intervention of demons?

A striking evidence of this association of ideas is the fact that in ancient times temples were the only hospitals and institutes of healing, and priests the only physicians. We are told that to the most celebrated of Greek temples, that of Æsculapius at Epidaurus, thousands of invalids made pilgrimages, in order that the god might suggest to them, as the slept within the sacred precincts, the means necessary to their recovery. The temple was situated in the midst of charming scenery, on a wood-clad height, surrounded by cheerful walks and avenues and holy groves. In the vestibules were statues and pictures, and a variety of symbolical representations of sleep, dreams, fortune, happiness, etc. Over the portal was the significant inscription: "Only the pure-minded are permitted to approach me." No one, therefore, was allowed to enter the interior of the temple without being first prepared for the ordeal by the priests. This process of preparation consisted in fastings, bathings, annointings, fumigations with narcotic incense, and similar acts of purification. Thus consecrated the patients were conducted, with prayer and singing, into

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the dormitory adjoining the temple, where in solemn stillness and profound darkness they went to sleep and dreamed of their diseases and of methods of cure. On waking the priests interpreted their dreams and declared the will of the gods in respect to their treatment. If the patient recovered, his cure was attributed to divine interposition; if he died, it was because the gods were angry with him and would not heal him. Thus in either event the reputation of the priests and the fame of the temple suffered no detriment. Incurable diseases were regarded as signs of the implacable wrath of the higher powers; and we have frequent accounts of poor consumptives wandering from temple to temple, and finding nowhere a remedy for their mysterious affliction. In this priestly hocus-pocus Professor Rosenstein sees the germ of medical science among the Greeks. It certainly furnished an excellent opportunity for studying the nature of various diseases, as well as the effect of the means used for their cure. Thus many observations were made and many valuable facts accumulated, forming a storehouse of knowledge essential as a foundation on which to construct a purely empirical science like that of medicine. Still the idea of magic entered into all these pathological phenomena, each of which was regarded as the manifestation of some special divinity or demon which called it forth. The stranger and more striking these phenomena were, and the more conspicuous and unintelligible the symptoms appeared, the more directly the supernatural agent was supposed to be at work in it, and the more *sacred* the disease itself was presumed to be. Apoplexy and epilepsy, which stretched the seemingly strong man suddenly on the ground, caused all his muscles to twitch and writhe, and his mouth to foam, were preeminently *sacred diseases*, in which the malign influence of Hecate, Neptune, Mars, Apollo, or some inferior spirit of the infernal or supernal world was traceable. Even the wandering speech and disconnected words of the "possessed" —as he was called—were revered and remembered as the supposed utterances, not of the persons from whose lips they fell, but of the indwelling demon. This superstition became more deeply rooted and widely diffused at a later period in Alexandria, where Greek learning blended with the wisdom of Egypt and the East and gave rise to a school of philosophy which, under the name of neo-platonism, combined the most extravagant dogmas of Pythagoras and the poetic dreams of Plato with the wonderful speculations and theories of Oriental sages. It was this new school which developed most fully the doctrine of demons, particularly in relation to diseases. The whole atmosphere was believed to be thronged with them, so that they could enter into men with every breath; also food and drink were supposed to be converted by them into causes of disease. Such views became almost universal; not only among the masses of the people, but also among the most cultivated classes. Even the great majority of physicians employed no other means than prayer and incantations for the purpose of expelling the demons, and regarded this as the highest end and aim of their art. It was also deemed possible to drive out the demon into a tree, an animal, or another person; and it was therefore usual to command the evil spirit to come out of the patient and enter into this or that thing. This practice of transferring disease from the sick person to some definite object is still quite common among the lower classes in Germany. Thus fever is gathered on a twig of elder bush and buried in the earth, without a word being spoken during the procedure; in like manner a dove is used to cure epilepsy. The old women who practice these arts no longer talk of demons, but their performances are vestiges of old heathenism.

The power of disenchantment did not inhere in the meaning of the words spoken, but in certain mysterious magic properties. Indeed their potency was thought to be in the direct ratio of their unintelligibility. Hence Hebrew words were generally preferred; and these written on scraps of paper or engraved on tablets of metal, were employed as curative and prophylactic amulets. The physician in ordinary of the Emperor Septimius Severus, acquired especial fame by the invention of the formula, "Abracadabra," with which he healed fever. Peculiar magical qualities were attributed to precious stones, a consideration which was always borne in mind by the fair sex in selecting their personal ornaments. Thus the diamond worn on the left arm was esteemed an efficient talisman against poison and evil spirits; the agate was a protection at once against wicked thoughts and the intoxication of love; the ruby was a sure remedy for catarrh; the rock crystal for dizziness; the chrysolite for melancholy; the topaz inspired chaste thoughts; the emerald warded off epilepsy, and other jewels possessed other virtues equally desirable. The use of gems bearing mystical inscriptions as amulets, and a firm faith in their efficacy, are by no means uncommon in our own day. According to the reports of correspondents, as

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cited by Prof. Rosenstein, the surgeons of the French army in the Crimean war found a majority of the soldiers in the possession of consecrated amulets, in which their trust was so strong that not even the most severely wounded despaired of his recovery so long as he had these talismans. Even General Canrobert is said to have worn a treasure of this kind, and to have attributed his safety to it during the battles on the Alma.

The idea that sickness is the result of sin and a work of the devil gave free scope to all kinds of medical sorcery in the early days of Christianity. Some of the Church Fathers declared the confidence shown by the sick in roots and herbs as remedies, to be nothing less than an inspiration of Satan himself in order to give influence and consideration to the heathen doctors who prescribed such medicaments. This notion runs through all the medical literature of the Middle Ages, and determines the entire choice of means to be employed in given cases. One writer recommends as a cure for colic the application of a stone on which is a picture of Hercules pressing the lion to death. Another says that if a person has swallowed a bone so that it sticks in his throat, he will find relief by exclaiming: "The martyr Blasius commands thee, come out or go down." After the sixth century, when the healing art was practiced only as a work of charity and compassion by the monks, every trace of scientific procedure seems to have vanished, and all cures were looked upon as miracles which were wrought at the graves of saints, through the mediation of apostles, or by holy relics. This state of things is admirably satirized in "Reinhart," an old German poem of the twelfth century, where a hare that has fever is suddenly cured by lying on the grave of a chicken which had been killed by Reynard the fox. In consequence of this event the young hen was declared to be a saint and a martyr holy before God's face; or, in the mediæval German of the original,

"Daz daz huon waere
Heilec vor gotes gesihte."

This abuse became so great that the church itself was obliged to prohibit the exercise of the healing art by the monks; and the throng of so called "holy physicians" increased to such a degree, that certain laws were established in accordance with which a cure should be declared miraculous and the physician should be canonized. The few men, who, like Peter of Albans, tried to discover the origin of disease in physical causes and to treat it accordingly, were denounced by the rabble of laymen and ecclesiastics as wizards and necromancers.

After the revival of letters and the diffusion of knowledge by the printing press, men began to seek the source of disease not so much in the demons as in the stars; hence the pretensions of astrology. Cardanus, one of the ablest physicians of his time, reasoned on this point thus: "What seems to be accidental must have a cause. Demons cannot do it, for if they had the power they would destroy the world; therefore the stars must do it, for nowhere else do we find an order of things so wonderful. If, then, a physician wishes to diagnose, number and name the diseases, he must learn it of the heavens, which show the origin and nature of every disease; for there is no knowledge of diseases except what the heavens reveal." Hence arose horoscopy and a vast amount of useless lore concerning the conjunction of planets, the influence of the stars upon herbs and metals. "Medicine," says Paracelsus, "is in the will of the stars. The heavens must be favorable when physic is prescribed." At a later period, Dr. Thurneysser, physician in ordinary to John George, Elector of Brandenburg, published numerous editions of astrological almanacs, giving the times for bleeding, blistering, etc.; for all these operations were dependent, as to the time when they were to be performed, not on the state of the disease but on the state of the stars. Certain days, too, were of ill omen; it was deemed dangerous to rise from a sick bed, or to go out after prolonged illness on Friday or Sunday. In respect to this matter medical authorities enjoined the greatest prudence and caution.

Out of medical astrology grew up a kindred species of charlatanism known as the doctrine of sympathies, which was especially developed by the disciples of Paracelsus. The whole universe, sun, moon, stars, and all the forms of animal and vegetable life were supposed by the Paracelsists to have certain secret and magical relations to each other, underlying the physical qualities and chemical affinities of matter. In obedience to this principle of sympathy the physician endeavored to trace resemblance in form and color between plants and diseases. Thus he prescribed yellow plants for jaundice; and because the flower Euphrasia has a black spot in its corona like the pupil of the eye, it was regarded as beneficial for affections of the eye. "Since the leaves of the thistle prick like needles," says Paracelsus, "therefore it has been discovered by magia that no better herb exists for internal pain." The natural

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and real properties of the plants were not at all taken into account; but only their supposed sympathetic relations or attractions, which enabled them to act like magnets in drawing out the disease. Blood, by reason of its apparently intimate connection with life, was thought to be the strongest of these magnets. The usual method of applying it was to fill an egg shell with the blood of a healthy man, seal it up hermetically with isinglass, let it remain for three weeks under a brooding hen, and finally put it into an oven and leave it there so long a time as it would require to bake bread. Thus prepared the mummy, as it was called, was applied to the parts affected, and then given to an animal to eat, buried in the ground or otherwise safely disposed of. A relic of this superstition is seen in our own day in the practice of curing warts by rubbing them with a piece of meat and then burying it; as the piece of meat decays the wart vanishes. According to the original prescription the wart was to be rubbed with a dead person's hand; but as this was not always easily attainable, a more convenient and agreeable substitute was found in the piece of meat.

Professor Rosenstein is inclined to regard mesmerism as another phase of the Paracelsian doctrine of sympathy. We do not think, however, that his laborious attempt to explain mesmeric phenomena by referring them to what is already known of the laws of mind and matter will be at all satisfactory to the majority of his readers. Neither psychology nor physiology, nor both together have as yet made these things clear to us. Of the German professor's polemic against homœopathy—which he characterizes as a species of charalatanism akin to the mummy of the Paracelsists—mesmerism and the casting out of demons, we need say nothing here. Whatever may be the truth or falsehood in regard to homœopathy, the author shows himself at once to be incompetent to sit in judgment on its claims, since his professional prejudice renders him incapable of seeing and stating the simple facts as they are.

The Proper Food for Man.

BY JAMES ALEXANDER MOWATT.

A LITTLE over a year ago The Evening Mail and New York Times had several columns occupied daily by communications on "The Cost of Living." Bachelors attempted to show that on $1,200 a year up to $2,000 they could do no more than support themselves, and could not think of doing anything so reckless as to marry. Good, prudent housewives showed, by actual figures, that they each kept their whole family on $500 a year. Married men, in all ranks, gave particulars of their annual outlay—some boasting of running in debt on $6,000 a year. In all the letters which have appeared, the writers take it actually for granted that they must incur a heavy butcher's bill weekly, if their families are to be at all nourished. Flesh of some sort at least three times a day, is a rule from which none of them seem to vary. And the item in all their published housekeeping accounts, for flesh, fish and fowl is the one that really makes the total annual expenditure "foot up" to these thousands of dollars.

It does not appear to have ever occurred to any one of even the most economical of the housewife correspondents, that there is much better food than flesh to be had in abundance, at more reasonable rates of expenditure. And yet it is so. That fruits, roots and grain form the most nutritive and suitable food for man, we attempted briefly to show in a former article on this subject. And in this vast continent of ours, with its millions of acres yet uncultivated, there can never be any lack of man's natural food. So much have our population given themselves over to flesh-devouring that we hardly ever see, in the vicinity of our populous cities, the miles square of "market gardens," producing all sorts of vegetables which are to be seen on every road around London and Paris. There is not apparently the demand here to cause agriculturalists to embark in producing a large daily supply. Yet if our people were but properly educated as to their own structure, and what it requires to sustain it, they would live chiefly on the pure produce of the soil, and abandon their acquired carnivorous habits and practices.

Every young lady knows the construction,

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nature and capabilities of her piano, and what sort of treatment throws it "out of tune." They also know what are even the peculiar or special features in the movement of their watches, and what sort of rude or rough handling would put them out of working order. But to understand anything about how "fearfully and wonderfully" they are themselves made, is an acquirement of knowledge not embraced in the polished and polite accomplishments of the hour. In order to know correctly what food to eat, and of what sustenance to partake, it is, to some extent, requisite to know what is our physical organism, and what is the nutriment adapted for such an animal economy as that which man possesses.

Tell a young lady that she is to knit crotchet work, and she instantly requires cotton. She knows that the bootmaker who supplies her with boots had to first procure leather out of which to make them. Perfectly does she understand, though she does not really wish *to think of it*, that the beautiful hair in her chignon had been once another's, and may have been cut from a corpse. To make all the various articles in daily use she knows the fitting material for them was necessary, and had to be procured, even if from the ends of the earth. But when she has to make up bone and muscle, and sinew, and nails and hair for her own existence, she knows not what really are the best and most suitable and economical materials to use. Why should this be so? Why should not every one know what materials they require as food to maintain a sound, healthy body, and were to obtain those proper substances? It shall be our object now to seek to impart such knowledge in the simplest possible form, free from technicalities.

The physical structure of man, notwithstanding the opinions expressed in "Chambers's Encyclopedia," proves clearly that he was destined by his All-wise Creator to consume the produce of the soil, not the flesh of animals. All the leading naturalists, who have made the subject their special study, are agreed on this point. The masticatory organs of man bear no resemblance to those of flesh-eating animals. In the carnivora the teeth either pass into each other, like the cogs in two wheels of, say your watch; or they cut past each other, like the edges of a pair of scissors. There is in the carnivora no lateral motion of the jaw. The lion, tiger, hyena, dog, cat, wolf, etc., have all this class of teeth. Any reader can readily examine for himself, or herself, the teeth of the domestic cat, or dog to satisfy themselves on this matter. The teeth of man are in no wise similar to these. Man's jaws are constructed with a lateral motion, by which he can grind his food, not tear it; his jaws moving on each other with the effect of mill-stones. His sharp-edged front teeth cut off the portion of food needed, and then his broad, flat back teeth grind it up, mixed with saliva, and so prepare it for passing into the stomach. We are not going take Mrs. L. F. Johnson and "Chambers's Encyclopedia" all at haphazard.

