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INTERNATIONAL HEALTH STUDIES.

BY FELIX L. OSWALD, M. D.

Author of "Physical Education," "The Bible of Nature," Etc.

54.—The Dakotas.

COUNT SEGUR, in his memoirs of the Russian campaign, tells a pretty anecdote about a Cossack prisoner, who amused the French officers by the frankness of his remarks, till somebody asked him how he would like to accompany his captors to France.

"I like you fellows well enough," said the son of the steppes, "but, Heaven help me! what sort of a wretched desert must be your native land, if you went out of your way to conquer a country like this!"

In a similar way a Dakota Indian might quiz the Caucasian colonists who massacred his companions to possess themselves of their frozen prairies. "Is it for this," he might ask, "that you abandoned your native land, and crossed six thousand miles of seas and icy lakes?"

Still the advertising tricks of railway land agents are not the only explanation of the rapid settlement of our northwestern border plains. It is true that in a prairie country, railway building is so cheap that a syndicate of speculators could afford to propagate the belief in the absurdities of the "banana zone myth," but, on the other hand, General Hazen went a little too far in his sarcastic remark, that "the plains of the upper Missouri ripen few first-class fruits except icicles." In Cook County, on the "Black Fork" of the Dakota River, fruit farmers have derived a comfortable income from a few acres of ground, by cultivating red raspberries, that sell at Omaha for twenty-five cents a quart; and the settlers of the Sioux Falls district have surprised their neighbors, and perhaps themselves, by raising several crops of prize apples, of a variety that cannot be relied upon to ripen every year, but in lucky seasons grow to a perfection that rivals the finest products of the Atlantic States. Besides, many thousands of acres in the apparently inhospitable upland region have proved able to yield abundant harvests of rye and wheat — the surplus of the latter cereal having repeatedly taxed the transportation facilities of all the northwestern railroads. Like the Canadian portion of the Red River country, North Dakota can boast pasture grounds that compensate the shortness of the warm season, and last year enabled the dairymen of the State to raise the enormous total of 6,200,000 pounds of butter, supplemented (or rather, offset, from a sanitary point of view) by 550,000 pounds of cheese.

Considering the scarcity of woodlands, the productiveness of the soil can be explained only by the circumstance, that for an untold series of centuries, decaying grasses were left to enrich the mold, like the falling leaves of the forest, while the grain farmer who removes the vegetable outcome of the warm season to his barn, is, or soon will be, obliged to make up the loss by the use of fertilizers. The existence of large deposits of lignite suggests, however, the possibility that in bygone ages the barren lands of the upper Missouri were covered with pine forests whose legacy of rich mold still benefits the herbs that spring up after the destruction of perennial plants.

The fine scenery of the Rockies is limited to the far western counties, and game is getting scarce; but the settlers may console themselves with the remark of the philosopher Schopenhauer, that "experience soon teaches a wise man to renounce the pursuit of dispensable pleasures and devote his energies to the prevention of avoidable trouble." Singing birds are rare, but so are sparrows, gophers, and tramps, and a man may come to bless the absolute silence of the winter nights, after having had his brains racked with the infernal chatter of katydids and black crickets.

At the time when the French government claimed all the territory west of the Mississippi River, a good many emigrants from Western France settled the country between the Niobrara and the Sioux rivers, but they speedily lost ground when they were brought in competition with Scotch and Scandinavian colonists. For a while they used the customary expedient of hard pushed races, and "moved farther west," but became discouraged when they came across that *ne plus ultra* of hopeless desolation, the Mauvaise Terre, or "Bad Land" region. The name of that grass-forsaken district is certainly putting the case mildly. The Maroons, in their tropical lake dwellings, have drained the serpent swamps of the lower Orinoco, and by means of artesian wells, French engineers have reclaimed sand fields on the border of the Sahara; but what human ingenuity can utilize a desert of hard-baked blue clay, parched out of every vestige of vegetable life and cracked by frost into a labyrinth of gaping gulches and man-traps? Here and there the rocks, at the edge of a deep chasm, have crumbled away around remnants of more compact cliffs, that rise from the debris like towers from the brink of a castle ditch, as inhospitable and inaccessible as the ruins of a robbers' stronghold in the southern Balkans. In winter the dangers of the pitfalls are doubled by a screen of snow, and the few drops of rain which now and then fall between May and November, disappear instantly in the depths of the steep gulches.

A superstitious veneration of the "Great West" could not resist such arguments, and the baffled Bretons described the horrors of their experience in a way that turned the tide of immigration toward the far North, where a hard-working farmer could, anyhow, find bread for his children and grass enough to keep his horses from starving.

Yet, if the discouraged pioneers had continued their westward advance for another hundred miles, their perseverance would have been rewarded by the discovery of that remarkable oasis in the North American ice desert, the region of the Dakota Black Hills. "*Bäume und Berge adeln jeden Ort,*" says a German poet philosopher, — "Trees and mountains ennoble any land"— especially where they are found in combination.

The Black Hills, only about eighty miles from the most horrible rock wastes of the Bad Lands, are covered with magnificent forests; clear, perennial streams fertilize the valleys far prairie-ward, and summer rains are nearly as frequent as in the northern Alps,— a circumstance well worth noting, for comparison with the inevitable result of climatic changes, when the greed of the lumber sharks shall have stripped the hills of their evergreen forests.

The climatic differences between the shady Caucasus and the barren highlands of Armenia, cannot be more striking than that between the Black Hills and the surrounding forest mountain ranges, and no clear-sighted observer can doubt that tree culture will be one of the chief duties inculcated by the religion of the future. Some fifty years ago, Prince Puckler-Muskau ("Semilasso," as he called himself in the chronicle of his Oriental travels) confessed himself a convert to the belief in the divine mission of Mohammed, "whose four chapters on the necessity of frequent ablutions have saved many thousands from disagreeable skin afflictions." Those four chapters may certainly be included in the redeeming features of the Koran; but if the Man of Allah had just added the four words: "Spare the highland forests," would that precaution not have saved millions from the equally "disagreeable affliction" of death by starvation, not to mention such trifling results of desert heat as sunstroke and ophthalmia?

In sandy regions, as the brick wilderness of a large city, a rain shower in midsummer has often the disappointing effect of making the weather more sultry, while the rapid evaporation from the rain-moistened foliage of a large forest cools the atmosphere even of a tropical coast plain, and in the uplands of the temperate zone tends to effect a refrigeration cure for nearly all the troubles which the customers of the German "Dew-bath Doctor" try to relieve by a barefoot race through the clover patch of the venerable, but rather expensive, specialist. This plan has helped to dispel the superstitious dread of wet feet; but its pathological application recalls Charles Lamb's anecdote about the primeval rustics who found a lot of spare ribs in the ruins of a burned shanty, and who, for years after, went to the trouble of setting a house afire whenever they happened to hanker after roast pork. The invalids of western Dakota certainly can save themselves the expense

of a journey to the Bavarian clover patch Mecca, as long as they can rely on occasional summer breezes from the direction of the Black Hill highland forests.

The climatic influence of that large, cool-air factory (the Black Hills stretch for a hundred miles along the south fork of the Cheyenne River) explains the frequent assertion that the summers of South Dakota are cooler than those of her northern twin State, so much so, indeed, that in the dog-days the buffalo herds of the Little Missouri River, near the borders of Dakota, often migrated in a southwesterly direction.

In winter the favors of the climate are more evenly distributed. After the middle of November the frosts of the Black Hill highlands become so intense that even the bonanza-crazed miners of '87 generally preferred to suspend their treasure-trove operations for a couple of months, and a snow fall of thirty-six inches is considered nothing unusual. When such snow storms are accompanied with a northwest blizzard, the staying powers of the average Caucasian approach their limit of endurance, and a protracted exposure to the fury of the storm is apt to bring on a fever known to the old-time French settlers as the *mal-de-niege*, or "snow-sickness," which may confine the patient to his bed for a day or two, but, as a rule, subsides after the first good night's rest. Headache and pains in the ears, now and then followed by intermittent deafness, are the characteristic symptoms of the disorder, which, like other febrile affections, seem to serve the purpose of freeing the system from morbid elements,—in this case, probably, the tissues vitiated by the azotic effect of the ice gale.

Snow-blindness, too, is an occasional penalty of the attempt to brave the perils of the wilderness in midwinter, and in a country where cross-road traders are apt to be out of the "light greenish blue spectacles," recommended by Dr. Kane. A veil of blue mosquito bar gauze is said to serve the same purpose, and the Dakota Indians obviated the trouble by the simple plan of loosening their top-knots, and permitting their long black hair to hang about their eyes. In the woods and brush prairies there is not much danger of an affliction which appears to be prevented by anything helping to break the uniform white glare of sunlit snow fields.

North Dakota, even without the assistance of cloud-piercing mountain ranges, gets her full share of these blizzards. The latitude is that of central France, the climate that of northernmost Norway, though the steady frosts of the three coldest winter months are perhaps preferable from a sanitary point of view, to the fogs and frequent "Gulf Stream thaws" of the Scandinavian coastlands. The settlers of the best sheltered bottom lands need every bushel of coal they can get hold of, and the storms of the uplands must have helped to moderate the homesickness of the Sioux exiles. Near Minot, on the tableland known as the "Coteau du Missouri," a hunting party from Fort Buford a few years ago found a troop of pronghorn antelopes frozen to death in a little ravine where they had taken refuge from the rage of the snow storm, after the clearing of the brushwood that had probably sheltered them in former years. The weather had been intensely cold for several weeks, and the poor refugees were wasted to mere skeletons; yet the analogies of the Manitoba stockfarms make it doubtful if a series of almost arctic frost had in the least affected the soundness of their lungs.

If prejudice were not argument-proof, the dissection of a number of such frostland victims should suffice to dispel the idea that cold air has anything to do with the origin of lung affections, for the Swiss chamois, the near relative of the pronghorn antelope, breathes with impunity the icy atmosphere of the upper Alps, but speedily succumbs to a lung disorder resembling the epizootic of our street-car horses, if confined for any length of time in an ill-ventilated stable. Von Ischudi, the author of "Das Thierleben der Alpen-Welt," and one of the most accomplished naturalists of the nineteenth century, mentions the case of a young chamois buck that had been domesticated on the ranch of a Swiss farmer, who, on the eve of an unusually cold night, had tried to save the life of his pet by tying him up in a warm cow stable. That night the mercury dropped to twenty degrees below the zero of the Reaumur thermometer, but the next morning the farmer found his protegé camping comfortably on the ridge of the snow-covered stable roof. In the agony of its air-famine the child of the Alps had snapped its halter, burst the shingle roof by desperate leaps, and modified the life-saving plan of its owner by preferring the purifying air of the cold, clear night to the lung poison of the warm stable.

(To be continued.)

MILTON'S DOCTRINE OF ABSTINENCE.

BY WM. E. A. AXON.

THERE is a moral purpose in Milton's poems which is evident alike in "Comus" and in "Paradise Lost." It runs like a thread of gold through his noblest strains of song. The object of the "Paradise Lost" is, in the poet's own words, to "assert eternal Providence, and justify the ways of God to man." The topic is very distinctly set forth in the opening lines of the poem: —

"Of man's first disobedience, and *the fruit*
Of that forbidden tree, whose mortal taste
Brought death into the world, and all our woe,
With loss of Eden, till one greater Man
Restore us, and regain the blissful seat,
Sing, heavenly Muse."

In "Paradise Lost" we have, then, the momentous picture of the evil results of yielding to the temptation of the gratification of uncontrolled appetite. In "Comus" we have the opposite picture of the saintly soul successfully resisting the allurements of sensual indulgence. Notwithstanding the high scope of Milton's "Paradise Lost," dealing as it does with all the mysteries of the Christian theology, the poet frequently recurs to this fundamental idea. The danger of an indulgence in sensual delights is ever the warning cry of the poet. The doctrine of abstinence and temperance is enforced in its homeliest as well as in its highest aspect. Thus, in the picture of the innocence of Eden before the fatal fall, the simplicity of the food of our first ancestors is thus set forth: —

"Under a tuft of shade that on a green
Stood whispering soft, by a fresh fountain side
They sat them down; and after no more toil
Of their sweet gardening labor than sufficed
To recommend cool zephyr, and made ease
More easy, wholesome thirst and appetite
More grateful, to their supper fruits they fell;
Nectarine fruits, which the compliant boughs
Yielded them; sidelong as they sat recline
On the soft, downy bank damasked with flowers;
The savory pulp they chew, and in the rind,
Still as they thirsted, scoop the brimming stream."

When the angel Raphael visits Adam and Eve, our first mother is represented as possessed by all the feelings of a good old English housekeeper anxious for the bodily welfare of her guest. The nature and quality of her viands are set forth as though to contrast with the more elaborate tables infected by luxury's contagion vile. Before the appearance of Raphael we read, —

"And Eve within, due at her hour prepared
For dinner savory fruits, of taste to please
True appetite, and not disrelish thirst
Of nectarous draught between, from milky stream,
Berry or grape."

But when the angel is seen, to do him honor she says: —

". . . 'I will haste, and from each bough and brake,
Each plant and juiciest gourd, will pluck such choice
To entertain our angel guest, as he
Beholding shall confess, that here on earth
God hath dispensed his bounties as in heaven.'
"So saying, with despatchful looks, in haste
She turns, on hospitable thoughts intent,
What choice to choose for delicacy best,
What order, so contrived as not to mix
Tastes, not well joined, inelegant, but bring
Taste after taste upheld with kindliest change;
"Bestirs her then, and from each tender stalk
Whatever earth, all-bearing mother, yields
In India, East or West, or middle shore
In Pontus, or the Punic coast, or where
Alcinous reigned, fruit of all kinds, in coat
Rough, or smooth rind, or bearded husk, or shell,
She gathers, tribute large, and on the board
Heaps with unsparing hand; for drink, the grape
She crushes, inoffensive must, and meaths
From many a berry, and from sweet kernels pressed
She tempers dulcet creams; nor these to hold
Wants her fit vessels pure; then strews the ground
With rose and odors from the shrub unfumed."*

Again, after the fall, the archangel Michael shows Adam in vision the first murder, and thereafter says: —

"'Death thou hast seen
In his first shape on man; but many shapes
Of death, and many are the ways that lead
To his grim cave, all dismal; yet to sense
More terrible at the entrance than within.
Some, as thou saw'st, by violent stroke shall die;
By fire, flood, famine; by intemperance more
In meats and drinks, which on the earth shall bring
Diseases dire, of which a monstrous crew
Before thee shall appear, that thou mayst know
What misery th' inabstinence of Eve
Shall bring on men.' Immediately a place
Before his eyes appeared, sad, noisome, dark;
A lazar-house it seemed, wherein were laid
Numbers of all diseased, all maladies
Of ghastly spasm, or racking torture, qualms
Of heart-sick agony; all feverous kinds,
Convulsions, epilepsies, fierce catarrhs,
Intestine stone and ulcer, colic pangs,
Demoniac frenzy, moping melancholy,
And moonstruck madness, pining atrophy,
Marasmus, and wide-wasting pestilence,
Dropsies, and asthmas, and joint-racking rheums.
Dire was the tossing, deep the groans; Despair
Tended the sick, busiest from couch to couch;

*Milton's dietary at his highest moments was vegetarian. Thus, in the elegy to Diodati, which Cowper has translated, he lays down rules for the poet's life: —

"Simply let those, like him of Samos, live:
Let herbs to them a *bloodless* banquet give.
In beechen goblets let their beverage shine,
Cool from the crystal spring their sober wine!
Their youth should pass in innocence secure
From stain licentious, and in manners pure.

* * * * * *

For these are sacred bards, and, from above,
Drink large infusions from the mind of Love."

And over them triumphant, Death his dart
Shook, delayed to strike, though oft invoked
With vows, as their chief good and final hope."

The archangel makes appetite, or rather its uncontrolled gratification, the cause of all this suffering.

"'Their Maker's image,' answered Michael, 'then
Forsook them, when themselves they vilified
To serve ungoverned appetite, and took
His image whom they served, a brutish vice,
Inductive mainly to the sin of Eve.
Therefore so abject is their punishment,
Disfiguring not God's likeness, but their own;
Or if his likeness, by themselves defaced,
While they pervert pure nature's healthful rules
To loathsome sickness; worthily, since they
God's image did not reverence in themselves.'
"'I yield it just,' said Adam, 'and submit.
But is there yet no other way, besides
These painful passages, how we may come
To death, and mix with our connatural dust?'
"'There is,' said Michael, 'if thou well observe
The rule of not too much, by temperance taught,
In what thou eat'st and drink'st, seeking from thence
Due nourishment, not gluttonous delight,
Till many years over thy head return:
So mayst thou live, till like ripe fruit thou drop
Into thy mother's lap, or be with ease
Gathered, not harshly plucked, for death mature:
This is old age; but then thou must outlive
Thy youth, thy strength, thy beauty, which will change
To withered, weak, and gray; thy senses then
Obtuse, all taste of pleasure must forego
To what thou hast; and for the air of youth,
Hopeful and cheerful, in thy blood will reign
A melancholy damp of cold and dry
To weigh thy spirits down, and last consume
The balm of life.'"

