

# GOOD HEALTH.

## A JOURNAL OF HYGIENE

MENS SANA IN CORPORE SANO.

VOL. 16.

BATTLE CREEK, MICH., NOVEMBER, 1881.

NO. 11.

### THE EYE AND ITS FUNCTIONS.

BY J. H. KELLOGG, M. D.

THE organ of vision consists essentially of two parts, the optical instrument itself,

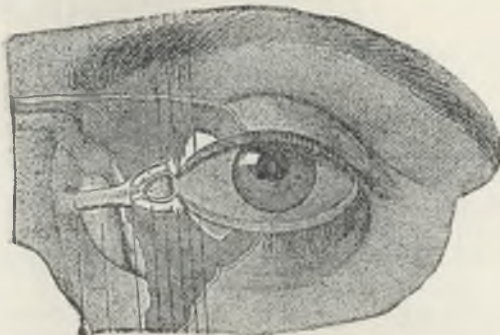


FIG. 1. The Eye, showing at its inner border the apparatus for removing the tears from the eye.

or the eye-ball, and the accessory organs and enveloping parts. The latter, which we will describe first, consist of the *orbit*, the *eyelids*, and the *lacrimal* or *tear apparatus*.

#### THE ORBIT.

In order to protect it from mechanical injury, the eye is placed in a deep socket formed by the bones of the cranium and face. The edges of the socket project so much beyond the eye-ball that it will readily escape injury, even should a blow be received upon that part of the face, unless from a small instrument aimed directly at the eye. The overhanging brow is covered with short hairs so arranged as to conduct away the perspiration when a

person is sweating freely, and prevent its entering the eye. An opening in the bottom of this bony socket gives entrance to the nerve of sight, which passes into the eye-ball. In the back part of the orbit is to be found a large amount of fatty tissue, which forms a sort of cushion for the eye-ball, to protect it from any injury from jar.

#### THE EYELIDS.

The eye is protected in front by two movable curtains, the eyelids, the upper of which is the larger and moves very freely, the lower being short and having little motion. The lids are chiefly composed of skin, lined with a delicate mucous membrane known as the *conjunctiva*. The edges of the lids present a row of fine hairs, the eyelashes, which protect the eye from dust, and when the lids are partially

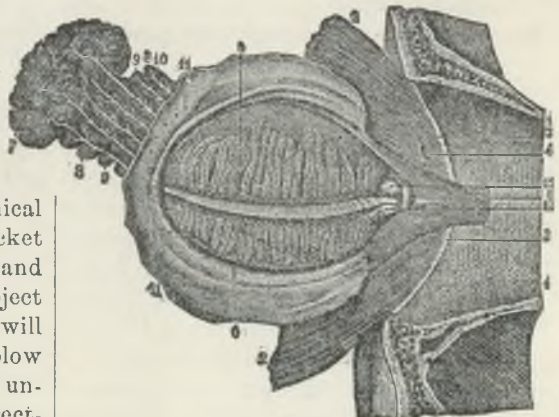


FIG. 2. The Glandular Apparatus of the Eye; 7. Lacrimal Gland. 8, 9, 10, Ducts. 11. Openings of ducts on inner border of upper lid; 6. Glands for lubricating edges of eyelids.

closed, diminish the amount of light that may enter the eye. Just within the row of eyelashes may be seen a line of delicate points, which are the mouths of ducts leading from minute sebaceous glands, which secrete an oily substance and pour it out upon the edge of the lids, by means of which they are prevented from adhering together during sleep. By the same means the lachrymal fluid which lubricates the eye is prevented from overflowing upon the cheek.

#### THE LACHRYMAL APPARATUS.

Just within the outer and upper border of the orbit is placed a little gland, the function of which is to secrete a limpid, lubricating fluid, the *lachrymal fluid*, or tears, from which fact it is called the lachrymal gland. The fluid formed flows down and across the eye, moistening its whole anterior surface, and is drained off at the lower and internal angle of the eye by the *nasal duct*, a canal which leads to the nose. This fluid protects the eye both by washing away impurities and by keeping it transparent. When the cornea, or transparent part of the eye becomes dry, it loses its lustre, and becomes partially opaque. This is well seen in fishes when they have been removed from the water for some time. They have no lachrymal apparatus, since their natural element, the water in which they swim, answers the same purpose.

In the edge of each lid, at the inner end, are little openings through which the tears are drained off into the nasal duct, and so conveyed to the nose. These can be seen in the lower lids by drawing them downward and forward.

The secretion of the lachrymal fluid is constant, but only in sufficient quantity for the purpose of lubricating the eye, except when the mind is laboring under the influence of some strong emotion, when it is poured out in such quantities that it

escapes over the lids upon the cheek in tears. Irritating substances in the eye, a harsh, dry wind, and irritating vapors, produce the same effect.

#### THE EYE-BALL.

The ball of the eye, which is the essential instrument of sight, in many respects resembles the camera of the photographer, as will be seen from the description. The eye-ball is not perfectly spherical in shape, though approaching the form of a globe.

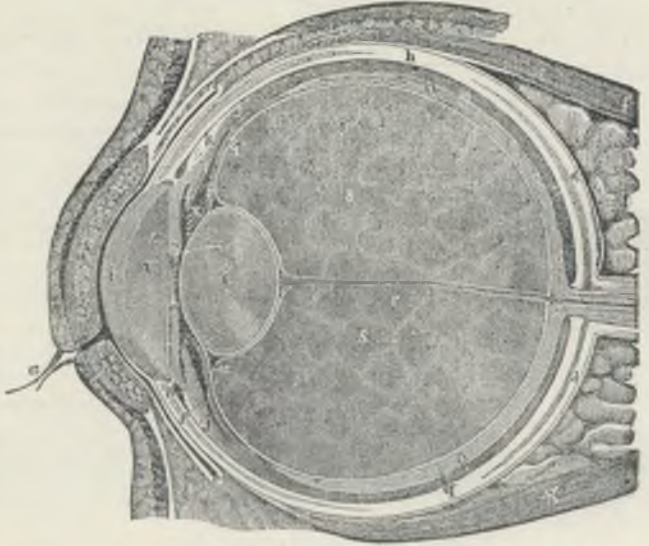


FIG. 3. Vertical Section of the Eye-Ball. a. Eyelashes; d. Eyelids; i. Cornea; v. Aqueous Humor; l. Crystalline Lens; s. Vitreous Humor; m. Iris; o. Retina.

Its average diameter is about an inch. It is composed, essentially, of three investing membranes, or coats, called *tunics*, and three transparent media inclosed, called *humors*.

The outermost tunic is called the *sclerotic*. It is a tough, fibrous coat, and forms what is known as the white of the eye. It covers the whole eye-ball, with the exception of a small circular portion which is covered by a peculiar, horn-like, transparent structure which is a continuation of the sclerotic, and is called the *cornea*. It is this which forms the lustrous portion of the eye, through which its color is seen. The cornea acts as a window to the interior of the eye.

Within the sclerotic is another tunic,

the *choroid*, which is a delicate membrane filled with blood-vessels to nourish the eye, and lined upon the inside with a layer of dark, nearly black, coloring matter. The choroid is also absent in front, ending at the margin of the cornea; but it is continued by a circular curtain called—

#### THE IRIS.

This delicate structure is what gives to the eye its color. Its outer side is in different persons a great variety of colors, being brown, blue, gray, hazel, and many other shades. Its center is pierced by an opening called the pupil. Its back side is covered, like the choroid, with a layer of black pigment, the object of which is the same as that had in view by the manufacturer of telescopes and microscopes when he covers with a coat of black paint the inside of his instruments, viz., the absorption of wandering rays of light, and the prevention of reflection in the eye, which would occasion confusion of vision. In albinos these dark cells are wanting, in consequence of which they suffer from imperfect vision. The same is true of albinos among lower animals, as white elephants, white rabbits, etc. In blue and gray eyes the pigment cells are less abundant than in black and brown, being found only on the back side of the iris; while in black and brown eyes, pigment cells are found upon both sides and in its substance. Dark eyes are usually associated with dark features on account of the general greater abundance of pigment throughout the body.

A careful examination of the iris with the microscope shows that it is made of two sets of fibers, one of which radiates from the center toward the circumference, while the other is arranged circularly. The circular fibres, by contracting, make the opening through the iris smaller; while the radiating fibres, by contracting, make it larger. Thus the size of the pupil is regulated according to the amount of light which is needed in the eye for the purposes of vision, or which may be tolerated without injury to its delicate structures. The action of the iris of the cat may be very

easily seen. When exposed to a bright light, the pupil becomes very small; but when taken into a room where there is little light, it becomes greatly dilated. It is in part the great power of dilation of the pupil which enables the cat and the owl to see well where the light is insufficient for most other animals and human beings. When we enter a darkened room we cannot see distinctly for some minutes, as is also the case when we are suddenly brought into the presence of a bright light. This is owing to the fact that time is required for the iris to accommodate the size of the pupil to the amount of light furnished. When the variation in the intensity of the light is but slight, as is ordinarily the case, no perceptible time is required; but a longer period is necessary when the difference is great. Every person has experienced temporary inability to see objects distinctly after looking at the sun for a few seconds steadily.

Certain drugs possess the power to cause dilation of the pupil by paralyzing its muscular fibres. Belladonna, one of the chief of these, derives its name, which signifies beautiful lady, from the fact that it has been much used to cause dilation of the pupil to add brilliance to the eyes. Death has not infrequently been occasioned in this way.

#### THE CILIARY MUSCLE.

Between the sclerotic and the choroid, around the edge of the cornea, is another curious little muscle, known as the *ciliary* muscle, the use of which will be seen presently.

#### THE RETINA.

This constitutes the third and inner coat of the eye. It is made up almost wholly of the end filaments of the optic nerve, which enters the ball of the eye at the back side and spreads out into a thin membrane to form the retina. It contains many delicate and curious structures connected with vision, but too complicated for explanation here. The retina is sensitive to no impressions but to those produced by light. That is, if otherwise stimulated, only the sensation of light is produced.

## THE CRYSTALLINE LENS.

This is the middle one of the three transparent media of the eye. It is placed in the eye just behind the iris, so that the center of the pupil is just opposite its center. Its shape, as will be seen by reference to the accompanying cuts, is like that of a convex lens or burning-glass. It is of quite firm consistency, feeling to the touch almost as hard as cartilage. It is held in place by means of a delicate sac or capsule which incloses it, and is attached by its circumference to the choroid coat just behind the iris. Its thickness is about one-fourth of an inch. The lens possesses great transparency in health, but sometimes, especially in old age, it becomes opaque, occasioning the disease known as cataract. Attached to the choroid behind the border of the capsule of the lens, is the ciliary muscle previously described.

## THE AQUEOUS HUMOR.

This is a watery fluid contained in the small space between the lens and the cornea in front. The free inner edge of the iris floats in the aqueous humor. It is this limpid fluid which escapes when the eye is punctured by a sharp instrument.

## THE VITREOUS HUMOR.

Behind the crystalline lens, and filling the greater part of the eye-ball, is the vitreous humor, so called on account of its imagined resemblance to melted glass. This structure is also very transparent. It constitutes about two-thirds of the eye-ball. The retina, the inner tunic of the eye, lies in close contact with it.

## WHAT I KNOW ABOUT TOBACCO.

AND what I don't know is not worth knowing, and what I *do* know is not worth knowing, if the knowledge is to be paid for at the rates I gave.

It is said that "experience keeps a dear school, but fools will learn in no other." The fact is, however, that fools will not learn even there, for "though thou shouldst bray a fool in a mortar, among wheat, with a pestle, yet will not his foolishness depart from him." The writer has been brayed,—mark, I do not say has brayed,

but *been* brayed,—and how much of the folly has been pounded out, the sequel will sufficiently show.

I was brought up on a tobacco plantation, and accordingly, in the language of an English king when on trial for his life, I beg leave to remind my severely puritanical readers that I had "the disadvantage of a very bad education." The atmosphere, at least of my early life, was none of the purest, for it was never free from tobacco-smoke. After the usual initiation, with its nauseous revulsion, in which nature utters her indignant protest against the offense put upon her, I became, at a comparatively tender age, a consumer of tobacco.

When only twelve years old, sent away from home to school, and thrown in with boys ambitious to be men, and I no less ambitious than they, the indulgence at first was limited to extraordinary occasions,—high days, holidays, days of grand carousal,—when we gave ourselves up to wassail, but without the wine, the tobacco serving as a substitute.

We proudly fancied we were holding "Bacchanalian orgies," and, enveloped in the "clouds" we "blew," we were frequently as veritably drunk as Bacchanalians ever were. I need not dwell upon the doubtful associations into which the habit brought me, nor the perilous tendencies in other directions, of which I was frequently painfully conscious. To these I look back tremblingly, thankful for the mercy that rescued me, and fervently praying that my boys may never be subjected to like dangerous exposure.

Little by little the appetite grew, and what at first was occasional and exceptional, became common and habitual, until by the time I had reached my majority, instead of being a free man, I found myself bound in fetters of brass,—the most abject and inveterate of slaves. I say the most abject, because I hugged my fetters, nor cherished a single aspiration to be free, for it did not occur to me that I was enslaved, at least it did not for many a year. I make this qualification, for by-and-by the consciousness did come with

exceeding vividness and overmastering force.

Possibly a change of latitude may have had something to do with it, for I left the tobacco-plantation more than twenty years ago,—possibly I am growing wiser as well as older.