There are those, we are aware, who will say that man has canine, or carnivorous teeth, and when required to point them out, they refer to his "eye-teeth." But these teeth (cuspids), in no feature of them, bear any similarity to the teeth of the carnivorous animals. They are, in man, a mere transition between the incisors—front teeth—and bicuspids—back teeth. They are generally on the same level with the other teeth; or, if changing at all from this level, they are to be found really lower than the range of the rest. Such teeth, then, cannot be called carniverous. Nor does any man that talks of them as being canine ever use them in the same capacity; he does not attempt to lacerate and tear raw flesh with them. Man's teeth only cut whatever comes between the incisors, and grind whatever gets back between the molars. When some men talk about having "carnivorous teeth," we are tempted to ask them have they forgotten their own teeth after them somewhere? They have only to look at the teeth of any given man or woman, and it will at once be seen that man has no canine teeth, in the proper sense. This is purely a matter of fact, not one for "opinions." The teeth of man are nearly like those of the horse, exactly like these of the quadrumana; the monkey, orang-outang and gorilla. Indeed, the horse, camel, stag, orang-outang and gorilla have all more fully developed, so called, canine teeth than man. Yet no one is ever so foolish as to set any of these animals down as flesh-eaters. The salivary glands, again, are small in carnivora and large in the herbivora. This is a wise arrangement. The horse requires much more saliva in chewing and grinding his dry oats than the lion, tiger, dog or cat, in simply tearing up and gulping down watery flesh. Here again is man's formation of masticatory organs seen to resemble the grain-eating—not the flesh-eating animals. Man has large salivary glands to aid in preparing the food for entrance to the stomach. Another special feature of marked distinction is this, that animals that live on flesh hardly ever perspire; or if they

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do, it is so trivial as not to be worth notice. All the grain and root-eating animals, like the horse, perspire freely. Man, in this respect, also resembles the grain-eating, not the flesh-devouring animals.

The internal organs of man, again, resemble those of the frugivorous animals. I shall clearly prove this against all the "opinions" of "Chambers's Encyclopedia," backed up by Mrs. L. F. Johnson even. In the carnivora the alimentary canal is short, simple, and its capacity small. This applies to the eagle and vulture as well as to the lion and tiger. In the herbivora the intestinal canal is considerably longer, and proportionate to the size of the body; and the stomach, colon and cæcum are much more complicated. In carnivorous animals the length of the intestinal canal varies from three to five times t e length of the body; and in some few cases to eight times its length. In the horse, ass, etc., it is six, eight, or even eleven times the length of the body; and in the ox, deer, sheep, etc., it varies from eleven to even twenty-eight times the length of the body. In man it is *said to be* from six to seven times the length of the body. But this is an erroneous principle of measurement, as we shall clearly show. When anatomists have made these comparisons, strange to say, they merely took the length of the spinal column in the lion, tiger, ox, sheep, deer, horse, ass, etc.; but they took the length of man at his full height, from his heels to the crown of his head. Why not have done the same with all other animals? This is one instance which shows how the physiologists referred to in "Chambers's Encyclopedia," in order to support a pre-conceived notion, perverted the most ordinary circumstances to favor their views. Either the length of the spinal column only in man should be taken for comparison, or the length of the horse, cow, etc., to their hoofs. If the length of the spinal column in man be taken as the basis of measurement, as has been done in the case of the lion, tiger, horse, cow, etc., then man's intestinal canal will be found to be about twelve times the length of the body, as in the horse, the ass, and those herbivorous animals that do not chew the cud.

Cuvier, the great anatomist, not one of Chambers's "physiologists" evidently, says: "Fruits, roots and the succulent parts of vegetables appear to be the natural food of man; his hands afford him a facility for gathering them; and his short and comparatively weak jaws, his short (so called) canine teeth not passing beyond the common line of the others, and the tuberculous teeth would not permit him to either feed on herbage or devour flesh, unless these aliments were previously prepared by the culinary process." Lord Monboddo says:

"Though I think man has *from* nature the capacity of living either by prey or upon the fruits of the earth—this we won't dispute with Mrs. L. F. Johnson—it appears to me that BY nature, and *in his original state*, he is a frugivorous animal; and that he only becomes an animal of prey *by acquired habit*."

Thomas Bell, in his "Anatomy, Physiology, and Diseases of the Teeth," observes: "It is, I think, not going too far to say that every fact connected with the human organization goes to prove that man was originally formed a frugivorous animal."

I could quote largely, to a similar effect, from Linnæus, Gassendi, Ray, Broussonnet, Owens, and many others, all of whom hold man to have been intended by nature to live and thrive on grain, roots and fruits of the earth.

Indeed, so far as we have any record of man's origin, it is clearly set forth that he was destined to be a frugivorous animal. The earliest provision made for man's sustenance was "a garden eastward in Eden" where Adam was placed in his primeval innocence "to dress it and to keep it," with directions to the effect that, "of every tree of the garden thou mayest freely eat," etc. And, as we quoted before, "God said, behold I have given you *every herb* bearing seed, which is upon the face of *all the earth*—no customhouse restrictions on importations—and every tree in the which is the fruit of a tree yielding seed; *to you it shall be for meat*." Here is the proper food of man, fully and well defined, in Genesis i, 29. But the food of the lower animals is as clearly set forth: "And to every beast of the earth, and to every fowl of the air, and to everything that creepeth upon the earth, wherein there is life, I have given *every green herb* for meat." This is the all-wise arrangement of Providence for the food of man. Even after "the fall of man" it is said, "Cursed is the ground for thy sake; in sorrow shalt thou eat of IT all the days of thy life; thorns also and thistles shall IT bring forth unto thee, and thou shalt eat *the herb of the field*; in the sweat of the face shalt thou EAT BREAD till thou return unto the ground." The point and force of this "curse" is that man is to toil and labor to bring forth *his food out of the ground*. Even in later ages of the Psalmist, he says, "He maketh grass to grow for the cattle

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and *herb for the service of man*, that he (man) may *bring forth food out of the earth*." Bread is everywhere set forth in Scripture as "the staff of life," and "plenty of corn and wine," the produce of the soil, was the Eastern idea of happiness and comfort. When a miraculous supply of food was provided for the Israelites it was "like coriander seed"—Exodus xvi, 31—and when, in their murmurings, they would have flesh, quails were given them; but "while the flesh was yet between their teeth, ere it was chewed," a plague broke out in their camp; just as scurvy and other loathsome skin diseases follow flesh-eating in our own times. When the spies sent by Joshua to spy out the land of Canaan, returned to him they wisely brought samples of its grapes, its figs and its pomegranates—not specimens of its beef, mutton and pork—it was a land "flowing with corn and wine," with "milk and honey." It is true that *permission* was given *after the deluge* to eat flesh, under stringent restrictions. "But flesh, with the life thereof, which is the blood thereof, shall ye not eat," Genesis ix, 4. This restriction properly carried out, would be practically prohibiting flesh eating. The Jews, to this day, try to obey it; but "the blood thereof" can never be wholly withdrawn from any slaughtered animal.

California as an Invalids' Resort.

A SERIES OF LETTERS TO THE EDITOR, BY JOHN P. PHILLIPS, M. D.

FROM boyhood you have heard and read of the fertile soil, the giant trees, the sunny skies, the mild and equable climate and the rich mines of California. Great clusters of her luscious grapes and enormous pears you have doubtless seen in the New York markets. These good points and pleasant features of California are everywhere accessible in books and pamphlets, some of which are written in a romantic and fascinating style, well calculated to deceive. These writings you are doubtless familiar with. In this letter a few of the principal drawbacks of California, in a business point of view, I will call your attention to, for the benefit of those who contemplate a change of residence and are not pecuniarily independent.

When the emigrant is told that San Francisco is only seven days journey from New York, and that the time is all passed in a luxurious car in which he can sleep as well as at home, and which stops at regular periods for good meals, a journey to California seems a mere trifle—a short, pleasant ride. But actual experience convinces him that the Pacific coast is an enormous distance from the great centres on the Atlantic. After crossing the Missouri river, which is associated in his mind with the extreme West, he must travel about 1,500 miles through a desolate, forbidding region; and this evokes the thought that an occasional return to visit the old home and friends will be a tiresome, monotonous trip. When San Francisco is reached and expenses counted, it is found that nearly $200 dollars is required to bring a single person from New York; and very little calculation is requisite to show that a comfortable home can be bought in Virginia or Indiana for the cost of transporting a moderate sized family to California from the Eastern States. On consulting the freight tariff it is next dicovered that to bring household goods, farming or mechanics' tools from the Atlantic States involves a large expense, which must be met, either directly, by bringing along the old goods and paying heavy freight bills, or, indirectly, by buying new supplies in California at enhanced prices. The traveler is likely, at this stage of his progress, to look at the map of the United States and to notice several things that had never before attracted his attention. He observes that California is isolated from the large population of the Atlantic slope, with their wealth and culture, by a lofty mountain chain and by a vast extent of desert country. To the south he sees the mountainous portion of Mexico, inhabited only by a few mongrel Spaniards and Indians. To the north the vast forests of Oregon with an extremely sparse population; and on the West, the Pacific ocean. He is then naturally led to look at the map of the world, and to observe the relative position of California compared with other prominent countries. That it faces an entirely different

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portion of the earth from that faced by the Atlantic States, is evident at a glance. He sees the Eastern States spread out invitingly, within a few days' steaming, before Europe—a region peopled with enterprising, energetic, cultivated and wealthy inhabitants—the foremost in art, science and literature on the globe; while California faces the barbarism, the aversion to progress, the indolence and the stolid ignorance of the swarms of Asia. These two things, viz.: the isolation of California, and the fact that it fronts the nations least desirable as neighbors, weigh heavily against the State as an inviting field for emigration. Last year nearly 300,000 emigrants came from Europe to America, and this stream of population has been flowing with greater or less volume from the infancy of our country to the present time. It constitutes a great source of wealth and power, and is the principal motor from which the unexampled prosperity of the Eastern, Western and Middle States has sprung. The comparatively slow growth and poverty of the Southern States is due largely to the fact that a number of circumstances have prevented emigration to them to any considerable extent. European emigrants become citizens and affiliate with natives of our country; they intermarry, and soon become assimilated and form as desirable and reliable citizens, either in peace or war, as those whose ancestors for generations have been born in America. But Asiatic emigration introduces a horde of barbarous aliens—not only aliens in nation, but aliens in race, in religion, in habit, in language, in ideas; a people incapable of being molded into American citizenship, and that form in the community in which they live, that most odious and demoralizing feature of any society—a servile class—whose elevation is the despair of philanthropists. In the past five years California has received, in all, less emigrants than have gone in a single year to one of the Atlantic States. As the area of California is about four times as great as that of New York, the small number of California emigrants—about 10,000 per year, on the average—has done little toward peopling such an immense territory.

A great obstacle in the way of an emigrant after arrival in California is the difficulty and expense of selecting and reaching a desirable and suitable location. The stranger finds himself in a vast country, of which he knows little, and about different parts of which he hears various and conflicting accounts. Railroads are comparatively few in number, and travel is laborious and expensive. It costs as much to travel from San Francisco to the southern part of the State, overland—the only way in which anything can be learned of the country—as it does to travel from New York to St. Louis. It is extremely difficult to obtain correct information about a given point without a personal visit. This is peculiarly the case in California, where the local topography has such an enormous influence on the climate and productiveness of different points. People can be daily met in San Francisco from all parts of the State, but members of small, remote and isolated communities, as are most California towns, very frequently are biased by their desire for new neighbors, and therefore suppress inconvenient facts relative to their particular locality. I have met with a number of persons who, for the sake of obtaining full and correct information about the place to which their attention had been specially directed, had subscribed for and read the local paper for six months or a year. Most of these individuals were sadly disappointed. The plain fact is, that for a fresh, wholesome, cheerful liar, some of the local California editors, when engaged in writing articles for the information and guidance of invalids and emigrants, should receive honorable mention, if not a diploma. As an illustration of the style of doing things adopted by these Munchausens, I remember seeing a letter from an Eastern farmer making inquiries, published in a local paper, with the answers by the editor appended. One of the questions was: "Is wood plenty near the town?" The answer was, "Yes." Now the fact is that the place in question is situated on a bare, treeless prairie, with only a scanty, inaccessible supply of wood in the mountains fifteen miles away. As human nature, under the same circumstances, is similar in all ages and countries, these writers I presume are not eccentric individuals. It would give me much gratification to be able to send you, as a curiosity, an accurate list of the number of California tourists the past winter, that have had their expectations of various places utterly disappointed. Many of them had gone to some particular locality for the purpose of making a home for the benefit of an invalid member of their family, and found the facts so entirely different from what they expected that they returned to their old homes fully convinced of the correctness of a certain historical, hasty statement concerning the truthfulness of mankind. More persons, I think, were disappointed in their expectations of Santa Barbara than of any other place. Santa Barbara, in my opinion, is not a suitable

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residence for an invalid afflicted with disease of the air passages, as it is more or less subject to cold, raw, damp winds from the ocean. Moreover, it is not now, or likely to be, a place of any commercial, manufacturing or agricultural importance.

To a person from the populous Eastern or Middle States, California seems almost uninhabited, except in a few localities. The traveler rides in many parts of the State sixty or seventy miles without seeing over a dozen houses on the way, and these mere shanties—such buildings as he would keep his calves in at home, after first lining them to keep out the cold. On the map he sees marked out what he supposes is a village; when he arrives there he finds a couple of shanties, a stable, a corral and a straw stack. When he reaches a "city," he finds from 1,000 to 5,000 people—the latter number constitutes a large town in California.

Land is very high in California, when all the conditions of its location are considered. Desirable farming lands, near schools and people, are held at as high prices as in Central New York. One hundred dollars per acre in gold is the price of good land situated where a farmer from Eastern Pennsylvania or Central New York would be willing to live. From this sum prices are graded down according to quality and location. Prices, I judge, will average as high as in the Atlantic States. The $10 per acre land of California corresponds to similar land in Iowa, Kansas or Missouri. Local markets are quite variable, more so than in the East. Prices for some kinds of produce are good, but in the main are quite low. The great distance of most of the State from San Francisco, and the enormously high railroad tariff places the majority of farmers under the domination of the railroad company. An intelligent farmer told me he had paid six dollars per ton to have his grain transported a distance of one hundred and forty miles by rail. A great deal of fruit rots upon the ground in some sections, simply from the fact that the cost of sending it to market is greater than the market price. The farms of California are generally very large, those of 5,000, 10,000 and 50,000 acres are quite common. Such large farms, of course, preclude all possibility of country schools and society, such as exist in places where the land is divided up in small farms of fifty and one hundred acres. The kind of farming necessitated by the peculiar climate, soil and situation of the State requires large farms. Much of the land is, and must necessarily be, devoted to grazing purposes, which can only be profitably carried on with a large tract of land; and in grain growing districts a crop can only be advantageously cultivated with a considerable amount and number of farming implements, machinery and teams employed in working over a large area of land.