The penalty of excess is set forth in the picture of the lazar-house, filled with all the sounds of woe and disease that arise from the intemperate exercise of the appetites and passions of man. The poet warns not only against indulgence in things evil, but also against excess of lawful pleasure. Thus Raphael gives timely admonition to Adam as the difference between passion and affection. Raphael has high hopes for mankind, and anticipates that a—

"Time may come when men
With angels may participate, and find
No inconvenient diet, nor too light fare.
And from those corporal nutriments perhaps
Your bodies may at last turn all to spirit,
Improved by tract of time, and winged ascend
Ethereal as we; or may at choice,
Here, or in heavenly paradises, dwell."

(To be continued.)

HEALTHY HOMES.

X.

BY HELEN L. MANNING.

HOUSEHOLD DISINFECTION.

POPULAR notices with regard to disinfection are about as disastrous as popular ignorance. The sense of fancied security which is afforded by a saucer of chloride of lime in the corner of a room occupied by a typhoid fever or diphtheria patient, would be ludicrous if it were not pathetic. Chloride of lime dissolved in water in proper proportion and given actual contact with matter containing disease germs, can be relied on as of some value, but its gases, when given off from the dry powder in contact with the air, create a bad smell without improving the sanitary conditions in the least.

"But," says the old lady from the country, "all that is necessary to keep the air of a sick room pure, is to set fire to a few old rags, or burn a little brown sugar, or roast a few coffee beans on a shovelful of coals once or twice a day."

"Pshaw!" says the old lady from town, "that is not nearly so æsthetic as spraying the room delicately with Cologne water."

All of these things, however, are merely deodorizers, which give a sort of sanitary satisfaction to an easy conscience, but are wholly valueless as germicides. In fact, the whole race of germs might well "laugh and grow fat" in the face of such harmless artillery aimed at their destruction.

Fumigation by sulphur is a proceeding not unheard of by persons who have not the slightest idea how it should be done. For instance, one of the Sanitarium physicians found a family of children down with scarlet fever, who were given the freedom of the whole house when "scaling off,"—the time when danger from contagion is greatest,—the precaution being taken daily of burning a teaspoonful of sulphur in the house, meantime leaving the doors and windows open! And later, this same physician found a typhoid patient gasping for breath because her friends thought it advisable to burn a little sulphur in the sick room as a disinfectant. Sulphur fumigation, when properly used, is a powerful germicide, but when sulphur is burned in small quantities in an open room, the human beings who inhale its poisonous gases are the ones who suffer from it, not the germs.

Directions for fumigating with sulphur will be found near the close of this article. As it is quite

difficult to ignite pure brimstone, or maintain its combustion, it may be advisable to state that Parke, Davis & Co., of Detroit, have prepared "sulphur candles" which burn easily and are very convenient and effective. Each "candle" represents a pound of sulphur. Fumigation with sulphur should be employed after typhoid fever, diphtheria, scarlet fever, consumption, and other contagious diseases. Every such case should be isolated or confined to a single apartment or suite for the sake of preserving the health of the remaining members of the family, and also that the cleaning up after the disease is spent, shall be less tedious and involve less loss. Books, papers, and playthings which have been used should be thrown into the fire. The germs of scarlet fever in particular, are wonderfully tenacious of life, and the disease has often been communicated by little articles which have been unused for a year or more. Take no such risks for the sake of sentiment or economy.

Soot has been recommended as a disinfectant of value for the absorption of poisonous gases around sinks and drains and for excreta, and is perhaps worthy of mention, since it is easily obtainable. It is composed of pure carbon, and is formed by the hot vapors of the hydro-carbon from burning fuel striking against the cold walls of the chimney or stovepipe, and condensing thereon. It is a very light, porous, and impalpable powder, and like charcoal, which is made up of much the same elements in a different form, possesses the property of absorbing and retaining a wonderfully large amount of gas. Another thing which adds to its value is, that it contains creosote among its constituent elements, and this is a powerful germicide. Charcoal and copperas combined make a better disinfectant for some purposes than either alone. A strong solution of copperas has been mentioned in previous articles as a good disinfectant for flushing drain-pipes from sinks and the like.

It must never be forgotten that sunshine and fresh air are the two best disinfectants which nature furnishes, and these must be lavishly admitted, whatever else is used or not used.

The State Board of Health of Maine has sent out a circular with regard to typhoid fever, which includes the following: —

DISINFECTANTS.

Solution A. — For excreta, privy vault, wood-work, and other surfaces.

Solution B. — For excreta and privy wells.

Solution C —For clothing, the hands, excreta, vaults, furniture, and wood-work.

Solution D. — For the person, the hands.

Solution E. — For clothing, the hands, the person, excreta.

Boiling. — For clothing.

Sulphur Fumigation. — For use only where liquid disinfectants cannot be used, or to supplement other methods.

SOLUTION A.

Chloride of lime ..... 6 oz.
Water ..... 1 gal.

Mix. Cost, about three cents, or seventy-five cents a barrel. (Decolorizes and destroys fabrics.)

SOLUTION B. — "PURPLE SOLUTION."

Corrosive sublimate ..... 2 drms.
Permanganate of potash ..... 2 drms.
Water ..... 1 gal.

Mix and dissolve. Label, *Poison.* Cost, two or three cents a gallon when the chemicals are bought by the pound. (Stains fabrics, etc.)

The permanganate of potash is used in this solution to give it color as a precaution against mistakes. It also, in this quantity, increases the deodorizing qualities of the solution. This is approximately a 1 to 500 solution of the sublimate; therefore, mixed with an equal quantity of water or liquids to be disinfected, it gives us a 1 to 1000 mixture. One ounce of this solution contains very nearly one grain of the corrosive sublimate.

SOLUTION C. — "BLUE SOLUTION."

Corrosive sublimate ..... 4 oz.
Sulphate of copper ..... 1 lb.
Water ..... 1 gal.

Mix and dissolve. Label, *poison.*

This is sixteen times stronger than Solution B, and is intended as a standard solution from which, by dilution with water, a solution of the proper strength for use may be made. To make from it a solution of the proportion of 1 to 500, add 8 ounces to a gallon of water; 1 to 1000, add 4 ounces to a gallon of water; 1 to 12,000, add 2 ounces to a gallon of water.

SOLUTION D.

Labarraque's solution ..... 1 pt.
Water ..... 1 gal.

Mix. Cost, about twenty-five cents.

SOLUTION E.

Carbolic acid (90 per cent) ..... 7 oz.
Water ..... 1 gal.

Mix. This is approximately a five per cent solution, or in the proportion of 1 to 21.

Boiling for at least half an hour is a sure way to destroy infection. Immersion in Solution C (1 to 2000), or in Solution E, one half strength, will lessen the danger from infected clothing until it can be boiled.

Sulphur Fumigation. — To use this effectively, three pounds of sulphur should be burned in a room ten feet square. Every opening in the room, flues, doors, windows, cracks, and crevices, must be closed, except the door by which the disinfector is to escape. The sulphur is to be burned in an iron kettle or other vessel set in a tub containing a little water to guard against fire. Ignite the sulphur with a few live coals, or with a little alcohol or kerosene and a match. Leave the room quickly, for the fumes are highly poisonous when breathed, and close the door tightly. Let the room remain closed twenty-four hours or more. Then air thoroughly for several days.

GHEEL, THE CITY OF LUNATICS.

In a late number of the *Outlook*, George H. Westley gives a very graphic account of a visit he made to a village in the northern part of Belgium, called the "City of the Simple." He says: —

"Taking the train east from Antwerp, I was soon set down at my destination, which I found to be a quaint, old-fashioned little town apparently in no way different from the toy-like towns and villages to be found all through Flanders. It was pierced by a long, straggling street bordered with two-story white-washed houses; and a couple of inns, externally plain, but internally roomy and inviting, offered their accommodations to the weary traveler. It was to all appearances a prosperous community, and considering the fact that a large proportion of its inhabitants were unconfined lunatics, it was to me an unexpectedly quiet one.

"I put up at the inn called the 'Armes de Turnhout.' My host and hostess were a handsome young couple, full of life and gayety, and most attentive to the necessities and comforts of their guests. A few hours' chat with them put me in possession of a number of most interesting facts, and prepared me for my subsequent encounters with some of the afflicted dwellers within the gates.

"In the parlor of the hotel where I sat that evening there were gathered ten or twelve habitués of the place, some sipping their beer and smoking, others reading, and several engaged in playing dominoes. To pass the time, I had picked up a Flemish newspaper, when presently there came through the open window the loud, commanding voice of some one in the street below.

"'Poor fellow!' said one of the guests, as we looked out together, 'he imagines himself to be Napoleon, and he is giving orders to his troops, who are gathered for the battle of Waterloo. He is quite harmless. See!'

"And, lo! as the lunatic was giving the word of command to his imaginary legions to wheel and charge in battalions, a little fellow of six plucked the skirt of his blouse and whispered a word in his ear, when, quick as a flash, the *soi disant* emperor was transformed into a quiet, humble, shamefaced man, who, with shambling step and downcast eye, suffered the boy to lead him into an adjacent cottage.

"I utilized this incident to start a conversation with the man who had acted as my informant. I found him quick and intelligent, and I thought he was, like myself, a visiting stranger, so that what followed gave me one of the greatest surprises of my life. We had got into a discussion upon the policy of the government, and our argument had grown somewhat warm, when suddenly the man arose and exclaimed: 'Listen to me, monsieur. Evidently you do not know to whom you are speaking. I am the presiding genius of this country, and without me Belgium could not exist a day. I pass my time in reading the papers and studying events, and every night I send my orders to the king, who is a mere puppet in my hands. And now, sir, good-night; for the hour has come at which this solemn duty demands my undivided attention. Another time I advise you to find out who you are talking with before you express your opinions so dogmatically.' And with that he marched out of the room.

"It was not long before I found out that most of the others were also monomaniacs. One of the domino-players shortly afterward rose and started off toward the railway station. He was continually expecting a case of wine, which never came. Day after day he went there on the same errand, always receiving a hopeful answer from the porter, who understood his case, and going away satisfied. One of the company thought he was the moon, and could not be persuaded to go out-of-doors until evening came. Another imagined himself to be made of glass, and was extremely careful in his movements lest he should break himself. The fifth had an idea that a sum of money was concealed in the lining of his coat. 'Feel them for yourself. Hear them chink,' he would say, shaking the garment, and then he would go on sorrowfully, 'but I can't get them out; I can't get them out. I have often picked the seam, but it's no use. Still they are there plain enough—chink, chink! Do n't you hear?'

"Gheel has a legend which gives to the heathen king of Ireland the credit, or discredit, of bringing about its beginning as a resort for those afflicted with mental disorders. Dympna, whose canonized name is revered by these people, being persecuted by the king, her father, fled from her home and found her way to Gheel, where she entered a convent. Hither she was tracked by her inhuman parent, who, in a fit of rage, smote off her head with his sword. Among the witnesses of this cruel murder were a number of lunatics, who, by the fright they received, were instantly restored to reason, whereupon the bystanders cried out, 'A miracle!

a miracle!' and proclaimed throughout the adjacent country that God had indicated the purity and devotion of the Christian virgin by thus causing her death to be the means of restoring reason to the unfortunate.

"This happened in the seventh century, and so for twelve hundred years Gheel has been 'the City of the Simple,' and the people became expert in their peculiar methods of treatment. The place now numbers over 10,000 inhabitants, nearly 2000 being lunatics who have been sent from various parts of Europe to receive the benefits of the Gheelois system.

"Unlike the insane of other communities, the patients are not confined in asylums, but are lodged in families, where they have perfect freedom, and can hold constant intercourse with their kindly hosts. They come and go as they please, play with the children, of whom they are almost invariably fond, and, if they desire to do so, partake of the labors and share in the pleasures of the family.

"As a rule, each family takes but one patient, and herein is shown one of the benefits of their treatment. It is well known that monomaniacs are as sensible as the sane to the manias of others. To be continually in the presence of those others, therefore, is but to remind them that they are under restraint. 'I am really mad, then,' cries the despairing monomaniac confined in an asylum, 'or else they would not condemn me to live with these people.' And so his malady is aggravated and the chance of cure grows daily smaller.

"Patients on arrival are examined at the infirmary and studied for a few days by the physician there, so that they may be placed in charge of the *nourriciers* or families which are best capable of treating their cases. If they are of the class such as I found at the inn, they are placed in one of the houses in Gheel proper. The more violent are sent to the farmers on the outskirts, not alone for peace and safety's sake, but because the peasants prefer them to the quieter patients, on account of their greater capacity for work. Madmen in their periods of calm are most vigorous laborers, and by labor they are greatly benefited, being soothed and their paroxysms rendered less frequent.

"Strange to say, violence is exceedingly rare in this little colony, and morality is less outraged than in the more protected communities.

"Of the many stories told to illustrate the tact of the Gheelois in dealing with those under their charge, I may pick out the following: —

"One *nourricier*, a cobbler, was keeping a patient who continually threatened suicide. After studying his boarder for some time, he said to him: 'Look here, Yvon, you've talked of this so often that I am quite tired of the subject. I am persuaded that you are right, and that the best thing you can do is to try the window, since you are not satisfied with going out at the door.'

"'But I shall be killed!' exclaimed the lunatic, completely taken aback by the coolness of his host.

"'Oh, that is your lookout! See here, I'll help you as far as opening the window goes, but the rest you must do for yourself.' The cobbler rose and deliberately opened the lattice. 'Now, Yvon, I am going down to dinner, so I'll say good-by.'

"The lunatic looked at him a moment in surprise, and then calmly walked up and closed the lattice, remarking, 'To dinner, did you say? Well, I don't mind if I dine too; I can do this afterward.'

"Another case is told of a woman being threatened by her charge, who came at her brandishing a pair of scissors, intending to stab her. Holding up her child between herself and the madman, she made him retreat until finally he fell into a chair, whereupon the woman threw the child into his lap and rushed out of the room. The little one, thus roughly treated, began to scream, and, the thoughts of the maniac being drawn from himself, he forgot his purpose and was heard a moment later soothing and pacifying the crying infant. Of course the mother knew that her child was as safe with him as with a person in the full possession of his faculties.

"The proportion of cures effected under the simple treatment at Gheel is very large, and it is not strange, for the people, through inheritance and long practice, naturally possess those qualifications which enable them to soothe and strengthen the minds of those under their charge. And where cures are impossible, their method does much to improve the condition of the unfortunate. A young lady who had been confined for a year in a large asylum used to break up everything she could lay her hands upon, and the severest restraints had to be put upon her. At Gheel, free among the peasants, she breaks up only little bits of wood. Unable to overcome the powerful impulse that besets her, still she understands that she is in a family which deserves consideration, since, far from oppressing her, they allow her to obey her instinctive needs of active movement. The young lunatic does her hosts as little harm as she can, and this trait admirably exhibits the influence of Gheel, which mitigates when it cannot cure, and obtains better than any other system the state of passive innocence."

HOW RACHEL WAS CURED.

A TRUE STORY.

"A CASE of nervous prostration," said Rachel's physician. "You need complete rest. Shut yourself away for several hours each day, even from your family. Every noise that reaches your ear arouses the brain and helps the insomnia."

"I cannot be shut away!" cried Rachel; "not for half an hour without a tap on my door."

"Let them tap!"

Rachel replied, in a slow, weary way: "But my brain arouses to know the reason. There is no rest for the mother of six children. Lately baby sleeps in the daytime only; that gives me time to work, but —"

"Let your housekeeping go!"

"It is n't the housekeeping — I am beyond fretting over broken china dishes or accumulation of crusts — it is the children."

"Leave them with a relative," suggested the doctor, who was also an old friend. "Your mother and Ruth have leisure; it would be a pleasing occupation for them."

Rachel's pale cheek flushed. She spoke doubtfully: "Mother has brought up one family, and Ruth's nerves are delicate."

"Delicate fiddlesticks!" ejaculated the doctor. "You must have rest." Suddenly he shot a keen glance at Rachel and added: "You can take your choice, madam, between leaving your children for a season now, or keeping on in your suicidal course for a few months and giving them forever to some other woman to bring up."

He noted the effect of the alternative with grim satisfaction.

Rachel left the office without reply, feeling too nervous to speak. Sadly she crossed the home threshold, and received the greetings of her lively band. Like fair flowers they clustered about her, but unlike blossoms, they had voices, and now were all chattering at once. This was usually a sweet din to the mother's ears, but of late it had been torture. She found it difficult to answer the questions and settle disputes with womanly patience. It had been her ideal to be enveloped in a holy, Madonna-like calm; now she felt a strange desire to thrust her offspring from her with savage blows. It seemed to Rachel that this was the beginning of insanity. The doctor called it "nervous prostration."

