AUGUST, 1893.

GOOD HEALTH

CONDUCTED BY

J. H. KELLOGG M.D.

Subscription price $2.00
(Including Companion Volume)

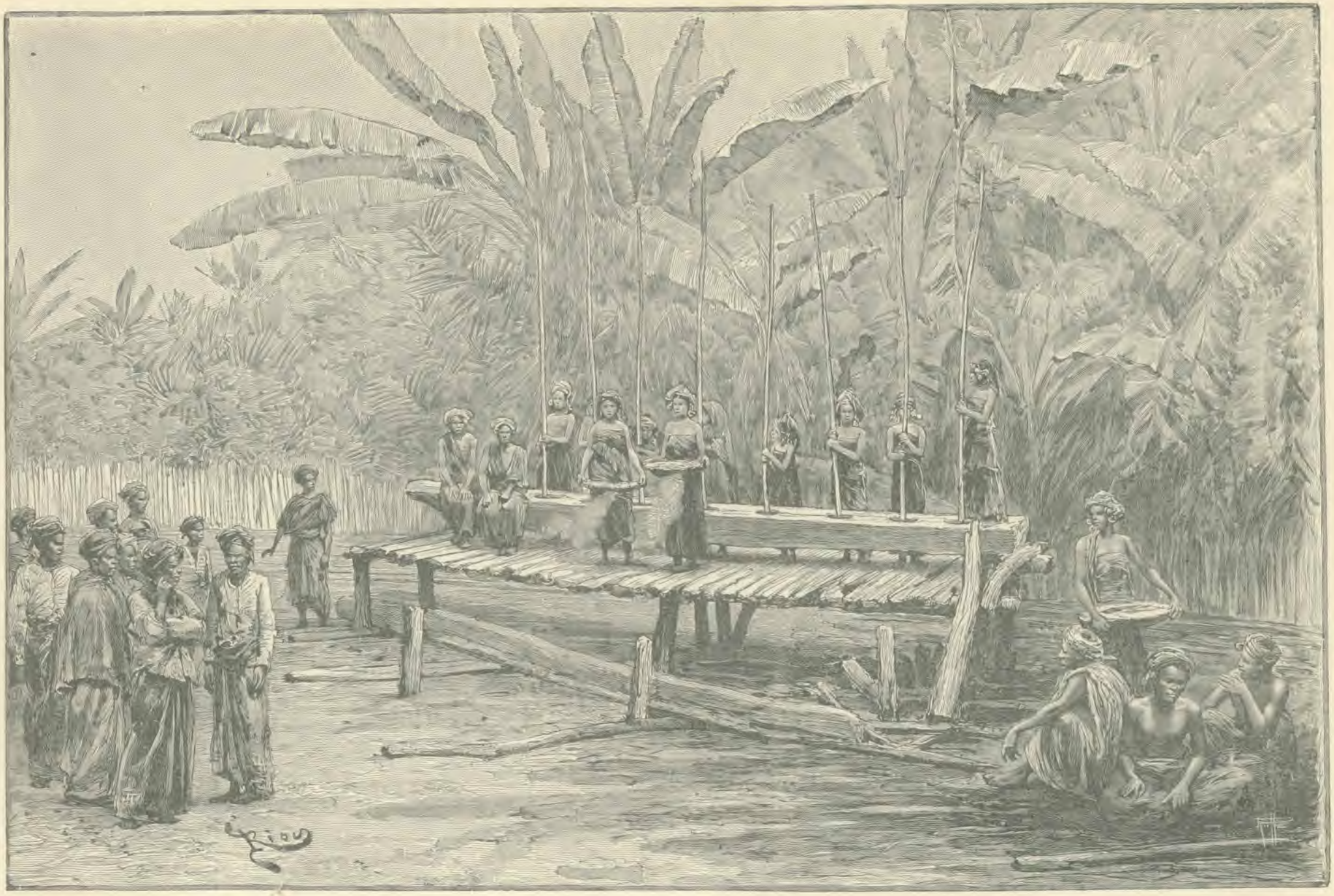
PUBLISHED MONTHLY.

SAMPLE COPY 20¢

GOOD HEALTH, VOL. 28, NO. 8.

CONTENTS.

BATTLE CREEK, MICH., August, 1893.



BATAK WOMEN POUNDING AND CLEANING RICE.

GOOD HEALTH
A JOURNAL OF HYGIENE
MENS SANA IN CORPORE SANO.
VOL. XXVIII. NUMBER 8.
BATTLE CREEK, MICHIGAN. AUGUST, 1893.

INTERNATIONAL HEALTH STUDIES.

BY FELIX L. OSWALD, M. D.

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

52.—New Mexico.

WHEN the birth-land of the human race sent out swarms of colonists, the pluckier nations seized upon the high tablelands, where the necessity of hard work was offset by immunity from climatic diseases and troublesome insects. Originally those plateaus were probably as well wooded as the coast regions, or even better, from an explorer's point of view, that made open forests preferable to the rank jungles of the lowlands; but in the course of time the exigencies of agriculture encroached upon the woodlands till droughts and failure of crops forced the settlers to migrate in quest of new homes.