Except near the large towns, it is an utter absurdity for a person to follow the advice which has been thoughtlessly and ignorantly given, to buy small farms. "Twenty-acre" farmers have a sorry time of it. The majority of those who went to the southern portion of the State and bought small farms to engage in the cultivation of oranges have sadly regretted their course. The great trouble is that ten years are required to bring the orchard into productiveness, and meantime the poor farmer has no resources. In an old, wealthy and populous section, a small farmer, when unoccupied at home, can usually find employment of some kind among his neighbors. But where his neighbors are all like himself, struggling for a mere existence, opportunities for earning money are more numerous than the chances of receiving it when earned.

The protracted and terrible droughts to which the State is subject often operate disastrously on the farming community; and especially so on those who are obliged to borrow money at one or two per cent. a month to carry them through an unfruitful year. In some seasons thousands of cattle have perished of starvation and thirst.

The best lands over the principal part of California are included in Mexican grants made before the State came under the American flag. The title and validity of most of these grants have been confirmed by the United States Supreme Court, but owing to the migratory, uncertain character and residence of the original grantees, the difficulty of discovering and identifying heirs, and the fact that many of them have made imperfect conveyances and have died without a proper probate settlement of their estates, a doubtful character is given to many of the land titles which obstructs sales and often brings purchasers into serious difficulties. Defective land titles have very considerably retarded the material prosperity of the State; and although a steady improvement in this respect has taken—and is now taking place—are still a drawback of considerable consequence.

California has an enormous capacity for producing grain. Wheat is the great staple, and her chief article of export. Most of it is shipped to Liverpool, a distance of over 15,000

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miles. As a natural result of having so distant a market wheat is cheap in San Francisco; a large portion of its market value in Liverpool being represented by the cost of transportation. The great and urgent need of California is a home market for a large portion of her crops; and this can only be made by the creation, within her borders, of manufacturing cities and villages. I regret to say that manufacturing interests grow slowly, and are not likely to change in that respect. Capital commands higher rates than in the Eastern States; there is only a limited market for any one special article of manufacture; water power is scarce, and coal not very cheap. The worst fact of all, however, concerning the manufacturing prospects of the State is the absence of coal suitable for ocean steamers, and for the manufacture of iron. Coal for this purpose is brought from New York, Philadelphia and Australia. Of course, with coal obtained at such cost it is impossible that the iron industry, which at the present day is the great absorbing interest of civilization, should ever assume other than meager proportions.

Over much of the State there is a scarcity of firewood, and no portion of it produces hardwood timber suitable for the manufacture of wagons, farming implements and machinery. Timber for these purposes is imported from the Atlantic States, and a high price is consequently attatched to tools of all kinds manufactured therefrom.

The wages of mechanics are generally good, but employment is not nearly so reliable and steady as in manufacturing centres. It is a great advantage to a workman to be so located that he is not dependent on any one man or firm for employment, as it gives greater personal independence and a more reliable source of support.

A minor objection to California, but a source, nevertheless, of some discomfort and occasional profanity, is the fact that for about one half the year fleas are as plenty as dishonest men in Congress. In stage driver vernacular, "in summer they jist git after a man and eat him plumb right up."

To many the state and kind of society in California are objectionable; many ladies especially desire to return to the formalities and customs of their old homes. But this is a mere personal feeling, a prejudice of education, and has no reasonable foundation. It seemed to me as if Californians were more affable and had more genine politeness and kindly feeling toward one another than the residents of the older States have. Dame Grundy receives less slavish devotion and obsequious homage, and there is more frankness and freedom of manner and thought in San Francisco than in any of the Eastern cities.

I designed to mention some additional facts and features, but this letter has already grown to a tiresome length and I must not weary you further. It will be a source of gratification to me if the views I have presented shall aid in correctly interpreting and appreciating the glowing and extended descriptions of California at their true value.

NUMERICAL COMPARISON OF THE SEXES.—The excess of males over females in the different countries of the world, has recently been the subject of investigation. In the United States in 1850, in a total white population of 19,553,068, there was an excess of 499,736; in a total free colored population of 434,449, there was an excess of 17,047 females over males; and in a total slave population of 3,204,313, there was an excess of 755 males. In 1860, in a total white population of 27,003,314, there was an excess of 735,544 males; in a free colored population of 487,996, there was an excess of 19,996 females; and in a slave population of 3,953,760, an excess of 11,490 males. In New York city it is said there are now 11,000 more males than females, while there are 132,000 more females of a marriageable age than males of that class. In Great Britain, on the other hand, there is an excess of 700,000 females over males; and in France, Austria, Spain, Italy and Prussia, with a population of 138,000,000, there are 1,074,000 more females than males.

A MEDICAL friend of ours had a patient afflicted with chronic rheumatism of the ankle-joint; our friend prescribed some medicine, but his patient refused to take it, saying: "An' what would be the use of me takin' your medicin' and the pain down in my ankle? sure your medicin' would never get down there."

A YOUNG married woman, having heard of the invention of a stove that consumes its own smoke, hopes that something of the same kind will be constructed to consume tobacco smoke.

AN Irish housemaid who had been sent to call a gentleman to dinner, found him engaged in using a tooth brush. "Well, is he coming?" asked the lady. "Yes, ma'am, directly; he is just sharpening his teeth."

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Hereditary Improvement.

BY FRANCIS GALTON.

DR. HOLBROOK: An article on "Hereditary Improvement," by Sir Francis Galton, has come to hand. It is so full of wholesome suggestion that I beg you will give it a place in THE HERALD OF HEALTH.

The great question of race and its improvement is one that should touch the heart of every thoughtful man and woman. One is constantly pained and shocked at the evidences of deterioration in even the families of one's acquaintances. Women (and men, too) of good blood, through want of knowledge ally themselves in marriage to inferior companions. Too often these marriages result in offspring of the Mongolian type. (The Mongolian represents the infancy of the race. As a *race* its representatives are more emotional, impulsive, less conscientious, less trusty in moral matters, less intellectual than the Caucasian. One would not look for a Gustavus Adolphus, Savonarola, Luther or Paul among this type of humanity.) Women of splendid temperament not unfrequently completely annihilate themselves, for this world at least, through a mistaken marriage with some tobacco-chewing, opium-eating, wine-drinking man. Only, *comparatively* speaking, physical degeneracy, intellectual mediocrity and spiritual blight result from such unions. Women have yet to learn that if they would surround their firesides with bloom and virtue they must select men of *integrity* for husbands. Hear what an English scientist says of psychical transmission. "The drunkard—tobacco, opium or alcohol—not only enfeebles his own nervous system, but entails mental disease on his family. *His daughters are nervous and hysterical; his sons are weak, wayward, eccentric,* and sink under the pressure of excitement of some unforeseen exigency, or the ordinary calls of duty."

Again, "nervine stimulants, (the giants of which are tobacco, opium and alcohol) further agree in this, that while they excite or misdirect the automatic activity of the mind, they *weaken the controlling power of the will; and this is exactly the condition which, intensified and fixed into permanence, constitutes* INSANITY."

I could wish these scientific gentlemen would bring into more prominence the fact that a *moral*, as well as an intellectual inheritance, is of priceless value. I do not think we shall accomplish much in the way of improving families upon a large scale, so long as considerable numbers of women instruct their daughters that the "correct thing" is to sweep a fallen sister into the gutter, while they hasten to accept, if he has money, overtures of love and marriage from that fallen sister's *companion in crime!*

Not long ago I heard a very thoughtful, sweet-spirited man remark that "he believed the licentious men of America, if they had a pleasing exterior, found more favor in womens' eyes than the strictly virtuous men." I wonder what your lady readers will say to that? This charge may be, and doubtless is true of that questionable class of women who encourage their daughters to angle for an establishment with the encumbrance of a husband; but of that vast mass of women, the *real* wives and mothers, the backbone of the land, the true American women—upon them it is a *foul slander!*

I know hundreds of women who literally *despise and abhor* men of this class, and who esteem virtue, fidelity and faithfulness of as untold value in men, as ever men could thus esteem the same in women. I think in womens' hearts there is something akin to WORSHIP for those husbands whom they ESTEEM as well as love. Woman is not *herself* now—that is to say, she is not what God made her to be, and so I believe her capacity for loving is as yet almost wholly latent. At present, in nine cases out of ten, her love is a compound of self-interest, affectation and sensualism. It is past my comprehension how a worthy woman can respect—and no power on earth could make me believe she does—a licentious man; *to love him I hold to be a moral impossibility!* I doubt not tens of thousands of my peers in this country will bear me out in these remarks. I hail, then, anything which looks toward lifting individuals, and thereby the race, from the present mire of sensualism, and the *diabolism* of licentiousness, as the accompanying article certainly does. Should some sensitive minds object to the anti-democratic tone of the production, *i. e.* the aiding of the better class to the *seeming* neglect of the less worthy, let them refer for comfort to Galatians, vi, 10: "Let us do good unto all men, ESPECIALLY unto them who are of the household of faith."

SUSAN EVERETT, M. D.

THE bodily and mental condition of every man are, in part, the result of his own vol-

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untary and bygone acts; but experience teaches us that they are also shaped by two other agencies, for neither of which he is responsible; the one the constitutional peculiarities transmitted to him by inheritance, and the other the various circumstances to which he has been perforce subjected, especially in early life. Now in this essay I do not propose to allude to ordinary education, family and national tradition, and other similar moral agencies of high importance. I leave them for the present to one side; the residue, with which alone I am about to deal, may be concisely and sufficiently expressed by the words "race" and "nurture." It is to the consideration of the first of these that the following pages are chiefly devoted; but not entirely so, for I acknowledge that we cannot wholly disentangle their several effects. An improvement in the nurture of a race will eradicate inherited disease; consequently, it is beyond dispute that if our future population were reared under more favorable conditions than at present, both their health and that of their descendants would be greatly improved. There is nothing in what I am about to say that shall underrate the sterling value of nurture, including all kinds of sanitary improvements; nay, I wish to claim them as powerful auxilaries to my cause; nevertheless *I look upon race as far more important than nurture.* Race has a double effect; it creates better and more intelligent individuals, and these become more competent than their predecessors to make laws and customs whose effects shall favorably react on their own health and on the nurture of their children. The merits and demerits of different races is strongly marked in colonies, where men begin a new life, to a great degree detached from the influences under which they had been reared. Now we may watch a band of Englishmen, subjected to no regular authority, but attracted to some new gold-digging, and we shall see that law and order will be gradually evolved, and that the community will purify itself and become respectable; and this is true of hardly any other race of men. Constitutional stamina, strength, intelligence and moral qualities cling to a breed, say of dogs, notwithstanding many generations of careless nurture; while careful nurture, unaided by selection, can do little more to an inferior breed than to eradicate disease and make it good of its kind. Those who would assign more importance to nurture than I have done, must concede that the sanitary conditions under which the mass of the population will hereafter live, are never likely to be so favorable to health as those which are now enjoyed by our wealthy classes. The latter may make many mistakes in matters of health; but they have enormous residual advantages. They can command good food, spacious rooms and change of air; which is more than equivalent to what the future achievements of sanitary science are likely to afford to the mass of the population. Yet how far are our wealthier classes from the secure possession of those high physical and mental qualities which are the birthright of a good race. Whoever has spent a winter at the health resorts of the south of France, must have been appalled at witnessing the number of their fellow-countrymen who are afflicted with wretched constitutions, while that of the sickly children, narrow-chested men, and fragile, delicate women who remain at home, is utterly disproportionate to the sickly and misshapen contingent of the stock of any of our breeds of domestic animals.

I need not speak in detail of the many ways in which the forms of civilization which have hitherto prevailed tend to spoil a race, because they must, by this time, have become familiar to all who are interested in heredity; it is sufficient just to allude to two of the chief among those which are now in activity. The first is the free power of bequeathing wealth, which interferes with the salutary action of natural selection, by preserving the wealthy and by encouraging marriage on grounds quite independent of personal qualities; and the second is the centralizing tendency of our civilization, which attracts the abler men to towns, where the discouragement to marry is great, and where marriage is comparatively unproductive of descendents who reach adult life. In a paper just communicated to the Statistical Society, I have carefully analyzed and discussed the census returns of 1,000 families of factory operatives in Coventry, and of the same number of agricultural laborers in the neighboring small rural parishes of Warwickshire, and find that the former have little more than half as many adult grandchildren as the latter. They have fewer offspring, and of those few a smaller proportion reach adult life, while the two classes marry with about equal frequency and at about the same ages. The allurements and exigencies of a centralized civilization are therefore seriously prejudicial to the better class of the human stock, which is first attracted to the towns and there destroyed; and a system of selection is created whose action is exactly adverse to the good of the race. Again, the ordinary struggle for existence under the

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bad sanitary conditions of our towns, seem to me to spoil, and not to improve, our breed. It selects those who are able to withstand zymotic diseases and impure and insufficient food, but such are not necessarily foremost in the qualities which make a nation great. On the contrary, it is the classes of coarser organization who seem to be on the whole most favored under this principle of selection, and who survive to become the parents of the next generation. Visitors to Ireland after the potato famine generally remarked that the Irish type of face seemed to have become more prognathous, that is, more like the negro in the protrusion of the lower jaw; the interpretation of which was that the men who survived the starvation and other deadly accidents of that horrible time, were more generally of a low and coarse organization. So again, in every malarious country, the traveler is pained by the sight of the miserable individuals who inhabit it. These have the pre-eminent gift of being able to survive fever, and therefore, by the law of economy of structure, are apt to be deficient in every quality less useful to the exceptional circumstances of their life. The reports of the health of our factory towns disclose a terrible proportion of bad constitutions and invalidism among the operatives, as shown by intermitting pulse, curved spine, narrow chests, and other measurable effects; and at the same time we learn from the census that our population is steadily becoming more urban. Twenty years ago the rural element preponderated; ten years ago the urban became equal to it, and now the urban is in the majority. We have therefore *much reason to bestir ourselves to resist the serious deterioration which threatens our race.*

I have hitherto addressed myself to the purely physical qualities of mankind, on the importance of which it would have been difficult to have sufficiently insisted a few years ago, when there was a prevailing feeling that the mind was everything and the body nothing. But a reaction has set in, and it has become pretty generally recognized that unless the body be in sound order we are not likely to get much healthy work or instinct out of it. A powerful brain is an excellent thing, but it requires for its proper maintenance a good pair of lungs, a vigorous heart, and especially a strong stomach, otherwise its outcome of thought is likely to be morbid. This being understood, I will proceed to the mental qualities of our race.