Rachel's thoughts dwelt upon the problem of rest that night as she hushed the baby's cries that others might sleep. When that was done, she did not retire, but sat by the moonlit window, querying how she could enter upon the prescribed course. In the silence came a plan so sudden that it seemed heaven-born. It was then the early dawn. Rachel softly began her household tasks, and as soon as the rest of the world was awake, sent to ask her sister Ruth if she would keep house that day while she went to the city. Ruth came back with the little messenger.

"I feel dreadfully indolent," she said, "but I suppose I must do something for suffering humanity. Do n't buy the city out, sister."

Rachel did not reply, or disclose the fact that her shopping bag carried more than it would bring; a dainty lunch and a cup of milk in a flask. She kissed each little face so gravely that Ruth said, "One would think you were going on a mission!"

"So I am," replied Rachel, with a smile that verged on tears. She did not explain that it was a mission to her own self.

About eight o'clock Rachel entered a quiet city street, rang a doorbell, and asked to be shown to "Miss Clarke's room." Miss Clarke was just ready to go to her daily occupation, but stopped for a friendly greeting.

"Can you stay five minutes?" asked Rachel, sinking into the nearest chair.

"Ten, if you like, my dear woman!" said Miss Clarke, heartily. "But what does ail you? You are thin, and your hands shake. I wish I had the whole day to give you."

"This room would be the best gift just now," said Rachel, with a nervous laugh. "That is what I came in for."

She repeated the doctor's words, and unfolded her plan. It was to rest in Miss Clarke's room two days in the week, from nine to six. During these hours it was empty, as her friend lunched down town.

"Of course you are welcome," said Miss Clarke. Rachel also obtained her reluctant consent to sharing its rental. This amounted to twenty-five cents each day.

After Miss Clarke had gone, Rachel took a sponge bath, darkened the room, and went to bed as if for the night. There was no tap at the door, no baby's cry, nothing in the building for which she was responsible; she could surrender herself to rest. In less than an hour came sleep, that angel of healing, and the worn mother had forgotten care. Once she

roused enough to know that she was actually resting, and lay enjoying the delicious indolence till she slept again. The busy city hastened hither and thither; truck and carriage rolled through the street; in the basement dining-room people ate and went their ways; still Rachel lay in that sweet, health-giving, dreamless sleep.

Just before tea, Rachel appeared to her flock. There was a joyous rush for her arms, a renewal of the old sweet din. With gratitude Rachel noted that each voice was not a blow on bare nerves, that she could listen and respond with something of her own graciousness.

Twice each week for three months she went into her retreat and came back strengthened. She believes that she has discovered a cure for overtaxed mothers, one that costs little money, time, or disarrangement of household affairs. Renewed health makes the joys of wifehood and motherhood so keen, she rejoices daily that she was led to leave her little ones "for a season," and not to "give them forever to some other woman to bring up."— *Helen Pearson Barnard, in Congregationalist.*

"LOW SPIRITS."

"Low spirits" is a common excuse for a great deal of selfishness. It is certainly a matter of doubt whether any one has a right to be melancholy in a world so full of the graciousness and generosity of Providence, and it is a miserable piece of egotism to thrust one's low spirits upon others. Melancholia is undoubtedly a disease, but it is one of those diseases which are largely, if not wholly, under the control of the will, contradictory though the statement may seem. There are many diseases recognized by physicians as brought about purely by patients' allowing themselves to drift into morbid conditions of mind. Even dreaded scourges, like typhus fever and cholera, are known to be induced by morbid fear. Constantly brooding over some fancied wrong or imaginary slight, showing an exaggerated state of selfishness which is too often considered super-sensitiveness, will readily induce that condition of mind which we know as melancholy. The selfish idler is condemned by every one; but the one who wastes his time in the much more foolish manner, groaning and complaining until he becomes a chronic hypochondriac, often passes for a hard worker from the very excess of trouble he takes to find trouble. As a matter of fact, such people accomplish very little real work in the world. They are greater wasters of time than the most flippant idler of the world, because they take away from the nerve force and the life of others. Minus quantities, they represent much less than nothing, for they reduce the working power of all around them, enervating them by their continuous dole and plaint.

Strange as it may seem, a disposition to melancholy often appears in children, and if not discouraged, may develop into a fixed habit in later life. There is no better cure for such morbid tendencies than some method by which the individual can get outside of himself and forget for a time his own selfish interests and desires. Peevishness in a young child should be treated as a serious fault, yet in nine cases out of ten the fretful child is petted, and so rewarded for his fretfulness; and the fretful child makes the complaining melancholy man or woman. The best prescription for depression of spirits generally is work — work which is all-absorbing. The poor who drudge for a living seldom develop chronic diseases of the nerves and the mind, despite the greater hardships to which they are subjected. How often it happens that the woman of wealth who believes herself to be an invalid, and who is suddenly thrust into poverty, is able to meet the emergency, and forgets all the morbid tendencies in the necessity which calls forth her supreme strength.

A certain way of paralyzing our faculties is to allow them to waste with disuse. Employment keeps away the rust. It keeps the mind and heart alive to the interests of the day. It has been said that the reason why so many old men break down and become childish is because they abandon business, and thus lose much of their every-day interest in the world around them. It is no uncommon thing to-day for people who are quite advanced in life to take up courses of study and successfully pass through them. All such occupations serve to keep the interest alive in something besides mere selfishness, and do more to ward away the "fumes of dusky melancholy" than all the herbs in the old wife's pot on which our ancestors relied. There is far less tendency to brooding now in this active, work-a-day world than there was formerly when people had little to think upon but their pains and ills. The daily newspaper, the railroads and the telegraphs which bind the interests of the world together in a common brotherhood, give now, to even the most ignorant person, but little time for selfish brooding.— *From an English Paper.*

HEALTH A DUTY.—Perhaps nothing will so much hasten the time when body and mind will both be adequately cared for, as a diffusion of the belief that the preservation of health is a duty. Few seem conscious that there is such a thing as physical morality.

Men's habitual words and acts imply that they are at liberty to treat their bodies as they please. Disorder entailed by disobedience to nature's dictates they regard as grievances, not as the effects of a conduct more or less flagitious. Though the evil consequence inflicted on their descendants and on future generations, are often as great as those caused by crime, they do not think themselves in any degree criminal.

It is true that in the case of drunkenness the viciousness of a bodily transgression is recognized ; but none appear to infer that if this bodily transgression is vicious, so, too, is every bodily transgression. The fact is, all breaches of the law of health are physical sins.

When this is generally seen, then, and perhaps not till then, will the physical training of the young receive all the attention it deserves.—*Herbert Spencer.*

VEGETARIANS SUFFER NO THIRST.— Vegetarians suffer little from thirst. Marching under a burning sun, puddling before a blazing fire while their mates swill gallons of water or some more fiery cordial, our friends toil on, brisk, mettlesome, unwearied, and never thirsty. How is this? Are we made of other clay? By what spell are we set free from cravings which the world without hears as the voice of instinct, strong, imperious, inexorable? Our secret is an open one. We never provoke thirst by the sting either of nicotine or high-seasoned dishes and sauces. . . . Some among us, content with the juice of fruits and the water hidden in our soups, vegetables, and porridge, need no cup or glass. For myself, some thirty years ago I discovered that tea, as a separate meal, is a sheer thief of time. Dinner was then at 4 : 30 P. M., and I wanted nothing and took nothing between that and next morning's breakfast. I now, when at home in college, drink but once a day, at hall (now 7 : 15 P. M.), and that rather from habit than to slake thirst. My beverage is lemonade, for in my vegetarian days I have never put to my lips the fashionable hot draughts, coffee, tea, cocoa. I buy no drink whatever, except milk at railway stations, and that in the interest of temperance, and to encourage the dairy at the expense of the brewery.— *Prof. John E. B. Mayor, St. John's College, Cambridge, Eng.*

THE INEXORABLE FACTS OF HEREDITY.— "I have drunk whisky every day for thirty-five years," remarked a gentleman of sixty, rather proudly, "and I don't see but I have as good a constitution as the average man of my age ; I never was drunk in my life."

He was telling the truth, but to learn the whole truth you would have to study his children. The oldest, a young lady, had perfect health ; the second, a young man, was of a remarkably nervous and excitable temperament, as different from his phlegmatic father as possible ; the third, a young lady of seventeen, was epileptic and always had very poor health. Did the father's whisky drinking have anything to do with these facts?

The instance may be duplicated in almost every community. Think over the families of your acquaintance in which the father has long been a moderate drinker, and observe the facts as to the health of the children. The superintendent of a hospital for children at Berne, Switzerland, has found by careful observation, that only forty-five per cent of those whose parents used intoxicating liquors habitually had good constitutions, while eighty-two per cent of the children of temperate parents had sound bodies. Of the children of inebriates, only six per cent were healthy. Can any man "drink and take the consequences," or must his children take the consequences? — *Quarterly Journal of Inebriety.*

WHY SHE HAD A TIRED FEELING.— *Farmer* (to medical man)—"If you get out my way, doctor, any time, I wish you'd stop and see my wife. She says she ain't feeling well."

Physician—"What are some of her symptoms?"

Farmer—"I dunno. This morning after she had milked the cows and fed the pigs and got breakfast for the laborers and washed the dishes and built a fire under the copper in the wash-house and done a few odd jobs about the house, she complained of feeling tired-like. I should n't be surprised if her blood was out of order. I fancy she needs a dose of medicine."— *Truth.*

A HARD PRESCRIPTION.—"You must let the baby have one cow's milk to drink every day," said the doctor.

"Very well, if you say so, doctor," said the perplexed young mother, "but I really do n't see how he is going to hold it all."—*Indianapolis Journal.*

HOW NOT TO BE FAT.

BY J. H. KELLOGG, M. D.

Address delivered at the Bay View Assembly, July 28, 1893.

THE American people may be divided into two classes, the too-fat and the too-thin. I think the too-thin predominate; for the typical American is usually pictured, like Cassius, with "a lean and hungry look." Nevertheless, the too-fat type is coming to be sufficiently frequent to make the question, "How not to be fat," one of considerable interest to Americans, as well as to other civilized peoples.

Obesity is a disease of sedentary life. Among nomadic tribes and savages, I may say, among wild

FIG. 1. Connective Tissue, showing spaces produced by drawing the fibers apart.

men and wild beasts, obesity does not exist. It exists only among civilized and half-civilized people and domestic animals. Domestic animals, such as cattle, sheep, and hogs, are obese because those who rear animals for domestic purposes, cultivate obesity in them. I shall show you that civilized people are cultivating obesity by the same methods which the stock raiser employs to secure obesity in the ox or the pig that he is preparing for market. It is a very curious fact that a condition which is considered so undesirable in a human being,—a condition of disease through excessive accumulation of adipose tissue—should be considered so extremely desirable for an animal that is to be consumed for food. Nevertheless, I will not discuss this question at the present time. The question before us now is, how to prevent and cure the disease obesity in human beings.

First, who is an obese person?—A person who weighs 40 or 50 pounds more than he ought to weigh is obese. People sometimes weigh much more than that in excess of their normal weight. I have known people who weighed two or three times as much as they ought to weigh. The fat boy or girl in the dime museum offers a splendid example of human obesity. Persons have been exhibited who weighed nearly a third of a ton. Such enormous obesity is certainly very rare; but it is noticeable that obesity is coming to be more and more common. It is a growing disease among civilized people.

Before we can understand what obesity is, we must have a clear idea of what the normal fat-making process is. What is fat, or adipose tissue? I show you here upon the chart (Fig. 1) a representation of what is termed connective tissue. It is a loose network of fibers, which serves as a frame-work to hold and bind the whole body together. The gland and nerve cells, and the muscle and nerve fibers are suspended in a network of this tissue. A mesh-work of connective tissue is found beneath the skin. That is the reason why the skin is movable. It is for this reason that it is possible for us to vary in weight.

These connective tissue spaces may be filled with air, or they may be filled with water. Many years ago some traveling gypsies were arrested in England for cruelty to children. They produced a monstrosity upon the head of a small boy by putting a pipe stem under his scalp and then blowing it up, giving the child's head the appearance of a case of enormous hydrocephalus. When this connective tissue is filled with water, the individual has dropsy. These connective tissue spaces may also be filled with fat. Here is a representation of such tissue, called adipose tissue. (Fig. 2.) It is simply connective tissue spaces filled with fat globules, or cells. Now when the connective tissue spaces are well filled with fat, a person is in "good condition," as we say of an animal when naturally fat. The amount of this accumulation of fat is variable. It may almost entirely disappear upon the body, as in cases of great emaciation from starvation or other causes; or it may increase until it constitutes more than half the entire bulk and weight of the body.

What is the origin of fat? Fat is derived from our food. There are, in our foods, three elements which make fat; starch, sugar, and fat itself — the fat of other animals or fat from vegetable sources. Let us notice for a moment something with reference to the processes of nutrition which are concerned in the fat-making function of the body. In the process of digestion, starch is converted into sugar by the action of saliva, the pancreatic juice, and the intestinal juice. Cane sugar is also digested into another kind of sugar. This sugar is carried by the blood to the liver, and by the liver converted back into a form of starch, called liver starch, or glycogen. This glycogen is afterward re-digested and doled out to the body in small morsels of sugar. The fat of our food is not changed at all; it is simply emulsified, or reduced to very fine drops, and is then absorbed, and carried by the thoracic duct to the left subclavian vein, where it reaches the blood. By some curious transformation — we do n't know just how it is — the glycogen and sugar are also converted into fat. It has been noticed that the negroes in Jamaica and in the South, in the sugar-making season, always become fat; they drink a great amount of sap, and eat quantities of sugar, and thus become very fat. It is found that bees make wax, a kind of fat, from the sugar upon which they feed. It is known by these and other observations that sugar is actually converted into fat.

Now these food elements — starch, sugar, and fat — are also used for heat and force production. Starch, sugar, and fat, when burned, are capable of giving off heat, and when these substances pass through the vital processes of the body, they undergo oxidation, or burning, and heat is given off the same as though these same substances had been burned outside of the body, and just the same amount of heat is produced by the assimilation and oxidation of these food substances as though they had been burned in a furnace or in a stove. This is the great source of heat in the body. The living body maintains its temperature at about 100° F. The temperature of the surrounding air may not be more than 60°, or it may be zero, or 40° below zero, but the body has the power to heat itself; it is a furnace in which the fat of the tissues takes the place of fuel. The breath which escapes from the lungs corresponds to the smoke from the furnace. The air taken into the lungs in breathing furnishes the draft. The residual waste matter which is carried away through the liver, kidneys, skin, and other

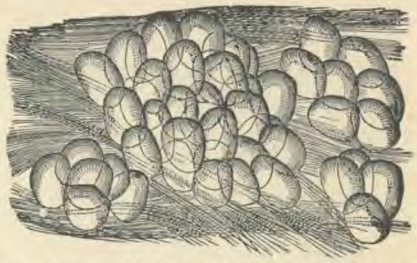

FIG. 2. Adipose Tissue, showing fat cells deposited in the connective-tissue spaces.

organs, represents the ashes left behind in the consumption of fuel.

These food substances are useful for another purpose. To illustrate: The fuel which is put into the furnace of the locomotive furnishes the force by which the locomotive is able to run. The heat converts some of the water into steam, and the steam generates energy by which the locomotive draws the train of cars. In the same way is force produced from heat in our bodies. The vital changes which take place in these food substances in our body, produce heat, and it is by this means that we move our muscles. The body derives all its force from the food substances which we take into it.

We find three uses for the fatty tissues of the body: —

1. To act as a cushion for certain delicate organs, the eye for example, and to round out the figure.

2. To serve as a nonconductor, or overcoat. When cold weather approaches, the autumn fruits are ripened by the frost. Some of you know the unpleasant qualities of a green persimmon. As soon as the frost comes, this green persimmon becomes palatable; its starch is changed to sugar; it is

ripened by the frost. These fruits give us a large supply of fat-making food by means of which nature makes us an overcoat for winter. A fat animal resists cold much better than a thin animal, for the reason that it has a thick layer of adipose tissue to prevent the escape of heat from the body.

3. The third and most important of all the uses of fat tissue, is its service as a reservoir of material to supply heat and force to the body. It supplies the place of a tender to a locomotive, if you please; it is the coal-bin of the body. It is a means by which the starch and sugar and fat of our food may be stored up to be converted into heat and force at some subsequent time. If a man were going to prepare himself for a long fast, it would be a good thing for him to accumulate fat for a time, because a large amount of adipose tissue would furnish a reserve of heat and force to supply life in the absence of food. And so fat constitutes what may be called reserve tissue. The muscular tissue is a living tissue, a force-producing tissue. Nerve tissue is a force-producing and force-conducting tissue, but adipose tissue is simply an inert reserve tissue. It takes no active part in the functions of the body. It is passive, like the bones, which serve as levers with which our bodies are moved by the muscles. It does not act, it is acted upon; it is consumed as fuel. An accumulation of fat is not a gain in living tissue as is a growth of the muscles; it is simply an accumulation of reserve tissue. We do not use up to-day all the force producing material taken into the body; we store some of it up as fat to be used at some future time.

