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MEDICAL GYMNASTICS, OR SWEDISH MOVEMENTS.

BY THE EDITOR.

THE value of exercises of various sorts as a remedial measure has for ages been recognized by both barbarous and civilized nations. The Chinese, one of the oldest nations on the globe, together with the inhabitants of India, have long appreciated the value of exercise. According to accounts which have been gathered from their writings, they have for the last two thousand years or more possessed a knowledge of the remedial value of exercise, and have employed it frequently in a more or less systematic manner. The ancient Greeks and Romans also employed exercises of various sorts, not only for developing the body, but for relieving many diseased conditions.

We might find it interesting to note more particularly some of the peculiar modes of treatment employed by the various nations mentioned in ancient and modern times; but as our space is limited, we will confine our remarks entirely to what are known at the present time as "Swedish movements." This system of medical gymnastics was chiefly developed by a Swede by the name of Ling, who was born about the middle of the last century. His system of exercise was put in practice in Stockholm, Sweden, about the year 1813. The results obtained were so remarkable and attracted such general attention that Ling very soon secured the co-operation of the Swedish Government, which enabled him to found an institution under governmental patronage for the employment of his system for the treatment of chronic diseases of various sorts, which was so successful that it remains in existence to the present time, though its founder has been dead for more than forty years. At the present time many hundred patients are annually treated at this institution, and its success has encouraged the establishment of similar institutions in various parts, especially in this country, so that it is probable that at present there are not less than fifty in active operation.

THE REMEDIAL VALUE OF MOVEMENTS.

The value of movements in the treatment of disease has become now so thoroughly established that it is not necessary for us to adduce other arguments than the results of their use to show their utility. For some years after the introduction of this mode of treatment, it was looked upon with suspicion by the better class of physicians generally, and was left to be employed by quacks and charlatans. In many instances it has been employed by unscrupulous persons who sought to attract patronage by laying claim to the possession of skillful magnetic powers. There have been cases in which patients were benefited by the treatment of these quacks, when in fact their success was wholly due to the results of manipulations of various sorts which were invariably employed by the so-called "magnetic doctors." We will now briefly

consider some of the principal remedial effects of the employment of medical gymnastics.

1. To Regulate the Circulation.—It has long been recognized as an established physiological fact that the circulation of the blood is greatly influenced by the action of the muscles. By muscular action the blood is pressed along the veins, and thus its progress toward the heart is greatly accelerated. Whenever there is a deficiency of muscular activity, as in persons who are confined to their beds or who are unable to take a sufficient amount of daily exercise, the employment of Swedish movements will often produce most marvelous results in restoring to a normal condition the unbalanced circulation. They are of special service as a derivative measure when applied to the hands and feet of any person suffering with habitual coldness of these members. We are acquainted with no remedy which will so readily secure marked and permanent results in this direction as this. Applied to the whole skin, it is an excellent means of relieving congestion of the head, spine, liver, and other organs.

2. To Increase Secretion and Excretion.—Movements are of much service in cases in which there is very great diminution of secretion and excretion. They are especially useful in cases of torpidity of the liver and inactivity of the skin.

3. To Increase Respiratory Power.—No function may be so rapidly augmented and permanently increased by the aid of movements as that of respiration. We have known patients to double their breathing capacity by a few weeks' practice in the employment of lung gymnastics.

4. To Increase Digestive Power.—In the great majority of lung diseases of other organs, as well as in functional derangement of the stomach, deficient muscular power and activity of the stomach and intestinal canal is one of the principal morbid conditions, and one to which especial attention must be given in directing a successful mode of treatment. In many cases, movements applied to the abdomen seem to meet these indications better than any other remedy which can be employed. We have been in the habit of prescribing this means of treatment in cases of this sort for a number of years, and are more and more thoroughly satisfied with the results obtained.

5. To Increase Assimilation.—In not a small proportion of cases of chronic disease which come under the care of a physician, defective assimilation is one of the most serious obstacles which must be overcome in conducting the case toward a successful issue. It is not what a person eats, or even what he digests, that benefits him, but what he assimilates. There is no means by which assimilation may be so powerfully stimulated and encouraged as by the careful and skillful employment of Swedish movements. This fact is now so thoroughly recognized by the leading physicians of all countries that this means of treatment is relied upon as almost the sole remedy in the treatment of a large class of cases.

6. To Increase Vital Action.—The influence of movements in increasing vital action is shown not only by the rapidity with which patients gain in flesh under their employment, but by the fact that the immediate effect of the application in the majority of cases is to produce marked rises of temperature which cannot be accounted for in any other way but that there has been a marked increase in vital action as a result of treatment. As the the effect clearly suggests, the remedy is of great service in the treatment of cases of general debility and all other diseases in which there is general inactivity of the vital functions.

7. To Regulate Muscular Action.—No remedy is of greater value in the treatment of that class of cases in which there is disordered muscular activity, as in various distortions of the spine, which result from unequal muscular action, in the great majority of cases of displacement of the womb, and various other diseases peculiar to women. In cases of paralysis no other

remedy, unless it be electricity, will accomplish so much as this, and if we were obliged to dispense with the use of one of these two remedies we should certainly choose this as the one of greatest value.

GENERAL PRINCIPLES GOVERNING THE APPLICATION OF MOVEMENTS.

In the application of medical gymnastics, it is important to give attention to the following points:—

1. The kind of movements to be taken should be carefully and accurately adapted to the condition of the patient.

2. If the movements to be taken are of such a character that the patient can administer them to himself, he should receive careful instruction, as everything depends upon the proper application of the means employed; if they be given by another person, the attendant should be thoroughly trained, as much more harm than good will be done by an unskillful application of the remedy.

3. Movements are best administered at about ten o'clock in the forenoon, or between three and four o'clock in the afternoon, unless there is some special reason why they should be administered at some other time, as in cases of slow digestion.

4. At the beginning of a course of treatment with movements, the first application should be gentle, so as to avoid the production of muscular soreness and nervous irritability which will often appear when this precaution is disregarded. In case, however, the patient suffers with a slight soreness, or with an increase of nervous irritability, and other slightly unpleasant symptoms, his fears should be at once quieted by the assurance that both these symptoms will disappear in a few days, as they will be almost certain to do.

5. In the application of movements, care should always be taken not to extend them sufficiently long to induce great fatigue. The patient should always be made to take an hour or two of rest after the application.

DESCRIPTION OF VARIOUS MOVEMENTS.—The various movements employed are divided into three general classes: Active, Passive, and Half-Active, or Active-Passive. In the first class of movements the exercise is obtained wholly from the individual effort of the patient; in the second, the exercise is applied by means of an attendant; in the third class there is a combination of the two, attendant and patient co-operating, the two acting either alternately or at the same time, each gently resisting the other's efforts. In institutions in which this remedy is relied upon almost entirely, it is common to give a great variety of movements of various sorts. We will not attempt to describe the whole list, but will give a brief description of a few of those which we have found the most useful, and which can be the most readily utilized.

MOVEMENTS TO DEVELOP THE MUSCLES OF THE TRUNK.—Figs. 1–7 represent movements which are especially designed to develop the muscles of the back, chest, and abdomen.

Fig. 1 represents an exercise to be taken in a doorway, or between two posts of proper height. The position is sufficiently well shown in the cut. The exercise consists in raising one foot and placing it forward as in walking, at the same time throwing the body forward with energy. The forward motion being arrested suddenly by the arms, a strong strain is brought upon the muscles of the front of the body, particularly those of the chest. After the forward movement, the foot is returned to its place beside the other. This movement is repeated eight or ten times with each foot. As in all other movements, the action should be deliberate, and energy and considerable muscular strength should be em-

FIG. 1.

ployed. This is a most excellent means for strengthening the chest.

FIG. 2.

Fig. 2 is another admirable movement for developing the chest and the muscles of the trunk. The feet are thrown apart to brace the body, the hands being clasped over the head, and the trunk is oscillated from side to side several times in succession; then the same movement is executed from before backward.

Fig. 3. The weight of the body is partly sustained by the hands holding the top of a bed-post, or a ring fastened in a wall or post. The movement consists in swinging the body, making the points of support of the hands and feet the centers

FIG. 3.

of motion. The movement may be varied by allowing the body to fall slowly toward the hands by bending the arms at the elbows, and then straightening the arms to restore the body to its first position again. The effect is to expand the chest and strengthen the muscles of the abdomen and back.

Fig. 4. The body is placed in the kneeling posture, with a cushion under the knees, and the heels prevented from rising when the body bends forward, as shown by the dotted lines, by being placed under the edge of a sofa or some other

FIG. 4.

convenient object. This movement affects not only the trunk, but also the muscles of the calf and thigh.

Fig. 5. The patient stands against a wall or post, and bends forward as far as possible without bending the knees. By the aid of an assistant, the head may be readily lowered to a level with the knees.

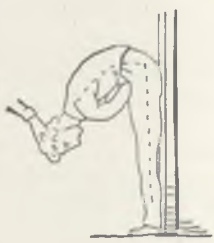

FIG. 5.

FIG. 6.

Fig. 6. In this movement the patient's head is thrown back as far as possible, and to prevent the patient from falling backward, the head is supported by the wall or a post.

Fig. 7 represents essentially the same movement, its effect being intensified by bending the body backward nearly to a right angle. In taking this movement it is necessary to have the back supported by the hand of an assistant.

FIG. 7.

HEALTH, THE TRUE NOBILITY.*

BY DR. ALBERT L. GIHON, U. S. N.

WHICH is the fairest of babes? What man the manliest? Who, among women, the queenliest woman?

Is it the infant ushered into the world amid a nation's plaudits, cradled in damask, and surrounded by all the luxury of wealth, whose dull eye and feeble wail betokens its dire inheritance from generations of royal sinners; or the rosy child, without spot or blemish, feeding at a mother's breast, which has never ached with pain?

Is it the man who daily wakes from restless slumber to battle with one or another of the body's ills which have pursued him from birth or are the fruits of his own reckless living; or he whose sound body domiciles a sound mind, and whose nerves thrill with ecstatic pleasure to the harmonious tunings of his senses?

Is it she whose existence has been one long plaint of suffering, who hides ill-shaped, attenuated limbs and shrunken bosom beneath rich garments, and by cunning artifices makes that seem which is not, braiding her thin, short hair with other women's tresses, tinting her sallow cheeks, and filling unsightly gaps until they counterfeit nature's rounded outlines; or she, whose warm blood courses unchecked throughout her faultless form, mantling her checks with rosy hue, moistening her lips with dewy softness, and brightening her eye with lustrous fire, whom time fails to disfigure, and who passes out of the loveliness of youth into the eternal beauty of perfect womanhood?

What is it thus beautifies the babe, ennobles the man, and glorifies the woman,—which no wealth can purchase, no ancient lineage nor exalted station secure? Health! Health is the priceless talisman of beauty. Health is the patent of nature's own nobility. Health is the crowning glory of womanhood and of all humanity, the source of all earthly happiness, the mainspring of every human pleasure.

The Greeks deified health, typifying it like every other good and blessing known to man in the guise of woman. She was legendized as the daughter of Æsculapius, the god of medicine, and was worshiped with him. She sat by the side of Apollo, the type of manly vigor, and herself, the impersonation of female loveliness, was the companion of Pallas, the Goddess of Wisdom, and of Cytherea, Queen of Love. Among the sisterhood of deities none was more fair and honored than the divine Hygeia. Young and old crowded her temples, rejoicing that through her favor the world was so bright and joyous, and life such sweet lingering on earth. Alas! how has she fared in modern times! Her statues have fallen from their pedestals, her beautiful temples have crumbled into ruins, her faith discarded and her precepts scorned. A few votaries of the sweet goddess have preserved the secrets of her cult, and with encouraging success have sought to re-establish her fanes, and light once more the sacred fire upon her altars.

Are the rites this deity's service imposes solemn hyperdulia, recondite myteries only to be mastered by a trained priesthood? Far from it. Health is nature's simplest faith. Its liturgy can be written in the prattle of children and the commonplaces of the peasant. Its laws are fixed, irrevocable, eternal. This do, and thou shalt live and be happy. Do that, and thou shalt surely suffer and die.

If health is but the outcome of self-evident truth, if long life, unalloyed happiness, ecstatic pleasure, are but the recompenses for simply walking in its broad paths; and premature decay, pain, and sorrow, and ungratified desire the certain penalties for wandering in the tangled byways that stretch away far from it in unknown lines, why should any need be taught that wherein their interest lies? This is the great mystery of humanity. Why, having ears they hear not, and eyes they see not. In every age men have rushed where angels have not sought to tread. While the sanitarian begins his teaching abashed at the simplicity of the lessons he has to inculcate, knowing, on the other hand, the stubborn incredulity

* A paper read before the recent meeting of the American Public Health Association.

of the world, he realizes the magnitude of his undertaking.