I have written much in my work on "Hereditary Genius" about *the average intellect of modern civilized races being unequal to cope with the requirements of the mode of life which circumstances have latterly imposed upon them*, and much more might be said on the same subject. The advance in means of communication has made large nations or federations a necessity, whose existence implies a vast number of complicated interests and nice adjustments, which require to be treated in a very intelligent manner; or will otherwise have to be brutally ordered by despotic power. We have latterly seen that the best statesmen of our day are little capable of expressing their meaning in intelligible language, so that political relations are apt to become embroiled by mere misunderstanding of what is intended to be conveyed. *In no walk of civilized life do the intellects of men seem equal to what is required of them.* It is true that Anglo-Saxons are quite competent to grapple with the every-day problems of small communities, but they have insufficient ability for the due performance of the more difficult duties of citizens of large nations. Consequently, the functions of men engaged in trades and professions of all kinds are adjusted to a dangerously low standard, and the political insight of the multitude goes little deeper than the surface, and is applied in few directions except those to which their guides have pointed. Great nations, instead of being highly organized bodies, are little more than aggregations of men severally intent on self-advancement, who must be cemented into a mass by blind feelings of gregariousness and reverence to mere rank, mere authority and mere tradition, or they will assuredly fall asunder.

As regards the moral qualities, which are closely interwoven with the intellectual, we cannot but observe the considerable effect which the influence of many generations of civilized life has already exercised upon the race of man. It has already bred out of us many of the wild instincts of our savage forefathers, and has given us a stricter conscience and a larger power of self-control than—judging from the analogy of modern savages—they appear to have had. The possibility of eradicating instinctive wildness and of introducing an instinctively affectionate disposition into any breed of animals, is clearly proved by what has been effected in dogs. The currish and wolfish nature of such as may be seen roaming in the streets of Eastern towns has been largely suppressed in that of their tamed descendants; who, after many generations of selection and friendly treatment, have also acquired the curious innate love of man to which Mr. Darwin drew attention. All this gives hope for the

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future of our race, especially if "viriculture" be possible, notwithstanding that *our present moral nature is as unfited for a high-toned civilization as our intellectual nature is unfited to deal with a complex one.* It is curious to observe the great variety in the morals of the human race, such as have been delineated by Theophrastus, La Bruyère, and the phrenologists. It seems to me that natural selection has had no influence in securing dominance to the noblest of them, because in the various tactics of the individual battle for life any one of these qualities in excess may be serviceable to its possessor. But the case would be very different in those higher forms of civilization—vainly tried as yet—of which the notion of personal property is not the foundation, but which are, in honest truth, republican and co-operative; the good of the community being literally a more vivid desire than that of self-aggrandizement, or any other motive whatever. This is a stage which the human race is undoubtedly destined sooner or later to reach, but which the deficient moral gifts of existing races render them incapable of attaining. It is the obvious course of intelligent men—and I venture to say it should be their religious duty—to advance in the direction whither Nature determined they shall go; that is, toward the improvement of their race. Thither she will assuredly goad them with a ruthless arm if they hang back, and it is of no avail to kick against the pricks. We are exceedingly blind to the ultimate purposes for which we have come into life, and we know that no small part of the intentions by which we are most apt to be guided are mere illusions. If, however, we look around at the course of Nature one authoritative fact becomes distinctly prominent, let us make of it what we may. It is that the life of the individual is treated as of absolutely no importance, while the race is treated as everything, Nature being wholly careless of the former, except as a contributor to the maintenance and evolution of the latter. Myriads of inchoate lives are produced in what, to our best judgment, seems a wasteful and reckless manner, in order that a few selected specimens may survive and be the parents of the next generation. It is as though individual lives were of no more consideration than are the senseless chips which fall from the chisel of the artist who is elaborating some ideal form out of a rude block. We are naturally apt to think of ourselves and of those around us that, being not senseless chips, but living and suffering beings, we should be of primary importance; whereas it seems perfectly clear that our individual lives are little more than agents toward attaining some great and common end of evolution. We must loyally accept the facts as they are, and solace ourselves with such hypotheses as may seem most credible to us. For my part I cling to the idea of a conscious solidarity in nature, and of its laborious advance under many restrictions; the Whole being conscious of us temporarily detached individuals, but we being very imperfectly and darkly conscious of the Whole. Be this as it may, it becomes our bounden duty to conform our steps to the paths which we recognize to be defined as those in which, sooner or later, we have to go. We must, therefore, try to render our individual aims subordinate to those which lead to the improvement of the race. The enthusiasm of humanity, strange as the doctrine may sound, has to be directed primarily to the future of our race, and only secondarily to the well-being of our contemporaries. The ants, who, when their nest is disturbed, hurry away each with an uninteresting-looking egg—picked up at a hazard, not even its own, but not the less precious to it—have their instincts curiously in accordance with the real requirements of Nature. So far as we can interpret her, we read in the clearest letters that our desire for the improvement of our race ought to rise to the force of a passion; and if others interpret Nature in the same way we may expect that at some future time, perhaps not very remote, it may come to be looked upon as one of the chief religious obligations. It is no absurdity to expect that it may hereafter be preached that, while helpfulness to the weak and sympathy with suffering is the natural form of outpouring of a merciful and kindly heart, yet that the highest action of all is to provide a vigorous national life; and that one practical and effective way in which individuals of *feeble constitution and depraved instincts can show mercy to their kind is by celibacy, lest they should bring beings into existence whose race is predoomed to destruction by the laws of Nature.* It may come to be avowed as a paramount duty to anticipate the slow and stubborn processes of natural selection, *by endeavoring to breed out feeble constitutions, and petty and ignoble instincts, and to breed in those which are vigorous, and noble and social.*

(*To be continued.*)

At a wedding recently, when the clergyman asked the lady, "Wilt thou have this man to be thy wedded husband?" she, with a modesty which lent her beauty an additional grace, replied, "If you *please.*"

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Life in the Open Air.

BY HENRY REYNOLDS, M. D.

IN The Atlantic, for March, "Life under Glass" was graphically described, its advantages portrayed, and its feasibility enforced. A plan was presented for constructing a gigantic invalid "air castle" to cover forty acres of ground, to be filled with a luxuriant hothouse vegetation and swarms of delicate invalids. Perennial summer and eternal spring were to abound, and our old New England winters were literally to be "left out in the cold."

The description reads like a narrative of fairy land. We admire the scope and vividness of the writer's imagination, and the originality of his scheme. Whether such an enterprise as the one proposed would be practicable or not, we do not wish to discuss. We are willing to admit that it would be. We object to its utility as a means for the cure of invalids, and particularly of consumptives. The object proposed to be gained is to secure a uniform temperature for the benefit of invalids, particularly those affected with consumption.

It is well known that the general belief is that the one thing deemed most desirable in the treatment of consumption is to secure an even temperature. The vicissitudes of our climate are believed to be the principal cause of this disease. The sudden changes from warm to cold, and from cold to warm, are thought to act disastrously upon the constitution.

The conclusion that consumption is caused by these sudden changes of temperature has been arrived at, perhaps, in this way. Consumption prevails extensively in New England, nearly one-fifth of all the deaths of adults is due to this disease; it prevails more extensively here than in more southern climates; hence the conclusion that it is the severe rigors of our northern climate that causes the difference. Consequently the changes of temperature are looked upon as producing and aggravating causes of consumption. The natural deduction from this is that in order to guard against this disease, and also to cure it, the most essential and important part is to protect the person, or patient, from these changes of the weather. Taking this view of the matter, the physician enjoins upon his patient to go out only on pleasant days, to maintain an even temperature within his apartments; or, if he continues to fail, to seek a southern climate.

Are the vicissitudes of the seasons really injurious to the health? It is hard to believe that they are. Looking upon the plant world around us, these changes seem essential to the growth, vigor and perfection of our northern vegetation. In spring and summer the extreme heat seems to add immensely to the growth and vigor of plants of all kinds. The cool days of autumn have their use in checking growth and maturing the vegetable fiber, that it may be prepared for the rest and sleep of winter. The severe and prolonged cold of winter harms not the dormant world of plants. As spring time advances, bud, blossom and leaf come forth with renewed vigor, after their long rest and profound sleep. The climatic changes, instead of injuring, invigorates plant life.

It may well be believed these same climatic changes act beneficially upon the health of man. The cold of winter tones and invigorates the system, and imparts increased activity and energy. The warmth and glow of summer opens the pores and various emunctories of the body, removing impurities and noxious particles from the system.

We believe to be erroneous the generally received opinion, that our changeable climate causes and aggravates consumption; and that the best results of treatment are to be obtained by guarding against these changes of the weather by remaining in apartments maintained at an even temperature, or by seeking southern abodes.

A great deal has been said and written in regard to the cause of consumption. So much has been thought to depend upon the climate that the hope has been entertained that some region might be found which is exempt from the ravages of this disease. During the settling of the West various sections of that region, at one time and another, have been proclaimed to be the looked for retreat from this dread destroyer. California at one time enjoyed this distinction. Then it passed to Minnesota, and now it has passed to some still more recently settled territory. No region can long retain this distinction. There is no clime, no retreat where consumption may not prevail. Newly settled countries are usually thought to be free from this disease. The first

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settlers of a new country are almost invariably the most rugged and healthy men and women; their habits are promotive of health, and all such communities are peculiarly exempt from all diseases. The feeble and consumptive do not go thither till a later period, and then it is found that consumption prevails there as well as elsewhere.

Yet it must be admitted that even in the older settled regions of the United States there is a difference in the degree of prevalence of consumption. The Northern States along the sea-board are much more seriously afflicted with this disease than the Southern States along the same sea-coast. This fact has led many to attribute the difference to the severity of the more northern climate. This would be a very natural inference to draw from the case. Still there may be other differences in the surroundings of the people of these two sections to account for the difference. Looking a little more closely into the domestic habits of the people at the North we observe one very important fact in its bearing upon this subject. It is the neglect of ventilation of dwellings, workshops, mills, churches and schoolhouses. In these northern latitudes the chief aim of the builder is to exclude the air, to shut out the cold and to make warm and close. Little attention is given to the securing of good ventilation. Even where attempts at ventilation are made, the means adopted are so imperfect and insufficient that little good results.

The importance of a free supply of pure air at all times to the lungs of every person, is generally unknown and unrealized. Air confined in a close room is quickly rendered unfit for respiration by its occupants, and a copious and continuous supply is demanded. Air that has once been breathed is unfit for further use. It is polluted with carbonic acid gas and excrementitious matters thrown off from the lungs, and is no more fit to be received again into the system than are other excrementitious particles.

There are very good grounds for believing that the rebreathing of such impure air is the most common, the most efficient, and the most to be dreaded cause of consumption. Wild animals when closely confined in cages with insufficient supplies of fresh air almost invariably fall victims to this disease. Our domestic animals when confined to close, unventilated stables, often sicken and die of this affection. It is not strange, then, that less robust man should also, when confined to an impure atmosphere, fall a prey to pulmonary disease. Many even whose occupations are in the open air by day, yet by being confined to close, unventilated sleeping-rooms at night, at length are destroyed by this disease.

If the breathing of impure air is the cause of consumption, we would naturally expect it to manifest its most serious effects locally upon the lungs, which come in immediate contact with the injurious properties. Such, indeed, is the case; and is a further evidence in proof of impure air being the cause of the affection.

Now the difference between the prevalence of consumption at the North and at the South can be explained by the fact that the air, on account of its coldness, is more completely excluded from the houses in the former region; and in the latter is more freely admitted to secure relief from the excessive heat of summer. Thus the air in Northern homes becomes impure and destructive to life, while at the South, by welcoming a free interchange of the outer with the inner air, a purer atmosphere is maintained, and consequently there is greater exemption from lung diseases. In this way we would explain the fact of the greater prevalence of consumptive diseases in New England than further south, instead of attributing it to the vicissitudes of the seasons.

If means were adopted to secure thorough ventilation of our homes, workshops, mills, churches and schoolhouses, we would be as free from this disease as any people upon the earth. The inhabitants of the Hebrides islands are said to be entirely free from the disease. Their dwellings contain but one room, in the center of which is the fire, with an opening in the roof above for the escape of the smoke; and this arrangement secures a thorough interchange of the air within with that of the outer air. The air of the dwelling is nearly as pure as that without. These people, living thus, enjoy complete exemption from this affection, while their neighbors upon the mainland, who live in differently constructed dwellings, suffer from its ravages. It is not to be inferred from this that all must adopt this style of living to escape, but merely adopt the essential principle, that of thorough and efficient ventilation.

Admitting that consumption is caused by impure air, we will now consider what is the proper treatment of the same. It is too well known that the usual treatment of this affection is almost a complete failure, as regards curing the patient. They are sufficiently dosed with drugs, in great variety. There is no neglect here. They are also sufficiently fed,

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so that it is not for want of nourishment that death comes.

It is the generally received opinion that consumption is an incurable disease, and that it is for this reason that treatment invariably fails. There are, however, certain facts to disprove this incurability. A large proportion of adults above the age of forty who die of other diseases, present evidences of having had lung disease at some period of their existence, and of having recovered from it. The *scars* of the former disease remain. There are on record some cases of very far advanced disease of the lungs that have been recovered from, and at an advanced age the patient has died of some other disease. These facts go to prove that consumption is not necessarily an incurable disease; and we may infer that the almost uniformly fatal result which attends it is due to some serious fault in the treatment.

Since impure air is the cause of consumption, we may infer that the removal of this cause should be the first consideration in adopting means for its cure. It is hardly reasonable to expect recovery to take place so long as the cause remains operative. If the patient is unable to be taken often into the open air, do the next best thing, by thorough ventilation of his rooms render the air as nearly equal in its purity to the outer air as possible. It is absolutely necessary that the apartments occupied by the patient when within doors be freely and abundantly supplied with pure air.

It sometimes happens that misfortunes—so called—transfer the declining patient from his comfortable and close quarters to open chambers, filled with rents and crevices in its walls, through which from all sides comes the life-giving, pure air. Forthwith an amendment is noticed in the patient's condition. He rests better at night, coughs less, and feels more refreshed by day. The admission of pure air works his cure.

If a patient is able to ride or walk, and most of them are, even after there can be no hope of recovery, he should be kept much in the open air. No air can be so pure as that of outdoors, unobstructed by walls and wafted about by the ceaseless breezes. He should be occupied in some way, either in riding, walking, at work, or by amusements. Horseback riding is one of the best of exercises for such patients. Inclemency of the weather should not keep them within doors. If the cold be severe, or the wind blow, or the storm rage, let additional clothing be put on to protect from chilliness, and the patient go forth. The aim of the patient should be to live outdoors, instead of in the house; and the nearer he comes to attaining this object the more likely he is to recover.

The consumptive patient need not be to the trouble to go south. He has a better climate, a purer air right at his doors, if he only sees fit to avail himself of them. The practice of confining patients within doors and maintaining an even temperature, permitting them to go out only on pleasant days, has sent its thousands to premature graves. If others would escape a like fate, let them avail themselves of the inestimable blessings which can alone come from a life in the open air.

Getting Ready to be Married.

BY RUTH FREEMAN.