Before proceeding further, let us consider how it is that a person gets over-fat. You see that in order for the ordinary weight to be maintained, the food must be properly adapted to the needs of the body; that is, a person must eat each day just enough to replace the material which has been used up in the course of the previous day. Suppose one eats more than that, suppose he consumes more food than he needs to produce heat and work; what will be the result? — There will be an increase of reserve tissue, or fat. If a locomotive takes on a certain amount of coal at the first station, and then at the next station takes on more coal than has been used since leaving the first station, and then at the next station takes on still more coal than has been used since leaving the last station, and so on from station to station, it is apparent that there will be an accumulation in the tender. The locomotive tender will be filled up; it will soon be heaped up and running over. The same principle applies to our bodies; if we eat more food than we require for heat and force production, there will be an increase in reserve tissue; in other words, we will become obese.

(To be continued.)

THE BICYCLE AS A PHYSICIAN. — As an exercise, cycling is superior to most, if not all others, at ready command. It takes its followers into the out-door air; is entirely under control; can be made as gentle or as vigorous as one desires; is active and not passive; takes the rider out of himself and the thoughts and cares of his daily work; develops his will, his attention, courage, and independence, and makes pleasant what is otherwise often most irksome; moreover, the exercise is well and equally distributed over almost the whole body; and when all the muscles are exercised, no muscle is likely to be over-exercised. This general muscular exercise also has its direct effect upon the other and vital organs of the body, especially the heart, lungs, and digestive organs; and the improvement in general health and digestion, after a few weeks' riding, is far from fleeting. In writing of such exercise, Dr. Egbert asserts:—

"We all know that the trouble with many of our patients is purely functional, and that their maladies have been brought on by lack of pure air, too little exercise, and too much mental worry over their work or business. For these the bicycle furnishes an agreeable remedy. Take a case of nervous or anæmic dyspepsia, of hepatic or intestinal torpor. The increase in the flow of the bood current, the gentle vibration, and the additional elimination of waste matters through lungs and skin,—all results of a ride on the wheel,— are just what we desire for the cure of our patient. Or with one of a tuberculous diathesis, or with incipient phthisis, how much depends upon teaching him to breathe properly, *i.e.*, fully and deeply, and to spend much of his time in the open air. This the bicycle will do for him, perforce."

Practical observation shows that those of rheumatic tendencies, especially, will find that regular and systematic riding will do much to keep the disease in abeyance, and even occasionally to act as a cure. Dr. W. G. Stables, formerly a prominent medical officer in the Royal Navy, says: "My rheumatism used to come on periodically, and last for six weeks at a time, during which I could hardly stand on the floor, nor sleep in bed without feet and

legs elevated. Since I adopted cycling as an exercise, and thus found pleasant means to keep my skin in working order, I have never had a single twinge of rheumatism. Cycling has banished my pains and lightened my mind, and made me, physically and mentally, double the individual I was."

A peculiar side of the utility of the bicycle is the fact that it is of great benefit to women. It gets them out of doors, gives them a form of exercise adapted to their needs, neither too violent nor too passive, and one very pleasant withal, that they may enjoy in company with others or alone, and one that goes to the root of their nervous troubles; for these do not, for the most part, have their primal origin in woman's peculiar anatomy and physiology. Cycling sends the blood vigorously circulating in the lower limbs. Moreover, it brings oceans of fresh, open air to the lungs. — (London) *Good Health.*

Heart Disease and Athletics. — In the *Medical Week* an article by Dr. Collier calls attention to the fact that long-continued severe muscular exercise, while it may not produce immediate heart disease, will gradually produce hypertrophy, which, when the individual comes to mature age, forty or so, will be not only troublesome, but probably productive of some serious difficulty. The article is a warning, simply, since no cases are instanced in which such results can be traced to athletics; but he predicts that long-continued indulgence in bicycle racing, for instance, and more particularly long-distance racing, will be followed by the evils which he describes. — *Physical Training.*

Physical Culture for Children. — A late correspondent of the *Union Signal* writes as follows: —

"I would begin when a child was two years old and teach her to stand poised from the hips and slightly forward, chest up, abdomen contracted, toes turned out at an angle of sixty degrees, and neck erect, so that the collar-bone should be horizontal. You can teach a little child to know whether she is standing properly or not by having her occasionally walk up against a door. She should touch it with her lips, chin, chest, and toes. A plumb-line from the shoulders should pass through the hip and ankle joints. Then I would teach her to breathe slowly, inflating the chest upward and outward, not downward, keeping the abdomen contracted. This gives a wonderful feeling of buoyancy. As she grew older she should not take above ten breaths a minute, but they should be full, vigorous ones. Good breathing and good standing are almost enough of themselves to give good health and good figure. In walking I would show her how to keep her face and chest well over the advanced foot, and to lift the body by the muscles and the inflation of the lungs, I would see to it that she turned her toes well out. Seventy-five women out of every one hundred walk with the feet straight or toe in. This increases the tendency to an inward turn of the knees, and encourages a pelvic contraction. The weight should rest on the balls of the feet, and the ball and heel should touch the floor at the same time. In her school days I would take pains to have her sit at her desk properly.

The Lame Wheel. — A Parson's Experience.

Mr. Johnson—"Good morning, parson. I see that you have struck the modern craze, and are learning to ride a wheel."

Parson Limberup—"Dat's so, sah, Mr. Johns'n."

Mr. J.—"How do you like it?"

Parson L.—"Well, sah, ter tell yer de trufe, I hain't akomplesh no experdishun yit. I t'ink dat ef I war a runnin' er mile wid er lame mule, I wouldn't show up at de finish, excep' de mule gimme a mile handicap."

Mr. J.—"What appears to be the matter?"

Parson L.—"It's all der machine, sah, I t'ink. Dey tells me she'm what dey calls a 'rheumatic,' an' I 'clar to goodness ef I don't b'lieb she am. Her jints wo'k like she'm full o' kinks, an' she limps diserway an' daterway, till I mos' feel like she am got de blin' staggers. I done hed der rheumatiz mese'f, but I don't t'ink I eber ziggerzagger 'long der street ter de extent dis yer wheel do."—*Boston Courier.*

Not a Favorable Occasion. — *Missionary* — "I have come, my benighted brother, to lead your people to a better life."

Native—"Got no time now. King taking amateur photographs, queen trying on crinoline, and people all learning to ride bicycles. Better try the next village."— *Puck.*

Nero's studies in breathing were classed in the list of his crimes. One of the charges brought against Marie Antoinette by her husband's relatives was that she spoke distinctly and in an audible tone, like an actress. — *Sel.*

The short, loose dress used for the gymnasium, worn even for an hour, would give some women a new idea of liberty, and would dispel many mistaken notions of helplessness. — *Sel.*

INFLUENCE OF HEREDITY ON CHILDREN.

A lecture delivered by Dr. Mary Wood Allen before the Mothers' Meeting of the W. C. T. U. in the Sanitarium, July 25, 1893.

IT is certainly an evidence of increasing appreciation of mothers in the world that such meetings as this are being held. Napoleon once said that the greatest need of France was mothers. The great need of the world *is* mothers, not merely physical mothers, but spiritual and intellectual mothers. There are a great many who are physical mothers,— that is, they bring children into the world, but they are not spiritual and intellectual mothers. On the other hand, there are a great many single women who are leading the thought of the proper training of children, and are really grand intellectual and spiritual mothers. Single women, sitting apart from the worries and cares of maternity, have a better chance to judge of the needs of childhood, and more time to study vexed problems concerning child training, than many mothers.

Every true woman has within her breast the maternal instinct. There are always the helpless and sick who call upon us for motherly care, so none need say there is nothing to do. A good many who are excellent mothers of little children, fail when it comes to training those of older growth. We think when our children are little that we will keep them always with us, but by and by they slip away from us. Sometimes we are so anxious to get them out of the way that we hurry them off to school; so anxious about clothing for their little bodies that we forget to provide for their moral and intellectual needs; forget the higher forms of motherhood which recognize the body as the temple of the Holy Ghost.

O friends, remember that these little ones may slip from us into the grave, or if not, we may lose them as they grow up to manhood and womanhood. Our little boy is soon a bright, active, stirring young man, facing life with all its problems, and our beautiful baby girl is budding into young womanhood, with all its hopes and joys. Once these babies in our arms were so close to us that we fondly thought that nothing could ever separate us; but something has come between, and we may well ask the reason why the bond of confidence has been broken. Is it not strange that we could have let these little ones slip away from us, and we not know what they are learning and how they are learning it? Our little boy goes to school, and he finds many strange teachers. He learns things we have tried to keep from him, and he learns to keep secrets. He does not come now to his mother, and lay his whole heart before her as in babyhood,— then there was no embarrassment between mother and child, and he came to you fearlessly with everything.

Be wise, mothers, and when your little boy comes to you with a tale that makes your blood run cold, do not say to him, "Hush, don't let me hear anything about that from you," because this will make him imagine that there are subjects which should be tabooed between his mother and himself, and he will henceforth keep such matters from you. O, if the mother could only see that this is her opportunity for drawing her child into closer relations with herself, by strengthening to this bond of sympathy!

I was at one time speaking on the subject of purity, and the necessity of mothers' talking with their children. A mother in the audience felt that she had not done her duty by her boy. She was a farmer's wife, and upon her return home found him laid up by an injury to his foot. Here was her opportunity, and so laying aside her usual task, she spent the whole day in talking with him, and they came nearer to each other than they had been before since he was a little child. Both wept, and the boy said, "Mother, if all mothers talked in this way to their boys, not so many of them would go wrong."

The way, then, for mothers to do is to keep hold of the little boy and not let him go away from them.

Some may ask, How would you train a child who had received wrong tendencies from heredity? I would answer: In dealing with a child stamped with a bad heredity, physical or moral, I think it is an excellent plan to talk with the child plainly and candidly concerning the trait, and thus secure his co-operation with your efforts to eradicate it. And the motive can be brought to bear, of change or reform for the sake of his own possible children. If a child has a tendency to consumption, we should give particular care to cultivation of the lung capacity; if he has a tendency toward alcoholism, he must be taught to know that this form of evil cannot be tampered with. Fenelon was the son of a drunken horse jockey, but by the cultivation of his higher moral qualities, he became the spiritual man we know.

We want to be able to instruct our children in the matter of heredity, so that they may be able to choose wisely their future companions. One half of the heredity of our children we cannot control, but the other half we can. Our own ancestry, good or bad, is a fixed fact, but we can choose wisely the other half of the line. I know a beautiful woman who married a man who was dissolute, and their little boy at an early age began to show the characteristics of the father. Some one remarked to me, "You don't blame the mother of the child for his showing these traits, do you?" "Yes," I replied, "because she deliberately chose this man to be the father of her children." I knew another case, where a young man became infatuated with a beautiful girl who was the daughter of a criminal, and whose ancestry included the imbecile. The girl told her lover of these things, and he gallantly responded, "Henceforth, the faults of the Reinsfords are dear to me." This sounded very gallant and generous, but how would the matter appear if his sons proved to be criminals or imbeciles because he had chosen to marry a pretty girl with a bad ancestry?

It is time that we, as mothers, took these things in our hands, and taught them to our children. If there are in our ancestry, crime, or serious mental or physical defects, it is time that we learned to forego the pleasures of wedded life for the sake of our possible children. It is time that we stopped multiplying the insane, the drunkards, or the criminals.

While we hold very firmly to the idea that absolute chastity is possible for women, we hold almost as strongly that it is possible for men. Shall we believe that the Lord is not true to himself, for he has nowhere set up a double standard of morals as between men and women? — No; God has not been unjust, and made a necessity for the one sex that means death of soul and body to numbers of the other sex. Absolute chastity is just as possible and desirable in men as in women. And this we should teach to our sons. We should teach our children that self-control is as possible in marriage as out of it, and then we shall have brought them up to an appreciation of the most noble idea of marriage as a companionship.

All manner of jesting about love, marriage, and flirtation does children and young people an incalculable harm. If we only spoke of marriage in the dignified and sacred manner which truly belongs to it, we should find our young people would have high respect for it, and this would influence them in all their conversation and thought regarding it.

ARTIFICIAL ivory is now manufactured out of condensed skim milk.

Robert — "Mamma, my stomach says it is dinner time."

Mamma — "You better go and see what time it is."

Robert (after an inspection of the clock) — "Well, mamma, my stomach 's three minutes fast."— *Grand Traverse Herald.*

DANGERS OF EATING FRESH BREAD. — M. Boussingault has made a fresh loaf of bread the subject of minute investigation, and the results are interesting. New bread, in its smallest parts, is so soft, clammy, flexible, and glutinous, that by mastication it is with great difficulty separated and reduced to smaller parts, and is less under the influence of the saliva and gastric juices. It consequently forms itself into hard balls by careless and hasty mastication and deglutition, becomes coated over with saliva and slime, and in this state enters the stomach. The gastric juice being unable to penetrate such hard masses, and being scarcely able even to act upon the surface of them, they frequently remain in the stomach unchanged, and, like foreign bodies, irritate and incommode it, inducing every species of suffering, — oppression of the stomach, pain in the chest, disturbed circulation of the blood, congestion and pain in the head, irritation of the brain, and inflammation, apoplectic attacks, cramp, and delirium. — (*London*) *Good Health.*

SLOYD WITHIN A CIRCLE.— NO. 10.

BY MRS. M. F. STEARNS.

THE world is full of people who want more than their money's worth — in reality they are dishonest, though they would be horror-struck with the thought of taking even a penny that did not belong to them.

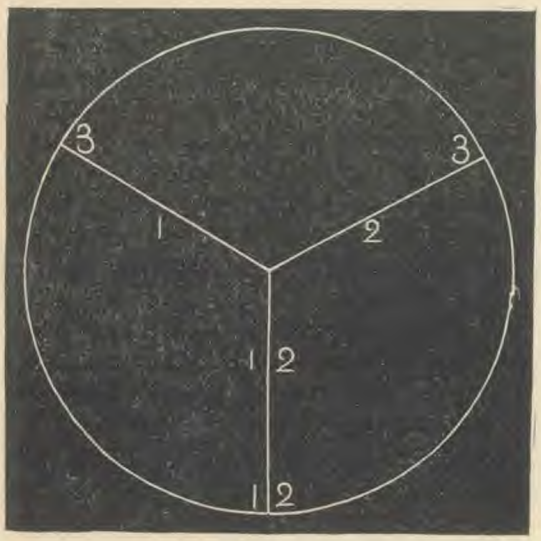

FIG. 27. WORKING DRAWING. MODEL NO 12.

Yet, if we consider honesty as truthfulness applied to ownership, an exchange of true values and profits, in our insatiable desire for "good bargains," do we not transgress the line of truthful dealing? Does not the very idea of a bargain and its fascination lie in the fact of our receiving more than we give? We often hear expressions similar to this, "I got a splendid bargain to-day down at the slaughter sale — this beautiful piece of dress goods at only half price, and these lovely hand-embroidered handkerchiefs at cost."

FIG. 28. TRIPLE-POCKET LAMP-LIGHTER CASE. COMPLETED.

Now these successful bargainers seldom stop to consider that everything must have a true value, and if they do not pay for it, somebody else does. They may be very sure that when there is a "slaughter sale," somebody is "slaughtered." It will not be the purchaser, that is sure, and it is equally certain that it will not be the seller. The probabilities are that the store which offers the regular attractions of "slaughter sales" does the slaughtering on the shop-girls' salaries, paying them less than living wages. So *they* pay for the good bargains *we* get. How? Ask them! All of us know who pays for our cheap ready-made clothing, and O that we might remember, in Hood's words, that —

FIG. 29. WORKING DRAWING. MODEL. NO. 13.

"It is not *linen* you are wearing out,
But human creatures' *lives*."

But what has all this to do with Sloyd, or Sloyd with this? A great deal, if it is rightly taught. The little Sloyder learns that he must give so much time and so much effort to get a good result — his pay; and that a good thing cannot be made without a certain amount of material, time, and labor going into it.

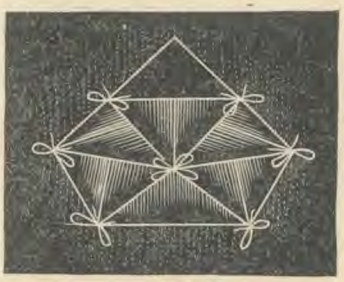

FIG. 30. BUTTON HOLDER COMPLETED.

He has to pay for a perfect model, hard, earnest work, and he cannot get it in any other way; and after the satisfaction of earning it, he will not want to. After forming the habit of working for what he has, he will disdain all these so-called "easy" ways of making money, which, though they may be legally correct are morally corrupt. He will never develop into

one of those human harpies — the real estate agent — who spends his time looking up forced sales, his prey very likely being some hard-working farmer, brought by misfortune or the greed of grain monopolies to make a cheap sale, — a fine opening for our real estate agent — just what he wants. So it is swallowed up with hundreds of other hard-earned homes, and he who can afford to wait a profitable sale, reaps the harvest of another's hard work. So these human harpies feed and fatten off of others' misfortunes.