For a long time I had been in trouble on account of my tobacco. It was not *domestic*, because blessed with the most patient of wives. Nor was it *physical*, because blessed with a body of extraordinary toughness of fibre. But I had trouble of conscience, which for a Christian is of all trouble the very worst. First of all, there was a sense of *personal defilement* of which I could not quite divest myself. It is nowhere said in the Scriptures, as many suppose, that “cleanliness is next to godliness,” but *it is* said, “Be ye *clean* that bear the vessels of the Lord;” and the consciousness of carrying about with me, and the prospect of leaving behind me, other fragrance than that of simple piety, was not a particularly savory reflection. I had noticed, too, that in this regard tobacco-users, as a rule, did not improve as age drew on; and the possibility of coming to such a pass of palpable filthiness as some old fellows,—the thought that, if I should die in extreme old age, the undertaker's assistant would have much ado to scrub out “the busy wrinkles round the chin” before he could make a decent Christian corpse out of me,—this did sometimes disquiet me. And along with this came the conviction that tobacco-using was *against nature*, and seeing that God is the God of nature as well as grace, I could not help feeling that in running against nature I was running against not *it*, but *Him*; and this, I was persuaded, was not a thing to be safely done; for however slowly God's mills do grind, “they grind exceeding small,” and sooner or later, as sure as we live, they will grind exactly all. As a consequence, there were texts in the Bible, and not a few of them, which, while not difficult in themselves, perhaps, were very difficult for me, and so I dared not preach from them, lest I should convict myself, and stand convicted in the presence of my people. I could not urge them to “lay

apart all filthiness and superfluity of naughtiness” if the traces of such superfluity were discoverable in my breath and on my body. I could not insist that *they* should “keep the body under,” if *my* body kept *me* under. I could not ring out the cry of conscious Christian freedom, if I myself was a slave to a fleshly lust that was warring against the soul.

That I *was* such a slave was a thing beyond all question. More and more inveterate grew the habit, more and more imperious the demands of an appetite that finally became impatient of almost any intermission in its accustomed gratification. Again and again, when bowed before the Lord, and striving after greater nearness of access, and a higher measure of consecration, I would ask myself, “Is there anything on earth to which I am sinfully clinging?” and there would come a whisper, “How is it about tobacco?” and I would be ready to wish that I had never raised the question. But having been raised, it was a Banquo's ghost, that would not “down.”

I endeavored to persuade myself that the Lord did not concern himself about such a trivial matter, and said to myself, “Is it not a little one, and my soul shall live?” But I had preached from that text too often, and to too many just such sinners as myself, to extract much comfort out of it. I remembered that scripture, “He that eateth is damned if he doubt;” and I more than doubted, and so was not only involved in doubt, but danger. I deliberately, solemnly, prayerfully determined, God helping me, to have done with tobacco at once and forever. And so I quit,—not for a time, to see if I would feel better—then I should have felt immeasurably worse,—but for all time.

My whole system having so long been accustomed to the use of a narcotic, my body having so long been saturated with it through and through, my brain having so long been dependent upon its artificial stimulation, it was just a question, and one of exceeding gravity, it seemed to me, as to the possible consequences of so sudden and complete a revolution in the whole habits of my life. But having first sol-

emly decided that it was the Christian thing at least for me to do, then there was nothing left but to do it, trusting Him for whose sake I did it to take care of all the consequences. And He did, in the most surprising and beautiful way.

From the supreme moment of final decision, the spell of the appetite was utterly broken. And yet I suffered, not with any insatiable craving for the old gratification, but with a dazed, demented, bewildered feeling,—a collapse, a consciousness of imbecility over which I could have wept,—a sort of "*chimera bombinans in vacuo*," and devouring neither "*secundas intentiones*," nor anything else,—a sort of Samson shorn of his locks, only I never was otherwise like Samson before or since. I could no more have made a sermon than I could have built a locomotive, and my only recourse was to turn up the barrel, and fish out some of the old "Silurians."

And this continued for five whole weeks, in the which I was wrapped in "an horror of great darkness, and the very hair of my flesh stood up." I would fain have run away from myself, and *did* run away from my friends, fleeing to the far West, and skirmishing around in the hope of recovering my lost equilibrium.

Returning home, and seating myself in my well-worn arm-chair in my sanctum, with trembling solicitude I settled myself for work, but fearing I should never be myself again, when, lo! to my joy, my mind, long eclipsed, came out like the moon when it has swept past the shadow, and "Richard was himself again;" yea, more himself than ever; for, for the first time, there was the clear swing and sweep of natural faculty unobscured by narcotics. This week concludes the twelfth month, not of an experiment, for I am not experimenting, but of an *experience*, which to me has been a new life, full of joy and blessing. Like the three young Hebrews, I am "fairer and fatter in flesh," and if my whole life-work is not being better done, and upon a higher plane, as I hope it is, I have a "comfort in my conscience," which is to me of incalculable value.

I know it is likely to be suggested by some doubting Thomas that the writer of

this confession is not yet dead, and so, in spite of these brave words, may some day relapse into his old depravity. Possibly, for even better men have done worse things; but "having obtained help of God, I continue unto this day," and if any one, waxing bold through the *breaking* of my "bonds," should be stimulated to strive after like liberty, I shall mightily rejoice, and be abundantly repaid.—*P. S. Henson, D. D.*

#### DOCUMENT ON THE RESTRICTION OF DIPHTHERIA.

[THE following is a reprint, almost entire, of a document published by the State Board of Health of Michigan on the restriction of a malady which is prevalent in nearly all parts of the world. The serious nature of the disease, its contagious character, and its alarming prevalence in this State at the present time, make it important that practical information on the subject should be placed in the hands of the people everywhere. To accomplish this end, the State Board of Health have had printed about 50,000 copies in the English, German, and Holland languages for distribution in this State. Any one who desires can obtain a copy by addressing the Secretary of the Board, Dr. H. B. Baker, Lansing, Mich.—Ed.]

DIPHTHERIA IS A CONTAGIOUS DISEASE, hence the strict observance of the following precautions is of very great importance:—

1. When a child or young person has a sore throat, bad odor to its breath, and especially if it has fever, it should immediately be kept separated from all other persons, except necessary attendants, until it be ascertained whether or not it has diphtheria or some other communicable disease.

2. EVERY PERSON known to be sick with diphtheria should be PROMPTLY and EFFECTUALLY ISOLATED from the public; no more persons than are actually necessary should have charge of or visit the patient, and they should be restricted in their intercourse with other persons.

3. PLAIN AND DISTINCT NOTICES SHOULD BE PLACED UPON THE PREMISES OR HOUSE IN WHICH THERE IS A PERSON SICK WITH DIPH-  
THERIA, AND NO CHILD SHOULD BE ALLOWED TO ENTER.

4. EVERY CASE OF DIPH-  
THERIA SHOULD AT ONCE BE REPORTED TO THE HEALTH OFFICER, OR TO THE LOCAL BOARD OF HEALTH, AS THE LAW REQUIRES, diphtheria being plainly a disease "dangerous to the public health," within the meaning of the law.

5. Upon receipt of such notice, the board of health has duties to perform in taking measures to restrict the spread of the disease, which it is a great violation of public trust for it to neglect or postpone. That no precious time may be lost, it is the duty of every board of health to make provision for prompt action by its health officer, authorizing and directing him to be prepared at all times, as executive officer of the board, to take certain action without waiting for a meeting of the board, whenever a case of diphtheria, scarlet fever, small-pox, or other disease dangerous to the public health occurs within its jurisdiction. Some of these duties of the health officer may be briefly suggested as follows: He should,—

a. Verify the diagnoses of reported cases of diphtheria and other diseases dangerous to the public health.

b. Secure the isolation of those sick with, or exposed to, such a disease.

c. Give notice of infected places.

d. Regulate funerals of persons dead from diphtheria, etc.

e. Disinfect rooms, clothing, and premises.

f. Give certificates of recovery and of freedom from liability to communicate the disease.

6. The room into which one sick with diphtheria is placed should previously be cleared of all needless clothing, carpets, drapery, and other materials likely to harbor the poison of the disease. This room should constantly receive a liberal supply of fresh air, without currents or drafts directly upon the patient. It will be well also to have the sun shine directly into the room.

7. The discharges from the throat, nose,

and mouth are extremely liable to communicate the disease, and should be received in vessels containing a strong solution of copperas (sulphate of iron), or on soft rags or pieces of cloth, which should immediately be burned.

8. The discharges from the kidneys and bowels are also dangerous, and should be passed into vessels containing a strong solution of sulphate of iron (copperas), and then be *buried* at least 100 feet distant from any well; or when this is impracticable, they should be passed on old cloths, which should immediately be burned.

Sulphate of iron (copperas) dissolved in water in the proportion of one and a half pounds of the sulphate to one gallon of water, is a good solution for chamber-vessels, water-closets, etc. When much is wanted it may be prepared by hanging a basket containing about sixty pounds of copperas in a barrel of water.

9. The clothing, towels, bed-linen, etc., on removal from the patient, should at once, before removal from the room, be placed in a pail or tub of boiling-hot zinc-solution, made in proportions as follows: water, one gallon; sulphate of zinc, four ounces; common salt, two ounces.

10. Nurses and attendants should be required to keep themselves and their patients as clean as possible; their own hands should frequently be washed and disinfected by chlorinated soda, which can be purchased at any drug store.

11. All persons recovering from diphtheria should be considered dangerous; therefore such a person should not be permitted to associate with others, or to attend school, church, or any public assembly until the throat and any sores which may have been on the lips or nose are healed; nor until, in the judgment of a careful and intelligent health officer, he can do so without endangering others; nor until after all his clothing has been thoroughly disinfected, and this without regard to the time which has elapsed since recovery, if the time is less than one year. Nor should a person from premises on which there is or has been a case of diphtheria, attend any school, Sunday-school, church, or public assembly, or be permitted by the health authorities or by the school board to do so, until after

disinfection of such premises and of the clothing worn by such person if it shall have been exposed to the contagion of the disease.

12. The body of a person who has died of diphtheria should be washed with a zinc solution of double the strength stated in paragraph 9, then wrapped in a sheet wet with the zinc solution, and at once buried. In no case should the body be exposed to view.

13. No public funeral should be held at a house in which there is a case of diphtheria, nor in which a death from diphtheria has recently occurred. Except under extraordinary precautions there should be no public funeral of a person who has died from diphtheria. No child, at least, and it would be better in most cases that few adults, should attend a funeral of a person dead of diphtheria.

*DISINFECTION OF ROOMS, CLOTHING,  
ETC., ETC.*

14. After a death or recovery from diphtheria, the room in which there has been a case of diphtheria, whether fatal or not, should, with all its contents, be thoroughly disinfected by exposure for several hours to strong fumes of burning sulphur; and then, if possible, it should for several hours or days be exposed to currents of fresh air.

*a.* Because of the innumerable ways in which the contagion may be scattered about the house and premises where there has been for some little time a case of diphtheria, the entire house and out-buildings, including cellar, garret, wood-shed, and privy, will usually need to be disinfected.

*b.* Rooms to be disinfected must be vacated. Heavy clothing, blankets, bedding, and other articles which cannot be treated with the zinc solution, should be spread out so as to be thoroughly exposed during fumigation, which should take place in the room where the clothing, etc., has been used in connection with the patient. For a room about ten feet square, at least two pounds of sulphur should be used; for larger rooms, proportionately increased quantities, at the rate of two pounds for each 1,000 cubic feet of air-space.

*c.* Close the rooms as tight as possible, place the sulphur in iron pans supported upon bricks, set it on fire by hot coals or with the aid of a spoonful of alcohol lighted by a match, be careful not to breathe the fumes of the burning sulphur, and when certain the sulphur is burning well, leave the room, close the door, and allow the room to be closed for twenty-four hours.

*d.* Care should be taken to secure the complete burning of as much of the sulphur as is possible. For this purpose the iron pan or pot in which the sulphur is to be placed may previously be heated, and may be placed in the room over hot coals in a pan of ashes set up on bricks.

*e.* Cellars, yards, stables, gutters, privies, cesspools, water-closets, drains, sewers, etc., should be frequently and liberally treated with copperas solution, made as described in paragraph 8.

*f.* *Body and bed clothing, etc.*—It is best to burn all articles which have been in contact with persons sick with contagious or infectious diseases. Articles too valuable to be destroyed, should be exposed for one hour to a dry heat of from 240° F. to 250° F., or be treated as follows:—

*g.* Cotton, linen, flannels, blankets, etc., should be treated with the boiling-hot zinc-solution, introducing them piece by piece, securing thorough wetting, and boiling for at least half an hour. Heavy woolen clothing, silks, furs, stuffed bed-covers, beds, and other articles which cannot be treated with the zinc solution, should be hung in the room during fumigation, pockets being turned inside-out and the whole garment being thoroughly exposed. Afterward they should be hung in the open air, beaten, and shaken. Carpets are best fumigated on the floor, but should afterward be removed to the open air and thoroughly beaten. Pillows, beds, stuffed mattresses, upholstered furniture, etc., after being disinfected on the outside, may be cut open and their contents again exposed to fumes of burning sulphur. In no case should the thorough disinfection of clothing, bedding, etc., be omitted. Infected clothing and bedding have been known to communicate diphtheria months after their infection.



THE FOREGOING METHODS OF DISINFECTATION ARE APPLICABLE IN OTHER CONTAGIOUS DISEASES.

*TEMPORARY SHELTER DURING DISINFECTATION.*

15. Disinfection of a room always necessitates vacating it, and sometimes makes it impossible to remain in adjoining rooms; therefore, in some cases it seems essential to have hospital tent, or other temporary shelter for the inmates of infected houses, where bathing, disinfection, and washing can be done while such houses are being disinfected and put in order. On this subject local boards of health should be consulted, and should be prepared to act.