A perverted religious sentiment is responsible for this disregard of the body's welfare. A system which teaches that the physical man is the enemy of an independent, immaterial personality, called soul and spirit; that the flesh is inherently rotten, vile, and sinful; that the more beautiful its contour, the more sensitive and delicate its organization, the more surely it leads its psychic prisoner toward the gates of hell and eternal damnation,—had but one corollary,—it were good to despise, degrade, and mortify this earthly thing, which is all we know as self, and which we call father, mother, brother, sister, child. Naturally, these earnest strivers after spiritual salvation immured this carnal foe, of which they could not rid themselves and live, in convents, monasteries, and hermit cells, and passed their lives in a long crusade against the pleadings of their senses. They welcomed pain, the protest of outraged nerves; they endured hunger, the cry of the thin blood for food; they suffered cold, because it antagonized every sense of pleasure; they wallowed in filth in defiance of their educated humanity. The modern Christian, like the older Buddhist, waxed in self-complacent holiness as he tortured, deformed, and degraded his body, preparing the way for fiendish inquisitors, who, in the name of God and Saviour, tore off the sin-cased flesh of gentle maidens with red-hot pincers, and sought to appease the vengeance of a Heavenly Father by impaling unbelieving babes. Rather do the pagan's homage to that Maker, in whose image he has been fashioned, by glorifying that masterpiece of creative power, the human body—that marvelous mechanism called man. What mortal handiwork can rival this in the mysterious intricacy of its parts? What other object on earth or in the heavens approaches in beauty that culmination of grace and loveliness,—the female form? Grant the soul a distinct identity, can it have a grander temple than this house not made by hands? and should not this be guarded from pollution with jealous care, its avenues closed to every unclean thing, the slimy reptile of disease allowed no hiding corner in its secret chambers, the sacred fire of health kept burning on its altars, daily decked with fresh thank-offerings?*

It is only my present purpose to ask your attention to the culpable neglect which has been the natural consequence of the degradation of the body, and to urge upon you, in the interest of every living being, in the interest of every organized community, in the interest of the whole human race, the importance of bestowing the most earnest thought upon the subject of physical culture. All that we know or feel, every desire and gratification, find expression through the body. Thought, will, emotion, sensation depend upon the normal action of normally constituted organic molecules. Hence, to think intelligently, to feel acutely, the chords on which these harmonies are rung must be in perfect tune. The aggregate actions of the various organs and apparatus of the body, which we call life, if harmonious and without jar, are what we mean by health. Dim the eye, deaden the ear, silence the speech, and benumb the touch, and what will remain to us of the bright world? Widen the avenues to the senses, let in the flood of light and sound, develop the capabilities of the physical man, and as he communes with new spheres, he grows in mental stature.

It behooves us, therefore, to cultivate this garden of the soul, in which it lives and thrives; to develop this mortal frame to its utmost, that all these attributes of manhood, which are alone possible through its instrumentality, may be exercised in their highest intensity; not only for the well being and happiness of the individual, but for the welfare and higher development of the whole race. Rich estates and noble titles are valueless bequests beside the heritage of health. The youth who can boast an ancestry free from the stain of transmitted disease has a prouder blazon

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*"Our bodies are God's temples, and the joy and the terror of life depend on our keeping these temples pure, or defiling them."—*Is Life Worth Living?*—Mallock.

on his banners than the lordling whose feeble frame bears the indelible mark of constitutional contamination. Invalid parents beget invalid offspring, and these other weaklings, like themselves, whose puny descendants ramify over an entire country. How great then should be the concern of the community in the physical condition of its individual members! The contaminated man, scared through folly, ignorance, or sin, does not bear his living burthen alone to the grave, but shares it with his wife and child. It leaps the threshold of his home. The blight spreads from household to family, to vicinage, to race. The muddy stream, poured into the ocean, meets others from like polluted sources, each aiding the other in marring the purity of the broad waters. The physical deterioration evidenced in certain localities—notably in America—by the paucity of children, the abstention from out door life, the incapacity for athletic sports, and the high mortality rate, is only temporarily retarded by foreign importation. While the breeding of cattle is carefully fostered and splendid results obtained by judicious crossing, the human animal is allowed to intermingle without regard to possible funest consequences. The mother confides her spotless daughter to a contaminated husband; the father sees his son deliberately taking to wife the heiress of some other father's infirmity. The warning family records of premature decay are unheeded. Hereditary taints are blindly encountered and physical vices intensified and perpetuated in malformed and weakly offspring. Nor is the evil wrought limited to the impairment of the body.

Crime is the outcome of physical defects. The brutal outrages, which have disgraced humanity, have been the fruit of impulses ingrained in ill-developed brains, exaggerated by repeated crossing. If the intermarriage of criminal classes is beyond the control of society, and the vipers must breed for slaughter, the enlightened sentiment of the educated should, without the need of arbitrary enactments, restrain the chance, promiscuous sexual alliance of the doomed victims of disease. Why should the future of a family or a race be imperiled to gratify the impulsive whim, the momentary fancy, or even the ardent affection of these, who bear the stigma of an ineradicable physical taint? Men toil and hoard. In the eager greed of wealth, they sacrifice health and strength; and prematurely old, survey the pile of gold, which is to purchase pleasures they no longer have the capacity to enjoy. The very effort to taste the unaccustomed draught kills them before they should have reached their prime; and dying, they leave their riches to children framed in the likeness of their own decrepit bodies.

What if the sanitarian succeeds in inducing mankind to heed his warnings. Will not life be made up of self-denials? Will we not have to live and move, eat, sleep, and dress by rigid rules, so irksome that one would welcome the pangs of pain as penalty for untrammeled pleasure? By no means. It is not a question of a short life and a merry one, without restraint, in contrast with the tedious drawling of years of cheerless asceticism. The song and dance, the music and the flowers, the joyous laugh and sounds of jovial frolicking are heard and seen among Hygeia's followers; the cry of pain, the wailing of the sorrow-sticken, tears, agony, despair, the gloom of death, among those who have denied her. Let the child learn the simple laws of health, and the man will live responsive to them as automatically as the musician obeys the laws of harmony. Inculcate in the youth that his ambition should be the possession of a healthy physique,—in the maiden that no art can rival the charms with which nature will deck her unblemished form, that however lowly the station or humble the home, he and she may proudly vie with the scions of the richest aristocracy in that vigor of body, that strength of mind, that exquisite refinement of the emotional nature which constitute the perfect thinking, feeling, loving, living man and woman; and that the blue blood, which is derived from titled progenitors, however many their quarterings, is cold and sluggish in the veins

beside the red blood, which has been transmitted from ancestors who have known no stain of disease.

What are these simple laws of health? The first and greatest and that which comprehends all others is Hygeia's mandate to be clean. It is not an idle saying that cleanliness is next to godliness. It is its nearest kin, as filth is the parent of disease and sinfulness. Let us see what it means to be clean; but first realize that one-half (*) the mortality of the very centers of civilization—the great cities of the world—wherein are gathered the wise and learned, is due to preventable disease. One-half the deaths that are at this moment being mourned throughout the land need not, ought not, would not have happened had this law of cleanliness been obeyed; for preventable diseases are expressively, if coarsely, named filth diseases, and filth is all that which defiles, not merely the outward surface, the person and attire, the dwelling-place and sleeping-apartment, but penetrates within, entering the body as food and drink, and befouling the air which fills the lungs, poisons the blood, permeates the tissues, and carries its noxious influences to the minutest cell in the remotest organs. The unclean skin, the unkempt hair, the sordid garment, the bestial den, and disgusting viands, offend the senses of all but those whom ignorance and want have made lower than brutes.

But the foulest of all foul things, and that which is more insidiously deadly than them all, because unseen—foul air—is breathed by gentle lady and learned pundit without a shudder and without a fear. The clean and the unclean sit side by side, the delicate woman drawing into her lungs the disease-laden emanations of some unfortunate, honeycombed by disease. Could these curling clouds of noxious fumes be made visible, what horror would we have of them! An idea of it may be obtained in a public conveyance on a frosty winter's day, when the condensed vapor of the passengers' breaths may be seen circling out of one's mouth and nostrils to be drawn into another's, and what is there feebly illustrated, takes place in every badly ventilated theater, church, and schoolhouse. Go upon the densely populated berth-deck of a passenger ship or man-of-war, and what the eye cannot distinguish is soon made manifest to the other senses by the sickening odor, the mawkish taste, which indicates the saturation of the air with the products of human waste, the poison of *ochlesis*, the poison of overcrowding, which, intensified, destroys life quickly,—which in every railroad car, in every crowded vessel, in every place where human beings are congregated, here in this very hall, is present in a more or less diluted but always dangerous form.

Among the myriads of travelers who are hourly being transported about this country, how seldom will one be found to scan the ventilators and other air apertures provided in our railway cars, and if one there be hardy enough to open the window beside him to feed his famished blood with fresh air, how general will be the malediction of his neighbors at his endangering their lives by draughts. Through fear of draughts, every window of the confined apartment is closed, and the would-be guardian of his health deliberately poisons himself and his neighbors, befouling them with an indescribable nastiness that the stomach resents until it becomes paralyzed into insensibility, and against which the aching head makes indignant and persistent protest. Few of us would care to enter the bath which had already served a predecessor, yet the water possibly were less offensively soiled than the air of the apartment into which we plunge with reckless indifference.

THERE is a sort of virtuous selfishness in benevolence; for the more we live for the good of others, the more we really benefit ourselves.

*The report of Dr. John T. Nagle, Registrar of Vital Statistics, shows that during the three months ending September 30, 1881, there were 10,967 deaths in the city of New York, being equivalent to an annual death-rate of between 35 and 36 in every 1,000 inhabitants, the population being estimated at 1,242,533. The mortality from zymotic diseases alone amounted to 5,079, a death-rate of over 16 individuals in every 1,000 from diseases for which bad ventilation and bad drainage are mainly responsible.

BUDDHISM AND VEGETARIANISM.

THE king stood in his hall of offering,
On either hand the white-robed Brahmans ranged
Muttered their mantras, feeding still the fire
Which roared upon the midmost altar. There
From scented woods flickered bright tongues of flame,
Hissing and curling as they licked the gifts
Of ghee and spices and the Soma juice,
The joy of Indra. Round about the pile
A slow, thick, scarlet streamlet smoked and ran,
Sucked by the sand, but ever rolling down,
The blood of bleating victims. One such lay,
A spotted goat, long-horned, its head bound back
With munja grass; at its stretched throat the knife
Pressed by a priest, who murmured, "This, dread gods
Of many yajnas, cometh as the crown
From Bimbasâra; take ye joy to see
The spirted blood, and pleasure in the scent
Of rich flesh roasting 'mid the fragrant flames;
Let the king's sins be laid upon this goat,
And let the fire consume them burning it,
For now I strike."
But Buddha softly said,
"Let him not strike, great king!" and therewith loosed
The victim's bonds, none staying him, so great
His presence was. Then, craving leave, he spake
Of life, which all can take but none can give,
Life, which all creatures love and strive to keep,
Wonderful, dear, and pleasant unto each,
Even to the meanest; yea, a boon to all
Where pity is, for pity makes the world
Soft to the weak and noble for the strong.
Unto the dumb lips of the flock he lent
Sad, pleading words, showing how man, who prays
For mercy to the gods, is merciless,
Being as god to those; albeit all life
Is linked and kin, and what we slay have given
Meek tribute of their milk and wool, and set
Fast trust upon the hands which murder them.
Also he spake of what the holy books
Do surely teach, how that at death some sink
To bird and beast, and these rise up to man
In wanderings of the spark which grows purged flame.
So were the sacrifice new sin, if so
The fated passage of a soul be staid.
Nor, spake he, shall one wash his spirit clean
By blood; nor gladden gods, being good, with blood;
Nor bribe them, being evil; nay, nor lay
Upon the brow of innocent bound beasts
One hair's weight of that answer all must give
For all things done amiss or wrongfully,
Alone, each for himself, reckoning with that
The fixed arithmic of the universe,
Which meteth good for good and ill for ill,
Measure for measure, unto deeds, words, thoughts;
Watchful, aware, implacable, unmoved:
Making all futures fruits of all the pasts.
Thus spake he, breathing words so piteous
With such high lordliness of ruth and right,
The priests drew back their garments o'er the hands
Crimsoned with slaughter, and the king came near,
Standing with clasped palms reverencing Buddha;
While still our lord went on, teaching how fair
This earth were if all living things be linked
In friendliness and common use of foods,
Bloodless and pure; the golden grain, bright fruits,
Sweet herbs which grow for all, the waters wan,
Sufficient drinks and meats. Which when these heard,
The might of gentleness so conquered them,
The priests themselves scattered their altar-flames
And flung away the steel of sacrifice;
And through the land next day passed a decree
Proclaimed by criers, and in this wise graved
On rock and column: "*Thus the king's will is:*
There hath been slaughter for the sacrifice
And slaying for the meat, but henceforth none
Shall spill the blood of life nor taste of flesh,
Seeing that knowledge grows, and life is one,
And mercy cometh to the merciful."
So ran the edict, and from those days forth
Sweet peace hath spread between all living kind,
Man and the beasts which serve him, and the birds,
On all those banks of Gunga where our lord
Taught with his saintly pity and soft speech.

—*The light of Asia, Arnold.*

SMALL-POX.

SYMPTOMS.—Chill, or repeated chilliness, followed by fever continuing till eruption appears; intense headache, and pain in the back; vomiting; tongue coated, and no appetite; offensive breath; sometimes scarlet rash on abdomen and inside of thighs; sleeplessness, sometimes delirium; at the end of the second to fourth day, eruption of small red pimples beginning on the face, neck, and wrists, then extending to the trunk and lower extremities, attended by severe burning and itching; mucous membrane of mouth and throat also show the eruption; sore throat; fever, pain in the back and nausea subside when eruption appears; the spots enlarge, and about the eighth day become filled with matter, and the center becomes depressed; skin now much swollen; fever rises again; after three or four days the pustules begin to dry, and in two or three days are covered with brown scabs, which gradually loosen; severe itching.