TWENTY-FIVE years eight months and five days were spent in fitting Louise Greyburn for marriage, and she was not an old woman either when she gave her hand to fortunate Alwyn Nevis. You see her mother began the great work as soon as the child Louise was born. Indeed, it was begun early in that wise mother's single life; though, of course, not with especial reference to Louise.

Do you imagine that I mean embroideries, table linen, etc. etc., when I speak of the great work of preparing Louise for marriage?

Oh no, no, no! I cannot remember now as I have ever seen a bit of embroidery about the person of Louise. I dare say I have; but, if so, it has been so perfectly in place as to escape my notice. And her table linen, I am sure I cannot remember anything about it, though I was a guest in her house a day and a night during the first month of her housekeeping. I will tell you what I *did* see.

Love! It beamed from the eyes, it flushed the cheeks, it softened the voice, it ran over and flowed around everything, yet there was no os-

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tentation of love or happiness. I dare say that everything in that house was in excellent taste, but the details are not distinct in my mind. I remember some beautiful pictures on their walls. I know there were plenty of books. There was a musical instrument. I guess it was—yes, I think it *was* a piano, but I *know* that Alwyn and Louise sang together.

"Fine voices!" I presume so. I did not think of that. I just thought, "How good the Lord is! And He is *Love.*"

Well, I was going to tell how they prepared Louise for this magnificent success in the way of marriage. I will call it a "success," though Louise has not been a wife more than half a year, and though her husband is a farmer whose whole estate, real and personal, would scarcely bring more than a thousand dollars. I dare say they will meet with troubles and perplexities of various kinds, but their house is founded on a rock and it will stand. Their love is pure and religious. Their marriage is a holy sacrament. There is no school like it in all this human life—the school of marriage and parentage—for all who truly love.

To begin at the beginning—but where is the beginning? Not in the mother of Louise, after all; for she was not the creator of her own large soul; nor did she choose the circumstances which developed her into a woman of deep and broad experience, of culture rare and sweet. The father of Louise I never knew, as he died in her childhood, before I had met the family. Louise and two brothers, older than herself, were left in their mother's care. If I make the mother of Louise responible for the daughter's character, who will be responsible for the mother's character?—*her* mother? Then, you see, it runs back straight to the Great First Cause. Well then, to God I give the glory; but I may tell, at least in part, how He wrought through the mother of Louise.

She never deliberately set to work to prepare her daughter for that event of a day commonly called "getting married." She never set before her child, or before her own mind "getting married" as an *end* to labor toward. Of course she hoped, true woman as she was, that a union true and holy might some day be consummated between the womanhood of her child and true manhood in some human form. Of course, her heart could but choose that motherhood should sometimes work its deep interior culture upon the nature of her daughter. But her work was not that of a matchmaker, nor the work of a milliner. The helpless babe, the little child, the young maiden, she guarded and guided with wise tenderness. She tried to give both body and soul a fair chance to grow, and was too reverent toward her child's Creator to impose any restraints upon its nature, except such as were obviously necessary to check selfishness and teach the child self-government. "Love was law and joy was duty" in the home where Mrs. Greyburn was mother. In such an atmosphere the young Louise unfolded. She learned from her mother's example and precept first, and afterward from other teachers and from books, to take good care of the body that enshrined her immortal soul, her lungs had free play, and her limbs had healthy exercise. In her early youth she learned from the most fitting teacher of such things, her mother, the meaning of her sex and its physical peculiarities. To a child so instructed, clearly and reverently by a Christian mother, all these matters are pure and high, as God meant they should be. Curiosity, wisely gratified when it innocently arose, had no chance to become morbid or to seek satisfaction from poisonous sources.

Louise and her brothers were daily companions at play and at school, and while Louise was a schoolgirl, through all grades she had boys as well as girls for classmates. So she had no false or exaggerated ideas of the masculine character. She had been unconsciously reading it all her life. She had good friends among gentlemen before she felt the first dawnings of love for any.

"None knelt at her feet as adorers in thrall,
They knelt more to God than they used—that was all."

Why did she love Alwyn? I cannot undertake to analyze their love; for love goeth where it listeth, and though you may see the signs thereof, you may scarcely tell whence it cometh or whither it goeth. I know that she believed him to be a true lover of all that is good and true, and wise and beautiful. She recognized him as a fellow pilgrim on the road to a city that hath foundations, and nothing seemed more natural than that they should henceforth walk hand in hand. Something like this she told me only the day before she was married, and I thanked God inwardly as I listened. It occurs to me now that she never showed me a single article of her *trousseau*, nor mentioned a wedding present. Yet I know that she had wedding presents, for I myself gave her—it was such a trifle I will not name it, though I know it was acceptable to Louise, more for friendship's sake than for any intrinsic value. And I know that she had good

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clothes when she was married, for she always dressed well and tastefully.

As a housekeeper Louise is not yet perfect—perhaps never will be. But it does seem to me that she is beautifully prepared for the higher business of *home making*. She is so good, so well balanced, so capable of upward growth, so desirous to give the best help that in her lies to every good work and to every human being. But she is a good enough housekeeper, and "has no scorn of common things." Something was the matter with her bread when I was there, but she and her new Biddy soon set that matter straight, I am sure; for kind feelings and desires for improvement always help housekeepers out of such bogs. Louise has been well trained in household arts, but not she nor you nor I can hope to sail clear of rocks and shoals while the social world remains in its present disorderly condition.

Don't you see when the preparation for marriage came in? You don't? Well I do. You are thinking of "getting married," of standing up before some priest on an appointed day, dressed in the finest possible garments, with trunks full of unnecessary clothing, waiting to be transferred, sooner or later, from the old home to this new one—of bridesmaids and cards, and cakes and wedding presents. You cannot think of it without an accompanying thought of the tedious labor and care involved in such preparation, of the jaded condition of the bride when she enters upon her new life, of the relief it is to those left at the old home to have the fuss over with.

I was thinking of marriage, which is not simply the event of a day, but forever; not the mere yoking together of a man and woman, but the inward union of two human souls, which the outward union only typifies. For such marriage all the former life of Louise had fitted her. She was healthy in body and soul, and so was ready to meet any fate. To one so prepared all life's varied experiences, sooner or later, yield growth and wisdom.

Ornament and Dress.

BY DR. MARY J. SAFFORD.

CLIMATE has much to do with the proper selection of clothing. We all know it is of great use in preserving the heat of the body, and in preventing the injurious action of sudden changes of temperature upon the skin. We see the fez of the Mussulman, turbaned with its multitudinous yards of muslin, which protects the head from the burning rays of the sun.

The native sons of Russia wear for a like purpose in summer their heavy sheepskin caps—unlike their coats of the same material—with the wool outside. I have often been told by Englishmen, residents of India, that the most effective preventive against malarious diseases so prevalent there, is a proper attention to dress; and that undergarments of woolen or silk should never be dispensed with.

The reasons for this are evident. When linen or cotton is placed next to a perspiring skin the moisture passes through them and evaporation produces cold, while flannel absorbs it, and the heat is not conducted from the body; and thus is prevented the chilly sensations that follow in repose, after severe exertion, when one is heated and exposed to a draft of air.

It is believed that the better sanitary condition of the German soldiers—compared with the French—during the late Franco-Prussian war, is greatly attributable to the more practical and healthful manner with which the former were dressed.

As soon as the inclement weather of fall set in an order was issued giving to each German soldier an abdominal flannel covering, and it was generally conceded by physicians with whom I conversed upon the subject, that the influence was most favorable upon diseases of the bowels so prevalent in the army.

The *Turcos*, those "leaders of civilization," as the Germans styled them, just arrived from sunny Algiers in the fantastic dress that had always made them more conspicuous for ornament than noted for use. They were dressed in the full Turkish pants made of red broadcloth, met at the ankle with a buskin of white linen, with a loose blue, gold ornamented jacket, that left the neck exposed. The head was covered by a bright red fez cap, with a long blue tassel.

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Unaccustomed to the severity of the climate, and so illy prepared in dress to meet it, disease did almost as much in lessening their numbers as the German needle-gun.

Since the vacillating power of Europe rests upon the number and strength of its military, everything that money, science and skill could do, has been done to make the soldiers perfect self-acting machines, and the purely ornamental in their uniforms has given place to the practical.

The white coat and light blue pants of the Austrian soldier has been abandoned, and a uniform suit of dark blue has been substituted in its stead. The trousers have been worn closely fastened about the hips by a leathern strap; but it was found so to interfere with the normal functions of the liver and kidneys, that physicians condemned the practice and suspenders have taken its place.

With the downfall of the French Empire disappeared much that was fantastic in the dress of the soldiery. Scarcely a zouave is to be seen now patrolling the streets of Paris, and those cavalrymen of the guard, who sat upon their chargers at the gates of the Tuilleries, stately and magnificently formed as statues, made more imposing by their tall, long-furred black caps that weighed two and a half pounds; they, too, have disappeared, and over the portals they guarded so long and faithfully, is now written in black and white: "*Liberte, Fraternite et Egalite.*"

The women of America to-day are situated much as the soldiers of the empire were; they have outlived the social tactics of feudal times, and are now called forth to fight the battle of life as responsible, earnest individuals.

Shall they meet these responsibilities with a burden of clothing excelling in weight the armor of the knights of old. Shall they be bound at every joint, fettered at every limb, compressed about the vital organs, not by one leathern girdle, but by a multitude of tightly adjusted bands and bones; shall they carry upon their trailing garments the filth and rain of the streets; or shall they go forth under the new dispensation so dressed as to meet the demands of an active life, freed from the tyranny of fashion that dictates without reason to soul and body? It rests alone with women to decide if they shall be bond or free, if they shall regain the lost health that a superfluity and lack of dress has deprived them of, and if they shall be instrumental in peopling the world with human beings stamped with a higher type of manhood and womanhood, morally and physically.

The color of dress is not unimportant, as was demonstrated by the experiments of Benjamin Franklin, who placed various colored cloths on the surface of the snow and found naturally that under black the snow soonest disappeared; teaching us how much more of the sun's influence is concentrated upon us in summer when we are shaded by a black parasol, when our heads are covered by a black hat, or our bodies by black clothes.

We know of the injurious effects of wearing the various shades of green, the basis of whose formation is arsenic. The annual report of the State Board of Health, of Massachusetts, for 1872, tells us that the arsenical green tarlatanes contain nearly half their weight of coloring matter, a piece of the material examined was found to contain 8.21 grains of arsenious acid to each square foot, and a dress of ordinary dimensions would hold in its texture between three and four ounces of pure arsenic. If the occasional wearing of such a dress has not been found to injure the wearer or those associated with her, the dressmakers who worked upon the material have in many instances been made ill by it; the symptoms were those of poisoning, and subsided as soon as the cause was removed. We shall learn, I have no doubt, in the course of time, that the rank poisons used in dyeing have a decidedly injurious influence upon the human system. The beautiful magenta color, so much the rage not long since, was formed by doubly poisonous agents.

Without being able to trace it to a direct cause, there are many skins that rebel against the irritating influences of red flannel, which can tolerate with no unpleasant effects the contact of white flannel.

It seems to me that our first study in dress should be, in regard to the style and material selected; first, what is healthful; second, what is becoming, and third, what is fashionable.

Without falling so far behind the times as to become eccentric in dress, one can nevertheless steer clear of the worst breakers of fashion, and thus save what now is lost to the majority of women, time for mental culture. I never could see the propriety of a woman having any number of dresses, from half a dozen to twenty, to be worn in alternation semi-occasionally; to be put by when the season is ended and resurrected with its recurrence, only to be subjected to days and weeks of remodeling to suit them to the change of style. If men are so sensitive to the sudden changes that our northern cli-

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mate subjects us to, even in summer, that they find it necessary to return to their flannels, and substitute for heavy woolen garments a lighter quality of the same material, how is it that delicate women, possessed of much less vitality than they, can with impunity bare their skin, or shield it only with thin muslins. They never do it, in my opinion, without doing violence to the laws of their nature, and without suffering in some way the penalty of their transgression. How much time would be saved, and how much needlessly spent thought and money husbanded, if that rare old custom of our grandmothers could be revived, of having one substantial gown consecrated to secular life, and one for Sunday-go-to-meeting purposes. Subjects considered the most worthy to occupy the thought and attention of peoples of all nations have called them together in council to discuss plans, and arrange for the furtherance of them in the accomplishment of objects desired, than which none can be more important to mankind than those pertaining to dress and other hygenic subjects. They cover the possibility of securing health, wealth and happiness, not only to the present, but to coming generations.

We need a new order of home missionaries, those who shall preach the law and gospel of health.

There are few, if any, institutions of learning in our land with a chair devoted to the teachings of the Goddess Hygeia.

Our tenement houses are hotbeds of disease, our food is adulterated and rendered poisonous.

The meat we eat may come from the jaded, half starved and diseased animal that has been packed with its kind into pens and conveyed hundreds of miles, without food or drink. The sick are crowded into hospitals in the pent-up streets of large cities, when it is known how infinitely greater would be the per cent. of recoveries, if they could be removed to the country and placed in cottage hospitals, like those recently erected in Leipsic, where pure air, light and sunshine could be enjoyed without stint.

The children of our cities die at the rate of 50 per cent., and there has been a marked increase in adult mortality in some of our large cities the past year; all of which facts are winked at, instead of probing to the foundation for causes, and then without delay applying the remedy for their removal.

I sometimes fear that a robust physique is considered by many women undesirable. They may be drones in the world's hive, and yet they may become mothers. The ruddy health that shows itself in red cheeks and a vigorous strength that enables a woman to do with an elastic, cheerful will the duties devolving upon her, or that enables her to enjoy a walk of ten miles, is looked upon as something indelicate; and there is thought to be a sweet, grateful, tender womanliness in that nervous, exhaustive weariness that comes in sweeping a house, or in climbing a hill. I found myself unexpectedly converted into a heroine when I took a walk once up Mount Washington; and in England, when I walked through the lake district, making at easy stages fifteen and twenty miles per day, I was looked upon as a marvel of American hardihood; and in reply to the interogatories put to me: "Can any of your countrywomen walk as you do?" I replied: "Yes, the majority, if they found enjoyment in it, and would."

I am much more inclined to believe that our habits and modes of life are more responsible for the so called American nervousness and the delicacy of American women, than our much blamed and generally accused climate. Neither do I believe there has been a great failure, physiological and anatomical, in our formation; but rather that our physical disabilities are to be traced to the errors of those grandmothers of ours who gave us inheritances that we, by our own follies, have added to.

As the French Revolution swept away the fantastically absurd costumes of men, so would an American revolution—a revolution of ideas and of education—relieve us from this bondage of dress, so illy becoming our day and generation.

Frivolities always give place to realities. Give to women high aims and ennobling aspirations, educate them to a purpose as men are educated, instead of making them parasites, of teaching them to live on the growth and vigor of other lives, make them self-supporting.