*HOW TO AVOID AND PREVENT DIPHThERIA.*

16. Avoid the special contagium of the disease. This is especially important to be observed by children and all whose throats are sore from any cause. Children under ten years of age are in much greater danger of death from diphtheria than are adults; but adult persons often get and spread the disease, and sometimes die from it. Mild cases in adults may thus cause fatal cases among children. Because of these facts it is frequently dangerous for children to go where adult persons can go with almost perfect safety to themselves.

17. Do not let a child go near a case of diphtheria. Do not permit any person or thing, or a dog, cat, or other animal to come direct from a case of diphtheria to a child. Unless your services are needed, keep away from the disease yourself. If you do visit a case, bathe yourself and change and disinfect your clothing before you go where there is a child.

18. It is probable that the contagium of diphtheria may retain its virulence for some time, and be carried a long distance in various substances and articles in which it may have found lodgment. Diphtheria contracted from germs carried several blocks in a sewer may perhaps be as fatal as when contracted by direct exposure to one sick with it. While it is not definitely proved that the germs of diphtheria are propagated in any substance outside the

living human or animal body, it is possible that they may be found to be thus propagated. Therefore, and because the breathing of air laden with emanations from decaying fruit, vegetables, or meat, or from sewers, cess-pools, sinks, and other receptacles of filth, is believed to endanger health, great care should be taken to have the house, premises, and everything connected with dwellings kept clean and dry; to have sewer-connections well tapped, and house-drains constantly well ventilated; and to have all carriers of filth well disinfected. Do not permit a child to enter a privy, water-closet, or breathe the air from a privy, water-closet, cess-pool or sewer into which discharges from persons sick with diphtheria have entered, nor to drink water or milk which has been exposed to such air.

19. Do not permit a child to ride in a hack or other closed carriage in which has been a person sick with diphtheria, except the carriage has since been thoroughly disinfected with fumes of burning sulphur, as specified in paragraphs 14, 14 *b*, 14 *c*, and 14 *d*.

20. All influences which cause sore throats probably tend to promote the taking and spreading of this disease. Among the conditions external to the body liable to spread diphtheria, perhaps the most common are: infected air, infected water, and *contact with infected substances or persons*. Because of this, and as a means of lessening the danger of contracting other diseases, the following precautions should always be taken, but more particularly during the prevalence of any such disease as diphtheria.

21. Avoid exposure to wind and to breathing cold, dry air; also the use of strong vinegar or any other article of food which tends to make the throat raw or tender.

22. Do not wear or handle clothing worn by a person during sickness or convalescence from diphtheria.

23. Beware of any person who has a sore throat. Do not kiss or take the breath of such a person. Do not drink from the same cup, blow the same whistle, or put his pencil or pen into your mouth.

24. Beware of crowded assemblies in unventilated rooms.

25. Do not drink water which has a bad taste or odor, or which comes from a source that renders it liable to be impure, especially if there is reason to believe it may contain something derived from a person sick with diphtheria.

#### NEWLY DISCOVERED INDUSTRIES.

In taking the last census, several new kinds of business were brought to light.

"It was found, for instance, that some use was made of old shoes, but exactly what use was hard to find out. Large numbers of old shoes were sold by rag-pickers to certain men, who disposed of them at a good price. It is well known that bits of old leather make the commercial article known as Prussian blue, but only a few firms manufacture it, and the new call for old shoes was evidently for some other purpose. In New York City and Brooklyn about three million pairs of old shoes are thrown away every year. Formerly, old shoes were plentiful in the gutters of certain neighborhoods; now it appears that they are sought after as choice prizes in the rag-picker's line. By dint of persevering inquiry, it was discovered that the old shoes were used for three purposes. First, all shoes not completely worn out are patched, greased, and, after being otherwise regenerated, sold to men who deal in such wares. Some persons wear one shoe much more than the other; these dealers find mates for shoes whose original mates are past hope. Secondly, the shoes not worth patching up are cut into pieces; the good bits are used for patching other shoes, and the worthless bits, the soles and cracked 'uppers,' are converted into Jamaica rum by a process known only to the manufacturers. It is said that they are boiled in pure spirits and allowed to stand for a few weeks, the product far surpassing the Jamaica rum made with essences, burnt sugar, and spirits. A gentleman who doubted the truth of this story stopped recently at a low grog shop in the neighborhood of the factory spoken of and inquired if they had any

rum from old shoes. 'No,' said the bar-keeper, 'we don't keep it much, now; the druggists, who want a pure article, all sell it, and the price has gone up. But we have had it, and can get you some if you want it.' How many old shoes go to a gallon of rum could not be ascertained.

"It has been noticed by some deputies that while manufacturers are quite willing to put a valuation upon their manufactured product, they hesitate about stating the value of the raw material, and even return the schedules with the space for the value of raw material left blank. In one instance a manufacturer of tomato catsup returned a report giving the value of his manufactured product at \$18,000, and the value of his raw material as nothing. His explanation was as follows: Every year in the canning season he sends clean tubs to all the wholesale houses which make a business of canning tomatoes, with the understanding that the women who trim and peel shall throw the skins and parings into these tubs. Every day the tubs are removed, the stuff in them ground up, fermented, flavored, and sold as tomato catsup, to the extent of \$18,000.

"Another singular and decidedly pernicious business is the manufacture, on a large scale, of cheap candies from white earth, or terra alba, mixed with a little sugar and glucose. The deputy who investigated the confectionery business reports that 75 per cent of some candies is composed of these substances, and such candy, notably "gum drops," contains less sugar. The effect of white earth upon the stomachs of the unfortunate children who buy these candies, is yet to be determined by future autopsies. What is called a fine brand of castile soap has been found to be composed chiefly of this white earth and grease, but the evil effects of such an imposture are trifling compared to the results of turning children's stomachs into miniature pottery-works."

—Maine, under the Maine liquor law, has one convict in its penitentiary to each 3,200 of its population. California, under the license law, has one convict to each 600 of its population.

**SOME SANITARY MEMORANDA.**

BY JOHN K. ALLEN.

IN order to produce a sanitary reform among the people at large, two things are essential: first, sanitary literature must be placed in the hands of the people much more freely than it is at present; and second, it must be of a character which will appeal directly to that indefinite part of a person's knowledge called common sense. A sanitarian is sometimes looked upon by a certain and large class of people as a vague theorist, and when he suggests that bad-smelling water (usually from "the best well in the town") should not be drunk, or that certain kinds of food should not be eaten because of the liability of these articles producing sickness, he is said to be "too particular," "more nice than wise," etc. Some people would, seemingly, rather live as they have in years past, sublimely ignorant of the dangers lurking in articles of food and drink, and attribute the sickness and deaths in their families to an "inscrutable providence," than to be compelled to avoid a favorite diet, or to dig a new well. It is on this class of people that a certain amount of sanitary work must be done by our board of health. Peculiar lines of work must be carried out in order to successfully combat the peculiar ideas of the persons mentioned.

"Out of sight, out of mind," is too often illustrated in the domestic arrangements of many of our town and country homes. A foul-smelling, disease-breeding refuse barrel at the rear of a finely-kept front, may be frequently found. It is in the sole charge of the servants, to whom it is a catch-all for everything not otherwise disposed of. It may not be noticeable in the daytime, unless in close proximity to it; but at night, when the "wind goes down with the sun," and ozone, the beneficent natural disinfectant, is present in less quantity, the emanations from this foul reservoir may poison the air for the sleeping innocents for a half block around. If farmers could all be persuaded that good flesh or milk could not be produced from a mass of sour, decayed and decomposed material, those abominations called "swill

barrels" would be less frequent, and table-refuse, which could not be fed while fresh, would be buried or sewerred away by the infiltration process, to be oxydized by exposure to earth, and air, and water.

It is quite difficult, apparently, for some persons to realize that clean, sweet-tasting and good-smelling water may contain contamination from the privy-vault and cess-pool some seventy-five or one hundred feet distant. They will believe that water percolates in little streamlets through the ground and gathers in the well or in larger streamlets, or veins; but the moment it is insinuated that some of these streamlets may come directly from the privy-vault, the statement is considered ridiculous. To what extent water may thus be contaminated, is shown in a striking manner by the fact that in about 15,000 barrels of material removed from privy-vaults in one year by an odorless excavating company working in Michigan, only 2,000 barrels could be pumped out by the "odorless" process proper, the remaining 13,000 barrels being of so solid a nature that it had to be removed by the "pitting" process, which is simply taking the fecal matter out with pails. This shows that nearly all the liquid matter originally deposited, and all water soaking in the vaults during moist seasons, had run out in the soil, and perhaps carried in its train germs of typhoid fever, dysentery, etc., which on being deposited in wells, springs, and other sources of water supply, are taken into the systems of unsuspecting victims, and a "vicious circle" of sickness and death is established. Could the dry earth system be more fully introduced in places where a lack of sewerage system renders water-closets useless, and could the discharge of patients ill from infectious diseases be thoroughly disinfected by copperas water before being buried near any well, the danger of contamination of the water-supply in this manner would be much lessened. "We have decidedly to look to our wells."

It is frequently the case that drinking-water is contaminated in some manner other than by drains and vaults. An instance came under the writer's notice recently where some of the several cases of

illness in a family, occupying an apparently healthy house and location, were suspected of having been caused by the use of well-water. On being subjected to test, it looked clean, smelled pure, and tasted good. Heisch's test, however, showed the presence of organic substance, and after standing several days, a heavy organic sediment formed near the bottom of the jar. The well was cleaned, and the remains of several large frogs were removed. This shows the necessity of having the tops of wells tightly covered so as to preclude the possibility of cats, rats, frogs, etc., getting in, to not only end their own life but to cause an uneasy sensation in the stomachs of "drawers of water."

Another unsanitary object often in dwellings of the more unpretentious kind, is the "wood-box," generally placed behind the stove; and in the winter or after a few days or weeks of wet fall weather, a search will nearly always be rewarded by finding one or more inches of decomposing wood, chips, bark, etc., in the bottom of the box. This, on being stirred up, emits an odor decidedly unwholesome in its nature. It is a question being studied with some interest by Prof. Brewer, Dr. Kellogg, and others, as to the effect of decomposing of wood upon health; and Dr. Kellogg states that the decomposition of wood is accompanied by the development of bacteria and other low forms of life, which, in the light of modern investigations, may be regarded as intimately connected with the development of serious diseases. Dr. Coleman, of Richmond, believes decomposing wood to be more or less intimately connected with the causation of typhoid fever.

In a paper by Dr. Reed, in *The Sanitary News* for May 15, 1881, he condemns the custom of placing out-buildings too near the house. This custom has, in a recent visit to New England, been particularly called to the notice of the writer. It is almost the universal practice in that section of the country to have the house, wood-shed, privy, carriage-house and stock-barn under one continuous roof. I am told the chief reason for this is the great depth which snow sometimes there

attains. When the snow reaches the tops of doors and windows, the farmer does not then have to shovel a path to reach his well or wood, or to care for his stock. This is undoubtedly quite a convenience, but it seems to be a dangerous source of contamination to the water-supply at all seasons, and to render the inmates of the house subject to foul gases, especially in the summer. Another serious objection is the danger of total destruction in case of fire.

Bearing these and other self-suggesting unsanitary conditions in mind, let us have a literature that will accomplish the substitution of better methods for many of our household labors and circumstances, and let us have that literature widely distributed.—*Sanitary News*.

#### CURIOSITIES OF ADULTERATION.

In a report presented to the Corporation of Salford by the borough analyst, Mr. J. Carter Bell, several curious illustrations are given of forms of adulteration apparently in ordinary use. The report referred to 154 samples, consisting of 52 milks, 49 breads, 17 teas, 5 coffees, 3 peppers, 4 sugars, 11 wines, 1 bakers' mixture, and 5 butter. Of these, 24 were adulterated, consisting of 9 milks, 9 wines, 5 breads, and 1 butter. The five breads contained a chemical compound which is known by the name of bakers' mixture. This is now being sold in Salford to bakers for the purpose of mixing with inferior flour. It is made from phosphates of alumina, lime, and magnesia, with sulphuric acid and hydrochloric acid, and Mr. Carter Bell found that it has the effect of spoiling the bread, and making it injurious to health. It also contained a considerable amount of arsenic, the consequence of its being made from impure materials. Mr. Carter Bell also examined nine samples of so-called unfermented wines and two of ordinary tent wines. Of these nine samples, three bearing labels stating that the bottle contained "pure grape juice," "virgin fruit of the vine," etc., consisted of sugar, tartaric acid, salicylic acid, and coloring matter, with a considerable quantity of copper, the

result, doubtless, of ignorant or careless manufacture. Grape juice was, in Mr. Carter Bell's opinion, entirely absent. Another sample, labeled "Pure and genuine unfermented fruit of the vine," was evidently a composite article artificially made, and so carelessly prepared as to contain alcohol. One sample of unfermented wine imported from abroad contained some grape juice; but the presence of alcohol and an abundance of yeast cells showed that fermentation had not been arrested. One sample was labeled "The selected wine of the Temperance Fraternity." This was an ordinary low-class fermented wine, containing a large amount of alcohol. Of the nine samples of the so-called unfermented wines, only one was genuine and what it professed to be,—“Pure grape juice entirely free from alcohol. The samples of ten were sweet and highly alcoholic wines, one sample containing as much as 40 per cent of proof spirit. This wine had evidently been strongly brandied, no natural wine containing anything like this proportion of alcohol. The number and variety of these so-called unfermented wines testify to a large demand for articles of this class; but the examinations pointed to the necessity of a very careful discretion in their selection. Three samples of water taken from the lodge of a manufactory were so highly contaminated with sewage matter as to make them dangerous to health.—*London Lancet.*

#### TEMPERANCE.

THE following excellent thoughts are from the pen of Faith Latimer, in the *S. S. Times* :—

“Temperance includes the timely use of that which is to be used, and the timely letting alone of that which is to be let alone. Temperance always involves total abstinence from some things. It is sheer nonsense to claim, as some do, that temperance implies the actual use of everything in moderation; that to be temperate one must indulge moderately in strychnine and laudanum and whisky and wine and turpentine.