This is one of the most dreaded of all infectious diseases. This is partly owing to the fact that it is one of the most

contagious of all diseases of this class. The symptoms generally appear from ten days to two weeks after exposure. The characteristic features of the eruption are at first a shot-like feeling presented to the finger by the small, red spots which appear first upon the back, breast, and arms, gradually extending to the whole body. On the second day, the points become enlarged and elevated, forming dark red papules. By the third day, they become still further enlarged and filled with a milky fluid forming vesicles, which continue to enlarge for four or five days longer, becoming conical and as large as a pea. The point of the cone now becomes depressed, so that the vesicle shows a little hollow in the center, and is said to be umbilicated. The fluid contained in them becomes thick and yellow. This is termed the suppurative stage, which is attended by a return of the fever which generally almost entirely subsides on the appearance of the eruption. Sometimes the vesicles run together, forming large spots, when the disease is said to be confluent. This is the worst form of the disease. After recovery, most patients present a larger or smaller number of slight depressions in the skin known as pock-marks, due to the eruption.

In the mild form of the disease known as varioloid, the fever is much less intense, the eruption generally less profuse, and the vesicles do not matterate or become pustules. In the severe form of the disease pneumonia, bronchitis, dysentery, and hemorrhage, are likely to occur in connection with the second fever, and are frequently the cause of death.

Small-pox has been known as a dreaded disease for more than a thousand years, during which time it has frequently raged with great severity in various countries. During the Middle Ages it must have been very common to have given rise to the proverb current at that time, "From small-pox and love, but few remain free."

CAUSE.

Small-pox is undoubtedly the result of infection of the system by a specific germ, the origin of which is still wrapped in mystery. Although it is known that the disease has existed for many centuries, it is not known how it originated, or what country is its native home. Experience with the disease has shown that bad food, uncleanly and unhygienic habits, intemperance, dissipation of all sorts, unsanitary conditions, and the crowding together of large numbers of people, greatly facilitate the propagation of the disease and increase its fatality.

During the last two decades of the past century the mortality from this disease constituted one-twelfth of the total mortality in Berlin. During the same century the mortality from small-pox amounted to 30,000 persons annually. During the seventeenth and eighteenth centuries the death from this disease in England amounted to one-eleventh of the total mortality. According to the eminent Dr. Curschmann, of Berlin, from whose exhaustive article in Ziemssen's Cyclopedia of Medicine we cull these facts, small-pox came to be dreaded more than the plague. The disease continued its ravages notwithstanding the earnest efforts of the most eminent physicians to stay its progress. It even penetrated the jungles of Africa and the wilds of North and South America, where it carried off whole tribes of savages.

VACCINATION.

It was early observed that a person who had once had small-pox was not very liable to suffer from it a second time. Experiments made in China and India at a very early period showed that when the disease was induced by inoculation it was much less severe than when contracted in the usual way. This led to the employment in those countries of inoculation as a means of prevention of the disease. The same practice was introduced into Europe. It never became popular, however, from the fact that death not infrequently occurred in consequence of inoculation, and it was found that the disease was as violent when communicated by those suffering from the effects of inoculation as when acquired in the usual way.

In the eighteenth century, the supposed

discovery was made in various parts of the world that a disease known as cow-pox was identical with small-pox in human beings. According to Humboldt, this was known to the mountaineers of Mexico for many years before the time of Jenner. In Gloucestershire, England, there was a traditional belief that persons who had acquired cow-pox by milking cows affected with the disease were thereby protected from small-pox. This belief led Jenner to experiment with his virus of cow-pox, and his experiments resulted in the invention of vaccination as a means of protection from small-pox.

The peculiarity of small-pox in lower animals is that its manifestation is chiefly local. In the cow, the pocks or pustules occur almost exclusively upon the udder and teats. In horses the disease is confined to the foot-joints. Sheep, goats, pigs, asses, dogs, and monkeys are also subject to this disease.

The evidence is very strong that the so-called small-pox of animals is really the same disease as affects human beings, but the eminent authority quoted freely admits that the facts relied upon "do not absolutely prove it." Experience does seem to show, however, that inoculation with the virus of cow-pox, or with that obtained from the same disease in other animals, will produce a disease supposed to be modified small-pox, which will to some extent exercise the same preventive influence as the real disease itself. On this point the author before mentioned says:—

"In spite of the efforts of its opponents, no unprejudiced person at the present day can any longer be in doubt as to the efficacy and eminent practical value of vaccination. In countries where it has been introduced, and in a measure systematically carried out, the number, the intensity, and the extent of small-pox epidemics have been notably diminished, and in a manner which of itself renders the idea of mere coincidence inadmissable. In this connection nothing could be more convincing than the exceedingly interesting and graphic account which Kussmaul gives of the mortality from variola, in Sweden, during a period of one hundred years, in the latter half of which vaccination was universally practiced. Moreover, for Germany, France, and England a somewhat similar decrease in the small-pox mortality might be demonstrated. If, notwithstanding all these proofs, we for the moment entertain the supposition, improbable as it is, that this decrease in the epidemics is a matter of mere accident, it at once falls to the ground as soon as we proceed further into detail. We see, first of all, that where vaccination is regularly practiced in very early life, the mortality of children from small-pox, instead of being as enormous as amongst those not vaccinated, is almost *nil*. We notice, further, that where the vaccination of adults, as for example in the Prussian army, is performed with regularity, epidemics of the disease no longer occur. With these facts before us, the idea of mere coincidence is out of the question. The trial of vaccination in the Prussian army has conclusively demonstrated the efficacy of the measure, to test which we have only to compare the relative immunity of soldiers during great epidemics of small-pox with the mortality in classes of the same general age in the civil community where vaccination is imperfectly carried out."

Dr. Alonzo Clarke, professor of the theory and practice of medicine in the College of Physicians and Surgeons in New York City, and one of the most eminent physicians of this country, in a lecture on small-pox reported in the *Medical Record*, remarked as follows:—

"Vaccination has been generally practiced in civilized nations for seventy years. It took it about ten years to acquire general favor, since which time almost everybody has been vaccinated. And the history of the last seventy years gives us a longer duration of human life every succeeding ten years (a less number of deaths in proportion to the number living); and if everybody be vaccinated, and everybody's life be made shorter by vaccination, you observe that this is a rather singular commentary. Every ten years is marked

as giving additional length to human life (diminishing the proportion of deaths every year to the number living). I know no other commentary that need be made in regard to it."

The above quotation presents a practical argument which those who oppose vaccination under any and all circumstances will find hard to meet unless they can show that the statement respecting the length of human life is incorrect.

It is admitted by all who are in any degree conversant with the subject that vaccination is not free from disadvantages and even dangers. Experience shows very clearly that it affords immunity only for a period of eight to twelve years. It is settled beyond question that it may be the means of communicating the worst and most loathsome diseases, when humanized lymph is employed, though this evil may be wholly avoided by the use of bovine virus, or that taken direct from a calf suffering with the disease. It appears to us that in all cases in which vaccination is employed, only the latter kind of virus should be used. We have never known of any injury arising from bovine virus, and think the evidence is very clear that small-pox may be prevented in this way by vaccination.

In some countries, vaccination is made compulsory by law. This has aroused a vigorous opposition on the part of those who are opposed to the practice, and at the present time efforts are being made, especially in England and Scotland, to secure a repeal of the compulsory laws. The anti-vaccinators are not wholly unsustained in their efforts, quite a number of eminent physicians having taken a stand in opposition to the practice. Quite recently, a petition signed by several hundred physicians was presented to the English parliament, calling for the repeal of the obnoxious laws.

It is probable that the benefits of vaccination on the one hand, and on the other its evils, have been considerably exaggerated. It may be considered as thoroughly settled, however, that vaccination with human virus, that is, with scabs or matter taken from the sore produced in persons by vaccination, should be entirely discarded, and that bovine virus alone, if any, should be employed.

TREATMENT.

The patient should be kept quiet in bed, and given but very little simple, easily digested food. He may be allowed to take cool or cold water, lemonade, etc., at pleasure. The sick-room should be well ventilated, and should be kept at a temperature of 60° or 65°. As the disease cannot be broken up or interrupted in its course by any known remedy, the thing to be aimed at in treatment is to carry the patient safely through the ordeal, and to aid nature in the process of eliminating the poison with which the system is struggling. The high fever which occurs previous to the eruption, should be relieved by means of large, cool compresses laid upon the body, and changed as often as they become warm, together with cool sponging. The wet-sheet pack, renewed every fifteen or twenty minutes until the fever is lessened, is a very efficient remedy. When the face is flushed and the headache severe, ice compresses or ice bags should be applied to the head. If there is much vomiting and retching, the patient should swallow small bits of ice. Ice compresses should also be applied about the neck when the throat symptoms are severe.

The burning and itching of the eruption is best allayed by means of cold compresses, which should be changed as often as they become warm. If the odor is very bad, a lotion composed of an ounce of carbolic acid, one-half pint of glycerine, and two pints of water, may be applied two or three times a day. The solution should be well shaken each time before it is used. It has the effect not only to correct the bad odor, but also to allay itching of the skin. Frequent inunction of the whole body with vaseline or sweet oil should be practiced once or twice a day.

When the scabs are formed, and are coming off, the patient should take a warm bath twice a day. Various plans have been adopted for the purpose of preventing "pitting." One of the most common,

and probably quite as effective as any, is that invented by the ancient Arabian physicians, which consists in letting out the contents of each pustule by a fine needle passed under the skin a little way from the edge of each vesicle. Touching the pustules once or twice a day with tincture of iodine is also recommended as a means for preventing pitting. Another remedy recommended by some physicians is keeping the patient in the dark; but this plan is not a good one, as the deprivation of sunlight has a bad effect upon the course of the disease. Keeping the face covered with cotton well soaked in carron oil, a mixture of equal parts of olive oil and lime water, is also an excellent measure to prevent pitting; but the mixture has a bad odor, and is gummy and disagreeable. Covering the face with a thick layer of starch paste is excellent for the same purpose. None of these plans are entirely successful, however, and simple inunction of the skin, and the continuous application of the cold compresses, are probably as effective as any measures which can be employed. Adding a little soda to the water in which the patient is bathed, will facilitate the separation of the hard crusts which form near the conclusion of the disease.

The old-fashioned sweating process in which the patient was smothered beneath heavy blankets, and kept in a highly heated apartment deprived of fresh air, and still further heated by stimulating drinks, cannot be too strongly condemned. This method of treatment is a relic of the Dark Ages. There are no grounds whatever for fear that the eruption will be driven in by the proper application of water, even at quite a low temperature. Care should be taken, however, that the patient is not exposed to drafts, although there is much less danger of taking cold even from this source than is generally supposed.

Some years ago we saw an account of a patient who became delirious while undergoing treatment by the old-fashioned method, and while the attendant was absent for a few moments, threw himself out of the window into a snow-bank, where he was found by the attendant upon his return. The result, instead of being disastrous as might have been supposed would be the case, was in the highest degree favorable; the exposure to cold having the effect to diminish the fever in such a degree that the patient pretty soon became conscious, and made a good recovery.

Some years ago, when practicing in connection with one of the dispensaries in New York City, we had ample opportunity for observing the tenacity with which the ignorant classes cling to the old idea that fresh air is fatal to small-pox. In one case, we found a little boy suffering with the worst form of the disease, lying in a crib unconscious, dressed in the same clothing in which he had been taken sick four or five days previous, and almost stifled with the foul and heated atmosphere of the unventilated room. Notwithstanding our most earnest appeals for fresh air for the little patient, the parents insisted on keeping the windows and doors tightly closed. The little fellow survived in spite of it all, but that he did not die was certainly not due to the efforts of his parents in his behalf.

It is now pretty well settled that the disease cannot be averted nor mitigated by vaccination after exposure, even though it be performed immediately.—DR. KELLOGG, *in Home Hand-Book.*

PERSONAL BEAUTY AND FOOD.

THE following is from a "conversation" by Prof. A. Bronson Alcott, one of the "Concord philosophers," and a life-long vegetarian:—

"Climate and food have an effect upon the body. We are formed of different races, and each race will exhibit its peculiarities sometime or another. Every pair of black eyes migrated from the East. It takes fine sense to discover black souls. The Great Artist is endeavoring continually to recover the original beauty which the passions are covering and blackening. God is light, and any swerving from his divinity darkens the flesh, only varied a little by climate and

food. Just as persons are pure, so will they elect pure food. Persons do not dine alike, because, if they did, all would look alike. Each one takes with every morsel precisely that quality in harmony with his soul. If he be a brute, then he dines like one.

"Animal food is one of the greatest means by which the pure sentiment of the race is depressed. That man seems to be thought most of who can perform the most labor, mere brute force, and sleep less. When the soul begins to sin, it begins to darken. Just as a person is pure and just, he or she will select pure and just substances out of which to organize a pure and just body. If a person does not think of that, and adopts the custom of the times, he, of course, makes the body he has. Fruit bears the closest relation to light. The sun pours a continuous flood of light into the fruits, and they furnish the best portion of food a human being requires for the sustenance of mind and body. Some of the strongest people on the globe have taken no animal food. If you are required to do hard logical work, you may require animal strength.