Elevate marriage to the rank of a divine institution, instead of making it a degrading contract, a moneyed matter, a means of support to women. I know that much has been accomplished by men and women with vigorous minds and weak bodies; but the strife is a hard and unequal one, and we always think how much more might have been accomplished with a body that buoyed up the spirit instead of dragging it down.

With every aspiration for the accomplishment of good, there must be the accompanying desire to develop, in a corresponding ratio, mind and body.

A professor of elocution came to me not

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long since and begged that I would write or speak words of warning to women upon their suicidal manner of dressing. "Why," he said, "I cannot teach them the alphabet of elocution, because they cannot inflate their lungs and draw a free, full breath."

When I visited a publishing house during the winter, and saw by the side of men women working in garments that forbid all freedom of muscular movement, I could but wonder at their endurance in performing the tasks assigned them. The men were broad-shouldered, broad-waisted, and dressed to suit their work.

If women do not prove as enduring as men, shall we say it is owing to any functional peculiarity; or shall we tell the truth and the whole truth, that their own disobedience to the cardinal laws of their existence is alone at fault.

Last summer I visited a silk manufactory, and saw one hundred or more girls come to their daily labor, in a drenching rain, with skirts wet to the knees, and thin shoes, soaked through to the feet. If a large proportion of these girls break down in health shall we say: Poor, weak creatures, who could have expected them, in consideration of their physical disabilities, to endure hard work long? Or shall we strike at the cause of their failure, and say it was improper dress? You can no more bandage the vital parts and have them perform their normal functions than you can encase a limb of the body in slats or splints and expect it to retain a full muscular and nervous vigor. You can no more strengthen a weak back or brace up a stomach with faulty functions, by the means of pressure from steel and bones in your girl than you could in your boy.

Of the many hundred autopsies I have seen made upon women, the cases are exceptional in which the internal organs were in a normal condition; and it could not be denied that dress, in the majority of cases, was at fault.

If you will give your girl equal chances with your boy for a vigorous hold upon life, then dress her as free from the pressure and weight of clothing as you do him; and do not for a moment deceive yourself into the belief that you can compress her lungs and impede her circulation without sapping the fountains of her life.

The dawn of that long desired day has already streaked our horizon with rays of light. Soon the fettered superstitions of the past will be crushed and woman will be left free to work out the innermost promptings of her soul. May her aspirations be noble! and may she live true to them.

EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

A FRUIT DIET.

I. Can a man live on fruit alone?

ANSWER.—Yes. We have known thousands of people to live exceedingly well on the fruit of industry. It may not be altogether agreeable to do so, but after all we prefer it to any other as a steady diet. Too much of it clogs, too little dwarfs and pinches the man; and whatever he has besides, without this he starves.

ELEVATION OF WOMEN.

II. Can you give us an article on the elevation of women?

ANS.—A friend at our elbow suggests thick-soled boots as an article more certain to elevate women than anything else. They may be found at the shoemakers.

EVIDENCE OF SKILL IN A PHYSICIAN.

III. Which is evidence of the best doctor, the ability to amputate a leg or cure a boil?

ANS.—It is a very easy matter for a good surgeon to cut off a leg. He can do it in fifteen minutes, and perhaps less. The skill is largely mechanical. But to cure a boil is no easy matter for most doctors.

MOTHER AND CHILD.

IV. Should a scrofulous or consumptive mother nurse her own child?

ANS.—Very rarely, if ever. Nursing a child is one of the most deleterious influences of those which, in a feeble woman, may determine her downward course to consumption. It is also generally better for the child not to be nursed by its own mother, if she is feeble and scrofulous.

MARRIAGE, ETC.

V. An anxious father presents the following case: His children are consumptive, and he wishes to know what ground to take concern-

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ing their marriage relations. Shall he favor or oppose it?

ANS.—It would be wise for all parents under similar circumstances to inform themselves on this subject, so as to act wisely. In the first place consumptive persons should be thoroughly acquainted as to the possible consequences of marriage, and the birth of children. Then let them decide on their own responsibility. In olden times a leper was forbidden to marry, but in this age of liberty we put moral restraint on people rather than physical. If after this they marry, they alone are responsible for the evils that may occur.

In addition we may add that such persons should never marry consumptive partners. This will lead to more unhappiness than blighted love even. And again, they should so live as to ward off the disease. No great tax should fall on body or mind. A wise hygiene should be observed, and constant effort toward physical education be maintained. By such means a consumptive tendency may be thwarted. Then they should locate in a mild, healthful climate, and be very careful how they assume the responsibilities of parentage.

HUSBAND AND WIFE.

VI. Should a husband take care of his own wife when sick, or may he trust her care to help?

ANS.—The model husband is always very tender and thoughtful of his wife's needs, and if he does not personally do all for her that she wants, he sees she has proper care from others. The example of Prince Albert in this respect may here be mentioned: "His care and devotion," the Queen records, "were quite beyond expression." He refused to go to the play, or anywhere else, generally dining alone with the Duchess of Kent, till the Queen was able to join them, and was always at hand to do anything in his power for her comfort. He was content to sit by her in a darkened room, to read to her, or write for her. No one but himself ever lifted her from her bed to her sofa, and he always helped to wheel her on her bed or sofa into the next room. For this purpose he would come instantly, when sent for from any part of the house. As years went on and he became overwhelmed with work—for his attentions were the same in all the Queen's subsequent confinements—this was often done at much inconvenience to himself; but he ever came "with a sweet smile on his face. In short," the Queen adds, "his care of her was like that of a mother, nor could there be a kinder, wiser, or more judicious nurse."

QUARRELING.

VII. I find myself always in a quarrel with some one. It does not seem that I am to blame. I want to know how to avoid it.

ANS.—There are some natures so harmoniously balanced as to be naturally averse to incidental and abnormal excitement. There are others, again, in a state of perpetual and sudden altercation, flying to extremes, especially in emotional directions. But the vast majority of people hover between these two poles, and, especially in the matter of quarreling, abandon themselves pretty much to circumstances. Now if it could only be well understood that quarreling is, as we say, always a blunder, and that it is almost invariably avoidable, it is clear that a little precaution might remove, to a great extent, this trouble from life. It takes two to make a quarrel, and you may refuse to quarrel if you like. The longer you quarrel the more unlikely are you to convince your opponent that he is in the wrong. It is in the nature of quarrels that both disputants imagine they are in the right. Recrimination never contains argument that has the least effect, and the only result of the quarrel is to waste a large portion of time in profitless irritation, and to injure one's health.

MORE QUARRELING.

VIII. I find it very difficult to keep from quarreling with my husband. We begin a discussion on some point on which we differ, in good nature, and in five minutes we are at swords points. Is there any cure?

ANS.—That tendency to let any dispute drift into a quarrel is very much a matter of habit; but it is a habit which may be greatly modified, if not wholly cured. We should teach ourselves, to begin with, that moderation in language and temper is evidence, not of weakness of character, but of the reverse. While a dispute is yet in embryo moderation and self-control may remove it, but when it passes that stage—when it is developed into a quarrel—then all hope of setting the matter to rights is at an end. The prudent person will now simply withdraw himself from the affair, instead of needlessly embittering himself in a useless struggle.

DEFINITION OF HEALTH.

IX. Please give through Studies in Hygiene the best definition of "Health"—a definition concise, brief and comprehensive. The best one I know of is this: Health is the sum of all the functions of the body, properly performed.

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ANS.—Health may be defined to be a state of body in which all the functions are performed with regularity and vigor, hence the shortest and best definition would be: hale, sound, whole, vigorous. The best idea of health may be gained by observing healthy, happy children.

LETTUCE.

X I do not find in The Hygienic Cook Book, published by your house, any allusion to *lettuce* as an article of food. Is it not a suitable food for this season of the year, and can it not be brought within the limits of hygienic requirements as to its preparation for the table? Please state in THE HERALD whether there is any objection to it, used as a salad; and if not, how it may be eaten without the use of vinegar.

ANS.—Lettuce may be used moderately to advantage by most people. The acid from lemons, or limes, is much better than vinegar. Use only the best lettuce.

VISION.

XI. In what way do schools injure the eye?

ANS.—1. They decrease the range of vision, by producing short-sightedness.

2. They decrease the acuteness of vision by weakening the eye.

3. They decrease the endurance of the eye by the same cause.

All teachers should consider it a part of their duty to care for the eyes of school children, as well as their health; and schoolhouses should be built and seats arranged so as to be properly lighted.

HOP POULTICE.

XII. What is the best method of making a hop poultice?

ANS.—If possessed of any virtue as an anodyne, and popularly hops have a great reputation as such, the effect is best obtained by steaming a muslin bag full of them, on the side to be applied to the body, until quite soft and damp, not wet.

The ordinary method of wringing out in hot water wastes all the strength of the hops, and makes a nasty mess of it.

GLYCERINE OINTMENT.

XIII. What is the best method of making glycerine ointment for chapped hands, sores, etc.?

ANS.—Prof. Chas. A. Joy (Jour. Applied Chemistry) gives the following formula for a glycerine ointment, useful on chapped hands and excoriations: "One half ounce of spermaceti is melted together with a drachm of white wax and two fluid ounces of oil of almonds by moderate heat, the mixture is poured into a mortar, when a fluid ounce of glycerine is added to it and rubbed until the ingredients are thoroughly mixed and cold."

CELERY.

XIV. Is celery healthful for weak nerves?

ANS.—A correspondent of The Practical Farmer says: "I have known many men, and women too, who, from various causes, have become so much affected with nervousness that when they stretched out their hands they shook like aspen leaves on windy days; and by a daily, moderate use of the blanched footstalks of celery leaves as a salad, they became as strong and steady in limbs as other people. I have known others so very nervous that the least annoyance put them in a state of agitation—and they were in almost constant perplexity and fear—who were effectually cured by a daily moderate use of blanched celery as a salad at meal times. I have known others cured by using celery for palpitation of the heart."

SUCCESS.

XV. What is the secret of business success? Is it health, genius, learning, or all combined?

ANS.—The Journal of Commerce says: "It is not genius. All with such peculiar gifts make bad managers of any business, and are too erratic for ordinary executive purposes. And it is not high intellectual attainments. Few scholarly men will lay aside their devotion to letters for their own sake, and follow the plodding course by which success in business is to be attained. And it lies not in the force of circumstances. Some who might otherwise have been successful on a clear course have doubtless broken down in the face of peculiar obstacles, but the man who can bend occasions and conditions to his will can achieve his triumph in spite of such adverse surroundings. It is not luck. There is less of happy chance in such success than is commonly supposed. It is true that many tempt their fate, and escape as by a miracle; but this can form no rule of life. Success in business is obedient to a law that can be clearly and distinctly traced throughout the whole of one's career. This law is based on the principle that everything has its price, and they only who are able and willing to pay it can acquire that which they covet. Some are unable, through want of nerve, or failing health, or defective judgment, or other mental and physical defects, to succeed in the struggle. But more, who are able, fail because they are unwilling to meet the

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cost. They seek the end, but will not, by patient, earnest self-denial, employ the means. Present ease, present gratification, some form of indulgence not consistent with the end which has been proposed, offers a temptation too strong for them to resist. To-morrow they will begin a sterner course, next week they will turn over another leaf, with different reading on the obverse side; but to-day let the hands be folded and the old incumbrance remain. No man is on the road to success who has not already paid part of the price, and is now holding out to fortune in full the next instalment that is due. Many fancy they are tendering the price, and wonder that the ground does not grow solid beneath their feet. If they will look again with a keener eye they will see that their hands are filled with a counterfeit offering which will never be accepted. The toiler may deceive himself, but he can never get the better of the principle. Something for nothing is contrary to the constitution of things. Everything for its price is the universal law, but no bogus coin is taken in this bargain.

"There is still another question of even graver importance. Is that great measure of success which most people covet worth the price at which alone it can be acquired? Is it not often, if not always, bought too dearly, and at a sacrifice too great for its real value? And another, of even more practical importance: Is personal happiness at all dependent on this measure of success? We hold that happiness is not dependent on outward circumstances. It is the outgrowth of desirable moral character, and is built of no sordid materials. In truth, the enjoyments of our present state are more evenly distributed than any are willing to admit, as applied to their own case; this one fact alone proving the truth of our assertion."

TURKISH BATHS.

XVI. Is there any truth in the following extract: "The Turkish bath occasions sensations similar to those of alcohol, tobacco, coffee, morphine, etc., and like them is debilitating and pernicious."

Ans.—No. The Turkish bath does not occasion sensations similar to alcohol, tobacco, coffee or morphine. The sensations experienced after a properly administered Turkish bath are those of perfect cleanliness. The sensation is in no way very different from those experienced after any other thorough, careful bath, unless in degree. A dirty man who takes even a warm water, shower, towel, or hand bath, generally experiences a glow of pleasure from it. He, if asked how he felt, would say, "I feel clean and fresh now." He would make the same remark after a good Turkish bath, only he might add, if he had never taken one before, "I never felt so clean in all my life." As to the debilitating effects of the bath, it is all moonshine. We have had shampooers live in the bath several hours every day for years, and enjoying better health than before entering it. Instead of being debilitated, they were strengthened permanently. The Turkish bath may be abused, just as the shower bath or warm bath often is; but rightly used it is one of the best of baths. The writer of the above knows little of the subject, and being prejudiced is unable to state an honest opinion.

SKIN DISEASE AND SCROFULA.

XVII. My children inherit skin disease, and perhaps scrofula, from their father. Can this be eradicated by plain diet from childhood?

Ans.—Children with feeble constitutions and scrofulous tendency should be well fed on plain, but nourishing food. Give them plenty of out of door life in the fresh air and sunshine, clothe them warmly, see that they have plenty of sleep, and physically a good time, Regarding food, let us say that bread and milk. oatmeal and molasses, cracked wheat and cream, and good lean meat and plenty of good ripe fruit should be the main articles of food. If there is a craving for sweet, see that it is gratified by the moderate use of maple sugar, or loaf-sugar, rather than confectionery. The main reliance must be on good nourishment and wise physical culture.

PHOSPHORUS.

XVIII. What is the amount and use of phosphorus in the human body?

Ans.—In the adult it forms 1.80 per cent., in infants 0.80, and in idiots but 0.85; showing that the functions and activity of the brain are, to some extent, dependent upon it. To the nervous centers phosphorus is as essential as iron is to the blood, and whenever there is great nervous action and waste it is found in excess in the urine. Combined with lime it enters into the composition of the bones; it forms from 2 to 2½ per cent. of the substance of the brain, and 36.6 of the ash of muscle. It is an essential constituent of both vegetable and animal bodies, and exists not only in the bones and other hard parts of animals, but in many of the fluids, especially the excretions.

Good taste is the modesty of the mind; that is why it cannot be either imitated or acquired.

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

HEEDLESS TOM.