“One of the ways to be temperate in all

things is to know how to say *no*, to withstand temptation by going away from it. Satan knows how to make sin seem beautiful and to hide the sting that always follows wrong. On a public street in one of our cities is a beautiful house, its entrance festooned with vines and flowers, hanging fruits seem to have grown there, singing birds swing in gilded cages in bowers of green; at night colored lights look like fairy-land, and sounds of music and laughter are heard by those who pass. Over the door in letters of gas-light is one shining word—Paradise. What is within? It is a place where men buy and drink deadly poisons to soul and body,—wines, whisky, rum; where the young and innocent are enticed again and again, until they cannot control the desire for drink. Do you know who entered the first garden with a lie and brought sorrow and death to the world? They who named the gay saloon were more truthful than they knew. It is an earthly paradise, for the serpent is there with stings which fasten on the victims and pierce mothers, breaking hearts, and bringing widows' tears and orphans' cries. There are such temptations all over the world; would it not be wise to refuse to enter?”

#### OPIUM-SMOKING IN AMERICA.

[It will be a revelation to most people that opium-smoking has within the last few years been added to the numerous other popular vices of this country. The following article from the pen of a physician, which we quote from a popular magazine, offers convincing evidence that the habit has already assumed most alarming proportions, and gives a very interesting account of it.—Ed.]

It was supposed, at the time when “The Mystery of Edwin Drood” first made its appearance, that the character of an English opium-smoker was purely the outcome of Dicken's fertile imagination. He who would then have predicted that in a few years' time the number of white men indulging in this Eastern vice would be counted by thousands, would have been pronounced insane. Such, however, is the

case. At a low estimate there are in this country, to-day, from three to five thousand Americans, male and female, smoking opium once or twice daily, having formed a habit from which they find it impossible to free themselves. The opium-smoker finds his chains as binding and galling as does the opium-eater or morphine-taker.

The standing army of habitués is, furthermore, being from day to day recruited from the ranks of the over-curious, indolent, or willfully vicious. In San Francisco, to my certain knowledge, thirteen persons have commenced to use the pipe within the past seven days. Four of these are actresses.

Newspaper men have at various times attempted to investigate the matter, but in most cases wholly failed, their failure being due to the fact that they have based their articles upon a single tour of a few Chinese dens in the company of detectives, where the information to be obtained was meagre and inaccurate. In writing they drew largely upon their imagination, endeavoring to throw about the practice a romantic mysticism supposed to be penetrable only by the true Oriental. In several instances I have known white smokers, who were acquainted with the business of the visitor, to tell him the most silly and most outrageously false stories about the practice, and then laugh heartily at the article when it appeared in print. This applies more particularly to our Eastern papers. Hence it is that those people who suppose they know a great deal about opium-smoking really know nothing.

In order to make my investigation of the matter thorough and truthful, I made myself acquainted with some fifty male and female American smokers in this city; became a daily visitor, staying for hours at the principal smoking-house or "joint;" had habitués smoking at my own house, where I could more freely question and experiment upon them; smoked myself, in small quantities and to excess, and had two of my male nurses smoking at various times. Furthermore, I have had two smokers under treatment for the habit. In this way, and by means of letters addressed to physicians, chiefs of police, and

public men in various parts of the country, I have been enabled to get at the whole truth in the matter.

The principal places in this city where opium is smoked are in Mott, Pell, and Park streets. There is one in Chrystie street, one in Twenty-third street, and several in Fourth and Second avenues. Besides these, there are private rooms where a few friends, having provided themselves with a full outfit, smoke in secrecy, and a number of Chinese laundries where a few Americans smoke. All of these places, except the one in Twenty-third street, which is presided over by a white woman and her two daughters, and the private rooms, are kept by Chinamen.

These places are, as a rule, in the basement, and consist of a small, low-ceiled room, guiltless of all furniture save long wooden bunks, about four feet in width, made of board and covered with matting. There is usually but one tier, raised about two feet from the floor. A long, narrow board, sometimes beveled, running along the wall just above the bunk, or small stools covered with cloth, serve as pillows, or, more properly, head-rests, for the smokers. In the principal American joint, in the center of Chinatown, where all nationalities seem indiscriminately mixed, you go down a short flight of steps into the basement, when you find yourself in a small room. Near the entrance is a small table, where the proprietor may be found every morning cleaning and filling the little glass lamps used in smoking. On the left of the center is a small compartment (four by fifteen feet), a large table occupying most of the space. This is where games of chance are played by the Chinese. To the right is another boarded compartment of about the same size, in which the proprietor keeps his pipes, opium, and scales, and one small bunk for smoking. Going through a narrow passage between the two, we come to an image of some deity, before which a light is constantly burning. To the right of this is a door which leads into the "joint," or smoking-room. Upon three sides of this place are arranged bunks, in the rear there being two tiers of them, the upper one, how-

ever, being seldom used. Light—or semi-gloom—and air are furnished by one small window close up to the ceiling, and so placed that proper ventilation is an impossibility. In this place may be found, from 10 P. M. until 8 A. M. the following morning, from one to thirty American smokers. They usually come and go in parties of two or three.

In Chicago, San Francisco, and other places in the West, some of the joints are fitted up magnificently, all the surroundings being in true Oriental style.

The smoker entering a joint usually removes his coat, collar, and shoes, hangs them upon a peg, and, stretching himself transversely across the bunk beside a tray containing the necessary apparatus, calls for a pipe and some opium. The usual quantity asked for is twenty-five cents' worth. For this money the Chinaman gives from six to ten "fun" (thirty-two to sixty-four grains) of No. 1, or first-class, or double the quantity of No. 2, or second-class, opium.

Opium for smoking purposes is made in China from the crude opium imported from India. It is made by repeated boiling, filtering, and evaporation, until it becomes of a blackish color and treacle-like consistence. It has a rich creamy odor, and is very expensive. It is weak in morphia, the India opium from which it is made containing but about three per cent of morphia as against from twelve to seventeen per cent in the Turkey opium used for medicinal purposes in this country.

Having the necessary articles and opium brought to him by the keeper of the joint, the smoker settles himself comfortably upon his side, takes up a little of the treacle-like opium, which is brought to him in a small clam shell, upon a long steel needle, or *yen hanck*, and holding it above the flame of the lamp, watches it bubble and swell to eight or ten times its original size. In doing so it loses its inky hue, becomes of a bright golden brown color, and gives off a creamy odor, much admired by old smokers. Poor opium does not yield so pleasant an odor, is liable to drop from the needle into the lamp, and rarely gives so handsome a color, the

golden brown being streaked here and there with black. This process is known as "cooking" the opium. Having brought it to a proper consistence, the operator, with a rapid, twirling motion of the fingers, rolls the mass, still upon the *yen hanck*, upon the broad surface of the bowl, submitting it occasionally to the flame, catching it now and then upon the edge of the bowl and pulling it out into strings, in order to cook it through more thoroughly. This is called *chying* the mass. Rolling it again upon the bowl until formed into a pea-shaped mass, with the needle as a center, the needle is forced down into the small hole in the bowl, thus leveling off the bottom of the pea (*chandoo-tschandu*). Then grasping the stem of the pipe near the bowl in the left hand, the bowl is held across the flame of the lamp to warm it; the bottom of the opium mass being at the same time heated, the needle is thrust into the aperture in the center of the bowl, and withdrawn with a twisting motion, leaving the opium, with a hole in its center, upon the *surface* of the bowl. Inclining the body slightly forward, the smoker tips the pipe bowl across the lamp until the opium is just above the flame. Inhaling strongly and steadily, the smoke passes into the lungs of the operator, and is returned through the mouth and nose. This smoke is heavy, white, and has a not unpleasant fruity odor. It is hardly necessary to say, as is asserted by some, that this smoke escapes from the ears and eyes also.

Having finished this bolus, which requires but one long or a few short inhalations, the habitué cools the bowl of the pipe with a damp sponge, and repeats the operation of cooking, rolling, and smoking until the desired effects are obtained. Smokers are said to take the "long draw" or the "short draw" according to whether they consume a pill in one long or several short inspirations. The long draw, or single inspiration, by means of which the smoke passes directly into the lungs, discharging them to their full capacity, is unquestionably the most injurious, and those who smoke in this way form the habit the soonest, and are the hardest to break.



## TEMPERANCE AND MISCELLANY.

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

### LIFE.

Was it not said by some great sage  
That life is an unwritten page?  
We write our fate, and when old age  
Or death comes on

We drop the pen.

For good or ill, from day to day,  
Each deed we do, each word we say,  
Makes its impress on the clay  
Which molds the minds

Of other men.

And all our acts and words are seeds  
Sown o'er the past, whence future deeds  
Spring up to form our wheat or weeds;  
And as we've sown

So reap we then.

—Argosy.

### A STORY FOR THE TIMES.

BY "GERALD."

"O DEAR! I hate this very room; I hate housework—nothing but delve, delve, from morning till night—no time to one's self, or to anybody. A woman is nothing but a slave, and gets no thanks for it either."

And Mrs. Merton glanced around the large, roomy kitchen in which she sat with a most unamicable frown on her bright, rosy face.

The room was well furnished and well lighted, cheerful, and in all ways fitted for comfort, serving as dining-room, as well as work-room.

But, alas! my office as a faithful historian compels me to say it was wretchedly *untidy*. The bright carpet littered with the crumbs of the morning meal, the table still standing with the breakfast dishes untouched, although nearly the dinner hour; and the far from snowy cloth all awry, while the mistress of the house discoursed most eloquently of her trials. Her auditor was her aunt, who had arrived by the morning boat for a short visit, and they were discussing the merits and demerits of Mrs. Lizzie Merton's condition in life.

"Charles never appreciates anything

that I do," continued she, giving the fire a spiteful poke, overturning a basin of milk on the stove-hearth as she did so. "There, that is just my luck. I wish men had one-half to endure that falls to the lot of a woman. Charles grumbles continually—'Nothing in its place or ever to be found.' I'm sure it is not my fault. I get so tired picking up, and doing the same thing over and over day after day. A woman's work is never done."

Just then she glanced up, and seeing the eyes of her aunt regarding a torn curtain somewhat attentively, flushed crimson, and hurriedly exclaimed—"I meant to have got those curtains put up right before you came, but somehow it did not get done. I can't do everything. I wish Charles would allow me a girl; I am sure that he could afford one. I can't get time to dress or to go out at all. Before I was married I was well off, if I only had known it. Just think of it, Aunt Ellen, I have been to but one ball since, and I have been his wife eight years! Charles will not leave his store, and I *will not* be seen without him."

"Let us wash up these dishes, Lizzie, and get things somewhat in trim for dinner; the clock is now on the stroke of eleven, and I believe you dine at one." And Aunt Ellen arose from her seat with a smile—"We will see what light work two pair of hands will make of it."

"Oh! never mind, don't worry yourself, I can get the dishes done somehow; if Charles frets, I am used to it; and if dinner is not ready he can wait, or take hold and help me himself."

Mrs. Jones saw that it was of little use to argue with her niece in her present frame of mind, so she wisely said nothing, but proceeded to business. Lizzie soon joined her, and although complaining, meanwhile, of the narrow sphere of woman compared with that of man, she quickly brought order out of confusion.

At one o'clock a nice, smoking-hot dinner was on the table, tidily arranged, and the room so transformed that one would hardly have recognized it.

"Ah! this is something like house-



keeping," said Mr. Charles Merton, as he entered the room after greeting his aunt. "I vote that you remain with us six months, and impart your skill to Lizzie. What! a bouquet?" and he raised the glass, in which Mrs. Jones had placed a spray of geranium, with one rosebud, and a bit of heliotrope, with certainly an appreciative gesture.

His wife's face clouded for a moment, then, with an effort, she laughed lightly, saying—"I am glad to hear you praise anything, it is so seldom I have that pleasure."

His retort was not a pleasant one, and something mingled with it which sounded like "being a blessing to have company occasionally, so that things could be decent."

Aunt Ellen saw that the domestic harp was not in tune, and like a discreet woman introduced another subject, talking glibly of business and matters likely to interest, until dinner was over. Charles, lighting one of those "odious cigars," provoked the remark, "I wonder what men would say if women spent as much on folly of any kind as they do on their smoking?" and left the house.

"Come, aunt, now let us take a nap."

"What! and leave this disorder until afternoon to clear up?"

"Oh! I always do. I am so tired and sleepy I can't work yet."

"Then, Lizzie, go and lie down awhile. I am fresh, and will attend to this for you."

A slam of the outer door, a boisterous footstep, and in rushes a bright boy of six years, throwing his cap at the lounge, succeeding in landing it on the floor instead.

"Why, Freddie, are you so late home from school? It is nearly two now. Don't you see Aunt Ellen?"

The child seemed really glad to see and welcome his aunt, who always had a pleasant smile and gentle word for the little folks, but paid small heed to his mother's implied reproof.

He hurried his dinner through without ceremony, vouchsafing the information as he rushed out—"I'm going to play ball to-night with Tom Eaton, mother."

Another burst of lamentations came from Mrs. Merton's lips after he had closed the door.

"Freddie is so headstrong, and I don't want to fret at him all the time, for fear of spoiling his disposition. I can't govern him, and his father puts all the responsibility upon my shoulders. Men never

think that they can take any care; but the poor wife must bear all the blame if anything goes wrong."

Meanwhile, Aunt Ellen was quietly passing to and fro, and deftly putting the room to rights with her busy fingers, planning in her heart to speak a word in season, without offense, to the poor, unhappy woman before her.