"The purest food is fruit, next the cereals, then the vegetables, which are properly the food of animals. If it is necessary that animal food should be eaten, because you cannot leave off that diet at once, then take it in its mildest form—in the egg or oyster. The change which would be wrought by such a regimen would be slow, as all nature's changes are; but the results are not the less certain. Beautiful diet, beautiul form. All pure poets have abstained almost entirely from animal food. Especially does a minister take less meat when he has to write a sermon. The less meat, the better sermon. Every animal feeder is sometimes a tyrant. If one would abate that fate, he must omit it entirely, but by a gradual process. Compare a table of the present day with that spread by the hands of Eve in Paradise, to feed her ethereal guests. Then was gathered together a feast of the purest, a banquet of right. Scholars, if they would get their lessons, can do so in a great deal shorter time and know more, by adopting a pure diet. The cause of ill-temper and want of harmony in women, and peevishness of infants, and difficulties in family and other relations might be easily intimated. We are composed of atoms, and every atom must be musical and tremulous with harmony to give the body that harmony that is musical. The consent of our atoms, the absolute consent of every atom to every other atom—that is harmony. Every passion leaves its impress, we know not how long. Every atom sympathizes with every other atom."

HOW TOBACCO IS FLAVORED.

EVERYBODY knows that the stuff sold as tobacco is rarely the real article unmixed with anything else. The majority of smokers would probably rebel against the weed in its native state, in which it was used by the aboriginals who set the fashion which Columbus described so graphically in his report concerning the naked savages who "twist large leaves together and smoke like devils." The following is a description of how this nauseating weed is prepared for the palates of its fastidious devotees:—

"From the stripper's-room the tobacco goes to the sorters. This branch of the business is also intrusted to the negro women, who become so expert that they can tell the quality of the leaf by touch alone. After a certain amount of drying and dipping in various solutions, it goes through the supreme process which makes it palatable to the chewer. The leaves are laid on the floor, not necessarily a clean floor, and then a negro man, with pants rolled up to the knees, walks backward and forward upon it. As he does so, he pours upon it a solution of loaf sugar, licorice, delicate essences, etc., which, to use a darkey's expression, 'are well stomped in by dese two foots.' If, while performing this 'stomping' business, he desires to spit, the leaves get the benefit of that juice, also; while with his bare feet he kicks them over and over, and

'stomps' both sides well. The mess is then swept up into a pile, and afterward strung on poles and dried.

"'Do the men wash their feet before going on the tobacco?' I inquired.

"'Well,-I—they wash them when they come off,' was the smiling answer."

FILTH CAUSES OF DISEASE.

DR. SIMON, an eminent English Sanitarian, has described the common and deplorable neglect of sanitary matters in the following terse sentences:—

"There are houses, there are groups of houses, there are whole villages, there are considerable sections of towns, there are entire towns, where slovenliness in everything which relates to the removal of refuse matter, slovenliness which in very many cases amounts to utter bestiality of neglect in the local habit; where within or just outside of each house, or in spaces common to many houses, lies for an indefinite time, undergoing fœtid decomposition more or less of the putrefiable refuse which house-life and some sorts of trade-life produce; excrement of man and brute and garbage of all sorts and ponded slop waters; sometimes lying bare on the common surface, sometimes unintentionally stored out of sight; collections in drains or sewers which cannot carry them away; sometimes held in receptacles specially provided to favor accumulation, as privy pits, or other cesspools for excrement and slop water, and so called dust-bins receiving kitchen refuse and other filth. And with this state of things, be it on large or small scale, two chief sorts of danger to life arise: One, volatile effluvia from the refuse, pollute the surrounding air and everything which it contains; the other, that the liquid parts of the refuse pass by soakage or leakage into the surrounding soil, to mingle there, of course, with whatever water the soil yields, and in certain cases thus to occasion the deadliest pollution of wells and springs. To a really immense extent, to an extent which, indeed, persons unpracticed in sanitary inspection could scarcely find themselves able to imagine, dangers of these two sorts are prevailing throughout this country, not only in their slighter degrees, but in degrees which are gross and scandalous, and very often, I repeat, truly bestial. And I state all this in unequivocal language, because I feel that, if the new sanitary organization of the country is to fulfill its purpose, the administrators, local and central, must begin by fully recognizing the real state of the case, and with consciousness that in many instances they will have to introduce for the first time, as into savage life, the rudiments of sanitary civilization.

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"The extent to which soil is polluted by excreta and other refuse matter, in the rural and small urban districts in England, and the danger of the contamination of drinking-water from this source, may be learned from the report of the Rivers Polluting Commissioners, in which they say that, 'Estimating the town population of Great Britain at twelve millions, the remaining twelve millions of country population derive their water almost exclusively from shallow wells, and these are, so far as our experience extends, almost always horribly polluted by sewage and by animal matters of the most disgusting origin.' The common practice in villages and even small towns is to dispose of the sewage, and to provide for the water supply of each cottage, or pair of cottages, upon the premises. In the little yard or garden attached to each tenement, or pair of tenements, two holes are dug in the porous soil. Into one of these, usually the shallower of the two, all the filthy liquids of the house are discharged; from the other, which is sunk below the water-line of the porous stratum, the water for drinking and other domestic purposes is pumped. These two holes are not unfrequently within twelve feet of each other, and sometimes even closer. The contents of the filth hole or cesspool soak away through the surrounding soil, and mingle with the water below. As the contents of the water hole or well are pumped out, they are immediately replenished from the surrounding disgusting mixture, and it is, therefore, not very surprising to be assured that such a well does not become dry even in summer. Unfortunately, excrementitious liquids, especially after they have soaked through a few feet of porous soil, do not impair the palatibility of the water; and this polluted liquid is consumed from year to year without a suspicion of its character, until the cesspool and well receive infected sewage, and then an outbreak of epidemic disease compels attention to the polluted water. Indeed, our acquaintance with a very large proportion of this class of portable waters has been made in consequence of the occurrence of severe outbreaks of typhoid fever among the persons using them."

TEMPERANCE AND MISCELLANY.

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

IF WE HAD BUT A DAY.

We should fill the hours with the sweetest things,
If we had but a day;
We should drink alone at the purest springs,
In our upward way;
We should love with a life-time's love in an hour,
If our hours were few!
We should rest, not for dreams, but for fresher power
To be and to do.

We should bind our weary and wanton wills
To the clearest light;
We should keep our eyes on the heavenly hills,
If they lay in sight;
We should trample the pride and the discontent
Beneath our feet;
We should take whatever a good God sent,
With a trust complete!

We should waste no moments in weak regret,
If the day were but one—
If what we remember and what we forget
Went out with the sun.
We should be from our clamorous selves set free,
To work or to pray,
And to be what our Father would have us be,
If we had but a day.

TEMPERANCE WORK IN ENGLAND.

An address delivered before the American Health and Temperance Association at Battle Creek, Mich., Dec. 7, 1881.

BY J. N. LOUGHBOROUGH, OF SOUTHAMPTON, ENG.

It is as true in Great Britain as in America that the curse of strong drink has been productive of more evils than war, pestilence, and famine. Too long by far the masses have been misled by the sentiment expressed in burlesque by Robert Burns:—

"Gi'e him strong drink until he wink,
That's sinking in despair;
And liquor guid, to fire his bluid,
That's pressed wi' grief and care."

That we need earnest temperance work there a few figures will show. The amount spent in the United Kingdom for strong drink during the year 1880 was the enormous sum of £122,000,000 sterling, or about $611,250,000; and yet there are grievous complaints that losses by bad harvests, and the heavy expenses for the Government and Navy is the cause of hard times. Let us see if this is the real cause. Mr. Gladstone, our worthy Premier, says:—

"The loss from deficient harvests, owing to want of sunshine for the year 1880, amounted to the sum of £16,000,000 sterling. The amount used for the whole expense of sustaining the Government and Navy for the previous year, 1879, was only £10,000,000 sterling. Adding this to the loss by bad harvests, we have only £26,000,000. If the use of intoxicants was abandoned, we can readily see that the people could easily stand a bad harvest, meet all government expenses, and have to their credit the handsome sum of £96,000,000. But, you may ask, Do not high land rents make it difficult for the agricultural tenants? We will see. The whole sum of rentals for agricultural land in the United Kingdom in 1880 was only £60,000,000. Now if we take that from the £96,000,000 alone, we shall still have a balance of £36,000,000—a sum quite sufficient to school all the children of the poor for one year, with a margin sufficient to furnish thousands of books and other appliances to add to the facilities and usefulness of the schools. It may thus be readily seen to what source we should look for the true remedy for the hard times of England. We have seen that more money is worse than wasted on strong drink every year than would equal a sum sufficient to cover all the supposed causes of hard times.

I wish to call attention to another thing. The people speak of the appalling national debt of Great Britain. Great as the debt is, if the money spent there each year for strong drink was applied to canceling the debt, it could be done in five years, and England become the most happy and prosperous nation on earth.

We need temperance work in England. Thank God, we have already a host of earnest workers who are doing effective service. If our progress is slow, we are making progress, as figures will abundantly show. While the sale of intoxicating drinks in 1880 amounted to £122,000,000 in 1879 it was £147,000,000 showing a decrease of £25,000,000 in one year, and this can be set down to the credit of earnest perseverance on the part of our various temperance organizations.

There has been difficulty in years past in getting ministers and physicians enlisted in the temperance work. Too many of the physicians have recommended the use of strong drink to their patients, and taught them that it was a nourisher of strength, and food to the body. There is now a decided change in the sayings of our most eminent physicians on this subject as a single quotation will show.

Dr. Richardson, of London, says, "Alcohol, a product of the chemist's skill, is no part of the food of man or beast, and fed on it, no living thing could exist in obedience to natural laws. Nature tells us, with all the vigorous proof of experiment, that the product,—alcohol, spirit of wine, spirit of beer, and spirit of spirit,—imparts no power to men, supplies no natural warmth, but creates and feeds a diseased appetite, destroys strength, saps organic structures, causes the most painful diseases, blunts mental sensibilities, fills the mind with images of pain and sorrow, and embitters the hour of death. Nor does the voice of science stay here. She tells us again, that the evils implanted by the vice of intemperance extend, even on her side of the universe, the material side, which she so coldly surveys, beyond the grave; that the evils thus implanted reach the unborn, and spread secret and calamitous woes on generations yet to be, from generations that are."

Forty years ago those who advocated temperance and teetotalism in England received but little encouragement from ministers. Mr. Whittaker, the present Mayor of Scarboro, one of the most devoted advocates of temperance at that time, in one instance invited a minister, at the close of his service, to read from the pulpit a notice of the temperance lecture. The minister read it over to himself, then tore it up into small pieces and threw it on the floor, and said, "Let us pray." As he descended from the pulpit, he was met by one of the audience who presented him with a glass of wine and told him he had done well. Now we have an active and earnest force of ministers doing all in their power to crush the demon of drink. As the above-named Mayor said recently, after relating the above circumstance, "There is not now a pulpit in the land that would hold a minister for an hour who would so treat a temperance notice."

The theory used to be advocated that men must have strong drink in order to endure camp life, and do good service in the army. We present in contrast with this a recent testimony of Sir Garnet Woolsey, a man who has been in command of the British forces in South Africa. He says, "About ninety per cent of the crime in our army is owing to drunkenness, and when our men are removed from the temptation of intoxicating liquor, crime is practically unknown.

"During the operations I conducted in South Africa, in 1879, my own personal escort was composed almost exclusively of teetotalers. They had very hard work to do, but grumbling was never heard from them, and I was never assisted by a better behaved set of men,—a fact which I attributed to their being nearly all total abstainers."

I am not prepared to give you the names of all our temperance societies in Great Britain. The church of England has a powerful one. So also have many of the non-conformist churches. The Good Templars are a host, doing much good service for the youth through their Bands of Hope. There are also numerous temperance leagues in Great Britain. The United Kingdom Temperance Alliance, which was first organized June 11th, 1853, has become a very powerful organization. Its direct object is to secure from Parliament the enactment of laws for the suppression of the liquor traffic. It has been my privilege to become a member of the Alliance, and to attend their great anniversary meeting at Manchester, England, Oct. 18, 1881. In the evening the great Free Trade Hall, seating over 5000 people, was filled to overflowing. At the same time another meeting was held, comprised of some 2000 who failed to gain admittance to the large hall.

Sir Wilfrid Lawson, Baronet, member of Parliament, is president of this Alliance, and the Society owes much of its success to the earnest and untiring efforts of its honorable president. In addition to his gratuitous labors in the cause, he donates this year to the funds of the Society, the same as last year, the sum of £1,000. There are hundreds of earnest workers associated with him, including many members of Parliament. The Society acknowledges efficient aid from the visits and labors in England of such American speakers as John B. Gough, Hon. Neal Dow, and others.

Laws have already been obtained for the Sunday closing of public houses in Ireland and Wales. The Alliance labors to obtain a similar law for England, and

if possible, to secure the passage of a "local option" bill, giving the occupiers of houses throughout the United Kingdom the privilege of saying by their votes, whether, in their locality, any liquor shall be sold.

Sir Wilfrid has already tested the parliament in this matter by presenting a local option resolution. The conservative parliament under Beaconsfield gave an overwhelming vote against local option legislation. With the coming of the Liberals to power there is a house of commons containing more of a temperance element than the old, and Sir Wilfrid's local option motion obtained from them a majority of forty-two in favor of such legislation. This vote was followed by an intimation from the Premier (Hon. W. E. Gladstone) that such a bill if introduced would be entertained by the government.