Nor do we suppose that the small boy whose Sloyd bench-mate is a girl, will ever make a man who will underrate women's labor. Very likely his little bench-mate excels him in precision and care; her work yields her better results than his yields him. Why in after years, when grown, should a difference be made in money?

If a value given does not bring an equal return, somebody is dishonest. When a man and a woman do the same work equally well, and he receives for his more than she does for hers, either she is cheated out of what belongs to her, or he gets more than he earns.

Let the children have the principles of true values taught them in this work, and there will be fewer to —

> "Sing the song of the shirt,
> In poverty, hunger, and dirt."

To make Model No. 12, divide the twelve-inch circle into three equal parts, cut as indicated in diagram, bend edges 1 and 2 to corresponding lines, then bend on opposite side to points 3 and 3. 1, 2, 3, will then form the center of a triple cornucopia. Tie here with bow and long loop, and a pretty triple pocket for lamp-lighters is the result — very convenient to hang from a chandelier or in some corner.

Model No. 13 is designed for a little table catchall. We have the same circle divided into six equal parts, and then sub-divided into small equilateral triangles, as shown in the cut. Cut out the crossed portions, and fold or crease on the lines marked F. Tie the points marked with the odd numbers to the dotted center, and the points marked with the same numbers to each other. This, completed, makes a basket with six triangular pockets, suitable for holding an assortment of buttons.

DRESS REFORM.

WHEN I see women stay indoors the entire forenoon because their morning dresses trail the ground, and indoors all the afternoon because there comes a shower, and the walking-dress would soak and drabble; when I see the "working woman" standing at the counter or at the teacher's desk from day to day, in the drenched boots and damp stockings which her muddy skirts, flapping from side to side, have compelled her to endure; when I see her, a few weeks thereafter, going to Dr. Clark for treatment, as a consequence; when I find, after the most patient experiment, that, in spite of stout rubbers, waterproof gaiters, and dress-skirt three or four inches from the ground, an "out-of-door" girl is compelled to a general change of clothing each individual time that she returns from her daily walks in the summer rain; when I see a woman climbing upstairs with her baby in one arm, and its bowl of bread and milk in the other, and see her tripping on her dress at every stair (if, indeed, baby, bowl, bread, milk, and mother do not go down in universal chaos, it is only from the efforts of long skill and experience on the part of the mother in performing that acrobatic feat); when physicians tell me what fearful jars and strains these sudden jerks of the body from stumbling on the dress hem impose on a woman's intricate organism, and how much less injurious to her a direct fall would be than this start and rebound of nerve and muscle, and how the strongest man would suffer from such accidents; when they further assure me of the amount of calculable injury wrought upon our sex by the weight of the skirting brought upon the hips, and by thus making the seat of all the vital energies the pivot of motion and center of endurance; when I see women's skirts, the shortest of them, lying (when they sit down) inches deep along the foul floors, which man, in delicate appreciation of our concessions to his fancy in such respects, has inundated with tobacco juice, and from which she sweeps up and carries to her home the germs of stealthy pestilences; when I see a ruddy, romping school-girl, in her first long dress, beginning to avoid coasting on her double-runner, or afraid of the stone walls in the blueberry fields, or standing aloof from the game of ball, or turning sadly away from the ladder which her brother is climbing to the cherry-tree, or begging him to assist her over the gunwhale of a boat; when I read of the sinking of steamers at sea, with nearly all the women and children on board, and the accompanying comments: "Every effort was made to assist the women up the masts and out of danger till help

arrived, but they could not climb, and we were forced to leave them to their fate ;" or when I hear the wail with which a million lips take up the light words of a loafer on the Portland Wharf, when the survivors of the Atlantic filed past him, "Not a woman among them all ; my God !"— when I consider these things, I feel that I have ceased to deal with blunders in dress, and have entered the category of crimes.— *Elizabeth Stuart Phelps, in the Arena.*

FIVE YEARS OLD.

HAVE you seen my baby fair
Anywhere?
Golden curls, and sweet blue eyes,—
Cupid laughing in disguise,—
But yester eve I crooned to him my first
Low lullaby.

Have you seen my baby boy?
There 's his toy,
As he dropped it in his play,
Dancing off another way,
As bird, or flower, or butterfly
Led him to stray.

Say you he will yet return
Not again?—
The bud must to the flower unfold,
Amid time's changes manifold.

To-day my boy, a babe but yesterday,
Is five years old.

Yet I know that God's dear will
To fulfill,
Baby must become a man,
Learn the world's joy and its pain,
Learn its losses and its gain,
And choose between.

Brave enough to right the wrong.
True and strong,
Day by day my boy must grow,
Since best love knoweth it is better so,
I cannot wish him longer to remain
A baby boy.

— *Good Housekeeping.*

BLACKING STOVES.— Every good housekeeper dislikes to see a grimy stove, yet often dreads equally the grimy hand acquired in the process of blacking. A pair of thick gloves, is, of course, a necessary part of the outfit of any woman who does kitchen work, and yet desires, as she should, to keep her hands dainty. As a rule, far too much blacking is used on stoves. If too much blacking is used, it will not be rubbed into the surface of the stove as it should be, but remain as a fine dust to be afterward blown about and cause a general grimy appearence, so often seen in uncared-for kitchens. A fresh coat of black should not be applied oftener than once a month, when the flues should also be cleaned out and the interior of the stove thoroughly brushed out. Before putting on new blacking, the old blacking should be washed off. The new coat must now be applied and the stove thoroughly polished. The edges of the stove, if they are of polished iron, should not be blacked, but cleaned like a steel knif with brickdust. The nickel knobs and other nickel parts of the stove must be rubbed bright with a chamois skin or old shrunken flannel. An ordinary paint and whiting brush is one of the best things with which to apply blacking to a stove. A stiff brush, such as is used for this purpose is the best brush for polishing. During the month, polish the stove with the polishing-brush each morning just after kindling the fire. Keep an old cloth always on hand in cooking, to rub off any grease spot as soon as it occurs. If the spots are obstinate, a few drops of kerosene oil put on the stove-cloth will remove them. The ground edges and nickel-work of the stove should be rubbed off at least once a week, besides the monthly cleaning when the stove is blacked. — *Health.*

THE SIN OF FRETTING.— There is one sin which it seems to me is everywhere, and by everybody is underestimated and quite too much overlooked in valuations of character. It is the sin of fretting. It is as common as air, as speech ; so common that unless it rises above its usual monotone, we do not even observe it. Watch any ordinary coming together of people, and we see how many minutes it will be before somebody frets — that is, makes more or less complaining statement of something or other, which most probably every one in the room, or the car, or on the street corner, knew before, and which most probably nobody can help. Why say anything about it? It is cold, it is hot, it is wet, it is dry ; somebody has broken an appointment, ill-cooked a meal ; stupidity or bad faith somewhere has resulted in discomfort. There are plenty of things to fret about. It is simply astonishing how much annoyance and discomfort may be found in the course of every day's living, even at the simplest, if one only keeps a sharp eye out on that side of things. Even Holy Writ says we are born to trouble as sparks fly upward. But even to the sparks flying upward, in the blackest of smoke, there is a blue sky above, and the less time they waste on the road the sooner they will reach it. Fretting is all time wasted on the road. — *Helen Hunt.*

A SINGLE STITCH.

One stitch dropped as the weaver drove
His nimble shuttle to and fro,
In and out, beneath, above,
Till the pattern seemed to bud and grow
As if the fairies had helping been —
One small stitch which could scarce be seen ;
But the one stitch dropped pulled the next stitch out,
And a weak spot grew in the fabric stout ;
And the perfect pattern was marred for aye
By the one small stitch that was dropped that day.

One small life in God's great plan,
How futile it seems as the ages roll,
Do what it may, or strive how it can,
To alter the sweep of the infinite whole !
A single stitch in an endless web,
A drop in the ocean's flow and ebb !
But the pattern is rent where the stitch is lost,
Or marred where the tangled threads have crossed ;
And each life that fails of its true intent
Mars the perfect plan that its Master meant.

—*Susan Coolidge.*

A Good Substitute for Leather. — The question of securing an adequate substitute for leather, is one which has long been agitated in ultra vegetarian circles. Leather has for many years ranked as the most effectual protective covering for the foot, although not without its defects, for only the most supple and yielding qualities can be worn by persons having delicate or abnormally sensitive feet. Besides this, being non-porous, a leather boot or shoe is always unventilated, and so to a certain extent, an unwholesome covering for the foot. Leather has long held sway chiefly because it was measurably waterproof, durable, and of moderate cost. The London *Lancet* says that the favorable qualities which have served to make leather popular, are combined in a satisfactory degree in a new material, called "flexus fibra," and adds : —

"It appears to be a flax-derived material, suitably prepared and oiled, so that to all appearance it is leather. It is particularly supple and flexible, and takes a polish equally well with the best kinds of calf.

"We have recently had occasion to wear a boot of which the 'vamp' or cut front section consists entirely of flexus fibra, and have purposely submitted it to somewhat undue strain, in spite of which no cracking of the material was perceived, while the sense of comfort to the foot was very evident. Flexus fibra, being a material of vegetable origin, is calculated also to facilitate free ventilation and thereby to obviate the discomfort arising from what is called 'drawing' the feet." H. L. M.

SEASONABLE RECIPES.

Vegetable Soup. — Simmer together slowly for three or four hours, in five quarts of water, a quart of split peas, a slice of carrot, a slice of white turnip, one cup of canned tomatoes, and two stalks of celery cut into small bits. When done, rub through a colander, add milk to make of proper consistency, reheat, season with salt and cream, and serve.

One-crust Peach Pie. — Pare and remove the stones from ripe, nice flavored peaches ; stew till soft in the smallest quantity of water possible without burning. Rub through a colander, or beat smooth with a large spoon. Add sugar as required. Bake with one crust. If the peach sauce is evaporated until quite dry, it is very nice baked in a granola crust. When done, meringue with the whites of two eggs whipped stiff with two tablespoonfuls of sugar. The flavor is improved by adding by degrees to the egg while whipping, a tablespoonful of lemon juice. Return to the oven and brown lightly. Serve cold.

Squash Pie without Eggs. — Bake the squash in the shell ; when done, remove with a spoon and mash through a colander. For one pie, take eight tablespoonfuls of the squash, half a cup of sugar, and one and one third cups of boiling milk. Pour the milk slowly over the squash, beating rapidly meanwhile, to make the mixture light. Bake in one crust.

Baked Pears. — Peel ripe pears ; cut in halves, and pack in layers in a stoneware jar. Strew a little sugar over each layer, and add a small cupful of water, to prevent burning. Cover tightly, and bake three or four hours in a well-heated oven. Let them get very cold, and serve with sweet cream.

Baked Peaches. — Peaches which are ripe, but too hard for eating, are nice baked. Pare, remove the stone, and place in loose layers in a shallow, earthen pudding dish with a little water. Sprinkle each layer lightly with sugar, cover, and bake.

GOOD HEALTH
J. H. KELLOGG, M. D., EDITOR.
BATTLE CREEK, MICHIGAN.

NEW INTOXICANTS.

THE alcohol habit, which has become so prevalent in civilized countries, and which has blighted almost every nation of savage or primitive people that has been brought in contact with civilization, is by no means the only poison habit against which the medical profession should earnestly raise its voice. New forms of intoxication are constantly arising. Every new drug capable of producing an artificial felicity is quickly seized upon and made the means of a new poison habit. This is not the effect of a natural and physiological craving in the human constitution, but of an unnatural and artificial appetite which is, in large part, the result of the artificial conditions of life which prevail among civilized people. Through habit and heredity, the use of one nerve-tickling or obtunding drug creates a demand for another, and so the evil grows. A recent number of the *Medico*, a French periodical, gives an account of a new form of intoxication which is becoming fashionable among the ladies of Paris. This new mode of dissipation consists in the inhalation of the fumes of naphtha. The intoxication produced by this drug is similar to that induced by ether drinking, as it appears in Ireland and Russia. Its effects, however, continue for a much longer period, and are said to be very much more injurious. The French authority asserts that Parisian ladies are not responsible, however, for the invention of this new mode of intoxication, but that it was introduced into Paris by American ladies (?) who had long practiced it at their homes in America.

America must be held responsible for the invention of several new modes of intoxication. Ether intoxication was practiced in the South long before the drug was used as an anæsthetic in surgery. The writer once received from an eye-witness a very graphic account of an ether party held half a century ago in a country neighborhood in the South, at which a negro was first exhilarated to wild delirium, and afterward rendered unconscious by the prolonged administration of ether, to the great dismay of the reckless young people who had been amusing themselves at the expense of the poor negro. Intoxication by the chewing of tea seems to have originated in Boston, where a couple of servant girls were arrested a few years ago for being drunk and disorderly. The investigation by the court showed that they had become tipsy on tea. Tea cigarettes were, however, the ingenious invention of a Parisian woman who had tired of all the ordinary forms of intoxication.

The morphia habit, the cocaine habit, the chloral habit, and other poison habits which are prevalent in this and other countries, are only different manifestations of a wide-spread and apparently increasing love for drugs which benumb or excite the nerves, which seems to characterize our modern civilization. Indeed, there appears to be, at the present time, almost a mania for the discovery of some new nerve-tickle, or some novel means of fuddling the senses. It is indeed high time that the medical profession raised, with one accord, its voice in solemn protest against the use of all nerve-obtunding and felicity-producing drugs, which are all, without exception, toxic agents, working mischief and only mischief in the human body.—J. H. K. *in American Medical Temperance Quarterly.*

MEDICAL COOKERY.

THE writer quite agrees with Prof. Keen, the eminent Philadelphia anatomist and surgeon, who asserts that every physician should have as perfect knowledge of the kitchen and the proper methods of food preparation as of drug-stores and the methods of compounding medicinal agents. Of the two, the knowledge of dietetics and cookery, would, in the writer's opinion, be found much more valuable than the knowledge of drugs. Both kinds of information are important, but a thorough knowledge of food stuffs and their relation to the needs of the body, must be of inestimably greater value to the physician, than the information gained by the most thorough study of pharmacy and materia medica. Physicians frequently prescribe iron for anæmic conditions without considering that blood cannot be made of iron, but must be made, if at all, from the food. Strychnia is almost universally administered as a remedy for weak nerves, the fact that nerves cannot be made of strychnia being ignored. Weak nerves can be improved by proper nourishment only. In proper nourishment lies the only remedy obtainable for nearly all chronic maladies. Hence the importance that the physician should be thoroughly posted on the subject of materia alimentaria. If a good cooking-school and experimental kitchen could be connected with every medical college and every student be required to take a thorough course of instruction both in practical and theoretical cookery, and dietetics, a revolution in the methods of treating disease would quickly follow.— J. H. K., *in Modern Medicine.*

COWS AND CONSUMPTION.

THERE can be no doubt that the use of the flesh of cows and of unsterilized cows' milk is one of the most widely active causes of consumption, and one which has been very aptly designated "the great white plague of civilization." This fact has been known to the medical profession for many years, and yet no very radical measures have been taken with reference to the suppression of this cause of disease, which is accountable annually for many times more deaths than cholera or any other of the epidemic diseases.

Beefsteak is consumed in greater quantities than ever, owing to its present cheapness, and cows' milk is swallowed at all times and at all places without the slightest inquiry into its antecedents, and without the application of any means for the destruction of mischievous microbes which the lactile fluid may contain. Dr. E. F. Brush calls the cow "the wet nurse of consumption," and makes the following interesting observations concerning the relation of cows to this dread disease:—

"Scrofulous females in the human race usually secrete an abundance of milk, because in scrofula there is an unusual tendency to glandular enlargement and activity. As the mammary is the highest type of glandular structure, it is stimulated to increased action. A scrofulous cow is usually the largest milker, and the closest kind of consanguinity has been practiced by cattle breeders, with the object of producing a scrofulous animal, not because she is scrofulous, but because the particular form she represents are the largest yielders of milk. We find, too, that consanguineous breeding has been alleged as one of the causes of tuberculosis in the human race, where it never can be conducted with so close and intimate blood relatives as in the dairy animals.

"The absence of phthisis in high, dry, mountainous regions has been accounted for by reason of the altitude and absence of moisture in the atmosphere; but here occurs a somewhat curious fact; namely, that the cow does not thrive in high, dry, mountainous districts, but in the low, swampy, moist region, where the succulent and lush grasses grow, is the place where the cow flourishes, and it is in these regions also that tuberculosis abounds in both the bovine and human subjects."

CENTENARIANS.— The *Sanitary Era* states that six centenarians died within one month in New Orleans. We are glad to know that the old people are not all dead yet. Very few of the rising generation will ever reach the age of one hundred years. We are living too fast nowadays. A traveler who recently visited the Wakoya Indians, a tribe of Moquis, states in *Harper's Bazar* that he found among the two hundred Indians composing the tribe, fifteen centenarians, or seven and one half per cent. Each Indian in this tribe is provided with a horn in which he punches a hole on each birthday. An old woman called Watsuma once exhibited a horn in which were one hundred and eighty-four holes.

DEATH RATE OF THE UNITED STATES.