Mrs. Merton was an only child, married at the age of seventeen to a young man whom she fancied was "angelic," and found him, after all, to be like herself, *human*, with human frailties, and only human patience. Her mother, a kind, loving woman, in making the great mistake of educating her for society alone, not for home, had taken all the care and labor of the household upon her own hands, leaving Lizzie to embroider a little, to play a little, to walk, ride, visit, and finally to become a wife, without one *serious* look into the future, which dawned so rosily before her.

The mother was now gone to her rest, and the daughter, with the well-being of husband and child required of her, was as unfit for her position as a babe. Her cares were a continual torment to her. She found no delight in home duties; consequently they were styled *drudgery*, and performed as such.

Her husband lost patience, and seeing the confusion which reigned, kept out of it as much as possible. If he complained, she retorted, and the love, which promised to endure all things, waxed cold.

Aunt Ellen was a prudent woman, and listened to the story which her niece poured out in silence. Both were manifestly in fault, but she determined to try what a little kindly advice would do for Lizzie first, and attempt to establish the household upon the firm footing of mutual forbearance and affection.

"Let us make some custards for tea. I think I have heard your husband say they were his favorite dish; and with some of this nice, clear jelly they will be just the thing," she said, as Lizzie sauntered in after her nap, still in her wrapper, and her hair in tangled curls about her face.

"Charles does not come home to tea half the time, unless I want to go out somewhere; *then* he is sure to come, and grumble because I am not here, tied up like a dog, at home, day after day," was the unpromising answer.

"Never mind, I think he will come today. Anyway, we will make them, and trust to see him bright and early."

She coaxed her niece into preparing several little niceties which she knew would please him, then helped her to decorate the table as for an honored guest; and in spite of Lizzie's obstinate—"It's no use, he never notices anything I do," substituted a neatly fitting dress for the morning wrapper, smoothing the really pretty curls herself, and looping them back with a bright, fresh ribbon.

Charles *did* come, and was ushered into the eating room by Aunt Ellen, with the remark—"Lizzie has been very painstaking in your behalf this afternoon, sir, and I expect you to show the utmost appreciation of her efforts. Sit down, and confess nothing ever tasted so good in your life."

He did appreciate and praise, but could not forbear a hint that to Mrs. Jones must the credit be awarded.

That evening the store got along without him, for he escorted the two ladies to a first-class concert, which Lizzie had been longing to attend, but would not express the wish, believing all that she affirmed of his indifference to her pleasure.

The next morning, under Mrs. Jones's skillful management, the domestic tangle was straightened out, and the friends seated at their sewing at an early hour.

"Aunt, I know that you think me in fault toward Charles. You say nothing, but your manner betrays you. You little know how aggravating he is. While you are here he is on his best behavior. I feel often so provoked at him, I don't care whether I try to please him or not."

"Supposing you try to put aside that thought, Lizzie—and, indeed, all thoughts of his conduct—and, remembering only your individual duty, your own accountability, strive with singleness of purpose to fulfill these, trusting to God for the result. I firmly believe that you will not fail of your reward. When you were married, it was 'for better, for worse.' You promised to 'love, honor, and obey.' You did *not* promise that you would fulfil *your* part of the contract provided he did the same, but *unconditionally*, and as such you must *adhere* to your vows.

"He may be slow to recognize your efforts to please him, and your duty thereby be rendered a hard one; but, having 'put the hand to the plough,' you *cannot* turn back. Fight all your battles with yourself. The path lies straight before you, and any deviation is full of danger.

"Make your home always cheerful and pleasant, and yourself *always beautiful for*

*him*. He *will* see, and his heart *will* be touched, I have not one doubt.

"I leave here to-morrow; but, before I go, promise me that you will bear my words in your mind, and act upon them."

Mrs. Merton, with many tears, gave the required promise.

Aunt Ellen returned to her home, and a quotation from a letter received by her a twelvemonth after, will show whether her words were in vain or no:—

"I must always bless you as my good angel, dear aunt, in showing me my shortcomings as a wife and mother so fearlessly and yet so kindly. We are the happiest family in the world. I long for another visit from you, that you may compare it with your last. Charles is more my lover than before our marriage, and I know that I am more lovable. But let me confess to you, my mentor, I had many dark hours before I conquered myself. Poor Charles reproached himself bitterly for his lack of patience; but I find no word of blame in my heart for him. You cannot imagine how happy I am. Even Freddie thinks 'mamma grows young lately;' and *he* certainly grows *good*. I only regret the years which I have wasted before I learned the lesson you have taught me."

#### INTELLIGENCE OF ANTS.

THE mode of working practiced by the leaf-cutting ants of the Amazon, showing a very high degree of intelligence, is thus described by a scientific observer:—

"They mount a tree in multitudes. . . . Each one places itself on the surface of a leaf, and cuts with its sharp, scissors-like jaws a nearly semicircular incision on the upper side; it then takes the edge between its jaws, and by a sharp jerk detaches the piece. Sometimes they let the leaf drop to the ground, where a little heap accumulates, until carried off by another relay of workers; but generally each marches off with the piece it has operated on, and, as all take the same road to the colony, the path they follow becomes in a short time smooth and bare, looking like the impression of a cart-wheel through the herbage."

Other observers have since said that this herbage is regularly felled by the ants in order to make a road. Each ant carries its semicircular piece of leaf upright over its head, so that the home-returning train is rendered very conspicuous. Keener observation shows that this home-returning, or load-carrying, train of workers

keeps to one side of the road, while the outgoing, or empty-handed, train keeps to the other side; so that on every road there is a double train of ants going in opposite directions. When the leaves arrive at the nest, they are received by a smaller kind of worker, whose duty it is to cut up the pieces into smaller fragments, whereby the leaves seem to be better fitted for the purpose to which, as we shall presently see, they are put. These smaller workers never take any part in the out-door labor; but they occasionally leave the nest, apparently for the sole purpose of obtaining air and exercise, for when they leave the nest they merely run about doing nothing; and frequently, as in mere sport, mount some of the semicircular pieces of leaf which the carrier ants are taking to the nest, and so get a ride home.

The object of all this labor is a highly remarkable one. The leaves when gathered do not themselves appear to be of any service to the ants as food; but, when cut into small fragments and stored away in the nests, they become suited as a nidus for the growth of a minute kind of fungus on which the ants feed. We may therefore call these insects "gardening ants," inasmuch as all their labor is given to the rearing of nutritious vegetables on artificially prepared soil. They are not particular as to the material which they collect and store up for soil, provided that it is a material on which the fungus will grow—orange-peel, certain flowers, etc., being equally acceptable to them. But they are very particular regarding the ventilation of their underground storehouses, on a suitable degree of which the successful growth of the fungus presumably depends. They therefore have numerous holes or ventilating shafts which lead up to the surface from the storehouses or underground gardens, and these they either open or close according to the horticultural requirements as regards temperature and moisture. If the leaves are either too damp or too dry, they will not grow the fungus, and therefore in gathering the leaves the ants are very particular that they should neither be the one nor the other.

Mr. Bates says that "if a sudden shower should come on, the ants do not carry the wet pieces into the burrows, but throw them down near the entrances; should the weather clear up again, these pieces are picked up when nearly dried and taken inside; should the rain, however, continue, they get sodden down into the

ground, and are left there. On the contrary, in dry and hot weather, when the leaves would get dried up before they could be conveyed to the nest, the ants, when in exposed situations, do not go out at all during the hot hours, but bring in their leafy burdens in the cool of the day and during the night."

Dr. Ellendorf made the experiment of interrupting the advance of a column of these ants, with the interesting result which he thus describes in a letter to Büchner:—

"Thick, dry grass stood on either side of their narrow road, so that they could not pass through it with the load on their heads. I placed a dry branch, nearly a foot in diameter, obliquely across their path, and pressed it down so tightly on the ground that they could not pass underneath. The first comers crawled beneath the branch as far as they could, and then tried to climb over, but failed, owing to the weight on their heads. Meanwhile the unloaded ants from the other side came on, and when these succeeded in climbing over the bough, there was such a crush that the unladen ants had to clamber over the laden, and the result was a terrible muddle. I now walked along the train, and found that all the ants, with their bannerets on their heads, were standing still, thickly pressed together, awaiting the word of command from the front. When I turned back to the obstacle, I was astonished to see that the loads had been laid aside by more than a foot's length of the column, one imitating the other. And now work began on both sides of the branch, and in about half an hour a tunnel was made beneath it. Each ant then took up its burden again, and the march was resumed in the most perfect order."

Ants of this genus are very clever at making tunnels. The Rev. H. Clark says that in one case they have made a tunnel of enormous length under the river Parahylia, where this is as broad as the Thames at London—their object being to reach a storehouse which is on the opposite bank. This statement is not to be considered so incredible as it at first sight unquestionably appears, for Bates has seen the subterranean passages of these ants extending to a distance of seventy yards.

*Home.*—If you wanted to gather up all tender memories, all lights and shadows of the heart, all banquetings and reunions, all filial, fraternal, paternal, conjugal af-

fections, and had only just four letters with which to spell out that height and depth and length and breadth and magnitude and eternity of meaning, you would write it all out of these four capital letters: H O M E.—*T. De Witt Talmage.*

### WELL DONE.

A YOUNG man called, in company with several other gentlemen, upon a young lady. Her father was also present, to assist in entertaining the callers. He did not share his daughter's scruples against the use of spirituous drinks, for he had wine to offer. The wine was poured out, and would soon have been drunk, but the young lady asked:—

"Did you call upon me, or upon papa?"

Gallantry, if nothing else, compelled them to answer, "We called upon you."

"Then you will please not drink wine; I have lemonade for my callers."

The father urged the guests to drink, and they were undecided. The young lady added, "Remember, if you call upon me, then you drink lemonade; but if upon papa, why, in that case I have nothing to say."

The wine-glasses were set down with the contents untasted. After leaving the house, one of the party exclaimed, "That is the most effectual temperance lecture I ever heard."

Indeed, it was seed sown in good ground. It took root, sprung up, and is now bearing fruit. The young man, from whom these facts were obtained, broke off at once from the use of all strong drink, and is now a clergyman, preaching temperance and religion. As he related the circumstance to me, tears came into his eyes. He sees now his former dangerous position, and holds in grateful remembrance the lady who gracefully and still resolutely gave him to understand that her callers should not drink wine.

**Woman in Holland.**—The average woman in Holland is doomed to the performance of the greater portion of the hard work of that country. A woman is treated with little more consideration than a beast. Indeed, if the following paragraph be true, the Hollander gives his dogs the preference over his "helpmeet":—

"A French traveler states that on his first visit to Holland he used to see quite often the heavy barges called *trekschnuten* dragged along the canal by a big dog and

a woman, harnessed to the same rope, while the man steered. On a later voyage he missed the big dogs, and saw only the woman, or perhaps two women, tugging at the heavy boat. Informing himself as to why this change in the habits of so conservative a race as the Dutch, he learned that the local Society for the Prevention of Cruelty to Animals had secured the passage of an act prohibiting the harnessing of dogs; so the women had to do it all themselves!"

### CHEERFULNESS.

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 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. Jonbert says, "When you give, give with joy, smiling." Smiles are little things, cheap articles to be fraught with so many blessings, both to the giver and the receiver—pleasant little ripples to watch as we stand on the shore of every-day life. These are the higher and better responses of nature to the emotion of the soul. Let the children have the benefit of them,—those little ones who need the sunshine of the heart to educate them, and would find a level for their buoyant nature in the cheerful, loving faces of those who need them. Give your smiles to the aged. They come to them like the quiet rain of summer, making fresh and verdant the long, weary path of life.

If your seat is hard to sit upon, stand up. If a rock rises up before you, roll it away, or climb over it. If you want money, earn it. If you want confidence, prove yourself worthy of it. Do not be content with doing what another has done—surpass it. Deserve success, and it will come. The boy was not born a man. The sun does not rise like a rocket, nor go down like a bullet fired from a gun. Slowly and surely it makes its round, and never tires. It is as easy to be a lead horse as a wheel horse. If the job be long, the pay will be greater; if the task be hard, the more competent you must be to do it.—*Sel.*

—He is temperate who on no occasion prefers what is merely pleasant to what is better.—*Xenophon.*

**HEALTH VERSUS SUCCESS.**

It is no exaggeration to say that health is a large constituent in what the world calls talent. A man without it may be a giant in intellect, but his deeds will be the deeds of a dwarf. On the contrary, let him have a quick circulation, a good digestion, the bulk, thews, and sinews of a man, and the alacrity, the unthinking confidence inspired by these, and he will set failure at defiance. It is true, especially in this country, that the number of centaurs in every community is small; that, in general, a man has reason to think himself well off in the lottery of life, if he draw the prize of a healthy stomach without a mind, or the prize of a fine intellect with a crazy stomach. But of the two, a weak mind in a herculean frame is better than a giant mind in a crazy constitution. A pound of energy with an ounce of talent will achieve greater results than a pound of talent with an ounce of energy. Intellect in a weak body is "like gold in a spent swimmer's pocket." A mechanic may have tools of the sharpest edge and highest polish; but what are these, without a vigorous arm and hand? Of what use is it that your mind has become a great granary of knowledge, if you have not strength to turn the key?

The success of men, gifted, apparently, with nothing but constitutional talent, and the frequency with which men endowed with the finest intellectual powers, but powers supported by a weak body, have disappointed the expectations of their admirers, has led some persons almost to regard the stomach as the seat of intellect, and genius and cupepsy as convertible terms. Ridiculous as this may seem, it is certain that the brain is often credited with achievements that belong to the digestion. Everything shows that the greatness of our great men is as much a bodily affair as a mental one.