There was much enthusiasm in the Alliance meeting, especially over the favorable prospects for local option. During the meeting, a telegram was received from Hon. Herbert Gladstone, son of the premier, and Junior member of parliament, saying that calls for legislation on an extensive scale would be numerous, and that in the next session the Alliance must make its voice "*heard above the rest.*"

The workers in the American Health and Temperance Association, while urging the passing of laws for the suppression of the sale of strong drink, at the same time go a step further and strike against the use of such narcotics as tobacco, tea, and coffee, recognizing the fact that the use of tobacco often creates a thirst for ardent spirits.

While you have here the anti-tobacco pledge as a part of the temperance work, we have in England "The Anti-tobacco Society, and Anti-narcotic League." This society is doing good work in its warfare against narcotics. It also held its anniversary meeting in Manchester, on the evening of Oct. 17. Being a member, I availed myself of the privilege of attending this, the most encouraging meeting they have ever had. This Society publishes the monthly *News Letter* and other literature dealing deadly blows upon the tobacco evil, and we rejoice in that the society is constantly gaining ground. They were much pleased to learn of your Association and its workings, and I convey to you their greetings. This would undoubtedly have been done in an official manner had it been known that I should meet with this Association at this time.

There is another society in England near of kin to the American Health and Temperance Association. It is the Vegetarian Society. The vegetarian pledge of membership excludes the use of fish, flesh, and fowl as articles of diet. In substituting for these a vegetarian diet we are not limited by any means to a meager fare. We understand that a vegetable diet includes what grows out of the ground that is fit for food. Surely in the broad range of fruits, grains, and succulent roots, with even a limited use of milk, eggs, and butter, we have enough for the sustenance of man.

The Vegetarian Society was organized Sept. 30th, 1847. It has already a very large membership, and circulates, each month, many thousands of copies of the *Dietetic Reformer*, the organ of the Society.

Being myself a member of this Society, I esteemed it a great pleasure to be with them at Manchester, England, Oct. 19, 1881, in the anniversary meeting of the Society.

That the Vegetarian Society is willing to co-operate with you in the dissemination of health and temperance principles, you will see by a letter from the secretary of the Society, Mr. R. Bailey Walker. The letter bears date of Oct. 27, 1881. In speaking of my trip to America he says, "I am glad to hear of the letter you have received from your Executive (the letter inviting me to this meeting). I think you will go back to America able to give a good account of the forces organized for health, temperance, humanity, and morals on this side, and able to say to them all how heartily we shall welcome closer co-operation with all the forces, in the States and elsewhere. After our meetings, you will be better able to do so than you could have done before. We shall be entirely pleased to co-operate in any way in reference to GOOD HEALTH and *Dietetic Reformer*.

"You will see from Dr. DeColville's letter that an international conference was suggested for next year. But this you will take with you, and perhaps can read it to your American friends. I hope you will also urge upon Drs. Holbrook, Jackson, and Kellogg, the recognition of the highest platform of dietetic reform, on the ground of health, humanity, and morals. We seem to look to them as most nearly representing us in your American crusade. For your journey, accept my best wishes. You will, I trust, weather

the storms in safety, and with renewed health return again to greater usefulness."

I called on Dr. Holbrook at his Institution on Laight St., N. Y., Dec. 2, and was pleased to find him so earnest on the moral phase of the diet question. He told me also that in Germany there are now nearly one hundred water-cures, where the true diet question is advocated more or less. We must not let these new converts in other lands, get the start of us who have long had light on this question.

How often we hear people express their desires to be more loving, kind, and tender-hearted, and sometimes even lamenting that they so easily become irritated and impatient; and yet these same persons hardly stop to think that animal food, and especially that of animals killed while in a state of excitement, of fear, or anger, causes the eater similar feelings. If we wish to work with the spirit of God, and obtain that development of our faculties most conducive to spiritual life, let us cease feeding and fostering animal passions while we are asking God to subdue the same in us.

How plainly the Scriptures enjoin upon us to be "*tender*-hearted." Why, in order to cultivate this, should we not be tender and good to the animal kind as well as to the human? Who would dare to say that the butcher of innocent lambs is following a way to cultivate the tender faculties of his being? How many, when enjoying a feast of innocent animals, fowls, or fishes, stop to think that their food has cost the lives of animals whose lives are just as dear to them as ours are to us? If the slaughter of animals for our food was left to our tender mothers and sisters, I fancy the flesh pots would be rather scarce.

Now you will understand a little of what our friend Walker means by the "moral" phase of the subject. The vegetarians are in heart, to a man, opposers of cruelty to animals. It is a pleasing sight to witness the congenial spirit of those who have for years discarded entirely the use of fish, flesh, and fowl.

Some may suppose a vegetable diet is limited to beets and cabbages, or something of that kind. By no means; a vegetable diet embraces all the edible fruits, grains, and succulent roots. These, with even a limited supply of milk, eggs, and butter, are ample to supply all the real wants of man's physical nature.

As I have read to you from the letter of the secretary, the Vegetarian Society is ready for close co-operation with you, either in exchange of *Dietetic Reformer* and GOOD HEALTH, or in any way. Now I wish the members of the Health and Temperance Association to read the *Dietetic Reformer;* you will thus be better informed on their line of argument. They are commencing to take the GOOD HEALTH and thus read up on your line of argument. I wish to take subscriptions for their journal, at the close of this meeting, and I wish further that the presidents of our various State organizations would follow this matter up in their respective states. Send me all the names and addresses you can, with 75 cts. each, either in currency or American postage stamps, to Ravenswood, Shirley Road, Southampton, England, and I will see that you have this monthly journal for one year. There need be no fear but that such an effort on your part here will meet with a response from our Vegetarian Society, in their taking GOOD HEALTH. Thus we shall become better acquainted with each other.

THE FOLLY OF FRETTING.

Yesterday morning cousin Sibyl's little Will came running over with the message, "Mamma says, please come over and stay with her all day." Wasn't I glad though, for I always feel so lonely when Charlie is away, and I always like to go to Sibyl's.

When I got there, I found Sibyl in her pleasant sitting-room, a white apron on, her hair smooth and shining, and her morning's work all done. (I'll own to you, you dear old journal, that I felt conscience-smitten as I thought of the way I thrust my unwashed sauce-pan into the closet and went off to dress for my visit.) Well, when I go to Sibyl's I always have *such* a good time; everything is so cozy and home-like there, though her furniture is not as nice as ours, but there is such an air of perfect order there, never anything out of place. Her kitchen—O how nice it is! —neater than somebody's sitting-room that I wot of; no unwashed dishes to furnish the flies with a meal, no greasy tables or unswept corners. But the great charm of that house is Sibyl herself. I can never understand her, she is always so calm and self-possessed,—such a perfect lady in her every-day life, if she does do all her own work. She never gets flurried or vexed as I do if things go wrong, just takes it all easy, and some way they seem to straighten themselves out. Yesterday after dinner I got my crocheting, and she her sew-

ing, and we had seated ourselves for a nice talk, and I just made up my mind to ask her all about it; so I said, "Sibyl, how is it that you never worry about anything?"

She looked up a little surprised, and said,—

"How do you know I never worry?"

"Well," said I, "you never appear to. Everything goes on so smoothly with you. Now about your dinner to-day; warm as it was in that kitchen, you came in to dinner, after doing all the cooking yourself, looking as fresh and neat and cool as if you had just come out of the parlor. Now I am sure if it had been me, I should have been all flurried and heated and tired and—cross, perhaps, I often am, I am sorry to say. I cannot understand it, Sibyl."

"Well, cousin," said she slowly, "perhaps after you have kept house for eight years you will get over that, and yet there are some things which even experience will never teach us. Now perhaps you think the wheels of our domestic life run very smoothly; so they do, but they have not always. When I think of our first two years of housekeeping, I tremble to think how near I came to losing Harry's love by my fretfulness and complaining about little things which I should have kept to myself; for, my dear, it is one thing to win a man's love, and another to keep it. And the danger lay in placing my work first, and Harry's comfort second."

"O Sibyl," I said, "you don't know how my conscience has troubled me all day. Now I'll just tell you. You met Harry at the door at dinner-time, and you looked and acted for all the world as if you had nothing to do but attend to *him*. You did not fly around and hurry things on the table, or push Will out of the way, or scold Harry for coming before dinner was ready. Now this morning Charlie was so anxious to go away early, and so I hurried to get his breakfast ready, and it did seem as though everything was in the way, and I could find nothing I wanted, and—"

"Did you plan your breakfast over night?"

"Why, no," I said. "I never do that. Perhaps if I had, I should not have become so nervous and worried for fear I should be late. Well, by the time the meal was ready, I was as cross as a bear, I know, and poor Charlie seemed to feel the effects of my ill-temper, for he scarcely ate a mouthful. After he was gone, and I had leisure to think it over, I felt sorry enough."

"Now, dear," said Sibyl in her soft, gentle way "you will surely ruin your own and Charlie's happiness if this is to continue. Now, I will give you a bit of my experience. When we first set up housekeeping, I gradually formed the habit of fretting over the many little vexations that fall to the lot of housekeepers, and also of carrying these little grievances to poor Harry when he came home. Want of system in my work caused me to have so many things to do at once, and that once usually happened to be just at dinner-time. Harry would come home to find me with uncombed hair, a pair of old slippers on my feet, and a very red face, flying in and out from kitchen to dining-room, back and forth, entirely too busy to meet him with a kiss of welcome. Then when we sat down at the table, instead of a pleasant, cheery talk, I was too jaded and worried to eat, or to join in conversation, except to fret about my tired feelings, and how very much work there was for only two people. And very soon I began to see the gloomy shade on his face as he came in the door, and my common sense taught me that I was the cause. Why, I do believe if I had pursued that course much longer, I should have lost the respect and love of one of the best and noblest husbands this world contains."

"Well, Sibyl, do tell how you remedied it."

"In the first place," said she, "I did some planning beforehand. Each afternoon, when I had leisure for thought, I decided what should be the next day's breakfast, dinner, and tea; then if we had not the necessary articles, there was time enough to purchase them. Then I determined to avoid the habit, which most women have, of crowding three days' work into one, in order to have 'a day to myself.' I divided it up as evenly as I could, and by this means I seldom became so overburdened and tired as to lose command of myself. System, cousin, system is everything in housework. Then, too, there is a great deal in trying to 'keep sweet,' no matter what happens. You smile, as much as to say, 'It's very easy to say that, when we are sitting here so tranquilly, but when the milk boils over on your clean stove, or the marketing fails to come home, or some other vexatious thing happens, it's much easier to preach than to practice;' but I tell you, dear, it won't hurt you to try it; try persistently; if you fail once or twice, resolve the more firmly to keep sweet next time; and you will find that fretting never remedied these little trials, but only tired you, body and mind; and you will find in time that it has become a habit with you to be pleasant and cheerful, and a good habit it is, too. To be sure, I am not *always* unruffled—sometimes my vexations get the victory, and the hasty, impatient word comes; but I know where to look for help,—God's grace and our own earnest endeavors can do marvelous things for us."—*A Leaf from Somebody's Journal.*

A FAST AGE.

It is stated on good authority that a petition is being circulated by persons accustomed to travel daily to New York City over one of the leading railroads which enter the metropolis, for the purpose of inducing the company to attach a prayer-car to each morning train, so as to enable early passengers to attend to their devotions while going to their places of business in the mad race for filthy lucre. The ostensible object is to save time for sleep or business, and to utilize the half-hour on the train which might not otherwise be employed. A metropolitan journal suggests that "There is no good reason why the company should refuse to grant it; for if at one end of the train there is a smoking-car for the special benefit of one class of travelers, why should there not be a praying-car at the other? So far as the comfort and convenience of the general body of passengers are concerned, a praying-car would be nowhere near as unpleasant to stumble into as a smoking-car; for although some devotional services diffuse a pronounced odor of brimstone, this is perfume itself compared with the atmosphere of the smoker's den on a railway train. Besides, there are doubtless plenty of people along the line who ought to be converted, but who never can be inveigled into a church; and as the praying-car will be the only refuge for men who are sick of the euchre, whist, gossip, bad tobacco, and worse politics that are being discussed in the other cars, they may haply be caught and turned from the error of their ways."

THE FORMING AGE.

Lord Shaftesbury lately stated in a public meeting in London, that from personal observation he had ascertained that of the adult male criminals of that city, nearly all had fallen into a course of crime between the ages of *eight* and *sixteen* years; and that if a young man lived an honest life up to twenty years of age, there were forty-nine chances in favor and only one against him as to an honorable life thereafter.

This is a fact of singular importance to fathers and mothers, and shows a fearful responsibility. Certainly a parent should secure and exercise absolute control over a child under sixteen. It cannot be a difficult matter to do this, except in rare cases; and if that control is not wisely and efficiently exercised, it must be the parents' fault; it is owing to parental neglect or remissness. Hence the real source of crime, in such a country as England or the United States, lies at the door of the parents. It is a fearful reflection! We throw it before the minds of the mothers and fathers of the land, and there leave it to be thought of in wisdom; remarking only as to the early seeds of bodily disease, that they are, in nearly every case, sown between sundown and bed-time, in absence from the family circle, in the supply of spending-money never earned by the spender, opening the doors of confectioneries and soda fountains, of beer and tobacco and wine shops, of the circus, the negro minstrel, the restaurant, and dance; then follows the Sunday excursion, the Sunday drive, with easy transition to the company of those whose ways lead to the fates of social, physical, and moral ruin. *From eight to sixteen*—in these few years are the destinies of children fixed in forty-nine cases out of fifty,—fixed by the parents! Let every father and mother vow, "By the Lord's help, I'll fix my darlings' destiny for good, by making home more attractive than the street."—*Sel.*

THE BOY OF THE PERIOD.