Wherefore fret if heedless Tom
Lose one half the words I say?
What if sometimes dreamy Ben
Fails to learn his algebra?

Culture is not everything.
Farmers must not always hoe.
Undisturbed, the roots of mind
Oftentimes the deepest grow.

Action is not always good.
Crystals form when left at rest.
What the teacher leaves undone,
May, perchance, be done the best.

Haply inattentive Tom
Thinks a thought beyond my reach;
Peradventure Ben may dream
More than mathematics teach.

Prof. W. H. Venable.

THE TRULY BEAUTIFUL.

How beautiful is Faith!
Amid Time's storm-vexed seas,
The discord and the strife of death
Steal heavenly harmonies.
A lute-tone from afar,
Sounds through the clashing din,
The radiance of Hope's rising star
Illuminates within.

How beautiful is Love!
God's angel from on high,
Commissioned as the spirit-dove,
To bring His glory nigh.
To fold in unison,
The hearts by sorrow tried,
Unto the footsteps ever lone,
To be a saving guide.

How grand is teaching Truth!
That bears aloft the soul,
To heights where the Eternal youth
Bids summer waters roll.
There, recognized the gain
Of trial and defeat,
Thought bides within a sacred fane
And learns at Wisdom's feet.

The attributes Divine,
Shed o'er the troubled lands
The glory of his inmost shrine,
Cared for by loyal hands.
The wealth of heart is there,
Where unity and grace
Make fragrant with the breath of prayer,
God's mighty dwelling-place.

How beautiful is Faith!
Eternal, Lord, in Thee;
Victorious o'er the gloom of death,
Our immortality.
Sweet Friendship's soothing balm,
Gives to the human breast
Assurance of the heavenly palm,
And Thy eternal rest. [Cora Wilburn.

CURIOUS EPITAPHS.

An honest fellow here is laid,
His debts in full he always paid,
And what's more strange, the neighbors tell us,
He brought back borrowed umbrellas.

On a talkative old maid (1750):

Beneath this silent stone is laid
A noisy, antiquated maid,
Who from her cradle talked till death,
And ne'er before was out of breath.

On a Mr. Box:

Here lies one Box within another –
The one of wood was very good,
We cannot say so much for t'other.

In a churchyard in Norfolk, on a lawyer:

God works wonders now and then:
He, though a lawyer, was an honest man.

In St. Michael's churchyard, Coventry, on a wife:

She was ——
But words are wanting
To say what!
Look what a wife should be,
And she was that.

TOBACCO SPIRITUALIZED.*

The Indian weed, withered quite,
Green at noon, cut down at night,
Shows thy decay, all flesh is hay;
Thus think, then *drink* tobacco.

The pipe, that is so lily-white,
Shows thee to be a mortal wight,
And even such gone with a touch;
Thus think, then *drink* tobacco.

And when the smoke ascends on high,
Think thou behold'st the vanity
Of worldly stuff, gone with a puff;
Thus think, then *drink* tobacco.

And when the pipe grows foul within,
Think on the soul defiled with sin,
And then the fire it doth require;
Thus think, then *drink* tobacco.

The ashes that are left behind
May serve to put thee still in mind,
That unto dust return thou must;
Thus think, then *drink* tobacco.

Answered by George Withers thus:

"Thus think, *drink no tobacco.*"

* The above poem was written about 1672; the word drink was then sometimes used in the sense of inhale, or smoke, a form now entirely obsolete.

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EDITORIAL DEPARTMENT

Herald of Health AND Journal of Physical Culture
Advocates A Higher Type of Manhood, Physical, Intellectual and Moral

NEW YORK, JUNE, 1873.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

☞ THE PUBLISHERS *do not hold themselves as indorsing every article which may appear in* THE HERALD. *They will allow the largest liberty of expression, believing that by so doing this magazine will prove to be more useful and acceptable to its patrons.*

☞ *Exchanges are at liberty to copy from this magazine by giving due credit to* THE HERALD OF HEALTH AND JOURNAL OF PHYSICAL CULTURE.

TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

THE KINDERGARTEN ERA — KINDERGARTEN ASSOCIATIONS.—Miss Peabody has sent us the following letter for publication in THE HERALD OF HEALTH, which we do with pleasure, the subject being one which this journal took a deep interest in from the first, and has done something to advance:

The kindergarten era stretches for three or four years between the nursery and the primary school time, admitting more formal discipline than the nursery, but less than is indispensable for the primary schools for instruction in reading and elementary science. And it requires a peculiar class of teachers, who unite the tenderness of the mother with a philosophical insight into the nature of childhood, in that pre-intellectual era when irresponsibility is just beginning to yield to the growing moral sense. Its teachers must have made themselves adepts in Frœbel's method of sharpening the five senses and training the limbs—especially the hands—to artistic processes, with genial conversation, that lead the children to think, invent, and especially to speak and understand their mother-tongue with precision and intelligence.

To obtain such a class of teachers it is necessary for parents first to make themselves acquainted with Frœbel's art and science; and, secondly, to support with their money and personal sympathy kindergartens with properly trained teachers.

To promote these objects, therefore, the Kindergarten Association of Boston proposes that parents all over the country shall form, in their own neighborhoods, simple unions, to meet at least once a month for the purpose of reading and conversing with each other on the subject of kindergarteuing; being quite sure, if they do so that they will very soon be prompted to do all that is requisite to have kindergartens for their own and their neighbors' children at once, and to support the teacher whom they shall procure, with all the necessary means for her success.

Already one such union has been formed in the town of Montclair, New Jersey, whose members meet once a fortnight to read and converse. They began, as any other union can do, with procuring from the National Bureau of Education its Circular of Information on Kindergartens for July, 1872, containing the Baroness Marenholtz-Bulow's statement of what a true kindergarten is. The Commissioner, General Eaton, will send this pamphlet for the asking, without price.

The Montclair Union has already procured

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and supports a kindergartener, who meets with the mothers to read kindergarten literature, and with whom they converse and sympathize. It has proved a complete success, and continues to be more and more interesting to the members. The grown daughters of the members also visit the kindergarten, and find it delightful to assist, under the direction of the kindergartner; who thus is enabled to enlarge her numbers, while they are obtaining the highest touch of culture for future motherhood and general womanly influence in society.

We close by giving the hint of a constitution:

Whereas, we deem it indispensable that all children, between the ages of three and seven, be prepared, by kindergartening, for the schools of instruction provided for them by the State, in order that the latter may attain their objects; and, whereas, kindergartening must be based upon the science of child-nature, which is not intuitive, the undersigned parents and friends of children organize themselves into a social union, to meet at least as often as once a month, for the purpose of reading and conversing upon all subjects pertaining to Frœbel's art and science; beginning with the Circular of Information published by the National Bureau, for July, 1872.

The meetings shall be as informal as is consistent with order and comfort, the President of the Union being chosen to act as chairman, and open the meetings with a statement of what is the subject of the reading or discussion of the day.

A secretary may also be appointed, whose duty it shall be to make some report of each meeting to the one following; and by and by to correspond with the Boston Kindergarten Association; which hopes, in the course of the summer, to start a monthly periodical, to be edited by Miss E. P. Peabody, the first number of which will be sent to any union that will make known its existence to the association.

This monthly will afford themes for the conversations of the unions, and contain, among other things, Miss Peabody's lectures of the past winter. The continuation of the publication, however, will depend upon the success of the subscription for it.

This letter is written by the order of the Boston Kindergarten Association, given at their meeting of March 22d, 1873.

ELIZABETH P. PEABODY.

CHEAP DISINFECTANTS.—One pound of green copperas, costing seven cents, dissolved in one quart of water, and poured down a water closet will effectually destroy the foulest smells. On board ships and steamboats, about hotels and other places, there is nothing so nice to purify the air. Simple green copperas dissolved under the bed in anything that will hold water will render a hospital, or other place for the sick, free from unpleasant smells. For butcher's stalls, fish markets, slaughter houses, sinks, and wherever there are offensive, putrid gases, dissolve copperas and sprinkle it about, and in a few days the smell will pass away. If a cat, rat or mouse dies about the house and sends forth an offensive gas, place some dissolved copperas in an open vessel near the place where the nuisance is, and it will soon purify the atmosphere.

EUTHANASIA.—At last the world has got hold of a new idea, or rather that part of it known as England, for it has hardly spread elsewhere, except by report. The word euthanasia represents the idea which is this, that when any person's life becomes intolerable they have a right to end it; not by the common, vulgar way of blowing his brains out, but by quietly having administered to him by the physician some anæsthetic that shall do the work. Those who are hopelessly diseased, insane, idiotic, and of no account in the world, are to be put to an end by the council of physicians who sit upon the cases. If this is not a new doctrine it will sound new to most people. The arguments given in favor of it are these: First, when life becomes intolerable it is not worth preserving. Next, when a person

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becomes hopelessly deranged in body and mind it is hardly worth while to wear out the life of a healthy person to keep him alive. It is giving a good life for a poor one. What will be the result of the discussion we cannot tell, but we doubt if it amounts to anything. Without fearing any serious results from the agitation, we patiently wait and see.

Meanwhile we may say that we believe that life on this globe is too precious to trifle with; and that if the laws of life were as carefully taught to every human being as they are to some, there would be few people to get out of the world by this short cut, and few whose lives would be a burden to them. So, too, we may add that while the sick and insane may tax unduly the well with their care, yet this very provision for their comfort and happiness develops some of the most desirable traits of character in the human mind. What we give to others we have: "It is more blessed to give than receive."

THE HYGIENIC INSTITUTE.—Our friends will be pleased to learn that the Hygienic Institute, 15 Laight street, is rapidly being refurnished, newly painted and repaired, and put in good order for the accommodation of friends everywhere. Whenever you come to New York don't fail to give it a call.

THE NEW YORK FREE MEDICAL COLLEGE FOR WOMEN.—The New York Free Medical College for Women, 57 St. Mark's Place, indicates a new phase of public sentiment. It indicates that the people and profession are at last sufficiently liberalized to support a medical college that has no pathy, and teaches medicine as a science apart from schools. It may not be generally known to our readers that the Faculty of the New York Free Medical College for Women contains representatives of the three leading schools of medicine. The old, or allopathic school, is represented by Profs. J. V. C. Smith, Frederic R. Marvin, Wm. Frederick Holcombe and Jonathan Cass; the homœopathic is represented by Profs. Caroline J. Youmans, Sarah E. Furnas and Wm. White; the eclectic by Profs. Paul W. Allen, Robert A. Gunn and E. S. McClellan. The college is free to all women, and is the largest and, we believe, the best medical college for women in the country. At its first commencement, held Saturday evening, April 12th, at Steinway Hall, it conferred the degree of M. D. upon six graduates: Miss C. A. La Selle, Miss Laura M. Fleming, Miss P. A. Smith, Mrs. R. C. Martin, Mrs. G. M. Crosby and Mrs. Harriet S. Warren. Dr. Marvin, in closing the exercises, said the second winter term, which closed last Thursday, had been one of not only the greatest promise, but of unparalleled success. A medical college, established in a large city like New York, with rival institutions on every side, opening its doors without pecuniary compensation to all classes, rich and poor alike, and standing aloof from all schools, creeds and private prejudices, and yet from the commencement a success, is something unparalleled in educational enterprise.

We cheerfully recommend the New York Free Medical College for Women to our lady readers, and bid the noble institution God speed.

A FRIENDLY LETTER.—MR. EDITOR.—I have been a subscriber for THE HERALD OF HEALTH three years, and have for some time been impressed that it is a duty I owe to this valuable little work to make known to the world, as far as possible, the vast amount of useful knowledge I have already derived from it; but as I lay no claims to education I feel somewhat incompetent for this high privilege. Three years ago I was looking over The New York Evangelist, and by some means my attention was attracted by this publication—THE HEALTH OF HEALTH—which I immediately subscribed for; and as I am inclined to take a broad view of reformatory measures I was, of course, deeply absorbed and interested on finding what I had gained on receiving my first number. As I generally seize knowledge as

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it comes to me from observation, and use it to the best advantage, of course, I immediately commenced the health reform. Being weakly constituted, and an improper training in regard to physical laws has ever caused me to be predisposed to any disease which may be brought on by disobeying the laws of nature. As I before said, I begun the practice of health laws, and since that time I have scarcely known the use of a physician in my family.

My first children have all went to an early grave, although I do not think this a special visitation of Providence. But since I have learned the art of health I have been blessed with a child, the picture of health and happiness.

A word to mothers, and "Women in Council:" Onward speed with this great work of reformation, and sow the good seed that it may take deep root and withstand the storms and tempests that may come in later years.

WOMEN'S SHOES. — DR. HOLBROOK. — Permit me among the valuable articles in THE HERALD OF HEALTH, to add a few words upon the popular forms of ladies' walking shoes and dress slippers. That the latter are pretty in coloring, although ugly in form, we cannot deny; and that they really add to the *fanciful* attractions of a lady's wardrobe. But it is this word "fancy" rather than judgment that occasions most of the unhealthy and sometimes ridiculous fashions so popular among society belles and many would-be pretty women, of all classes, at the present day.

Gait is dependent upon shoes, in a great measure; although, without doubt, this is frequently an inheritance, and very often indicates character; but those fashions of shoes which throw the weight of the body upon the toes—whether upon the street or in the house—must certainly be responsible for the absence of coveted grace among many of our fair pedestrians.

We know there are schools for cultivating fashionable manners, and such "airs" as distinguish ladies belonging to the *haut ton;* among these holding the hands "a limp," which, although laughable in the view of common sense, really does no physical harm to any female whatever. But this cannot be said of narrow shoes with high but small-sized heels, to wear which occasions constant irritation to the nervous system and really induces difficulties worse even than the corn or the bunion.

Chiropodists were formerly little required; now they flourish, like many other *artists*, upon fashionable indulgencies, and must, we think, find a great deal of secret satisfaction from the displays in our shoemakers' windows; for with every pair of these hideous contrivances, we can hear the chink of coin somewhere, honestly due for the relief of these self-imposed miseries.

The English woman, who wears, usually, very substantial shoes, walks better — with a more assured tread—than the American, and knows nothing at all of that quick fatigue experienced by the majority of female pedestrians in our own country. We would say to each of your readers: Go thou and do likewise.

Respectfully, SARAH L. HOPPER.