It is true there have been men who, despite of frail and miserable health, have done immortal things. Great and heroic were the achievements of Paul, "in bodily presence weak;" of the blind Milton; of Johnson, bravely carrying through life the weight of a diseased and tortured body; of the pale Lawrence, weighing from day to day the morsels of bread which alone his dyspeptic stomach could bear. It is true that Julius Cæsar was troubled with epilepsy, and never planned a great battle without going into fits; that Pope was a hunchback and an invalid.

But these are brilliant exceptions, which only prove the rule. The general fact still remains that it is the man of tough and enduring fibre, of elastic nerve, of comprehensive digestion, who does the great work of life. It is Scott, with his manly form; it is Franklin, at the age of seventy, camping out on his way to arouse the Canadas; it is Napoleon, sleeping four hours, and in the saddle twenty. Even the greatest poets have been those who, like Burns, have combined athletic bodies with souls of Æolian tones, who were blessed with good digestion as well as brains. Let, then, the person who is stripping for the race of life account no time or money as wasted that contributes to his physical health,—that gives tone to the stomach or development to the muscles.—*Abridged from Getting On in the World.*

**HISTORY OF THE STEEL SQUARE.**

Pliny says that Theodorus, a Greek of Samos, invented the square and level, but the square figure is seen in the represented designs of the Tower of Babel, one of the earliest important known structures. It is probable that it existed in the ark still earlier. The City of Babylon was a perfect square, and the bricks used in its buildings and walls were square; so probably were those in Babel. Now, to form small squares correctly, and to introduce them in endless combination into buildings, it needed a guiding instrument of some kind. So the square, as a constructive tool, came into use.

Among the ruins of Babylon, Nineveh, and Petra, it is said to have been found represented. There are pictures and sculptures from the ruins of Thebes in Egypt, showing the square in the hands of the artisan.

Evidences of its use are also seen in ruins in India, which are thought by some to antedate those found in Egypt. Among the ruins of the Aztecs, or people before them, in Peru and Brazil, it has also been found; and though tools of stone and flint, such as axes, hatchets, hammers, etc., were doubtless the first used by primitive man in these ruins that date back beyond history, the square is found, and specimens may be seen in the British Museum.

The square was regarded by the ancients as a symbol of completeness. Simonodes speaks of a man square as to his hands, feet, and his mind, etc. Aristotle uses a similar figure.—*California Architect.*

## POPULAR SCIENCE.

—The saline elements of the water of the Dead Sea constitute more than one-fifth of its weight.

—A French engineer has lately discovered the remains of an ancient Mohammedan city in the desert of Sahara, together with a subterranean river.

**A Portable Electric Light.**—One of the most recent improvements in the line of electrical appliances is an electric lamp giving a light equal to that of two candles, and capable of giving a steady light for six hours, which by the aid of the recent invention for storing electricity may be carried about in the hand as any ordinary lamp.

**Weighing a Pencil Mark.**—The scales used for weighing gold in the Assay Office at New York are so delicate that, when brought to a balance with two pieces of paper of equal size in the pans, the mere writing of a name with a lead pencil on one of the pieces of paper will add enough weight to the paper to turn the scales in its favor.

**Artificial Stone.**—In 110 gal. of water are dissolved 15½ lb. of alum, 13¼ lb. of slaked lime, and 2¼ lb. of yellow ochre, to which is added 2¼ lb. of glue dissolved in 1 gal. of hot water. In this mixture 198 gal. of plaster-of-paris are tempered, and then half the quantity of fine river sand, free from clay, is added. The compound sets in twelve hours, when run in molds, and becomes very hard. The blocks are protected from the influence of rains by two or three coats of soluble glass, or silicate of potassa.

**Third Set of Teeth.**—Prof. Owen, the great English anatomist, at a recent meeting of the British Dental Association, disputed the common belief that some persons acquire a third set of teeth in old age. He tells a story about investigating an alleged case of this sort in the north of Ireland, where he found an old lady, crouching over her peat fire, “a typical example of human decay. To the shouts of her pastor the deaf old crone replied by pulling down her skinny lip and exposing the side of her lower jaw, from which there projected through the gum the blackened

stump of a tooth, the crown of which had gone many years before. The absorption of the gums, consequent on the edentulous state of the jaw in senility, had brought to light this remnant of a long-lost tooth. Other stumps of teeth, of which the loss of the decayed crown had been forgotten, might, in like manner, appear through the shrinkage and absorption of the senile jaw. And this I take to be the true ground of the allegations as to the acquisition in extreme old age of a third set of veritable teeth.”

**Eruption of Mount Lapwai, Idaho.**—The recent report of a volcanic eruption in Idaho Territory is confirmed by a correspondent of the *Eagle*, of Butler, Pa., who visited the volcano about the middle of August in company with a representative of a Walla Walla newspaper.

As seen from Camas Prairie, the column of smoke rising from Mount Lapwai was like that of a steamer beyond the horizon at sea. The mountain is two days' ride from Camas Prairie. Omitting unimportant personal details, the correspondent's account runs as follow:—

“About 500 feet below the cone a large column of smoke sprang into the air hundreds of feet, and then folded over to the east. Flames shot up to a great height, and a seething flow of lava was at that time rushing down into a small valley to the west, and emitting a strong, sickening sulphuric odor, which made it impossible to remain by it any length of time. The lava had moved a distance of one mile from the mountain, and was gradually making its way toward the Salmon. The neighboring hills were covered with ashes.”

The visitors were informed by a Lapwai Indian that the lava flow is intermittent. With the wind at their backs they climbed the cone when the crater was quiet, though greatly disturbed and sickened by the sulphurous odors. The crater was about 500 feet below the rim of the cone, and appeared to be about an acre in extent. When the flow ceased, the visitors went down to the edge of the crater, after covering their faces with rubber folds and their eyes with glasses. The heat was great. On one side it was possible to descend twenty feet into the crater without being nauseated, thanks to a favorable wind. The lava poured into the crater from the sides, and when it was full, bubbled over and ran into the valley. The surrounding country is volcanic, and the Indians reported a recent eruption of

Mount Idaho, a large peak a few miles miles from Mount Lapwai.

The visitors spent twenty minutes in the crater. At 5:45 p. m. the flow began again, and they hastily retreated. Scientific parties were fitting out at Portland, Oregon, toward the end of August, to visit the volcano. Mount Lapwai is one of the Blue Mountains, a low range crossed by the Snake River.—*Scientific American*.

### SOMNAMBULISM.

THE phenomena of somnambulism arise from the fact that the faculties are unequally suspended during sleep, so that one set of organs may be active while the others are dormant. It is frequently accompanied by dreams, which arise out of a similar condition of the nervous functions. Several incidents, illustrating the manner in which the partial suspension, partial activity of the faculties affect the somnambulist, are related in an English magazine. A boy, on his way to the seaside, had traveled by steamer, railway, and coach, from six o'clock in the evening till four o'clock on the next afternoon, without cessation and with hardly any sleep. Shortly after going to bed, his companion was awakened by a crash of glass, followed by hysterical cries; and, on looking for the boy, found that he had got up, broken the window, and gone. He was found in the road, wounded in the feet. It appeared from his story that, when half asleep, he thought he saw a mad bull rushing at him. Catching hold of the curtain, which he thought was a tree, he swung himself over the hedge by which the tree grew—the window, open from the top—then jumped and ran away, breaking the window with his heel, and cutting his feet on the sharp stones.

In this case the impression left on the mind of the sleep-walker was so strong as to enable him to tell all that he thought and imagined during the dream. In the next incident no trace of remembrance survived. A servant-girl came down at four o'clock in the morning, and asked her mistress for some cotton to mend her dress, which she had torn. While she was looking in her work-box some one offered her an empty spool, but she refused it, and taking up her gown pointed to two holes which she said she wanted to mend. A needle was threaded for her with black cotton, but she rejected it, saying she wanted brown cotton. Some one spoke, and she said that it was her mistress; but

it was not. Her vision was thus shown to be keen, but her hearing dull. She was wakened with considerable difficulty, and, seeing the cotton-box disturbed, asked why it had been meddled with. Several questions were asked her during the following day, to test her recollection; but she could not recall her sleep-walking, or anything that had taken place during the night. A miner near Redruth arose one night, walked to the engine-shaft of the mine, and safely descended to the depth of twenty fathoms, where he was found soon afterward sound asleep. He could not be wakened by calling to him, and had to be shaken. When awake, he could not account for the situation in which he found himself. Morrison, in his "Medicine no Mystery," tells of a clergyman who used to get up in the night, light his candle, write sermons, correct them with interlineations, and go to bed again, while he was all the time fast asleep.

A similar story is told of an English dissenting preacher, who had been perplexed during the week about the treatment of the subject of his Sunday's sermon, and mentioned his perplexity to his wife on Saturday night. During the night he got up and preached a good sermon on the subject in the hearing of his wife. In the morning his wife suggested a method of treating the subject, based upon his sleep-work of the night before, with which he was much pleased; and he preached the sermon with no knowledge of its real origin.

The "Lancet" has a story of a butcher's boy who went to the stable in his sleep to saddle his horse and go his rounds. Not finding the saddle in its usual place, he went to the house and asked for it, and failing to get it, he started off without it. He was taken from the horse and carried into the house. A doctor came, and while he was present, the boy, considering himself stopped at the turnpike-gate, offered sixpence for the toll, and this being given back to him, he refused it, and demanded his change. A part of the change was given him, and he demanded the proper amount. When awake afterward, he had no recollection of what had passed.

To prevent sleep-walking it is necessary to remove whatever is the occasion of it, if it arises from any definable disorder. Often, however, it cannot be referred to any complaint; then the best that can be done will be to take precautions against the somnambulist running into any danger.—*Popular Science Monthly*.



# GOOD HEALTH.

BATTLE CREEK, MICH., NOVEMBER, 1881.

J. H. KELLOGG, M. D., EDITOR.

TERMS, \$1.00 A YEAR.

## **BARRICADED AGAINST FRESH AIR.**

IN some parts of the country, particularly in the New England States, the houses of most of the wealthier classes are furnished with double windows, and every other device for the purpose of keeping out the cold air of winter. Apartments are made as nearly air-tight as possible; and in these close, unventilated rooms, hermetically sealed up, thousands of persons annually spend several months of the year, regardless of the fact that with the air which they respire day and night, they are inhaling debility, disease, and death. The life-giving oxygen, which a beneficent Creator has supplied in lavish abundance "without money and without price" to all, moans anxiously around these sealed-up houses, seeking in vain for even one small crevice through which to find entrance, carrying life, energy, and purification to the suffocating inmates.

Let a person from the pure, crisp, outer air, enter one of these magnificent dens of disease. A beautiful carpet covers the floors, fine works of art adorn the walls, luxurious furniture abounds in every room, and no luxury that wealth can buy is wanting; but oh! what a smell! One is tempted to protect his olfactories with a handkerchief, and beat a hasty retreat; but courtesy demands that he should suffer martyrdom, and so he sits down with as much complacency as possible, but involuntarily turns wistfully toward the window now and then, hoping to discover some little crack or crevice through which one breath of pure, unpoisoned air may enter. But in vain. In each breath his keen sense of smell discovers decenter smells from the kitchen, odors of decomposition from the cellar, moldy dust from the carpet,

and, worst of all, the foul exhalations from half a dozen human bodies, lungs, skins, stomachs, decaying teeth, etc. On the window panes little streams of organic filth are seen running down to form pools upon the window sills. On all the outer walls the same sort of condensation of fetid matter is taking place, but is rendered invisible by absorption by the porous paper and plaster, where it undergoes putrefactive changes, sending out foul and putrescent gases to add still further to the contamination of the poison-laden atmosphere of those close and musty rooms.

Better by far, from a hygienic standpoint, was the old-fashioned log house, with its huge fire-place and its capacious throat, breathing up great volumes of air, and here and there a chink between the logs, with loosely-fitting window sash, and door jambs too large for the doors, extending an invitation for God's pure, life-giving oxygen to come in with its energizing, vitalizing, purifying, beautifying, health-giving potencies. If every house were provided with an efficient, automatic, ventilating apparatus, double windows would be no disadvantage to health. But when windows are the chief means for the admission of fresh air as well as of light, in the majority of houses, they may well be looked upon as dangerous, and deserving of the most vigorous condemnation.

—A Frenchman has succeeded in curing worms in the stomach and bowels by means of large doses of pepsine. The pepsine digests the worms without acting on the stomach. If successful, this plan will be a great improvement over the old plan of dosing with nauseous drugs of various kinds.



**INTEMPERANCE IN EUROPE.**

MRS. MARY A. LIVERMORE, the renowned lady lecturer, has recently returned from a tour in Europe, and in an address delivered in Boston, gave the results of her observations respecting the drinking habits of the people of France, Italy, and Germany, particularly in their relations to the condition of the women of those nationalities. The claim so often made that the general use of light wines and beer would be conducive to temperance, and which is sustained by the assertion that the nations mentioned are as noted for their frugality and thrift as for the great quantities of wine and beer which they consume, is fully met by the facts which are clearly depicted by Mrs. L., and well summarized by an esteemed contemporary as follows:—

“Speaking of the superior sobriety of the French and Italians, where light and cheap wines are abundant, she says her impression is that it is more a matter of race. The peoples of these southern lands do not desire the strong intoxicating liquors that find favor in more northern latitudes. The beer-drinking Germans, as a class, are never drunk, but they are never sober. Twenty-four glasses of Bavarian beer per man per day is not an uncommon allowance, and even if it contain but six per cent of alcohol it is enough ‘o keep the drinker fuddled. In the agricultural regions, beer-drinking does not so much prevail, but in the cities it does; and while men are drinking, women are sweeping crossings, shoveling dirt, carrying hods, etc., and at much smaller wages than men, because they do not drink beer, and can afford to work cheaper. But, as a result of this degradation, one-half the births in Vienna are illegitimate, and immoral women are given conspicuous places on public occasions, while virtuous wives and maidens take obscure positions. In Great Britain, with its 34,000,000 people, but 4,000,000 are total abstainers, and there are 600,000 hopeless drunkards there. There are 785,000,000 gallons of malt liquors drank there every year, and the drink bill is \$2,000,000—about the same as in the United States with its 50,000,000 pop-

ulation. As one of the results of this wholesale harvest of drink, 43 out of every 100 women cannot marry, as there are no men for them. This excess must occasion much vice and degradation, and men are looked up to there by women as demi-gods. The thoughtful people of England are becoming alarmed at the dreadful tide of intemperance and its effects.