The boy of the day is not receiving the proper home culture. Children slip away from parental care. This is due to the rigorous old-time home culture. Education must be inculcated by the mother. In Wales, England, the character of the mother is inquired for as a recommendation for the son. The average boy, noisy, impetuous, detesting home work, bankrupt in education, and a dodger of churches and other pious places, yet has a fathomless tenderness for his mother, but he wants no spectator. He is characterized by a passionate loyalty to whatever he espouses, and a high sense of honor to which appeal can safely be made in most cases. One thing in his teaching is imperative,—moral purity. Let the mother inculcate with loving care, putting aside false notions of modesty and all prudishness. Let us have done with the belief in the saying, "Wild oats must sometime be sowed." He who thus sows, inevitably reaps a similar harvest. Every boy should be trained to respect womanhood. Nothing so much adorns American manhood as his respect for woman. The boy should be trained in politeness. This has a commercial value now-a-days. He makes his way in the world more easily for a pleasing address. There is no reason why the boy of to-day should not be taught the ordinary rules of etiquette. Good manners are to a man what beauty is to a woman. But best of all, train boys in honor, in integrity, and in trustworthiness. Every boy should have an industrial occupation, and this should be in harmony with his tastes. So with girls. To sum it all up, train the boy into manliness, that combines the

strongest virtue with the gentlest weakness. Let him be like a hand of iron in a glove of velvet. There is nothing higher or nobler than this.—*Mary A. Livermore.*

ANIMALS AND THE TELEGRAPH.

IN an article upon this subject in *Youth and Pleasure*, we found the following interesting facts, which we quote:—

"If you will kick or pound on a telegraph pole, or place your ear against one on a windy day, what will the noise remind you of? A hive of bees? Precisely. So it does the bears in Norway. Bears are passionately fond of honey, and when in one of the wild districts bruin hears the humming of the wires, he follows the sound to the posts where it is the loudest, and begins to tear away the stones heaped round the poles in rocky places to steady them, in order to get at the hive, which he imagines to be there. In his disappointment and disgust, he usually leaves savage marks of his claws in the wood. Nor is he the only victim of the wires. In the electric exhibition at Paris they show the top of a thick pine telegraph post, through which a woodpecker has drilled a hole several inches in diameter. The bird had apparently perched on the pole, and taken the humming of the wires for the buzzing of a nest of insects in the wood, and set himself manfully—or birdfully—to dig them out. Wolves will not stay in Norway where a telegraph line has been built. It was formerly the custom to protect farms by planting poles round them strung with cords, something like rabbit snares, and gradually the wolves came to respect these precautions, so that a line stretched across the neck of a peninsula would protect the whole district. The wolves take the telegraph for a new and improved snare, and promptly leave the country when a line is built. On our own treeless plains the buffalo hails the telegraph pole as an ingenious contrivance for his own benefit. Like all cattle, he delights in scratching himself, and he goes through the performance so energetically that he knocks down the post. An early builder of telegraphs undertook to protect the posts by inserting brad-awls into the wood, but the thick-skinned buffalo found the brad-awl an improvement, as affording him a new sensation, and scratched down more poles than ever. In Sumatra, the wild elephants are systematically opposed to telegraph lines, and at least twenty times a year make raids on them. In May, 1870, the elephants tore down the poles for a distance of several furlongs, and hid the wires and insulators in a cane jungle, and for three nights in succession they repeated the performance as regularly as the repairers built the line during the day. The monkeys and apes are about as formidable enemies, as they use the wires for swings and trapezes, and carry off the glass insulators as valuable prizes; then, when the repairer goes to correct the mischief, he may be pounced upon by a tiger, or driven to the post by a mad buffalo. In Japan the special enemies of the telegraph are the spiders, which grow to an immense size, and avail themselves of the wires as an excellent frame-work for their webs. So thick are the cords the Japanese spiders spin, that often, especially when they are covered with dew, they serve to connect the wires with each other or the ground, and so to stop them from working. In the sea the wires are not any safer, as a small worm has developed itself since cables came into fashion which bores its way through iron wire and gutta percha, lets in the water, and so destroys a line worth millions of dollars. When a great storm comes on in the center of the ocean, and the cable breaks while it is being laid, or threatens to break, no one is alarmed. They fasten the cable to a buoy and come back afterwards and pick it up, or if it is at the bottom of the sea, they drop a dredge, with a mile or so of rope, and fish out the precious thread, as large as one of your fingers, almost as you would fish up a penny from the bottom of a tub with the tongs. But the little worm, no bigger than a needle, is more formidable than the elephant on shore, or the hurricane at sea.

BE CHEERFUL.

CARRY the radiance of your soul in your face. Let the world have the benefit of it. Let your cheerfulness be felt for good wherever you are, and let your smiles be scattered like sunbeams "on the just, as well as on the unjust." Such a disposition will yield you a rich reward, for its happy effects will come home to you, and brighten your moments of thought.

Cheerfulness makes the mind clear, gives tone to thought, adds grace and beauty to the countenance. Joubert says: "When you give, give with joy and smiling."

Smiles are little things, cheap articles, to be fraught with so many blessings both to the giver and receiver—pleasant little ripples to watch as we stand on the shore of every-day life. They are our higher, better nature's responses to the emotions of the soul.

Let the children have the benefit of them; these little ones who need the sunshine of the heart to educate them, and would find a level for their buoyant natures in the cheerful, loving faces of those who lead them.

Give your smiles also to the aged. They

come to them like the quiet rain of summer, making fresh and verdant the long weary path of life. They look for them from you who are rejoicing in the fullness of life.—*Household.*

POPULAR SCIENCE.

—One ton of egg coal measures about nine bbls., or thirty-five to thirty-six cubic feet.

—A Swiss watchmaker has invented means by which watches can be kept running for years without winding up.

—Another new metal has been discovered in commercial zinc. The discoverer, Dr. Phipson, has given it the name of *actinium.*

—Mr. Edison has invented an attachment to his phonograph, through the aid of which a drill can be operated by the voice so that a man can actually talk a hole through a board.

—The zoological garden at Moscow has on exhibition a hairless horse. This curious animal was sent from Turkestan. His color is red. He is obliged to wear a woolen coat as a protection from the cold in his northern home.

Cornstalks as Fuel.—An Iowa farmer who has both wood and coal on his farm burns cornstalks for fuel to warm his house, and claims that they make the best and cheapest fuel he can get. He uses a large stove, and burns the stalks in tightly-bound bundles, weighing about forty pounds each. A bundle burns three hours (without flame) in an air-tight stove. The large stove offers so much radiating surface that it does not need to be very hot. Five bundles a day, or 600 for the winter, suffice to keep the stove going and the house warm.

What Makes Corn Pop?—Chemists who have examined Indian corn, find that it contains all the way from 6 to 11 parts in a hundred (by weight) of fat. By proper means this fat can be separated from the grain, and it is then a thick pale oil. When oils are heated sufficiently in closed vessels, so that the air can not get to them, they are turned into gas, which occupies many times the bulk that the oil did. When pop-corn is gradually heated and made so hot that the oil inside of the kernels turns to gas, this gas can not escape through the hull of the kernels, but when the interior pressure gets strong enough, it bursts the grain, and the explosion is so violent that it shatters it in the most curious manner. The starch in the grain becomes cooked and takes up a great deal more space than it did before.—*Agriculturist.*

How Spiders Fly.—Prof. Young, of Princeton, has been watching these curious insects, and announces the discovery that the flying of spiders is accomplished by the aid of the sun's rays which heat the web and so produce an upward current by means of which the spider is carried upward.

Power of the Microscope.—The magnifying power of the microscope has been brought by modern improvements to about one hundred thousand diameters. There is a difficulty in determining the exact degree of magnifying power exerted, the only method of comparison, as stated by one of the speakers, being "the apparently barbarous one of placing one eye to the instrument and looking at a finely graduated plate of known dimensions, and looking with the other eye at a common foot-rule at a proper distance for ordinary sight, and with practice bringing the objects together in the field of view."

It has been found that in microscopic observations the use of the electric light makes it possible to illumine at least 500 times stronger than with gas, and that in other important respects the new light is far superior to the old. By what is known as Clevalier's method, the light is separated by its difference in refrangibility so that the heat rays are nearly excluded, and only the luminous rays thrown on the objects to be examined.

Bold as the attempt may seem, microscopists have undertaken, by means of the extremely minute observations they are now able to make, to estimate the size of the ultimate elemental particles or atoms of which all matter is composed. This measurement has not as yet, it is true, been made with exactness; but it is claimed to be well ascertained that these ultimate particles cannot be over one twenty-millionth of an inch in diameter. The startling belief is expressed that the common house-fly is able to see and distinctly recognize these inconceivably minute particles, its eye having been found equipped with a peculiar circular muscle, unknown to early entomologists, which enables it to so change its focus and apply its lenses as to attain this incredible visual power.

The most skillful microscopists, with their most effective instruments, are able to examine the forms, colors, and nature of monades one hundred-thousandth of an inch in diameter, which is a long way off from the delicate precision above indicated, but still can hardly be called a coarse or clumsy way of investigating material phenomena. The best of human eyes, without artificial aid, can see no objects much smaller than one three-hundredth of an inch in diameter.—*Mechanical News.*

GOOD HEALTH.

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

SHALL I BE VACCINATED?

ALMOST every mail brings to us this question, and to answer it fully, we publish this month an article on small-pox, in which the subject is treated at length. There is no doubt that vaccination is a great protection against small-pox, and it is questionable whether serious results often follow the introduction of bovine virus into the human system, though it cannot be denied that such is sometimes the case. Humanized virus should *never* be employed, as it is settled beyond question that the old method of vaccination is dangerous in a high degree. Only virus from the calf should be employed, and care should be taken to prevent the introduction of septic matter into the system. We have known cases of marked blood-poisoning to be produced by vaccination, even when ordinary care was taken.

WHAT TO DO FOR A SICK-HEADACHE.

DO N'T take a cup of strong tea, a dose of "blue mass," or anti-bilious pills; but if you have an attack of genuine sick-headache, the whole head aching as though it would split, the temples throbbing, the tongue coated, and mouth tasting bad, no appetite, more or less nausea, and constipated bowels, drink a pint of warm (not hot) water. Keep drinking until free vomiting is induced, thus washing out the stomach and relieving it of its load of decomposing, undigested food. Next take a hot enema, apply hot fomentations to the bowels, and drink freely of very hot water. A fomentation about the head or between the shoulders will usually relieve the headache very much. Eat nothing for twenty-four hours, and afterward live upon fruits and grains, avoiding meat, butter, pastry, sugar, sauces, and all indigestible foods.

MOSES AS A SANITARIAN.

No modern teacher of hygiene can compare with Moses. He laid down for his people a code of sanitary laws which have never been approached in perfection until the present day, when the attention of the whole world is directed to this important subject. It seems singular, indeed, that it should have required thirty centuries to secure the general adoption of principles and methods even less thorough and effective than those laid down by the Hebrew legislator. A recent writer insists that we are a good way behind the times in sanitary matters, for "we admit the value of personal cleanliness, the importance of avoiding putrescent and loathsome matters, and of expelling them rapidly from our cities; and if we are theoretically aware of the disinfecting and deodorizing power of earth, we are far from embodying this, our knowledge, in the practice of actual life. As to the avoidance of blood in the flesh of foul-feeding animals, and of such as are liable to introduce entozoa into our systems, we do not recognize, even verbally, the importance of the Mosaic teachings. We eat 'blood puddings,' we feed swine with blood and with foul-smelling offal, and then we eat the animals which have been gorged on this revolting diet. And we pay the price of this uncleanliness in shortened lives and in waning vigor. We again call attention to the remarkable physiological insight displayed in the san-

itary code of the ancient Israelites, and we repeat the question, Whence did it spring?"

DO TOMATOES CAUSE CANCER?

An old health reformer writes from Iowa, asking the above question. We have often answered it before, but will notice it once more. The matter has been thoroughly investigated, and there is no doubt as to the truth with reference to it. Tomatoes are as innocent of the charge laid upon them as are apples or potatoes. They are, by no means, the best fruit, but are perfectly wholesome when properly prepared for food. There is much more reason for thinking that the condiments generally used in connection with this fruit are a cause of cancer than that the tomato itself is objectionable on this ground.

The fancied resemblance of tomatoes to cancers is wholly a matter of the imagination.

THE "PAD" HUMBUG.

The present seems to be an era of pads. The craze is for the most part a harmless one, and so we rather favor it, as it diminishes in some degree the amount of dosing with numerous nauseous and harmful nostrums which are lauded in every newspaper and upon nearly every fence corner in the land contiguous to a public highway. The New York *Times* comments thus upon these popular humbugs:

"Since the original liver-pad inventor made a fortune by decorating the fences of our country with his half-length portrait, representing him as dressed almost exclusively in a liver-pad, the attention of inventors of remedies for all sorts of diseases has been turned to the exterior of their fellow-beings. Pads have to a great extent superseded 'bitters' and 'compound extracts' and 'favorite remedies,' and the inexhaustible supply of eminent though anonymous ministers of the gospel, who were formerly constantly testifying that they had been cured of incurable diseases after taking seven bottles of this or that medicine, are now devoting most of their spare time to writing letters declaring the miracles wrought in the condition of their various organs by wearing appropriate pads. There is not an organ in the possession of any human being which is without its special pad, and persons who fancy themselves afflicted with a complication of diseases frequently cover themselves so thoroughly with remedial pads that they could, with entire decency appear, in public without any of the garments usually held to be necessary."