Dr. Billings criticises the statistics placed in the last census report which has been published by the government, and gives his own ideas upon this subject in the following paragraph : —

"The States of Connecticut, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont, the District of Columbia, and most of the large cities in the other States, have a fairly complete registration of deaths. To these may be added Alabama and Delaware, the registration systems of which, though not complete, are better than those of most of the States. The aggregate population of the above mentioned States and cities, which we will group together under the name of "registration area," was in 1890, 21,093,320, and the number of deaths recorded as having occurred in this area during the census year was 427,538. Thus we find that the mortality in the registration area was 20.27 per 1000. . . . As usual, it was the highest in the cities — being 23.58, while in the rural districts it was only 14.99. Among native born whites of native born parents, the death rate was 17. Among native born whites having one or both parents of foreign birth, the death rate was 24.42 ; the foreign born had a death rate of 19.85.

"In the cities, the death rate of the colored people is 34.52, while that of the whites is 23.22. In the rural districts of the Southern States, where the relative proportion of the colored population is greatest, the death rate of the whites is from 15 to 16, and that of the colored from 18 to 20, per 1000.

"Seventeen per cent of all deaths are of infants less than one year old, and 30 per cent, of children under five years old. Consumption kills more than any other single cause, since 12 per cent of all deaths are due to it. Pneumonia comes next. Diseases of the digestive organs cause 12 per cent ; 10 per cent are caused by diseases of the brain and nervous system ; 7 per cent diphtheria and croup ; 5 per cent by accidents ; 4 per cent by heart disease ; 3 per cent each, by typhoid fever and malarial fevers ; 2 per cent each, by scarlet fever, cancer and tumors, diseases of the kidney and childbirth ; and 1 per cent each, by measles and whooping cough."

A STRANGE DISEASE.

The perverting influences of civilized life are constantly giving rise to the development of new disorders. Neurasthenia, a malady which is perhaps more widely spread than any other disorder known at the present time, was first described less than twenty years ago ; and every year, some specialist, generally a specialist in nervous disorders, describes some new malady before unheard of.

One of the most singular disorders which has grown out of the conditions peculiar to civilization, originated in this country about eighteen years ago. It was described under the name of "jerks." The person suffering from this disease was often thrown into the most violent contortions ; the head would be thrown backward and forward with great violence ; the arms and legs would be jerked about in the most fantastic fashion ; sometimes the individual would be thrown upon the ground, or he would flounder about in the wildest manner. The disease seemed to be contagious. The story is told of a slave owner who considered the malady purely a disease of the imagination, and announced to his slaves that he would whip within an inch of his life any one of them who took the disease. He was shortly afterward told that one of his negroes was suffering from the jerks, whereupon he seized his horse whip and hastened toward him, but had advanced but a few steps when he was himself seized by the jerks, and could find no relief but by seizing a small tree and clinging to it with both hands until the attack was over. The disease prevailed between the years 1810 and 1819, when it gradually disappeared.

Cutting off Supplies. — The eminent Dr. Tronchin, of Paris, considered abstinence from food as the best of all remedies for disease, probably because he regarded most disorders as the result of overfeeding, a conclusion in which we heartily agree, at least if bad feeding is included. "Good generals," said Dr. Tronchin, "always attempt to cut off the enemy's supplies. I put my patients on spare diet at once, and bring the enemy to terms by famine." The great Napoleon seems to have had the same idea. "When I am not well," said Napoleon "I fast, bathe, and rest. If I am taken sick while I am resting, I exercise. If taken ill while hard at work, I rest ; but in all cases, I fast. I find that is all I need." — J. H. K., *in Modern Medicine.*

MILK DIET.—An exclusive diet of milk has become a favorite prescription with some physicians for quite a variety of maladies, particularly diseases of the kidneys. Two eminent French physicians have recently called attention to the evils that may arise from an exclusive diet of milk. One of the first mentioned of these is the distention of the stomach, resulting from the great bulk of food which must be taken; a person who undertakes to subsist upon milk alone, if an adult, will require at least four quarts of milk per diem. This large quantity of food is required, not to secure the necessary amount of the nitrogenous element, but to provide the proper proportion of the carbonaceous element, or the carbo-hydrates.

A larger proportion of the last mentioned class of food elements is necessary in adult than in infant life, for the reason that the young infant does little work; it requires a large amount of the nitrogenous element for use in building up muscular, nervous, and other rapidly developing tissues.

The purpose of the milk diet is simply to relieve the irritation of the kidneys and increase the flow of urine so as to eliminate the poisonous elements from the system. When this has been accomplished, an exclusive milk diet should be discontinued; in fact it is not necessary that the diet should be wholly restricted to milk in order to secure all the good results that are attainable by this method. Such farinaceous articles as zwieback, granola, sea biscuit, and other forms of water bread, may be used in connection with milk without inconvenience.

FAITH HEALERS TAKING A REST.—A London paper announces that the dispensaries of faith healing nostrums have selfishly shut their dispensaries for the summer holidays. Their bulletin announces that they are prepared to cure all kinds of maladies from whooping cough to a broken leg, and are doing so constantly, without calling upon other surgeons or physicians, and at no expense to patients. Yet notwithstanding the mighty healing power which these individuals claim to possess, they find themselves under the necessity of taking a rest, and at a season of the year when their services are the most needed, hieing themselves to the country or the seashore, leaving the suffering multitudes of London to their fate. "Physician, heal thyself," is an old adage which may be applied with entire propriety to these pretenders.

THE cholera epidemic which prevailed last year carried off nearly three hundred thousand victims.

"A LEETLE DOUBTFUL."—The *Youth's Companion* tells the story of an American who was traveling through Europe, and while stopping at an inn, in a small country town, called for turbot, a favorite dish in that part of the country. The American had had a few days of dense fog, and his appearance and manner perhaps showed that he had become a little wheezy in consequence of the climate. He was forced to have frequent recourse to his pocket handkerchief. When the turbot was brought, the guest fancied, even before it reached his plate, that it was no longer fresh, and an attempt to eat it confirmed that impression. He called the proprietor, who at once sent a waiter for fresh turbot, and removed the objectionable fish. "I beg your parding, sir," said the innkeeper, "but we got the idee, sir, as you came in, that you had a bad cold in yer 'ead, sir." "And suppose I had? What would that have to do with my being served with spoiled fish?" exclaimed the American, somewhat indignantly. "Heverythink, sir. We has this rule in this 'ouse; fish as is a leetle doubtful, like that 'ere, sir — them which has lost the savor of youth, as I may say — them we serves to parties as appears to 'ave colds in their 'eads, sir; and we finds that, bein' as such parties can't smell nothink, they likes the fish just as well, sir, and hoften they prefer 'em!"

Our purpose in presenting the above story, is not simply to bring a smile to the face of the reader, but to call attention to the fact that a great share of flesh food which is eaten would be intolerable were it not for the fact that the human olfactory sense is considerably blunted, not only by frequent colds or chronic catarrh, but by the effects of its use and abuse for many generations. Caspar Hauser, the young boy who was discovered at the gate of the city of Nuremberg many years ago, was unable to endure the presence of animal flesh, in consequence of the horrible odor which his acute sense of smell detected. Decomposition begins in the body of an animal of any sort almost immediately after death, and by the time the majority of food, whether flesh or fish, reaches the stomach of the average American, it is in a condition more than "a leetle doubtful."

THE importance of boiling water as a precaution against disease, seems not to be a modern discovery. Travelers tell us that native tribes in Africa refuse to drink water "which has not been cooked," and historians tell us that Cyrus, when crossing the Choaspes, permitted his troops to drink water only after it had been boiled in silver bowls.

Cold Hands and Feet. — Many persons in poor health are troubled, even during the summer and early fall months, by cold hands and feet. These limbs should be educated, if possible, to keep themselves warm; for certainly a cure cannot be effected by toasting them over a stove or a register, or by taking a hot bottle or bag to bed; all these methods make them colder afterward. Primarily, the cause of this trouble is want of exercise, so all the exercise possible must be taken. But some one says, The more exercise I take, the colder I get. This is due to a reflex contraction of the blood vessels. The large nerves in the abdomen are connected with the blood vessels running down into the legs, by numbers of sympathetic nerves and branches, and when there is an irritation of the abdominal nerves, there is a contraction of the blood vessels, thus confusing the blood. When a person is nauseated, he is always pale. Why? — Because the irritation of the nerves of the stomach causes a contraction of the blood vessels. Now when a person is nauseated, he is not pale in the face only, but he is pale over the entire surface of the body; there is not a contraction in the blood vessels only, but also in the brain; there is not free blood enough to keep the heart going, so as to keep the person in his ordinary condition. There are thousands of chronic dyspeptics suffering from cold feet. This is caused by an irritation of the lumbar ganglia of the sympathetic nerves, situated close by the nerve trunks running into the legs; it is a contraction or spasm of the blood vessels in the legs, induced by chronic irritation, that keeps the feet cold; otherwise they would be kept warm by reason of the dependence of the limbs, as was intended by nature. Now it is not by exercise alone that this trouble can be cured; the only way in which it can be permanently cured, is by relieving the abdominal irritation, and by relieving the dilated stomach, and that can be done by correcting the diet.

Should the Skins of Fruits be Eaten? — If the skins of fruits are to be eaten, they should be first purged of germs. The skins carry germs; the bloom of the peach and the grape is made up of germs, — luxuriant growths of microbes, — and when these skins are eaten, the microbes enter the stomach, and there they find one of the finest fields for growth in the world. The skin protects the fruit from the action of these germs. But if the skin is bruised, or broken, or injured in the slightest degree, the microbes get inside, and then the mischief begins. It is exactly the same as with the flesh of a human being; a little sliver will get under the skin, under the finger-nail, and soon we will have an abrasion, a sore, and pus, and we will wonder that such a little thing could cause such a sore; the reason is that germs have found their way through that abrasion; pus-making germs are always to be found just under the edge of the finger-nail, and when the sliver is thrust in there, it is equivalent to an inoculation of pus, for when the germs are carried in there, suppuration begins very quickly; whereas other portions of the body which are thoroughly cleansed would not be so liable to the action of germs. A rusty nail thrust into the foot will produce lock-jaw in many cases; and this is because, on the soiled nail there are often present germs of tetanus (germs which produce lockjaw), and the nail carries them through the skin into the flesh. Now skins of fruit, being infested with germs, when eaten, carry those germs down into the stomach along with the fruit, and these germs then cause the fruit to decompose. Many persons are not able to eat raw fruit for this reason.

To Prevent Taking Cold. — One of the very best means to prevent taking cold is to make yourself proof against colds. If a person is frequently taking cold, there is doubtless great susceptibility to changes of temperature. Dr. Brown-Sequard says: "If you are apt to take cold by getting your feet wet,

then get your feet wet every day. Harden yourself to it, — sit down and put your feet in cold water, then in hot water, then in cold water, then in hot water again, and so on, repeating the operation, leaving the feet longer and longer in cold water, until you can keep them in cold water for half an hour. If you get a cold by the wind blowing on your neck, get some one to blow on your neck with a pair of bellows, and then desist for a minute or two, and blow again; longer and longer, until you can stand the blowing steadily for half an hour without taking cold."

STYES. — Styes are danger-signals which a man's eye puts out, saying to him, "You ought to go to an oculist;" they show a strained condition of the eye, — that the person should go to an eye-doctor and have spectacles adjusted to his eyes. Straining of the eyes causes a congestion which exhibits itself in this form.

WEAKNESS OF THE VASO-MOTOR NERVE CENTERS. — The question is sometimes asked: What is wrong with a person who is thrown into a perspiration by drinking hot water, or the least over-exertion, or a little nervousness, — and what can be done for him? This state comes from a weakness of the vaso-motor nerve centers, so that they do not control the blood vessels of the skin and the glands. There is lowered nerve-tone; in such a case the entire nervous system is at a low tone. To remedy this, the nerve-tone must be brought up by good, nourishing food, by development of the nerve system by massage, etc., and of the muscular system by exercise.

CAUSE OF BILIOUSNESS. — The cause of biliousness is a dilated stomach. Food decomposes in the stomach, and that gives rise to the condition known as biliousness. It is a state of poisoning in the stomach, produced by the action of germs upon the food remaining there. When those germs grow up through the œsophagus, they produce the bad coating on the tongue. Biliousness always means bad diet. If a man is bilious, he ought to be ashamed of himself, for it means that he has abused his stomach. A dilated stomach is very common among chronic dyspeptics. It is a stretching of the stomach in consequence of overloading it; it is sometimes due to a breaking down of the stomach.

ANSWERS TO CORRESPONDENTS.

BICARBONATE OF SODIUM — CARLSBAD SPRUDEL SALT. — Mrs. M. F. C., Cal., inquires: "1. Is bicarbonate of sodium less harmful as a medicine than Church's soda, or any common refined bicarbonate of soda? 2. Is Carlsbad Sprudel Salt imported? and is it any safer or better than bicarbonate of soda?"

Ans. — 1. No.

2. The salt named is imported, but as an alkali, is no better than soda.

HEADACHE, DIZZINESS, AND COATED TONGUE. — J. H. B., N. C., is young and strong, but suffers constantly from coated tongue, slight dizziness, and headache. His diet is corn bread, wheat bread, butter, fruits, vegetables, and occasionally a little beef. He touches no tea, coffee, or alcoholic liquors, and does not believe in taking medicine. His occupation is clerking in a drug store. Would be glad of any advice as to treatment.

Ans. — This patient is suffering from indigestion. He should avoid the use of butter, cheese, meats, unsterilized milk, sugar, and all other food likely to ferment.

GRAPE SEEDS AND SKINS — GERMS IN FRESH FRUIT. — W. C. C., Canada, asks: "1. What is the danger in swallowing the seeds of grapes? 2. Is there equal danger from germs on fresh fruit and on dried fruit such as dessert raisins, French prunes, dates, and figs? 3. Would not the phagocytes, being on the lookout for germs, absorb them when entering the stomach in small quantities? 4. Is there not also danger from the germs which are produced in the fermentation of bread by the use of yeast?"

Ans. — 1. None.

2. No.

3. When germs are present in the stomach or alimentary canal only in small quantities, the system is able to deal with them.

4. Persons subject to acid dyspepsia and other forms of septic indigestion, should avoid the use of fermented bread.

HOURS OF SLEEP. — Mrs. M. A. J., So. Dak., asks: "Is it best to let a boy twelve years old sleep more than nine hours?"

Ans. — Ten hours might not do him any harm, — but be sure he is asleep.

WHAT IS THE TROUBLE?—The writer, a student, finding himself greatly emaciated, was prevailed upon to eat a good deal of beef and to drink cocoa twice a day. After a time, a rash, or itch, appeared on the skin, of the most irritating character. When scratched, little white pimples appeared, and these, when broken, exuded a clear fluid. This eruption has appeared periodically for three months. The stomach has become so weak that it can digest scarcely the simplest foods. There is a thick, tough saliva constantly in the mouth, which has a reddish tinge when the patient feels the worst. There is a sense of weakness in the stomach after eating even the smallest amount of food; pain in the back of the head; bad dreams at night. Meat and rice always seem to be hurtful.

Ans.—The patient is probably suffering from eczema.

CONSTIPATION.—W. C. C., of Canada, inquires, 1. "Is there any good reason why Muscatel raisins, French prunes, and figs are sometimes recommended as laxative foods in cases of constipation? 2. Do the stones of raisins irritate the intestines when thoroughly masticated? 3. Why are oleaginous foods, such as butter, olive oil, etc., sometimes allowed in such cases, but more frequently forbidden? 4. Is there some cathartic principle in them which is common to all, that is, to fruits and fats?"

Ans.—1. Yes. The foods named contain considerable indigestible matter, which acts as a stimulant to the bowels.

2. No; but we do not recommend that stones of raisins should be eaten.

3. A certain amount of oleaginous matter aids digestion.

4. No.

BOW LEGS.—F. R., of Washington, asks, "1. What is the best treatment for bow legs in a boy two years of age? 2. What is the best apparatus, and where can it be procured? 3. What diet would be best for him?"

Ans.—1. The condition known as "bow leg" can often be cured by the use of proper braces, the braces to be applied at an early age. Sometimes an operation is required.

2. The proper apparatus can be obtained by addressing Sharp & Smith, 73 Randolph St., Chicago, Ill.

3. Whatever diet is best digested and will maintain the best health. Fruits, grains, and milk, in our opinion, constitute the best dietary.

PRURITIS ANI—FREQUENT MICTURITION.—H.S.T., Conn., asks the following questions: "1. What causes pruritis ani, and what is the remedy? 2. If the kidneys are weak, with a tendency toward congestion, and there is frequent micturition, what will relieve this state? 3. What does frequent giddiness and fullness combined with pulsation on right side of head, indicate, if patient is delicate, nervous, and of the literary profession?"

Ans.—1. It is a parasitic disease due to the presence of a vegetable organism. It is sometimes difficult to cure. Germicidal remedies are unnecessary. The condition is not infrequently dependent upon intestinal indigestion, which must also be cured. A hot spray applied two or three times daily to the affected parts is a very useful remedy.