THE ELMIRA WATER CURE.—Nearly a quarter of a century ago Dr. S. O. and Mrs. R. B. Gleason moved onto the side hill in the town of Elmira, New York, and there among the glens and hills and springs, established what is now known as the Elmira Water Cure. By faithful attention to their patients and their business this institution has become known all over the country, and has been the *rendezvous* of a very large class of women, and men, too, who needed rest and restoration to health. As time passed on associates grew up in the place, learning by experience the methods of the Cure and helping on in its prosperity. Two of them we may mention: one, a sister of Mrs. Gleason, Miss Zippie Brooks, one of the best of workers and most accomplished of physicians, has been one of the most important spokes in the wheel for many years. Those who know her, will know one devoted to her work and her friends as a true woman can be. She has

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been in the Cure for many years. A few months since she was married to another of the workers in the institution, Dr. Wales, also a young, enthusiastic and accomplished physician. Here is a *quartet*, so to speak, Dr. Gleason and wife and Dr. Wales and wife, all related, and really one family in fact and in interest, managing this successful institution, each supplementing and strengthening the other. We do not need to speak for more patronage for this Cure, for it has always been well filled; but we take pleasure in mentioning it and its founders and proprietors.

GENTLEMEN.—I have been a subscriber for your HERALD OF HEALTH for two years; I cannot do without it; but what most interests me is the Editor's Studies in Hygiene. I am a young mother, do not believe in drugs, though my husband is a physician, and druggist, too. I have a boy nearly two years old, and I am troubled on account of his want of appetite. I weaned him at about five months old, because of my extreme illness with typhoid fever. He nursed the bottle, and has been doing very well until now. I only let him have six ounces of milk three times a day in his bottle. I cannot get him to drink from a cup or goblet. He has eaten gravy, butter, molasses, bread, and such as that until now. I cannot tell the cause of this want of appetite, as he has eighteen teeth; and it cannot be from teething. He is finely organized, with fair hair and complexion, and brown eyes. I have written this with the hope and faith that you will suggest something that may do my boy good. I am trying to raise him hygienically. I shall look forward to the next number of your HERALD OF HEALTH with much anxiety. Yours respectfully,

ANNIE E. GWIN.

P. S.—The six ounces of milk referred to above means at this time of his age, as I have been trying to wean him from the bottle altogether.

REMARKS.—Quite likely your child may be dyspeptic and there be little call for food. If his appetite does not soon return, perhaps a change of place for a few days, with change of scene, will be of advantage. We have known a child become very hungry, after weeks of dainty appetite, by simply visiting for a day away from home. When the weather is warm take him to the woods, or keep him out of doors; but not in the hot sunshine. Regarding food, it must be nutritious and palatable. It requires great tact on the part of mothers to make a dainty child eat even the best of food, and some cannot do it at all. In this case they may often be aided by those who are skilled in these matters. Regarding the kinds of food, it will not do to be too severely strict, as mothers are apt to be on first becoming acquainted with hygienic teachings. Of course, many things are objectionable; but common sense will aid, and should not be set one side.

A NEW COLONY.—Dr. J. P. Phillips, who has furnished THE HERALD OF HEALTH with several very instructive letters from California, has returned, much improved in health, to his home in New Haven, Conn. He hopes to start in a few months on an extended tour through north-western Texas and other Southern States, with a view to locating a colony on a large scale, if a suitable location can be found. He writes: "I am quite out of patience with life in a cold, sunless clime, and wish to go where a man can live out of doors more. From all I can learn southern New Mexico has the best climate for pulmonary troubles in America. There is an enormous demand for some spot to which invalids can be sent with a certainty of not being humbugged, and finding themselves the victim of a sensational writer, at a price per article regardless of truth. The mountains just back of San Diego have a fine climate, but the region is less accessible than southern New Mexico."

Dr. Phillips is a man of great energy and ample means, and is well fitted for such an enterprise. The readers of THE HERALD will be kept posted as to his movements.

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RECOVERY OF DR. SARA B. CHASE FROM protracted ulceration of the stomach.

Brownhelm, Loraine Co., O., April 28, 1873.

DR. HOLBROOK.—*My Dear Sir.*—Upon visiting Cleveland last week one of my former neighbors handed me a package of THE HERALD OF HEALTH, and I recognized at once your own handwriting upon the wrapper. I write to thank you for this new token that I am remembered, and to tell you of my exceeding good fortune in the recovery of my health. I find myself at the present a very happy woman—happy in the possession of a new-born freedom from disease and pain. All the world looks beautiful, and after my near approach to the grave and my almost miraculous restoration to health, with a new lease of life, as it were; it seems to me that nothing can trouble my repose of mind, and my thankfulness is a continual fountain of joy. I am content to give up my ambitions which have impelled me forward during past years, and nothing but the terrible experience of the past few months could have brought me to this frame of mind.

I have bought me a fruit farm of sixteen acres, on the line of the Lake Shore and Michigan Southern Railroad, between Cleveland and Sandusky; and my hired man and woman and my own child constitute my family. I have a lovely place, near school and church privileges, right in the center of one of the most beautiful farming regions in Northern Ohio—the lake in sight—society around me of the best quality, being mostly educated and intelligent graduates from Oberlin College.

I am the only M. D. in the town, and have all the practice I can attend to. I came here the middle of March. When I bought this place, in February, I could still eat nothing but *milk;* although I was constantly growing fleshy and strong upon this diet. Now I can eat almost anything I desire. I live out of doors when the weather will permit, and intend to do so all the season. I am trying to have my affairs arranged so that I shall be removed entirely from perplexity and anxiety, and live for the renewal of my life powers.

I am almost as heavy as I ever was, weighing 175 pounds. My great trouble now is with my nervous system. Any exaltation is followed by a complete letting down of my nerve force.

Thus, you see, I am still compelled to count myself an invalid, though a very "comfortable" one. I enjoy life intensely, and with my books, papers, correspondence and friends, surrounded by the beauties of nature and removed from corroding care, I may hope to live many years of comfortable and enjoyable life.

And now, my dear Doctor, I wish to say to you that I attribute my recovery to the persistent use of a milk diet exclusively. I have some of the time gained upon an average one pound daily, and that of good, solid flesh, and healthy. I weigh 75 pounds more than I did in August last, and all say that I look ten years younger than I did last summer. Do you wonder that I am happy, and find much cause for thankfulness?

Yours truly, SARA B. CHASE.

MARRIED WOMEN.—*To the Editor.*—THE HERALD OF HEALTH not long since told its readers that the present was an abnormal age. It would seem that it is so especially with regard to *femininity.* Women are abnormal from their *coronal* braids to their boot heels.

Should the author of the "Princess" rewrite that effusion, he probably would not intimate that marriage takes the nonsense out of women. According to the latest estimates marriage puts nonsense or nonentity *into* women. A sensible, young, wholesome girl, full of wit, sparkle, aspirations and generosity, marries. Ten years thereafter her best friend would say, if truth were spoken: "Oh, my dear, you are a *dreadful* cheat! You promised so much, and are so utterly lost to us and society."

Married women naturally range themselves into three classes, *Playthings, Drudges and Nobodies.* Class 1st are peculiar. Their heads measure about twenty and a half inches at the greatest circumference, waists ditto. They are of boarding-school origin, marry men from ten to forty years their seniors, and tend small dogs.

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Class 2d are of the sewing-on-shirt-button order. They sleep with one eye open through the infancy of their children, mend "his" stockings and wonder if "he" will come to dinner soon. Their husbands are an eternal "he." The out-Boswell Boswell in devotion, and are ready at any minute to make their frail bodies a bridge over which some selfish, unscrupulous husband can safely walk to comfort and advancement. "Hannah Jane and I" tells their story.

Class 3d may be subdivided into four interesting classes, viz.: *Invalids*, *Gossips*, *Women that Board*, and *Women that are Interested in Foreign Missions*. Formerly a distinct class, not above mentioned, existed. It flourished two generations ago. We heard something of it in our childhood. The class was peculiar in that it bore and reared children. It has almost entirely died out now, particularly in those christian churches that love to hunt children from the poorer districts to make their Sabbath schools of. A fashionable wife said to us not long since: "The ladies of 'my set' don't have children." (This lady's head would probably not go over nineteen inches at its greatest circumference. It is always well to keep the size of the head in mind when estimating individuals.)

The invalid class of women are a profound psychological curiosity, which no sane person would undertake to comprehend. They are characterized by perennial backaches, nerves constantly upon the rack, and stomachs that will digest pork, pepper, mustard, lard, pastry, pickles and candy. These feeble creatures manage to carry a weight upon their loins that would give kidney complaint to Samson himself. They are always alive when everybody else has died off. The woman that boards is a strictly modern invention. Of all women, they that board—and love to do so—come the nearest to having no souls. They are vanity, insanity and sophistry combined, and made to assume woman's shape. In a word, marriage too often means intellectual stupidity and spiritual paralysis; with diseases named legion to vary the monotony. Marriage does not now, as formerly, mean home, faithfulness and devotion.

ANN WESTBROOK.

[There will be a reply to this writer's letter in the next HERALD OF HEALTH. We dissent from her views and shall show our readers how she is mistaken.—EDITOR.]

TOO MUCH VENTILATION—TOO MUCH BATHING.—When a very young man I took to sleeping with an open widow, from finding that sleep on the top of a coach was peculiarly refreshing on a summer night; which I ascribed to the open air. But I soon found that when the air had raw fog in it, or was severely cold, the effects were evil; and though I have always preferred an open window in hot weather—except when noises outside compel me to close it—yet it is impossible to me as a general rule. Who can recommend it to those who, alas! have to dwell where the air outside is laden with noxious exhalations? Yet some physicians lay down a *universal* rule to sleep with an open window, and seem to think that one cannot have too much oxygen in the air by night.

On the direct contrary, an eminent physician, lately deceased, argued to me that in sleep the air ought to have *less* of oxygen; that much oxygen hinders sleep, air partially impure aids sleep; that cats and dogs in sleep cover their noses with their paws, or thrust them under their sides; that he had known pet dogs sleep under bed-clothes, and voluntarily go to the bottom of the bed; that dens of beasts have little circulation of air, and that the animals go deep into them for sleep. Sir Walter Trevelyan printed a paper on this subject, some years back, to the same effect. I have long been aware, in my own experience, that very cold air, which I can breathe while awake without inconvenience, will make me cough convulsively if I try to sleep in it. I believe the reason to lie in the long, deep breath of sleep.

Then, as regards clothing, the quantity needed surely depends on several circumstances—the activity of the person, the state of the pulse the habit of body, fat or without fat; perhaps

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also the age and the time of day, beside the temperature of the air. If I have to sit reading I need more clothing than when I have continuous muscular action, even if not severe. When fatigued I need more than when fresh; after a good meal I need less clothing than before. Besides, I suppose it will be admitted that the more oleaginous food we can take without disordering the liver the more we can lessen our clothing. To lay down any general rule that takes no notice of these diversities does not commend itself to me as good sense.

Concerning bathing of the body, I think our sanitarians are very extravagant, and they have done great public mischief by setting the great towns to plunder the rivers of their supplies from the head streams. Even the prophet Mohammed, a fanatic of cleanliness, regarded friction with sand as compensatory for washing. If any one supposes that the limbs and trunk of the body cannot be kept as perfectly clean by dry rubbing as by any amount of washing, I say he has something to learn. Undoubtedly in a hot climate, or hot weather, there is nothing so pleasant and so rapidly effectual as bathing, if the temperature of the water be not too low, as it is apt to be with us, even in our hottest weather. I have always enjoyed swimming; but reluctantly give it up, because the cold makes my hands dead, which cannot be healthful. I once brought on a severe attack of illness by using a sitz bath. All the hardy barbarians of the north have at all times. been reproached by southern people for their neglect in washing. The old Romans did not—as a nation—betake themselves to baths till the era of effeminacy set in. Tacitus says of the Germans: "In the midst of *this dirt* they grow up into those limbs which we admire.' The Scythians, of Herodotus, were reported not to wash; but in cold weather, at distant intervals, to cover their bodies with a hot, spicy paste. It dried on them, and dropped off when cold, leaving the flesh clean. Northern races know that cold water takes strength out of them, and they do not volunteer to touch it. Their practice has more weight with me than recent theories. No doubt where hot baths, warm dressing-rooms and luxurious towels can be commanded, warm bathing tends to human beauty. Perhaps it makes a more *delicate* animal, more susceptible to cold. I think it does. A hot-*air* bath is a very different thing, and more akin to the Scythian practice. But, granting that *wealth* may advantageously avail itself of warm water, with a cold shower bath after it, that does not justify a universal command to men and women, rich and poor, to wash their whole bodies every day in cold water, as many of our sanitarians do.

A few years ago there was an extensive conflagration in Ottery St. Mary, Devon; and an old man, who had long remained in-doors, was burnt out. The neighbors were so scandalized to see how dirty he was that, by an operation of lynch law, they set about washing him, against his plaintive and piteous entreaties; but they completed it, in spite of his protestations that he should die of cold from it. In fact, that very thing happened only a few days after. This was attested to me by a lady who lives close by.

The rich appear to me often to imagine that the poor can do wisely in imitating their practices; but to adapt them by halves may be mischievous. If a person cannot afford a change of shoes and stockings, when they are wetted, it is far better to go barefoot. So if he cannot command hot water and warm dressing rooms, it is not always certain that he will be healthier and stronger for much washing. In northern climates I do not think that the most robust of our species are the cleanest, any more than of dogs and horses.

F. W. Newman.

Owing to the illness of Howard Glyndon the article "Women in Council," is laid over until our next number.

The woman who maketh a good pudding in silence is better than one who maketh a tart reply.

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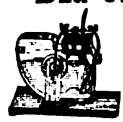
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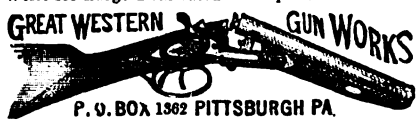
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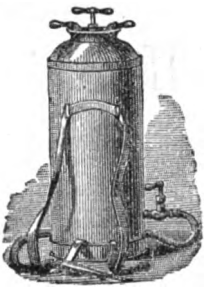
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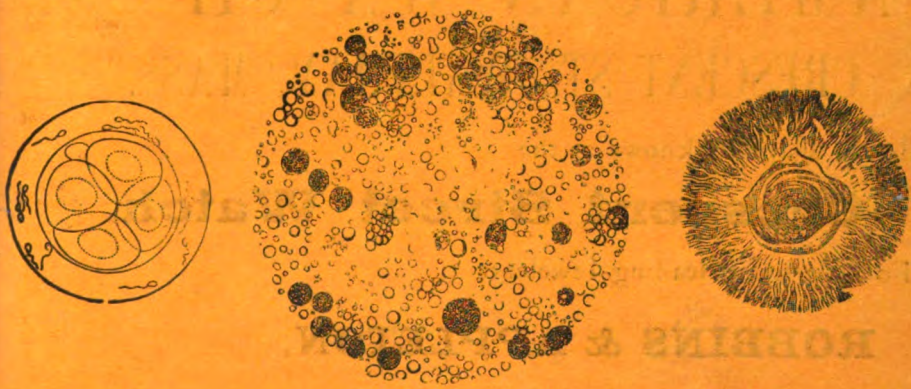


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