LIVING CHEAPLY AND HEALTHFULLY.

Mr. J. B. Rumford, of Bakersfield, Kern Co., Cal., in a recent letter to the *San Francisco Bulletin*, states that a man can earn enough in fifteen days of "ordinary labor" to supply him with the most wholesome food for one year. The following is his statement of the amount of food consumed by his family:—

"I find that three of us, a growing boy of seventeen years, my wife, and myself, do not together use on an average more than one and one-half pounds of wheat or other grain per day, being supplied with Seckel, Winter Nellis, and other pears, peaches, apples, Muscat grapes, and other fruit,—not more than eight pounds of fruit per day—thus making a total expense of 2¼ cents for grain and 16 cents for fruit per day. So we have a total of 18¼ cents per day, or $66.60 per year, or $22.20 for each person. As wages here for ordinary work are $1.50 per day (if you board yourself), it would take less than fifteen days' labor to provision each one a year on a full supply of the best grain and choicest fruits, giving the best health and gustatory pleasure; and as in the experiment we used them all uncooked, the only work of preparation necessary to be performed was a few minutes' time each day preparing the grain in a steel hand-mill, not equal to more than five minutes for each person."

On this simple fare, the whole family improved in health, especially the writer, who further states as follows:—

"I was, in two weeks, completely cured of dyspepsia, which had troubled me from boyhood until nearly fifty years of age, and my spectacles, which had become constant companions, were nearly put aside, and with them came an increase of mental if not of physical ability. Any one, from one acre well cultivated in fruits and grains, with one hour's work each day, can be supplied with a most wholesome and delightful diet of the finest fruits, and continue in good health; and one hour more, well applied, will furnish good, comfortable clothing." Why need it longer be said that man is subject to the curse of earning his bread by the sweat of his brow?"

And yet there are those who will maintain that man cannot live without a liberal supply of flesh food. We have tried the experiment of a fruit and grain diet for more than fifteen years, and have gained in health during the time very greatly, notwithstanding hard work. And we know of scores who have done the same, with like result.

RED OR WHITE FLANNEL, WHICH?

OFTEN are we asked the question, Which is best for health, red flannel or white? We answer, white, for the following reasons: 1. White flannel is warmer; 2. It contains no artificial coloring matter, as red flannel is likely to do, and hence cannot be a source of poisoning, as the latter frequently is; 3. It is more durable, and from the readiness with which it shows soil, is likely to be kept more cleanly. The popular notion that red flannel is a specific for rheumatism or any other disease is a mistake.

A Total Abstinence Colony.—A society has been organized in Canada for the purpose of encouraging the establishment of a teetotal colony. One thousand acres of land have been secured of the government, and are offered to strictly temperate persons at less than the established rate. This will be a splendid residence for dipsomaniacs.

MISO—A CHINESE DISH.

EVERY nation must have some sort of putrescent food to complete its dietary. The English has his "high" meat, the German his sauerkrout, the American his cheese, the East Indian his *Knappee*, and the Japanese his *Miso*, which is thus described by the *Journal of Chemistry*:—

"The Japanese, it is generally known, are a rice-eating people, but as rice contains little or no nitrogen, and flesh is rarely eaten by them, they make use of beans to supply this want. By combining the rice and beans with salt, they prepare a kind of sauerkraut known as *miso*, which is not very palatable to foreigners. Professor Penhallow, who has resided in Japan, describes the manufacture of *miso* in a recent number of the *Kansas City Review*. The proportions employed are stated by him as follows:—

Salt	2.30 bushels.
White Beans . . .	5.13 "
Rice	2.05 "

The rice is first soaked in cold water for two days; then drained, and put in fresh water, and steamed for three hours. It is taken out while hot, and spread on the floor in a warm room for four days, when it is found to be covered with an abundant growth of fungus. It is then taken from this close, damp room to a large, airy one, and spread on mats to cool for an hour and a half, and then transferred to small trays, where it is allowed to cool as rapidly as it can. As soon as cooled it is mixed with the beans, which have been boiled for six hours and allowed to cool over night in the boiler. The salt is also added, and the whole thoroughly reduced and incorporated in long mash-boxes, using a round pole as a pestle. The salt, it should be stated, is very impure solar salt, containing sticks, straw, and dirt.

"The mixture, when it has been converted into a stiff, pasty mass, is placed in large vats, holding 87 bushels, and packed solid by the feet. The temperature is kept as low as possible, and a slow fermentation goes on for six or eight months, at the end of which time the *miso* is ready

for the market. It forms a thick pasty mixture, of repulsive appearance and disagreeably sour odor."

STIMULATION VS. HEALTH.

ONE of the great physical sins of the age is the indulgence in stimulation. The tendency in this direction appears in a great variety of ways. In its grosser form, we see it in the use of alcoholic liquors, opium, tobacco, and other narcotics. Thousands of people who would scorn to become slaves to any of the drugs referred to are bound with chains almost as strong to tea, coffee, chocolate, or cocoa. Thousands more indulge in such stimulants as mustard, pepper, pepper-sauce, and pungent spices. The sin is the same in character, no matter what the name of the stimulant, the difference being only in degree. And this is the reason why one leads to the other. We are glad to see that there is now and then one who recognizes the fact that artificial stimulation of any kind is wholly unnatural, unnecessary, and prejudicial to health. We take pleasure in quoting the following paragraphs from the *International Review:*—

"All physical analogies speak against it. We are frugivorous by nature, partly carnivorous by habit, but certainly not graminivorous; and of all animals, only a few graminivorous ones have a natural craving for the mildest of all peptic stimulants. Deer, wild goats, and a few of the largest ruminants pay an occasonal visit to the salt licks. With this exception the instinct of all mammals in a state of nature, revolts against the mere taste of our popular tipples and spices. Monkeys, lenures, and the more frugivorous plantigrades, loathe the odor of fermented fruits.

"Tobacco fields need no fences; and only the rage of hunger will induce carnivorous beasts to touch salted or peppered meats. Strong spirits and opium are shunned as deadly poisons even by reptiles and the lowest insects. Sustained only by the tonic of the vital force, animals endure the rigor of an Arctic winter, and perform their physical functions with an energy far surpassing the exertions of man.

"That mental vigor is compatible with a non-stimulating diet, is proved by the teetotalism of many ancient philosophers, and such modern brain-workers as Peter Bayle, Grimm, Laplace, Combe, Franklin, and Shelley.

"But can abstainers combine mental activity with physical exertions, and especially with the monotonous, long-continued drudgery of the laboring classes? In other words, will total abstinence do for the people at large?

"The Pythagoreans of Magna Græcia, relaxed their principles before they became a national party. Still, history furnishes one excellent test-case in point. The Western Saracens abstained not only from wine, but from all fermented and distilled drinks whatsoever; were as innocent of coffee as of tea and tobacco; knew opium only as a soporific medicine and were inclined to abstemiousness in animal food. Yet six millions of these truest sons of temperance held their own for seven centuries against great odds of heavy armed Giaours; exceeded all Christendom in astronomy, medicine, agriculture, chemistry, and linguistics, as well as in the abstract sciences, and could boast of a whole galaxy of philosophers and poets.

CATCHING COLD.

THE following from the *London Lancet* is very sensible and wholesome advice if rightly applied:—

"It is noteworthy as a curious yet easily explicable fact, that few persons take cold who are not either self-consciously careful, or fearful of the consequences of exposure. If the attention be wholly diverted from the existence of danger, by some supreme concentration of thought, as, for example, when escaping from a house on fire, or plunging into cold water to save life,—the effects of 'chill' are seldom experienced. This alone should serve to suggest that the influence exerted by cold falls on the nerv-

ous system. The immediate effects of a displacement of blood from the surface, and its determination to the internal organs, are not, as was once supposed, sufficient to produce the sort of congestion that issues in inflammation. If it were so, an inflammatory condition would be the common characteristic of our bodily state. When the vascular system is healthy, and that part of the nervous apparatus by which the caliber of the vessels is controlled, performs its proper functions normally, any disturbance of equilibrium in the circulatory system which may have been produced by external cold, will be quickly adjusted. It is, therefore, on the state of the nervous system that everything depends; and it is, as we have said, on the nervous system the stress of a 'chill' falls. Consciousness is *one* element in the production of a *cold*, and when that is wanting the phenomenon is not very likely to ensue.

"It is in this way that persons who do not cultivate the fear of cold-catching are not, as a rule, subject to this infliction. This is one reason why the habit of wrapping up tends to create a morbid susceptibility. The mind by its fear-begetting precaution keeps the nervous system on the alert for impressions of cold, and the centers are, so to say, panic-stricken when even a slight sensation occurs. Cold applied to the surface, even in the form of a gentle current of air somewhat lower in temperature than the skin, will produce the 'feeling' of 'chill.' Conversely, a thought will often give rise to the 'feeling' of cold applied to the surface; for example, of 'cold water running down the back.' Many of the sensations of cold or heat which are experienced by the hypersensitive have no external cause. They are purely ideational in their mode of origination, and ideal in fact."

A CONTEMPORARY recommends, as a lotion for chapped hands, one part carbolic acid and two parts glycerine, to be applied daily. Don't try it unless you prefer burned hands to chapped ones.

A SAD CASE.

AT the last meeting of the State Board of Health, Hon. Leroy Parker, the president of the Board related the following facts in illustration of the importance of reporting cases of diphtheria to the health authorities, so as to secure the employment of proper precautionary measures. We quote from the abstract of the report sent us by the secretary.

"In Gaines township, Genessee Co., a child of Mr. H— died of what a doctor called malarial fever, and did not report the case to the board of health, though it seems probable that it was really diphtheria. A neighbor and wife, Mr. and Mrs. B. assisted in preparing the corpse for burial. About the same time a child of Mr. S. died from "sore throat," not reported as "dangerous to the public health," and some of the children of Mr. B. attended the funeral. Soon after, Mrs. B. was taken sick with diphtheria, and in turn thirteen out of fourteen members of the family had it, and seven out of ten children died. The board of health promptly isolated this household, but the attending physician's error in diagnosis, or failure to report the first case, was fatal to the hopes of that family.

"In this connection the Board adopted the following preamble and resolutions:—

"*Whereas*, It is often difficult to recognize mild cases of diphtheria, or to distinguish from a simple *pharyngitis* or *laryngitis*, and—

"*Whereas*, Such mild cases of diphtheria often communicate a dangerous and fatal form of diphtheria; therefore—

"*Resolved*, That it is the duty of physicians and householders in reporting diseases dangerous to the public health, and of local health authorities in their efforts to restrict such diseases, in every case to give the public safety the benefit of the doubt.

"*Resolved*, That suspected cases of dangerous diseases should be reported, and precautionary measures taken.

"Drs. Kellogg and Avery were appointed a special committee to report on the present knowledge of diphtheria.

A DRESS REFORM MOVEMENT IN ENGLAND.

We have not as yet heard much of this reformatory movement, and would be glad if any of our English friends would give our readers the facts, if the following from a writer in the *London World* is erroneous on any point:—

"I had read and heard of the 'Ladies' Dress Reform Association,' with Lady Haberton for its high-priestess; but I had no idea the reform had made any practical progress in England until last week, when I stumbled twice against ladies in the new garb, in the streets of London,—one in Bond street and the other in Cromwell road. Well, I am bound to say I like it. To be sure, the ladies I happened to see in it were both handsome and well set-up, carrying themselves like queens. But, really, in itself there appears nothing objectionable, and the dress certainly contributes to freedom of movement, and I should imagine, to the comfort of the wearer. It is for all the world like a riding-habit cut short just above the ankle, exhibiting merely the extremities of the trousers. I must mention them. Only, instead of the dress and nether garments being in cloth, those I saw were of a black brocaded silk stuff that fell gracefully, and looked quiet and lady-like. Trousers worn thus, with a long skirt over them, are very different from the loud, vulgar Bloomer costume of former efforts in this direction; and it is just possible that the reform may spread. But to do so it must come from above, else society will not have it on any consideration. At the Ladies' Dress Reform Association may be seen a specimen of this 'rational dress,' as it is called. In this the trousers are made very wide, with a deep flounce at the extremity, which combines with the skirt worn over them, so that in all ordinary situations no person could possibly tell there was any difference from the present dress of a lady."

We should be glad to learn more of this promising effort at reform, and hope it will be attended by success.

FIGS AS FOOD.

This valuable fruit is never eaten in its perfection in this latitude. Being very perishable in a fresh state, it is not easily transported without being first prepared by drying,—a process by which it is rendered less digestible than when in a perfectly fresh condition. On this account, as well as on account of its excessive sweetness, it is objectionable for some dyspeptics, especially persons suffering with acid dyspepsia. The first objection can be in a great part removed, however, by steaming. The great number of small seeds which it contains are also objectionable to a certain class of dyspeptics, especially those who have what is known as painful dyspepsia,—a form of the disease in which there is a considerable degree of tenderness, as shown by pressing upon the pit of the stomach.

Persons suffering with inactivity of the bowels may eat figs daily in moderate quantity, with great benefit in most cases, making the fruit a part of each meal.