2. The symptoms referred to do not indicate weakness of the kidneys, but an irritation of the bladder. This condition depends upon various causes; there is no one remedy adapted to all.

3. The indication is that the patient is suffering from reflex nervous disturbance, probably dependent upon a morbid state of the large sympathetic ganglia of the abdomen.

PARCHED MOUTH—EFFERVESCING DRINKS.—G. C. wishes to know: "1. What is the matter when a person very soon after a meal has a dry, parched mouth, which water relieves only for a moment?" His diet is mostly grains and fruits, with occasionally a bit of meat. 2. Is there any virtue in non-effervescing alcoholic drinks? 3. Are they injurious? 4. Would the addition of soda to beans when boiling, render them more digestible? 5. What about the 200-year club, at Washington, D. C. Is it reliable?"

Ans.—1. The condition is probably due to dilatation of the stomach.

2. No.

3. Yes.

4. No; it helps to loosen the hulls, but is not to be recommended.

5. No, not if it guarantees that a person will live 200 years, if he joins the club.

WEAK JOINTS.—L. R. asks: "1. What treatment will be good for weak joints,—where the bones feel as if they would crumble when walking upon hard floors? 2. What food is best in such a case?"

Ans.—Fomentation to the knees, the moist pack worn at night, rubbing with oil daily, electricity, either faradic or galvanic currents, or both, and using the joints in walking.

RED BUNCHES ON THE TONGUE.— A subscriber in Connecticut writes to inquire the cause of a troublesome complaint that is affecting a friend. It is the appearance of small red bunches on the left side and top of the tongue, near the palate. The tongue is covered in the places indicated. There is considerable pain, but it is not sharp, being more of a smarting sensation. It has continued about three months. She fears that it may be of cancerous origin.

Ans.—The condition referred to is an irritation of the large papillæ which are naturally found at the back part of the tongue. The irritation is probably due to hyperpepsia.

THROAT AFFECTION.— A subscriber in Tennessee writes concerning her son, a child of six years, who at every slight cold taken coughs terribly, sometimes with only slight intermission for over twenty-four hours. At times he is very hoarse. She dresses the child in flannel, and lets him run out doors during fine weather, but keeps him in very close in bad weather. Would be grateful for advice.

Ans.—The child has probably been coddled too much. Should have a cold sponge bath followed by a vigorous rubbing with oil every morning. In a few months the disposition to take cold will doubtless be overcome.

WHAT IS THE EFFECT OF OIL-BATHS?— R. S., Chicago, writes: "It is said that if a man were painted or varnished all over the surface of the body, he would die, and yet oiling the body in a Roman bath is practiced, and after any tub bath it is recommended pretty generally, that the body be gone over with cocoanut oil. Is not oil about as closing to the pores of the skin as paint or varnish? and is it really well to use cocoanut or any oil on the body?"

Ans.— Oil and varnish have very different effects when applied to the surface of the body. Varnish, when applied to the skin, soon drys and forms a coating upon the surface which is impermeable to either air or water. The film of oil spread over the skin allows a free passage to both air and water.

CHRONIC NERVOUSNESS.— H. M. S., Chicago, asks for some general specific for chronic nervousness. His chief symptoms are a maddening depression of mind, and morbid excitement without any apparent cause; a constant headache, giddiness, physical weakness, heart palpitation. He is of a quiet, studious disposition, and therefore cannot imagine whence these symptoms come.

Ans.— The patient is doubtless suffering from gastric neurasthenia, or what would have been called, ten years ago, nervous dyspepsia. The symptoms arise from disturbances of the abdominal sympathetic. Examination will probably show that the patient has dilatation of the stomach.

TREATMENT FOR INDIGESTION.— A. W. Mc B., N. J., says that though very careful in relation to his diet, he now and then eats something which causes griping pains, or a sour stomach, and asks for advice as to the proper treatment in such cases.

Ans.— For immediate relief of indigestion, when the stomach is filled with fermenting food, nothing is so satisfactory as the use of the stomach tube. By thorough washing of the stomach the unpleasant symptoms are immediately and completely relieved. Drinking a quantity of hot water,— two or three glasses or more,— fomentations over the stomach, and swallowing a heaping tablespoonful of finely powdered charcoal (wheat charcoal), are excellent palliative measures, but the stomach washing is the most effective.

NERVOUS DEBILITY, ETC.— "A reader" asks: "1. Do you think that Humphrey's Specific, No. 28, will cure nervous debility? If not, what course of treatment would you advise? 2. Can a cure of varicocele be effected by the use of a suspensory bandage?"

Ans.— 1. No. I would advise the patient to submit his case to a competent physician.

2. No.

CATARRH OF THE BOWELS — MALARIAL POISON — WHEAT CHARCOAL. — H. W. inquires: "1. What are the most prominent symptoms of catarrh of the bowels? 2. Will malarial poison remain in the system for twenty-nine years? 3. How hot should water be drunk? 4. Which is the more healthful, boiled fresh milk or reboiled skim milk which is twelve hours old? 5. Which is better for toast, fermented or unfermented bread? 6. How is wheat charcoal made?"

Ans.— 1. Large quantities of mucus in the stools.

2. No.

3. Not over 130° F.

4. Fresh milk is healthier than skim milk only because it contains all the elements of nutrition in proper proportion. Skim milk is lacking in fat.

5. To the writer's taste unfermented bread is preferable to fermented bread in any form.

6. Wheat charcoal is made from wheat by the process of charring and grinding.

RELIEF DEPARTMENT.

[THIS department has been organized in the interest of two classes: —

1. Young orphan children.
2. The worthy sick poor.

The purposes of this department, as regards these two classes, are as follows: —

1. To obtain intelligence respecting young and friendless orphan children, and to find suitable homes for them.

2. To obtain information respecting persons in indigent or very limited circumstances who are suffering from serious, though curable, maladies, but are unable to obtain the skilled medical attention which their cases may require, and to secure for them an opportunity to obtain relief by visiting the Sanitarium Hospital. The generous policy of the managers of the Medical and Surgical Sanitarium has provided in the Hospital connected with this institution a number of beds, in which suitable cases are treated without charge for the medical services rendered. Hundreds have already enjoyed the advantages of this beneficent work, and it is hoped that many thousands more may participate in these advantages. Cases belonging to either class may be reported in writing to the editor of this journal.

The following list contains the names and addresses of persons who have kindly consented to act as agents for us in this work, and who have been duly authorized to do so. Facts communicated to any of our local agents in person will be duly forwarded to us.

It should be plainly stated and clearly understood that neither orphan children nor sick persons should be sent to the Sanitarium or to Battle Creek with the expectation of being received by us, unless previous arrangement has been made by correspondence or otherwise; as it is not infrequently the case that our accommodations are filled to their utmost capacity, and hence additional cases cannot be received until special provision has been made.

Persons desiring further information concerning cases mentioned in this department, or wishing to present cases for notice in these columns, should address their communications to the editor, Dr. J. H. Kellogg, Battle Creek, Mich.]

THE names of our local agents are omitted this month so as to give more space for the presentation of cases needing immediate attention. We find that this part of the work is developing much more rapidly than we had anticipated. Homes have been offered for nearly all the little ones whose names have been mentioned in these columns, and the interest which has been aroused in the work that we have undertaken has been far beyond our expectation. For this reason we shall not be able to publish the list of agents regularly, but will do so now and then, as space will allow.

TWO MOTHERLESS BOYS (Nos. 115 and 116).— A bereaved father in Pennsylvania asks that a home be found for his two motherless boys, aged five and six years. They are both nice-looking boys, and said to be very intelligent and good. The father expects to give his life to missionary work, and cannot maintain a home for them.

A SAD CASE (No. 118). — A boy aged nine years, living in Michigan, has been bereft of a father's care, and his mother is blind, so he has been "neglected," the letter states, during the past two years. He needs to be under control, and will be a good boy under favorable circumstances. Will not some good missionary take him, and train him up for a good and useful life?

TWO MOTHERLESS BAIRNS (Nos. 119 and 120).— Two of Christ's little ones are in sad need of a home where loving hands will help them and loving hearts defend them. They are four and five years of age, and live in Massachusetts. Both have blue eyes and light brown hair, and are very attractive. For three years they have been given only boarding-house care, and their guardian wants to find a home for them. He would like to have them together if possible.

"INASMUCH."— Here comes a group of four little ones (Nos. 125, 126, 127, and 128). Their father is dead, and their mother's health is failing, so she sees it cannot be long that she can care for them. Who will open the door to them? Their ages are respectively eleven, nine, five, and four. They have dark eyes and brown hair. They have always lived in Kansas with their parents.

A SEVEN-YEAR-OLD (No. 129).— A little boy seven years old, in California, has lost his mother, and the father has given him to some aged people who do not feel able to bring him up right. He is of German parentage, with light hair and good health. Will not some one make a home for him?

TWO BROTHERS (Nos. 131 and 132), from Michigan, are in need of a home. One is five and the other ten years of age. Their mother died some two years ago, and the father is not able to care for them.

TWO MORE BOYS (Nos. 133 and 134) are in need of a home. These also live in Michigan. They are three and five years of age, have good health, with brown hair and eyes. Here is a good opportunity for doing missionary work in bringing up these children to be a blessing to the world. Who will undertake the task?

SAD FACES look out at us from the photograph that has been sent of two little girls (Nos. 139 and 140) about eight and nine years old, living in Michigan, who are just about to be turned away from home. How full the world is of trouble and sorrow! Cannot some one help to lift the sadness from these little faces?

MOTHERLESS.— Another little boy and girl (Nos. 143 and 144), in Kansas, have been left motherless,

and the father's health is so poor that he is anxious to find homes for his children before he is called away from them. They are good children, well-appearing, and have good health. The little boy is nine and his sister six years old.

De Forest (No. 145) is a dear little Michigan baby, six months old, with black eyes, dark hair, and a bright face. He has perfect health, and will doubtless bring sunshine to the home that is opened for him. Who will give him a home soon?

A Little Brother and His Sister.— Here are two little ones from Florida (Nos. 158 and 161) who are in need of a home or homes. The girl is two years and the boy six years old. They both have brown hair and eyes, and are blessed with good health.

No. 160 is a little girl from Ohio, ten years old, whose father is unable to support her since he suffered from the grippe. She has a clear complexion, and that rare combination, light hair and black eyes. With wise, loving care, she will be a happy addition to some family circle.

No. 162 is a little lady only two and one half years old, with fair complexion and a sweet, gentle disposition. Her home is in Michigan at present.

Who will Help? — Here are two boys (Nos. 163 and 164) from North Carolina, who want homes. The father is dead, and the mother cannot support them. They are bright, intelligent boys, and, as the application says, would make somebody's home brighter. They are eight and eleven years old respectively.

No. 165 is a strong, healthy boy, nine years of age, who needs a home. He is in Michigan.

Eddie (No. 166) is a bright boy twelve years old, who needs a home. He is of a pleasant disposition, and will be a great help in some home.

Bereft. — A boy (No. 167) eight years old, has lately been bereft of his mother, and his father cannot care for him, so he asks that a home be found for him, and very soon, so the child may not be neglected. He is living in Michigan.

Another Boy (No. 168) from Michigan, ten years old, is in sore need of a home. He has lived on a farm, and is rather small for his age, though in good health.

Two Brothers. — From Pennsylvania comes another call for homes for two boys (Nos. 169 and 170), three and eight years old. They both have good health, the younger one has dark hair and eyes, and dark complexion, the older one, dark hair and light brown eyes. They have had good care, till their mother died, and have not been allowed to run on the street, so have good characters to recommend them.

A Brother and Sister. — These little ones, aged nine and eleven (Nos. 171 and 172) have been five years without a mother, but have lived with their grandparents. The father is a canvasser. They have blue eyes and good health; the boy's hair is dark brown and the girl's light. They live in Iowa.

Persons making application for children advertised in this department, are requested to send with their applications the names and addresses of two or more persons as referees. If possible these referees should be known, either personally or by reputation, to some member of the Board of Trustees.

CLOTHING FOR THE POOR.

The call for clothing of all kinds and the numerous offers to supply assistance of this sort, have led us to organize a Clothes Department to receive and properly distribute new or partly worn garments which can be utilized for the relief of the very poor. In connection with this work it is very important that a few points should be kept in mind and carefully observed: —

1. Clothes that are so badly worn that repairs will cost more in money or labor than the garment is worth, will of course be of no service. Garments that are old, though faded, or which may be easily repaired by sewing up seams, or made presentable by a few stitches judiciously taken in some point in which the fabric is nearly worn through, may be utilized to most excellent advantage. But garments so badly worn that they need extensive patching, or clothes which have become much soiled and grimmy by long use in some dirty occupation, should find their way to the rag bag instead of the missionary box.

2. Freight must always be prepaid. It costs as much to send 25 pounds or any amount less than 100 pounds as to send the full 100 pounds; consequently it would be well for those who think of sending clothes to be used in this department, to put their contributions together in one shipment, so as to get the benefit of the 100-pound rates. *We are obliged to ask that freight should be prepaid as a means of preventing loss to the work in the payment of freight upon useless packages.*

3. Clothes that have been worn by patients suffering from any contagious disease — such as typhoid fever, erysipelas, consumption, and skin disorders of all sorts, as well as scarlet fever, measles, mumps, diphtheria, and smallpox — should not be sent. Infected clothes may be rendered safe by disinfection, but we cannot trust to the proper disinfection of such garments by those sending them, who, in the majority of cases, are quite inexperienced in such work; neither should those who unpack the clothes be exposed to the risk of contamination while preparing them for disinfection at this end of the line. Such clothes should, as a rule, be destroyed. If they are not destroyed, almost infinite pains are required to render their use perfectly safe.

4. All articles received here are carefully assorted and classified, and are then placed as called for where they will do the most good.

LITERARY NOTICES.

"JERUSHY IN BROOKLYN," is the title of a little volume by Jerushy Smith (Anna Olcott Commetin), reprinted by Fowler & Wells Co., from the *Brooklyn Eagle*. It sets forth in amusing vernacular the conventionalities of social life in our large cities, as viewed by a good soul from the country. It is in much the same vein as "Samantha at the Centennial." Price 25 cents.

THE "Kindergarten," edited by Kate Douglas Wiggin. 16 mo., cloth, ornamental, $1. [In "The Distaff Series."] Harper & Brothers, Franklin Square, New York.

This constitutes the 4th volume of "The Distaff Series," which provides a distinguished and valuable exhibit of literary and mechanical work for the Columbian Exposition and for the New York State Library by women of the State. "The Kindergarten" presents Froebel's ideas in their earliest phases, their development in practice, the advanced state in which the kindergarten of to-day is found, and a glimpse into the future of this wonder-working system of child education, together with interesting views on "The Relation of the Kindergarten to Social Reform," "The Philosophy of the Kindergarten," and "Outgrowths of Kindergarten Training," among other chapters, in all of which is seen not only the skill of the editor, but her full sympathy with the subject.

No. 39 of Shoppell's *Modern Houses*, an illustrated architectural quarterly, is just issued. This number contains some fifty neat designs for cottages and residences costing from $600 to $15,000. Just the thing for a guide in designing and erecting a new house. Price, 50 cents a number. No. 63 Broadway, New York.

THE *Chautauquan* for October is the first number of volume XVIII, and presents a table of contents of rare excellence. The frontispiece is of Washington Irving. Hjalmar Hjorth Boyesen writes of "Village Life in Norway," the article being finely illustrated. "American Charity Movements," "The Army and Navy of Italy," "How to Study History," "Sunday Readings," "What is Philosophy?" and "A Half Century of Italian History," make up the required readings. Elizabeth Stuart Phelps Ward contributes a sweet story of a woman overburdened with public philanthropic duties coming back to love and home. The articles for general reading are from L. H. Peet, C. C. Adams, Rev. W. W. Gist, Leo Dex, Bishop John H. Vincent, E. L. Didier, Rev. H. L. Wayland, I. I. Murphy, A. Waters, Joseph Cook, and G. N. Lovejoy.

"SATAN'S FIRST LIE, OR MAN IN DEATH," by Mrs. L. D. Avery-Stuttle, Battle Creek, Mich. This little phamplet presents in the form of a poem an argument against the doctrine of the natural immortality of the soul and in favor of eternal life through Christ. The work abounds in scripture references, which seem to support the views of the author. The argument is well elaborated, and is ingeniously woven into rhyme.

"CHRISTIAN EDUCATION," by Mrs. E. G. White, published by the International Tract Society, Battle Creek, Mich. This work of 255 pages contains more sound teaching upon the fundamental principles of correct and symmetrical and practical education, than any work which it has ever been our privilege to read. The chapters on "Education and Health" and "Mental Inebriates" are particularly valuable; but the same might be said of every chapter in the work. The suggestions to teachers and to parents, as well as students, evince an unusually profound knowledge of human nature and its needs. The work will certainly be of immense service to all who will give it a careful perusal.