**CONSUMPTION IN CATTLE.**

DR. A. CARPENTER, the eminent English physician, in an address published in the *British Medical Journal*, remarked as follows:—

“Our domestic animals fall an easy prey to every kind of epidemic. Knowing something of the customs of the country, I was not surprised when I heard an inspector from the metropolitan meat market declare upon oath, in Croyden Police Court, that 80 per cent of the meat which was sent to the London market was subject to tubercular disease. The foul air in which animals are often kept, the foul water with which they are supplied, and the musty food which is given them to eat, easily accounts for the readiness with which they fall victims to every kind of malady.”

The inspector referred to objected to the prohibition of the use of the flesh of consumptive animals, insisting that if this were done, it “would leave London without a meat supply.” And so the people of London continue to eat meat four-fifths of which is liable to communicate consumption, as has been abundantly demonstrated by numerous experiments.

There is good reason to believe that the inhabitants of London are not more unfortunate in the character of their meat than those of other large cities in this and other countries. In view of these facts, is it any wonder that of nine hundred and ninety-nine maladies which afflict the human race, the single disease consumption claims one-eighth of all the victims, and often a much larger percentage? If a man is about to purchase a horse or cow, he makes the most careful inquiry and scrutiny as to the health of the animal. If

the amount to be paid is a large one, he even requires satisfactory evidence respecting the ancestry of the animal. If the animal is an ox or a sheep to be eaten, no questions are asked. Whatever is offered in the market is accepted without investigation or more than casual scrutiny, notwithstanding the evident fact that questions respecting the health of an animal are of vastly greater consequence if it is to be eaten than if to be put to any other purpose whatever.

#### EFFECTS OF SMOKING ON THE HEART.

WE have often observed cases of intermittent pulse in which the cause was unquestionably the use of tobacco, the difficulty disappearing in almost every case where the habit was abandoned. The *Sanitary News*, under the head of "Danger Signals," presents the following interesting facts on this subject :—

"Some years ago M. Decaisne drew attention to the fact that tobacco-smoking often causes an intermittent pulse. Out of eighty-one great smokers examined, twenty-three presented an intermittent pulse, independent of any cardiac lesion. This intermittency disappeared when the habit of smoking was abandoned. He also studied the effects of smoking on children from nine to fifteen years of age, and found that it undoubtedly caused palpitation, intermittent pulse and chloroanæmia. The children, futhermore, became dull, lazy and predisposed to the use of alcoholic drinks. Recently he reported to the *Societe d'hygiene (Gazette Obstetricale)* the results of his observations on the effects of smoking on women. Since 1865 he has met with and observed forty-three female smokers. Most of them suffered from disturbances of menstruation and digestion, and eight presented very marked intermittency of the pulse without any lesion of the heart. He gave detailed accounts of these eight cases, in which all treatment directed against the intermittency proved utterly useless, while the suppression of tobacco was invariably followed by improvement and very often by complete disappearance of the phenomenon."

#### SCROFULA, OR KING'S EVIL.

SCROFULA is a disease common to all countries, and in some one of its many forms of manifestation it is probably more common than any other constitutional disorder. According to careful estimates, twenty-four per cent of the inhabitants of England are affected by this disease. The name scrofula is supposed to have been derived from the fact that the hog, *sus scrofa*, frequently presents enlarged lymphatic glands similar to those observed in this affection, or perhaps from the fancied facial resemblance to the hog, produced by the thickened glands and upper lip and enlarged neck which are exhibited in many cases of this disease. The first symptoms of the disease most frequently appear between the ages of five and seven years, though they may appear at any period of life from early infancy to old age. Not infrequently the disease appears in early childhood and disappears at puberty, though in many cases the period of puberty is marked by a decided increase in the activity of the disease, or the appearance of tuberculosis or consumption as a complication, or, perhaps, as another development of the constitutional affection. Until recent times, scrofula has been regarded as a blood disease, but modern researches have shown it to be a depraved condition of the nutritive processes, the exact character of which remains to be demonstrated. That it is closely allied to consumption and some other constitutional affections, is, however, clearly proven. Eruptions on the skin, especially about the face and head, are among the earliest symptoms of the disease. Severe nasal catarrh, accompanied with a profuse and thick discharge of an irritating character, is also one of the earlier symptoms in many cases. In consequence of the irritating effects of the catarrhal discharge, the nostrils and upper lip become much thickened and enlarged. Next appear enlarged lymphatic glands and enlargement of the throat, coming on rapidly or by almost imperceptible degrees, most frequently involving the glands of the neck, sometimes those of other parts of the

body. Discharge from the external ear, sore eyes, enlarged tonsils, and other morbid conditions mentioned under the head of symptoms, are all noticed in marked cases of the disease, so that it is by no means difficult to distinguish.

The term *scrofula* has, however, been much abused, not only by unprofessional people, but also by physicians, being charged with nearly all the ills to which human flesh is heir. It is the fashion with many persons, and not a few physicians, to attribute almost every obscure affection, especially those of children, to this disease. This fashion has, perhaps, arisen from the fact that, in different cases of this disease, disturbances are produced in nearly every organ and function of the body. In surgery, especially, it has been the custom to attribute nearly all diseases of the joints and bones which occur in childhood to scrofulous infection, but we believe it has been clearly shown by Dr. Sayre and other eminent observers, that in a large share of the so-called scrofulous diseases of the joints and bones, some mechanical injury has been the real starting-point of the disease. No doubt in many of these cases the injury might not have resulted in serious disease had it not been for the constitutional tendency to scrofula; and yet if the injury had not occurred, very likely the disease would not have been manifested in the particular manner observed, if, indeed, it had not remained dormant altogether. When the disease has been well marked in infancy, and does not disappear at puberty, it is very likely to continue, progressively increasing, and gradually undermining the constitution. The majority of scrofulous persons finally die of consumption. As has been before remarked, there has been traced a distinct connection between these two diseases, although it should not be supposed that a scrofulous person must necessarily die of pulmonary disease.

Respecting the real nature of the disease, it should be said that the results of the most thorough researches upon the subject seem to show that it consists rather in a peculiar susceptibility of the system to the morbid influence of disease-produc-

ing agents from without. This abnormal vulnerability, as the morbid condition may be called, is especially manifested in the lymphatic glands, the affection of which, so characteristic of this disease, is supposed to arise from their absorption of irritating matters from the exterior of the body, as the reception of germs or the absorption of morbid matter from a diseased skin.

*Causes.*—Among the causes of scrofula should be placed first, hereditary predisposition; not that the disease itself may be inherited, as is generally supposed, but, as is the case with nearly all hereditary affections, there is a transmission from parent to child of a susceptibility to morbid influences by which this disease is characterized. It is probable that in a large share of the cases of scrofula, the disease is simply the result of development, through favoring circumstances, of tendencies inherited from consumptive or scrofulous parents. We believe, however, that the influence of a bad hygienic condition has been clearly shown to be so active an agent in producing this disease, and in developing an inherited tendency to it, that we may be justified in charging bad hygiene with by far the greatest number of cases of scrofulous disease. Among the most important errors in diet are those appearing in early infancy. Of this sort should be mentioned the feeding of children upon food not suited to their condition, such as vegetables and farinaceous articles; and particularly the evil custom in some countries, especially Sweden and Germany, of allowing young children to imitate the example of their parents in drinking coffee and beer. It has also been shown by evidence which is entirely worthy of credence, that scrofula, as well as consumption, is very often produced in human beings, especially children, through the medium of milk. A child may imbibe a scrofulous taint through being nursed by a scrofulous or consumptive mother or wet-nurse. The testimony is equally clear that this disease is not infrequently produced by milk from scrofulous or consumptive cows. That scrofula is by no means an uncommon disease in cows, has been

clearly shown by the demonstration that the affection known as *pearl* disease among cows and other live stock, is identical with scrofula and other tuberculous affections. Some idea of the prevalence of this disease among cows may be gained from the statement of an eminent physician who asserts that at least fifty per cent of the live stock of Hanover, Germany, is affected with pearl disease, or scrofula.

The production of scrofula has also been attributed to the use of potatoes, starchy vegetables, and other farinaceous articles of food. This error has prevailed so extensively in some countries that it has become the fashion for mothers to prohibit the use of vegetables, particularly potatoes, to their children; and as a German medical writer has said, "Many a poor child has been sent hungry to bed, while its anxious mother passed a sleepless night, in consequence of the discovery that it had eaten a potato." Scientific investigation has shown, however, that in this case, as well as with many popular notions of the same sort, there is no real foundation either in theory or in reliable experience. We believe, however, it can be clearly shown that the large use of animal food, especially the use, as food, of animals in which scrofulous disease has been developed by confinement in stalls or close pens for the purpose of fattening, is one of the most serious dietetic causes of scrofula.

Experiments have shown that the flesh, as well as the milk, of tuberculous or consumptive animals, will give rise to scrofula or consumption when eaten, even if cooked with a moderate heat. This being the case, how can we resist the conclusion that the use, as food, of the flesh of animals which have been fattened under conditions the best calculated to produce scrofulous disease, and the carcasses of which, in a large number of cases, show the actual anatomical changes resulting from scrofula, and especially the use of the flesh of the hog, which is known to be almost universally affected more or less intensely with scrofulous infection, must be among the most active and wide-spread causes of this almost universal malady? We are firmly convinced, not only by

theoretical reasoning, but from practical observations, that of all dietetic errors, the use of swine's flesh is the most active cause of scrofulous disease.

We should not omit to mention, however, that eating between meals, the use of pastry, candy, sweetmeats, and tidbits of all sorts, is also a prolific cause, not only in producing scrofula, but in developing scrofulous tendencies which might otherwise remain latent. Bad air, arising from overcrowding, and deficient ventilation of living-rooms, sleeping apartments, and school-houses, must also be mentioned as a prolific cause of scrofula. If, as has been frequently shown by careful investigations of the subject, scrofula is, in some degree at least, an infectious disease, being communicable by means of diseased particles thrown off from the lungs by respiration, it will readily be seen that the crowding together of large numbers of children, quite a large percentage of whom must in all cases be suffering more or less with scrofulous affections, must be in the highest degree dangerous.

Uncleanliness of the skin, through want of frequent bathing, must also be a very common cause of this affection, or at least of the development of pre-existing scrofulous tendencies, on account of increasing the liability to diseases of the skin. Certain diseases, as measles, scarlatina, diphtheria, typhoid fever, small-pox, and other affections of a grave character, frequently occasion the development of this disease. It has also been shown that vaccination is frequently the means of inducing, or at least developing, scrofulous affections. There is good reason for believing that vaccine virus may be the means of communicating the scrofulous taint to the person vaccinated when it has been obtained from either a child or a calf suffering from scrofulous disease.

It has been generally supposed that persons of a sanguine temperament, or those having light complexions, blue eyes, and light hair, are particularly liable to scrofula, and even that the peculiarities of the temperament mentioned are indications of a scrofulous tendency. It has been shown, however, by Phillips, from a

careful collection of statistics, that this popular theory of disease is erroneous, and that persons of the very opposite temperament and characteristics from those named, are equally liable to the disease. Thus it will be seen that it is almost impossible to predict the occurrence of scrofula, before it has made its appearance, by any personal peculiarity. Indeed, the only basis upon which the probable occurrence of scrofula can be predicted is that of known hereditary predisposition. It is contended, however, by those who have had the most experience in the treatment of this affection, that there is a distinct "scrofulous habit," of which there are said to be two varieties.

The first, or irritable form, according to Dr. Birch-Hirschfeld, the eminent author of an able article on scrofula in Ziemssen's Encyclopedia of Medicine, is characterized by a delicate frame of body, deficient muscular development, thin skin inclined to bluish tint, with transparent veins especially in the temporal region and on the eyelid, soft hair, mostly of a light color, blue, lustrous eyes with a dilated pupil, irritable temper, "and sexual and intellectual precocity." The same author describes the second, or torpid form of scrofula as characterized by a burly frame of body, bloated appearance, richly developed adipose tissue, and muscles incapable of great exertion. The head is large, the physiognomy becomes heavy and unpleasant by the thickness of the upper lip, the broad jaws, and short, thick neck. The psychological character is distinguished by a sluggish, phlegmatic disposition and deficient development. Between these two typical classes there lie, of course, all the intermediate forms of disease.

**Tobacco and Vice.**—Few are aware of the influence upon morals exerted by that filthy habit, tobacco-using. When acquired early, it excites the passions, and in a few years converts the once chaste and pure youth into a veritable volcano of lust, belching out from its inner fires of passion, torrents of obscenity and the sulphurous fumes of lasciviousness. If long-contin-

ued, the final effect of tobacco is emasculation; but this is only the necessary consequence of previous super-excitation.

We are aware that we have made a grave charge against tobacco, and we have not hesitated to state the naked truth; yet we do not think we have exaggerated, in the least, the pernicious influence of this foul drug. As much might be said against the use of liquor on the same grounds.