Coffee-Drinking Horses.—The story is told of a fine English cavalry horse which lost his life by eating a quantity of tea mixed with his oats, which would seem to be a sufficient warning to the equine race to eschew the favorite poison, notwithstanding the bad example of the race *homo*. It appears, however, that horses are in a fair way to become regular patrons of the fragrant cup, since it has been discovered that they are very susceptible to its stimulating influence. According to a contemporary, the winner of the great race at Buffalo, "Midnight," was treated to a liberal dose of cold coffee before going upon the track. It has long been customary to stimulate horses with whisky, but Mr. Vanderbilt and other owners of trotters now say they are willing to allow their horses to join temperance societies, as they shall stimulate hereafter with coffee instead of liquor.

How many men and women are daily stimulated on in the headlong race for wealth, or honor, or the gratification of ambition, by this Arabian seed!

A New Disease.—It is recently announced that the workmen employed in the St. Gothard Tunnel have suffered with a singular disease from which many have died. The disease was not due to the character of the labor performed by the workmen, but has been traced to a new species of intestinal worms, of which fifteen hundred were counted in the intestines of one victim. The worm is of the variety known as *nematoid*, and bears the name of *ankylostoma duodenalis*. The worm was first discovered in Italy, and is very abundant in Egypt. "The creature has prodigious fecundity. Happily, the eggs are not developed in the person who harbors them; the development begins in the excrement or the moist earth, and gains admission to the intestines with unwholesome water.

"Large numbers of laborers from the regions which furnished the workmen of St. Gothard have been brought to this country to engage in railway construction and similar rude employments. They bring their careless and uncleanly habits; and there is danger of their defiling springs and water courses where they are camped, and so spreading the worm-pest along the lines of new railways."

Cellars a Source of Malaria.—We have repeatedly observed an apparent connection between cases of malaria and damp cellars or cisterns under houses. A physician, writing from Florida to an Eastern journal, calls attention to this same fact as follows:—

"In this State a somewhat new problem presents itself, in the fact that all houses should be constructed without cellars, and so raised on underpinnings as to allow a clean sweep of light and air beneath them. Indeed, it is a question whether such a mode of construction should not be adopted everywhere for dwellings. I have for more than twenty years believed that cellar atmosphere is a most prolific cause of disease and death. I believe that it increases seventy-five per cent the risk from malarial disease all over our country. Through this State the native population, as by an instinct, raise their simple cabins three or four feet above the ground, and allow air and light to pervade the space so made beneath the ground floor. I advise all travelers to avoid those hotels and other domiciles in the South which are not so constructed."

Prohibition in Madagascar.—The government of Madagascar not only forbids the sale of intoxicating drinks, but also prohibits the planting of the poppy for the production of opium, under a penalty of $100 fine, or imprisonment. The use of hashish is also prohibited. The heathen are getting ahead of Christian civilization.

LITERARY NOTICES.

THE OPIUM HABIT AND ALCOHOLISM. By Fred H. Hubbard, New York: A. S. Barnes & Co.

THIS is a work of twenty-five pages which purports to give the results of the author's treatment of quite a large number of cases of persons addicted to the use of opium, alcohol, and other stimulants or narcotics. It contains many practical suggestions of value, and is well worthy of careful perusal.

ANCIENT MAN IN AMERICA. By Frederick Larkin, M. D., Randolph, New York.

THIS work of 276 pages contains a very interesting account of the relics of ancient man which have been found in America, particular attention being given to remains of ancient works found in Western New York. Any one who has given any attention to archæology will find the book full of interest.

THE POPULAR SCIENTIFIC MONTHLY for February presents a varied and thoroughly interesting table of contents, which has not been surpassed in any former number. The reader of this valuable monthly will always find in the papers of this journal matter of the highest value, which he can obtain in no other American Scientific Monthly. Published by D. Appleton & Co., N. Y. City.

CONTAGIOUS DISEASES.—The Michigan State Board of Health has recently published a two-page circular which gives general rules for the prevention and restriction of scarlet fever, diphtheria, small-pox, typhus fever, and other contagious diseases. If the rules laid down were

strictly followed, these diseases would soon be almost wholly stamped out. 50,000 copies have been printed for general circulation. Copies can be obtained by addressing the secretary of the Board, Dr. H. B. Baker, Lansing, Mich.

We are in receipt of the "Moreton Farm Seed Catalogue" for 1882, containing a list of choice field, garden, and flower seeds, grown, and for sale by Joseph Harris, Moreton Farm, Rochester, N. Y. To encourage the children in the cultivation of flowers and vegetables, Mr. Harris offers to send them all the seeds they want for their own use, at a discount of 25 per cent from regular prices. This is certainly a most commendatory offer, and ought to find a ready acceptance among the boys and girls everywhere.

Our Medical Literature.

This is an exceedingly interesting and able paper, read by the author, Dr. John S. Billings, at the great medical congress, recently held in England.

Dr. Billings has a world-wide reputation as an indefatigable worker in science, particularly those branches of science which have direct relation to medicine and sanitation. His position as librarian of the great medical library in Washington affords him opportunity for research which few men enjoy, and his able papers indicate the full appreciation and utilization of the means afforded him by his position.

"Good Health."—We have received the first number of a new four-page paper, which has appropriated our own name evidently for advertising purposes. The chief object of the paper, or more properly circular, is evidently to advertise a certain chronic disease office which promises to treat successfully numerous serious maladies, together with "all diseases peculiar to females" without seeing the patient. We would be greatly obliged to this establishment if they would change the name of their circular, as we claim priority in the use of the name, and think considerable of its reputation, and do not like to have it maltreated in this way.

The Food Reform Magazine. S. W. Partridge & Co., 9 Pater Noster Row, Eng.

We have received No. 2, of the first volume of this magazine, which is the organ of the London Food Reform Society. The objects of this journal are thus stated:—

"To promote the use of fruits, seeds, grains, and other products of the Vegetable Kingdom, and also to advocate total abstinence from flesh of all birds, beasts, and fishes; to spread, by means of literature, essays, lectures, social meetings, and public discussions, information on the subject of Food Reform, showing the many advantages of a physical, intellectual, and moral character, resulting from the use of a diet consisting of farinaceous substances, over a mixed diet which includes the flesh of animals; and, in general, to further by every means in its power the introduction of a truly healthful and economical diet for man."

These are truly worthy objects, and we think the magazine well calculated to encourage their attainment, and hence welcome it to the list of papers devoted to the dissemination of hygienic literature.

The Problem of Human Life Here and Hereafter. By A. Wilford Hall. New York: Hall & Co.

This work of a little over 500 pages is an attempt on the part of the author to review the six great, modern scientists, Darwin, Huxley, Tyndall, Haeckel, Helmholtz, and Mayer. The greater portion of the work is devoted to an attempt to disprove the undulatory theory of sound. The author's arguments may be conclusive to superficial readers, but certainly will not be accepted by any one accustomed to scientific investigations, or familiar with the data upon which the modern theory of sound is based. We have not space here to notice the details of his arguments. We notice this work has the endorsement of many clergymen, laymen, and religious newspapers, but do not find among all his indorsers the name of a single scientist of established reputation. The greater portion of the work is a singular compound of ignorance, conceit, and superficial reasoning.

Cyclopædia of Practical Quotations. By J. K. Hoyt and Anna L. Ward, New York: R. K. Funk & Co.

We cannot in any way give our readers a better idea of this work than by quoting the following from the *Boston Post*, well known as an authority in literary matters:—

"The entire reading public, but more especially the great army of students and literary workers, will hail this volume with undisguised satisfaction; for it is a boon to them, that they have time out of mind longed for in vain. . . . . Is a monument of industry, research, and learning. . . . . The book is indexed in the most superior manner, both according to topics and by a concordance to the English quotations. The magnitude of the work which has been done in the compilation of this Cyclopædia impresses one at the very outset, and the authors have every reason to be proud of what they have jointly accomplished. Mr. Hoyt is a trained journalist, having been managing editor of the Newark *Daily Advertiser* for many years, and the arrangement of the book and all its methods show a thorough understanding of the needs of those for whom it is intended. Miss Ward is said to be a lady of exceptionally fine culture and literary taste, and of this the work gives good evidence. For convenience and usefulness, the work cannot, to our mind, be surpassed and it must long remain the standard among its kind, ranking side by side with Worcester's Dictionary, Roget's Thesaurus, and Crabbe's Synonyms, and being equally indispensable to any well-ordered library.

Publishers' Page.

☞ This number contains several papers of more than ordinary interest. The article on small-pox has been called for by many correspondents, and is of special importance just now, when this disease is unusually prevalent. The great dread of this malady grows out of the fact that it appears most frequently in emigrants, a class of persons whose gross and uncleanly habits occasion a development of the disease in its most loathsome and appalling forms. When the disease occurs under ordinary conditions, in persons who have lived healthfully, and is treated in a rational manner, it is not more to be dreaded than scarlet fever and many other maladies which are much more common.

The essay by Dr. Gihon, "Health, the True Nobility," which is begun in this number, to be concluded next month, is a most felicitous presentation of the value of health, and the duty of every human being to secure it in its greatest perfection.

"Medical Gymnastics, or Swedish Movements," will constitute a series of articles extending through several numbers. The methods recommended are such as can be employed at home, and are in the highest degree practical. In point of artistic merit, the diagrams are not quite what we would be pleased to present to our readers; but will serve to illustrate the method of applying the various exercises described.

☞ The series of health and temperance charts, which was announced some months ago, is in preparation, and is now nearly completed. The designs are in the hands of the lithographers, who promise to have the charts ready for sale in a few weeks. The set consists of ten separate charts, and is superior to anything which has ever before been undertaken in this line. No. 1, illustrates the chemical character and affinities of alcohol. No. 2, is a magnificent representation of a healthy stomach. No. 3, shows the appearance of the stomach of a moderate drinker. No. 4, shows the stomach of an habitual drinker, representing to the eye the ulcerated and inflamed condition often present in those who habitually use strong liquors. No. 5, represents the appearance of a stomach in delirium tremens. No. 6, represents a cancerous stomach. Nos. 7, 8, and 9, illustrate, in a most graphic manner, the effect of alcohol upon the nerves, muscles, heart, brain, liver, lungs, kidneys, blood, and blood-vessels, together with the effects of tobacco upon the blood and the eye, and a case of smoker's cancer. No. 10, shows the effect of alcohol and tobacco upon the pulse. With the exception of Nos. 1 and 10, all the charts are beautifully printed in chromo lithograph, and illustrate in a most graphic manner the evil effects upon the body of alcohol and tobacco. Each chart is 28x42 inches in size, all the figures being sufficiently large to be easily seen by a large audience. The charts will be well mounted in various styles, and will be offered at as low a figure as possible. The price will not be less than $10 nor over $15 per set, which is exceedingly low for charts of this character; for which the demand is not sufficient to justify large editions.

The sole object in their publication is to give the temperance societies, temperance lecturers and workers an efficient means of impressing some of the strongest arguments which can be adduced in favor of temperance. Several of the charts will be accompanied by a key, by the aid of which any one of ordinary ability can prepare a highly interesting and instructive lecture. Great pains have been taken to make these charts faithful to life, and their accuracy can be relied upon. Orders will be received at $10 if forwarded within the next sixty days, by which time it is hoped the charts will be ready for delivery. We do not promise to furnish the charts at that price after that time. It will depend somewhat upon the number of orders received. We shall print but one thousand copies. Orders may be forwarded to GOOD HEALTH PUB. Co., or the author, Dr. J. H. Kellogg.

☞ The excitement about small-pox is raging high in some of our large cities. In Chicago numerous cases have occurred. But the sanitary authorities of our cities have put in operation such efficient measures for the restriction of the disease that there is no possibility of its becoming an epidemic, as many timid people fear. Several persons who are intending to visit the Sanitarium, have written that they have delayed their visit for fear of taking the small-pox in passing through Chicago. We have accurate information respecting the steps taken by the health authorities of Chicago, which justifies us in stating that there is no ground for fear of taking the disease in passing through that city, and we will undertake to give medical attendance, free of charge, to any persons who contract the disease on their way here to the Sanitarium, provided, of course, that they do not purposely expose themselves. We do not expect to obtain any patients in this way. The State of Illinois has one of the most efficient Boards of Health in the United States, and the Board enjoys the advantage of having ample authority to carry out its restrictions.

☞ The number of patients now under treatment at the Sanitarium is nearly double the number at any previous time at this season of the year. Every room in the two main buildings is occupied, and most of the cottages are filled. The managers are already making arrangements to accommodate at least one hundred extra guests next summer, and the indications are that even more than that number will require accommodation.

☞ Hon. V. C. Smith, long known as editor of one of the most enterprising papers in Michigan, has been stopping at the Sanitarum awhile, receiving treatment for impaired hearing. He made very rapid improvement, and has already returned to his home to attend to important business relating to the village in which he resides, of which he is president. Mr. S. is an old patient, and always welcome.

☞ A wealthy vegetarian in Ireland wishes to come to this country to engage in fruit-farming, partly for the purpose of getting away from the dust and confusion of a large city, and partly to enable him to rear his family with unperverted instincts. Where is there a good place for him?

☞ We are very sorry to be compelled to be a little behindhand again this month. The delay has been unavoidable, but we hope will not occur again.

☞ "Diphtheria" is having a very large sale. It receives the credit of having saved thousands of lives.