Food for September deals with many practical questions, among which are "The Care of Children's Eyes," by E. Oliver Belt, M. D., and "Individual Peculiarities Affecting the Dose of Drugs," by C. H. Stowell, M. D. There are short editorials on food and drink, patent medicines, poisons, alcohol, cholera, medical cookery, heredity, etc. The leading articles of the month include "Our Food and Drink," "Experiments in Bread and Biscuit," "The Use of Milk," "Diet in Diabetes," "Cremation after Infective Diseases," "Intestinal Indigestion," "The Hunger Cure," "Fresh Air the Best Tonic," etc.

PUBLISHERS' DEPARTMENT.

ONE of the most important improvements recently made at the Sanitarium is now in progress, in the shape of a large building for the accommodation of the young lady nurses. The building, which is already in process of erection, is located a few rods east of the large main building, on Barbour St. The location is a very sightly one. The building will accommodate 150 persons, and will cost about $30,000. It has been very much needed for many years, but there has been such a heavy draft upon the earnings of the institution for the support of the charity departments, that the managers have not seen their way clear before to undertake the expenditure for this much-needed improvement.

* * *

THE Chicago branch of the Battle Creek Sanitarium is making many new friends, as well as affording benefit to many of the old patrons of the original Sanitarium. Being so convenient to the World's Fair grounds, it is well patronized by visitors who are in Chicago for the purpose of attending the great Fair.

* * *

MRS. AGNES D'ARCAMBAL, whose noble work in behalf of discharged convicts has attracted the attention of philanthropists not only in Michigan but throughout the United States, is spending a few days as an invited guest of the Sanitarium. She has delivered two lectures in the interests of her endeavor, giving many interesting and touching incidents connected therewith. The Home for Discharged Convicts in Detroit has suffered somewhat from the present financial stress, and there is need of a little special effort on the part of its friends. It deserves much credit, not only for the grand work which it is doing, but also as being the only institution of the kind in the United States which owns its building and grounds. A Japanese prisoner reformer sends every month his pamphlet bulletin to Mrs. d'Arcambal, and also writes personal letters setting forth his work.

* * *

A MUSICAL and literary entertainment was given for the pleasure of the Sanitarium guests the evening of the 16th ult. under the auspices of the King's Daughters of Battle Creek. The ever popular Orpheus Club, Prof. John Martin, orchestral leader, Mrs. Clara Reynolds Smith and Miss Annie Locke, both fine elocutionists, all of Battle Creek, assisted; and besides these artists, Miss Georgie Yeager, a fine soprano from St. Louis, Mo., and Miss Marguerite Chapman and Miss E. Maude Richards, pianists, had numbers, with Miss Logan and Prof. Barnes as accompanists. The music was chiefly classical, and the readings of a high order. Altogether, it was a concert rarely excelled in brilliance.

* * *

THE celebrated Morocco traveler, J. E. Budgett Meakin, honored the Sanitarium with a visit of a few days, during which he delivered three lectures of remarkable interest. He traveled and lived as a native for nine years in the Barbary

States, and acquired such fluent use of the language and became so conversant with their manners and customs, that he was constantly being taken for a Moor. He thus gained access to certain of their sacred temples from which Europeans are rigidly excluded. He is of English birth, and the late editor and proprietor of the Morocco *Times*. In addition to his work on the lecture platform, and his journalistic work, Mr. Meakin has done considerable general literary work, and expects soon to bring out a book. He speaks very feelingly of the missionary work which is being carried on in the Barbary States, of the great force of medical missions, and of the needs of this immense field, where a handful of Christian missionaries are laboring,—only about fifty in all, and not half of these have the language yet.

* * *

HOMES FOR WORLD'S FAIR VISITORS. — In view of the crowded condition of Chicago and its hotels during the World's Fair period, Poole Bros. have done a public service in issuing a very carefully prepared list of the Homes in Chicago that are thrown open to the public upon this occasion. The list is completer and gives the name, location, number of rooms, etc., so that correspondence may be had and arrangements made before the visitos comes to Chicago. This list is accompanied by splendid sectional maps of the city on a large scale, by which the location of every house can be accurately found. Copies can be obtained at the Michigan Central Ticket Office at the publisher's price, 50 cent, — less really than the value of the maps themselves.

THE Summer Tours of the Michigan Central. "The Niagara Falls Route" are unrivaled in their variety, picturesqueness, and comfort, embracing the best routes to Petoskey, Mackinac Island, and Michigan resorts, Niagara Falls, Thousand Islands, and the St. Lawrence River, the Adirondacks, Green and White Mountains, Canadian Lakes, and the New England Sea Coast.

A copy will be sent upon application to Geo. J. Sadler, Ticket agent, Battle Creek, Mich.

* * *

WHERE TO LOCATE NEW FACTORIES.

THIS is the title of a 150-page pamphlet recently published by the Passenger Department of the Illinois Central Railroad, and should be read by every mechanic, capitalist, and manufacturer. It describes in detail the manufacturing advantages of the principal cities and towns on the line of the Southern Division of the Illinois Central, and the Louisville, New Orleans, and Texas Railroads, and indicates the character and amount of substantial aid each city or town is willing to contribute. It furnishes conclusive proof that the South possesses advantages for the establishment of every kind of factory, working wool, cotton, wood, or lcay. For a free copy of this illustrated pamphlet, address C. C. Power, Foreign Representative, 58 Michigan Ave., Chicago, Ill.

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COLUMBIAS

Four Columbia Bicycle Points.

POINT ONE.	The Double Diamond Frame, supreme in rigidity, lightness, elegance.
The Band Brake, of ample power and easy control. It doesn't touch the tire. It can't injure the tire.	**POINT TWO.**
POINT THREE.	The Columbia Pneumatic Tire; the tire you are sure of; the tire that is guaranteed.
Always, now, and probably forever, the STANDARD BICYCLE of the world. Absolutely guaranteed.	**POINT FOUR.**

You can tell a Columbia by the way it looks and the way it wears.

It grows old beautifully. It wears out slowly.

Catalogue free at Columbia agencies, by mail for two two-cent stamps. Pope Mfg. Co., Boston, New York, Chicago, Hartford.

CHICAGO & GRAND TRUNK R. R.

Time Table, in Effect June 5, 1893.

GOING EAST. Read Down.					STATIONS.	GOING WEST. Read up.							
10 Mail Ex.	4 L'v'd Ex.	6 Atl. Ex.	8 Erie Lim.	2 R'd Ex.		1 Day Ex.	9 P'fic Ex.	7 Erie L'v'd	21 M. & B. Ex	11 Mail Ex.	3 R'd L'v'd	5 Nig't Ex.
a m	p m	p m	a m	p m		p m	a m	p m	a m	p m	p m	a m
8.40	3.00	8.15	11.25	11.30	D. Chicago .A	4.50	7.32	9.30	8.30	7.00	9.00	7.25
11.10	5.00	10.30	1.20	1.36	.Valparaiso..	2.45	5.30	7.35	6.25	4.30	6.35	5.10
p m												
12.45	6.20	12.00	2.35	3.15	.South Bend.	1.20	4.00	6.20	5.00	2.50	5.10	3.35
1.20	6.58	12.45	3.07	4.05	..Cassopolis .	12.40	3.18	5.45	4.23	2.06	4.37	2.44
2.21	.....	‡1.33	.....	4.57	.Schoolcraft.	a m	.....	.....	.....	1.19	.....	1.58
2.33	7.40	1.48		5.10	..Vicksburg .	11.53	2.20	.....	3.28	1.08	3.52	1.48
					D	11.15	1.35	4.25	2.45	12.25	3.20	1.00
3.40	8.20	2.40	4.30	6.40	Battle Creek	11.10	1.30	4.15	2.40	12.10	3.10	.....
4.34	9.01	3.25	5.11	7.31	..Charlotte..	10.29	12.46	3.34	2.01	11.15	2.27	12.05
5.10	9.30	4.00	5.40	8.10	...Lansing...	10.02	12.15	3.07	1.35	10.40	2.00	11.30
6.50	10.20	5.03	6.35	9.30	..Durand...	9.05	11.20	2.22	12.44	9.35	1.15	10 30
7.30	10.47	5.40	7.05	10.05	....Flint	8.35	10.47	1.55	12.15	8.35	12.45	9.35
8.15	11.20	6.15	7.35	10.43	... Lapeer ...	8.02	10.07	1.27	11.45	7.49	12.17	8.51
8.42	a m	‡6.35		11.06	.Imlay City .	.....	.....	.....	.....	7.28	.....	8.24
9.56	12.30	7.30	8.46	12.05	Pt. H'r'n Tun	6.50	8.46	12 22	10.30	6.25	11.10	7.20
			p m			a m	p m	p m	p m	a m	a m	p m
9.25	.....	7.40	9.25	11.50	...Detroit....	.....	.....	.....	.....	.....	.....	.....
p m	a m	p m		a m								
.....	8.30	7.40		8.10	...Toronto...	.....	.....	.....	.....	.....	.....	.....
	p m	a m		a m								
.....	7.50	7.00	.....	7.00	..Montreal..	.....	.....	.....	.....	.....	.....	.....
	a m	a m		p m								
.....	8.15	9.30	.....	7.15	... Boston ...	.....	.....	.....	.....	.....	.....	.....
	a m	p m	a m	p m								
.....	7.25	4.13	3.00	7.30	Niag'ra Falls	.....	.....	.....	.....	.....	.....	.....
	a m	p m		p m								
.....	8.30	5.35	4.15	9.00	... Buffalo ...	.....	.....	.....	.....	.....	.....	.....
	p m	a m	p m	a m								
.....	9.40	7.52	4.52	10.10	..New York..	.....	.....	.....	.....	.....	.....	.....
	a m	a m	p m	m								
.....	7.00	10.00	9.25	12.00	... Boston ...	.....	.....	.....	.....	.....	.....	.....

Trains No. 1, 2, 3 4, 5, 6, 7, 8, 9, 21 run daily; Nos. 10, 11, 23 daily except Sunday.

All meals will be served on through trains in Chicago and Grand Trunk dining cars.

Battle Creek Passenger leaves Pt. Huron Tun. at 7:20 p. m., arrives at Battle Creek 9:25 p. m.

Valparaiso Accommodation daily except Sunday.

Way freights leave Nichols eastward 7:15 a. m.; from Battle Creek westward 7:05 a. m.

‡ Stop only on signal.

A. R. Mc INTYRE,
Asst. Supt., Battle Creek.

A. S. PARKER,
Pass. Agent, Battle Creek.

MICHIGAN CENTRAL

"The Niagara Falls Route."

Corrected Aug. 27, 1893.

EAST.	† Day Express.	*N. Shore Limited.	* N. Y. Express.	†Mail.	*Atl'ntic Express.	*N. Falls & Buffalo Special.	*Night Express.
STATIONS.							
Chicago.....	am 9.00	am 11.30	pm 3.10	am 7.05	pm 9.10	pm 4.20	pm 10.00
Michigan City.	11.00	pm 1.13	4.56	9.15	11.15	6.05	12.00
Niles.....	pm 12.25	2.08	5.55	10.35	am 12.30	7.05	am 1.20
Kalamazoo	2.00	3.18	7.03	pm 12.35	1.53	8.25	2.56
Battle Creek...	2.40	4.00	7.38	1.20	2.45	9.00	3.38
Jackson.....	4.30	5.08	8.52	3.10	4.25	10.18	5.05
Ann Arbor.....	5.30	6.08	9.45	4.27	5.33	11.12	6.15
Detroit.....	6.45	7.15	10.45	6.00	6.50	am 12.10	7.45
Buffalo.....		am 2.05	am 6.25		pm 2.45	8.30	pm 5.00
Rochester.....		4.45	9.55		5.50	pm 2.40	8.20
Syracuse.....		6.45	pm 12.15		8.30	4.10	10.20
New York.....		pm 2.40	8.50		am 6.30	10.30	am 7.00
Boston.....		4.45	11.45		10.50	am 6.15	10.50

WEST.	† Day Express.	*N. Shore Limited.	*Chicago Express.	* Night Express.	*Pacific Express.	*Chicago Special.	†Mail.
STATIONS.							
Boston.....	am 8.30	pm 2.00	pm 4.20		pm 7.15	am 5.00	
New York.....	10.30	4.30	6.00		9.15	9.10	
Syracuse.....	pm 7.30	11.35	am 2.10		am 7.20	pm 4.20	
Rochester.....	9.35	am 1.25	4.10		9.55	6.25	
Buffalo.....	10.45	2.20	5.30		pm 11.50	7.35	
Detroit.....	am 7.15	8.45	pm 1.00	pm 7.45	9.00	am 3.20	am 8.15
Ann Arbor.....	8.19	9.45	1.55	9.03	10.20		9.34
Jackson.....	9.30	10.48	2.55	10.35	11.45	5.15	11.40
Battle Creek...	10.45	12.00	4.00	am 12.10	am 1.12	6.27	pm 1.20
Kalamazoo	11.26	pm 12.39	4.35	1.02	1.53	7.15	2.08
Niles.....	pm 1.10	1.48	6.00	3.00	3.52	8.28	4.00
Michigan City.	2.18	2.45	7.05	4.35	5.22	9.30	5.25
Chicago.....	4.10	4.30	9.00	7.05	7.15	11.15	7.35

*Daily. †Daily except Sunday.

Accommodation train goes east at 7.52 a. m. except Sunday.
" " west at 9.00 p. m. "

Trains on Battle Creek Division depart at 7.55 a. m. and 4.35 p. m., and arrive at 12.40 p. m. and 9.45 p. m. daily except Sunday.

North Shore Limited trains east and west require special tickets.

O. W. RUGGLES,
General Pass. & Ticket Agent, Chicago.

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Ticket Agent, Battle Creek.

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Brace for Lateral Curvature of the Spine.

Deformity Apparatus,
Of All Descriptions,

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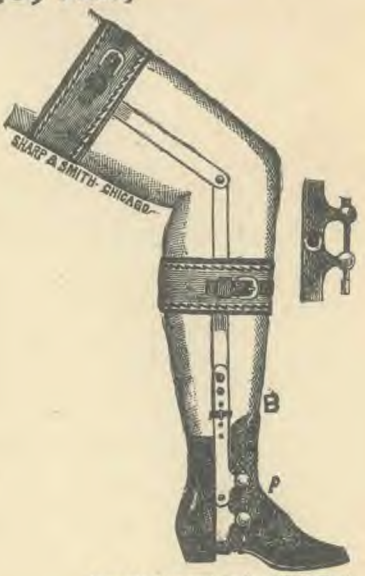

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AN INVALID FOOD prepared by a combination of grains so treated as to retain in the preparation the **Highest Degree of Nutrient Qualities,** while eliminating every element of an irritating character.

THOROUGHLY COOKED AND PARTIALLY DIGESTED,

This food preparation is admirably adapted to the use of all persons with weak digestion, defective assimilation, general or nervous debility, brain workers, feeble children, and invalids generally, as well as travelers and excursionists, who often need to carry the ***Largest Amount of Nutriment in the Smallest Bulk,*** which is afforded by Granola in a pre-eminent degree.

ONE POUND MORE THAN EQUALS THREE POUNDS OF BEST BEEF

In nutrient value, as determined by chemical analysis, besides affording a better quality of nutriment. Thoroughly cooked, and ready for use in one minute.

Send for illustrated and descriptive circular of Granola and other healthful foods to the

SANITARIUM FOOD COMPANY, BATTLE CREEK, MICH.

HEALTH FOODS

IN the effort to meet the necessities of a large Sanitarium, with its great variety of patients, we have produced a number of food preparations adapted to different diseased conditions, the merits of which are such as to secure for them a very large and increasing sale, not only to persons belonging to the invalid class, but to those who wish by "good living" to avoid disease. Unsuccessful attempts have been made to imitate some of these foods under various names. None are genuine unless bearing our stamp or made under our authority. The following are our leading preparations:—

	Cts. per lb.		Cts. per lb.		Cts. per lb.
Oatmeal Biscuit	12	*White Crackers*	10	*Wheat Granola (bulk 10)*	12
Medium Oatmeal Crackers	10	*Whole-Wheat Wafers*	10	*Avenola (bulk 10)*	12
Plain Oatmeal Crackers	10	*Gluten Wafers*	30	*Granola (bulk 10)*	12
No. 1 Graham Crackers	10	*Rye Wafers*	12	*Gluten Food No. 1*	50
No. 2 Graham Crackers	10	*Fruit Crackers*	20	*Gluten Food No. 2*	20
Plain Graham Crackers, Dyspeptic	10	*Carbon Crackers*	15	*Infant's Food*	56

SAMPLE PACKAGES CONTAINING SPECIMENS OF EACH OF OUR FOODS SENT POSTPAID FOR 50 CENTS. SELECTED SAMPLES, 25 CENTS.

All grain preparations can be supplied in large or small lots, as we keep a fresh supply constantly on hand of goods which are largely made expressly for us, of a superior quality of grain. Address—

SANITARIUM HEALTH FOOD COMPANY
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BY MRS. E. E. KELLOGG, A. M.,

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