**Right Sightedness.**—Every one knows that through more constant use the muscles of the right side of the body become more highly developed than those of the left. The opposite of this is true with left-handed persons. Recent experiments show that the right eye partakes of this extra development as well as other parts of the body, in consequence of its greater use, becoming more highly developed and less subject to disease.

**A New Remedy for Consumption.**—An exchange says, "A well-dressed and apparently intelligent woman appeared at the dog-pound in New York the other day, and asked for the forequarter of a dog that had been drowned. She said that her sister had consumption, and that some one had told her that the forequarter of a drowned dog, made into a stew, would cure the disease. She got the meat, and went away contented."

The above is almost too absurd for credence, and yet there are numerous popular notions about the treatment of consumption equally unworthy of belief.

It is not many years since that a man whom we asked to clean up his barnyard which was in a most unsanitary condition, and offensively and dangerously near several human habitations, met our request with the greatest indignation, declaring that "a barnyard smell was the healthiest kind of a smell, and well known to be excellent for consumption." Stewed dog and barnyard stench are of equal value as remedial agencies, though perhaps the dog ought to have a little preference. Medical common sense is a rare commodity among the people.

**Tobacco Prohibition.**—It is encouraging to note the fact that the opposition to the use of tobacco is growing daily more active, and general, and the attention of men of eminence and influence is being called to the importance of a reform in this direction. We are informed by credible authority that, "Tobacco is prohibited to the students of Oberlin College, Girard College, and the Naval School at Annapolis. A similar rule has been recommended at West Point by the Board of Visitors. At Cornell University nearly all the students have voluntarily signed a pledge of abstinence."

**The Blue Color of Milk.**—Herr Hansen, an authority in such matters, explains in a recent foreign scientific journal, the cause of the blue color in milk. He has discovered in milk which has become blue, a peculiar microscopical organism, known as *bacteria*, which multiplies with very great rapidity, and in so doing produces a peculiar blue matter similar to aniline. Milk which is kept in such a manner as to prevent the access of these organisms does not become blue. In view of these facts, it is evident that blue milk is unfit for food; and, although it may be eaten with apparent impunity by adults with vigorous digestive powers, it should never be given to children, whose weaker stomachs would be unable to resist the tendency to decomposition which such milk possesses.

**Pure Tobacco, Free from all Ingredients.**

—The *Sunday School Times* makes the following good point against tobacco:—

"Once in a while a dealer in harmful things is frank enough to tell the plain truth about the stuff he sells. There is a Philadelphia tobacconist, for example—Vetterlein of Chestnut Street—who distributes cheap fans on which he advertises his wares after this sort: 'The consumer in buying our segars can rely upon getting the pure tobacco free from all ingredients, which injures the health and breaks down the constitution.' Possibly if he had been more careful of his grammar and punctua-

tion, he would have said something else, but it is better as it stands. In tobacco, as in liquors, it is the pure article that works the mischief. There is never any adulteration that makes the thing worse than the original simple. It is the pure liquor or the pure tobacco 'which injures the health and breaks down the constitution.'"

**Scarlet Fever Conveyed by Milk.**—A Halifax milkman had five children sick with scarlet fever. He continued to dispense his milk to his customers, and soon succeeded in introducing the disease to forty-five of the eighty-two families which he supplied. When scarlet fever is known to exist in a neighborhood, every precaution should be taken to prevent its communication, as it is one of the most contagious of all diseases.

**Early History of Tea.**—When first introduced, tea was not a universal favorite. It was most vehemently opposed as an immoral, unwholesome decoction, from whose use the worst of results must be expected to follow. In 1633 a learned German decided that it was nothing better than black water with an acrid taste; and a few years later, a Russian ambassador at the court of the Mogul declined a large present of it for the Czar, his master, "as it would only encumber him with a commodity for which he had no use."

## LITERARY NOTICES.

ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MICHIGAN. W. S. George & Co., State Printers: Lansing Michigan.

We quote the following from a notice of the above work which recently appeared in the *Lansing Republican*:—

"The eighth annual report of the State Board of Health, for the fiscal year 1880, recently issued, is one of the most interesting and valuable documents yet issued by authority of the State.

"The increasing popular interest in sanitary work, based upon a growing and intelligent belief in the preventability of many of the so-called ordinary diseases which afflict young and middle-aged people, is largely due to the labors of

this Board and its correspondents, and its publications are growing in demand. The present volume contains, besides the secretary's report of the work of the Board and of the property, which includes additions to the library, abstracts of proceedings at the meetings of the Board, special reports, communications, etc., 44 addresses and papers on sanitary subjects. Of these, 23 were presented at the sanitary convention held in Detroit, Jan. 7 and 8, 1880; and 13 at the convention in Grand Rapids, Feb. 17, 18, 1880. The others are by members and correspondents of the Board. The report of the secretary is very full, and shows a large amount of labor performed in the office.

"The special reports and communications from correspondents relative to epidemics, are especially interesting, and include histories of outbreaks of diphtheria, scarlet fever, typhoid fever, small-pox, measles, erysipelas, and puerperal fever, etc.; their probable causes, treatment, methods adopted for restriction, and correspondence between local officers and the secretary of the State Board of Health in relation thereto. Besides the above are special reports relative to the relation of rag-weed and hay fever, poisoning by colored hose, resuscitation of the drowned, and many others.

"Dr. J. H. Kellogg points to the dangers arising from decaying wood, showing by numerous experiments that its decomposition is accompanied by the development of bacteria and other low forms of life, intimately connected with the development of many serious diseases, like typhoid fever. Dr. G. E. Corbin of St. Johns offers a paper on "Unsanitary Conditions in Public Schools." Dr. A. W. Nicholson, of Otisville, discusses the cause of intermittent fevers, which he thinks he finds in certain meteorological conditions, rather than disease germs.

"A large number of other interesting papers are also printed which can only be barely alluded to, and these are followed by a voluminous report upon the principal meteorological conditions in Michigan during 1879, compiled from reports of observers for the State Board of Health, and illustrated by ingenious diagrams designed by Secretary Baker, and drawn by Messrs. Turner and Allen of the office of the State Board of Health. This is followed by the compilation of the weekly reports of sickness by the health officers and physicians, also illustrated by diagrams and tables, showing the principal diseases which cause most sickness in Michigan, and their order of prevalence. An examination of these tables shows that the most prevalent diseases are largely preventable by proper attention to hygienic conditions, and are becoming more so every year through the direct efforts of the State Board of Health and intelligent correspondents who are aiding them in developing the causes of diseases by careful observation; and whose findings are freely scattered among the people through circulars, pamphlets, and these annual reports.

"The sanitary conventions which have been inaugurated in the State under the auspices of the State Board of Health, have proved invaluable

as educators of the people, and have been largely attended without exception.

"By its labors the Michigan State Board of Health has acquired a reputation second to no other in the United States, and is annually conferring untold benefits upon the State."

UNFERMENTED WINE A FACT. J. N. Stearns, 58 Reade Street, New York.

The above is the title of a pamphlet of exceptional interest and value, concerning the existence of unfermented wine in both ancient and modern times, prepared by Norman Kerr, M. D., F. R. S., the distinguished London physician; and which the National Temperance Society has just published. The author, while declining to enter the field of theological and exegetical discussion, presents a great number of authorities, historical, biblical, and scientific, which demonstrate beyond question that unfermented wine was known and used in Bible times, and also that it is made and used in our own times. The work is the result of great research and of most thorough and painstaking scientific experiment. It is a most important scholarly contribution to the literature of the unfermented wine question.

This is the pamphlet referred to by the Rev. Joseph Cook in the "New House and its Battlement," recently published by the National Temperance Society, and which called forth considerable unjust criticism from a portion of the religious press of the country. It merits a very wide circulation, especially among the ministers and members of Christian churches. 12mo, 41 pages. Price ten cents.

THE FARM AND GARDEN. An illustrated journal devoted to the interests of farmers and their families. Topics under the heads of Agriculture, Horticulture, and The Orchard, are discussed each month, while literary, scientific, and household notes, and a Children's Department, help to make the paper of interest to all in the family circle. Published by E. S. Child, Phila., Pa.

We have received from J. A. Willets & Co., of Dayton, Ohio, a new song by P. G. Hull, dedicated to his mother, and entitled, "I Will Always Remember." The words are very pretty, and the music is within the range of any voice. The song bids fair to become equal in popularity to the "Old Red Mill," by the same author. Price 40 cents.

THE CITY THAT A COW KICKED OVER. This is a comic history of the Chicago fire of 1871. It is written in rhyme, after the style of "The House that Jack Built," and is intended to celebrate the tenth anniversary of the great fire. It is published by A. H. Andrews & Co., of Chicago, and is well worth the perusal of all who enjoy the humorous.

A large number of publications are necessarily laid over till next issue, for want of time to give them an examination.

## Publishers' Page.

### MAGNIFICENT OFFER!

THE two most popular works ever issued by the publishers of GOOD HEALTH are entitled, "The Household Manual" and "Healthful Cookery." The first is a condensation of good advice respecting hygiene in its various branches, the treatment of disease, what to do in accidents and emergencies, etc. The various editions of the work aggregate more than 25,000 copies. Its one hundred and seventy-six pages contain more really practical information than many ponderous volumes.

"Healthful Cookery, a Hand-book of Food and Diet, or What to Eat, How to Eat, and When to Eat," has reached a sale of nearly 20,000 copies, and is a real treasury of knowledge on the subjects of which it treats. It contains one hundred and twenty-eight pages of carefully prepared matter, comprising in addition to general information on the subject of diet, the best collection of recipes for the preparation of healthful food to be found anywhere. The work is really a compendium of information on healthful cookery.

For several years the first-mentioned work has been offered as a premium to new subscribers to this journal, and thousands have availed themselves of the liberal offer to obtain a work which has sold at retail for seventy-five cents, for just one-third of that sum. The efforts of the publishers to give the public a really valuable work at a price even less than usually charged for worthless pictures, or other articles usually offered as premiums, have been so well seconded by the public, and so thoroughly appreciated, that they now propose to make

#### A still more Liberal Offer.

The two popular works mentioned are now bound together in one volume, making a work of over 300 pages. The price of the two volumes, as heretofore sold at retail, aggregates \$1.00, yet we now offer the two, neatly bound in cloth, for the small sum of 25 cents to all new subscribers to GOOD HEALTH, making the two cost the subscriber only \$1.25. Those who send subscriptions directly to the office of publication, wishing the premiums sent by mail, should add two three cent stamps, to pay postage.

PUBLISHERS OF GOOD HEALTH.

### A GIFT TO OLD SUBSCRIBERS.

WITHIN the last few years the custom of giving premiums to new subscribers has become almost universal among the publishers of periodicals, but very rarely, however, does the old subscriber, who stands by the paper year after year, receive such favors. The publishers of "Good Health" for two years tried the experiment of offering a small premium in the shape of a Good Health Calendar, and were so well pleased with the results that they concluded to make a more liberal offer still to their old subscribers, and between now and the first of January will treat old and new subscribers alike. The Household Manual and Healthful Cookery together will make one of the most useful books. The Manual treats, in a concise and interesting manner, not only of all the most practical subjects embraced under the head of hygiene,

but also of the best method of treatment of nearly all common ailments. Healthful Cookery is undoubtedly the best collection of hygienic recipes published in this country. It is a work which ought to be in every family. The information which it gives on the subject of food and diet is invaluable. In addition it contains a bill of fare for each month, which housekeepers will find very helpful. These two works, either bound separately or together in one volume will be sent to every old subscriber who sends his subscription and twenty-five cents before January first, 1882. Six cents should be added for postage, making one dollar and thirty-one cents in all. Where a number of subscribers are located in the same place they can have the books sent by freight or express and save postage if they desire.

☞ We would call special attention to the article entitled the "Prevention and Restriction of Diphtheria," published in this number. This article is particularly timely as diphtheria is, just at present, extending its ravages very rapidly in several sections of the State. The article referred to has been prepared with very great care by a committee appointed for the purpose by the State Board of Health of Michigan, and embodies the most recent and reliable information on the subject. Many thousands of copies have been printed and distributed in various parts of this and other States, with most excellent effect. In several instances where epidemics have started and assumed a fatal character, the disease has been checked entirely by the application of the rules given in the article referred to. In several instances in which villages have been afflicted with this disease to such an alarming extent as to stop all business, the Board has been requested to send some competent person to investigate the cause of the malady, and if possible check it. The results which have followed in such cases almost immediately, show the advantage of scientific and systematic effort in checking the ravages of this terrible disease. Those who wish copies of the document can obtain several specimen copies by addressing the Secretary of the State Board of Health, Dr. H. B. Baker, Lansing, Mich., inclosing stamp. They can be obtained by the quantity at actual cost of printing.

☞ Through inadvertence the notice of the annual meeting of the stockholders of the Health Reform Institute or Sanitarium was published in the last number without insertion of the proper date. A meeting will be held in connection with the general meeting to be held in this place, commencing December 1st. We hope there will be a good representation of stockholders and friends of the Sanitarium. All stockholders who are not able to attend in person should see that they are represented by proxy. Blanks will be sent to all stockholders whose addresses are known.

☞ These sunny autumn months afford a golden opportunity for intelligent persons who wish to benefit their friends and neighbors, and have time to devote to the matter, to spend a few days or weeks canvassing for GOOD HEALTH. Besides being a work of philanthropy, the business will be fairly remunerative to any person of ordinary ability. We will furnish outfits for twenty-five cents. Would like to send out at least five hundred to persons who will send not less than ten subscribers apiece within the next two weeks. Now is the time for vigorous work. How many are willing to spend a few days in this philanthropic work?