In that manner, Persia, Turkestan, and Armenia lost more than half their old-time population, and it seems certain that by similar causes large areas of our own continent were reduced to their present state of aridity. About the middle of the sixteenth century, when the first Spanish adventurers crossed the valley of the Rio Grande, the territory now known as New Mexico was studded with the hamlets of agricultural Indians, and seemed fertile enough to warrant the colonization of the country by a large force of armed immigrants, who brought their own priests and judges, in case the theological errors of the natives should require a course of *autos-da-fé*. The aborigines, however, renounced their heresies with a readiness that disarmed the wrath of their conquerors, and the missions soon flourished beyond anything yet experienced north of the isthmus. The historian Castenada, who accompanied Juan Coronado's expedition to the Taos highlands, describes the plateau as "*un pays de huertas y abejotes*," "a country of gardens and wild bees," and describes the large herds of buffaloes that browsed the herbs of the foothills. The natives belonged to the tribes which the Spaniards call Indios Mansos, gentle or "tame" Indians, in distinction from the carnivorous cutthroats of the northeast. They were as submissive as the aborigines of the West Indies, but less sensual and indolent, and would have made model tenants, if, to their sorrow, their masters had not discovered the fact that the rocks of the Sierras contained silver, as well as wild honey.

The hundred years following the discovery of precious metals, worked a woeful change in the prosperity of the new settlement. Thousands of Indians were dragged away from their hill gardens, and forced to toil in the mines or haul cordwood to the smelting furnaces, and the inhumanity of the silver nabobs may be inferred from the petition of one Pedro Becerra, a native of Fernando de las Palomas, who states that in five years (1672–77) three of his sons had been worked to death, and fourscore of his best fruit trees cut down for furnace wood. The country, originally quite as productive as Southern California, but never overblest with

moisture, was fast becoming a desert, and relief came too late, when in 1680 the natives rose in fierce revolt and chased their oppressors across the Rio Grande.

A few hundred half-breeds were suffered to remain, and with the aid of their native priest, worked out the strange compromise civilization known as the social system of the Pueblo Indians. The agricultural mountain hamlets of the New Mexican Sierras form a state in the state in a much more literal sense than the parishes of the Mormon hierarchy. Thrice, since 1855, the Pueblos have been offered the citizenship of the United States, but they

A MESCALERO APACHE.

prefer their own tribal organization and stick to their ancient customs. They have their own laws and their own physicians; they still weave their own clothes from homespun wool, and their religion is an astonishing mixture of Spanish mission dogmas and aboriginal traditions. In their little rock-built *casuohas*, they have images of the Virgin, and wear crosses as talismans of good luck, but they also wear serpent-bone amulets, and worship not only stars and weather gods, but home-made fetiches and hermaphrodites. To propitiate the favor of Heaven, they burn painted sticks in the first night of the new moon, or, as a last resort, undergo the penance of the flagellants and march along under the burden of a big wooden cross.

But neither their burnt sacrifices nor their processions can prevent droughts, and their crops have often to be harvested prematurely to anticipate the ravages of the Rocky Mountain locust. The plains which in Juan Coronado's time were dotted with orchards, have become dependent on artificial irrigation; large tracts of *despollados* (uncultivated tablelands with a sparse growth of mesquite shrubs) have become absolute deserts, as hot, dry, and barren, if not quite as sandy, as the ugliest portions of the central Sahara. A full third of the total area is entirely void of arboreal vegetation. The "Staked Plains" of Western Texas cross the southeastern border, and under various names, but without much change in their aspect of hopeless sterility, extend westward to the valley of the Rio Pecos, and even beyond, to the foot of the Pedernal Mountains, and the Reservation of the Mescalero Apaches, broken only here and there by a fringe of cottonwood and mimosas, along the brink of a shallow brook which in dry summers shrinks to a string of brackish pools or sand gullies, where persistent search may discover a trace of drinkable water.

Near the opposite — the northwestern — extremity there is another tract of treeless tablelands, extending across the Atlantic and Pacific Divide, and smaller "barrens" are found all along a line drawn from east to west across the center of the territory, to the uplands of the Zuni Plateau on the border of Arizona. In the worst of these deserts the mercury has been known to rise to 115° F. in the shade of a tent wagon. Travelers, unused to the climate, are overcome with the fatigues of a protracted journey through the region of burning sandhills, and at certain times of the year even the settlers of the oases, created by irrigation or the use of artesian wells, suffer from the effects of a scorching wind known as the *Ayre de Malpais*, a sort of sirocco, heated by the fierce sun of the Mexican deserts, and generally attaining its maximum of oppressiveness on the afternoon of the third day. The influence of the desert wind begins to betray itself in a feeling of general lassitude, followed by loss of appetite and dull headaches, but varying considerably in its effects on different individuals. Negroes and Reservation Indians, with an East American ancestry, suffer quite as much as the Anglo-American immigrants; the native half-breeds become torpid, and weather the heat by abstinence from mental and physical activity; while Chinamen from the southern provinces of the Mongol Empire are said to be almost sirocco-proof, and continue the hardest work, such as wheel-barrow labor on a new railway line, with stolid indifference to such trifles as a three days'

spell of bake-oven weather. In Southern California several wholesale fruit planters tried the experiment of dispensing with pigtail laborers and filling their places with white boys and girls; but a week after the setting in of the dog-day season, they had their houses full of sick children, and pigtail John returned, grinning in the triumph of his hades-proof constitution.

The phenomena of vegetable life present analogous contrasts, and the organ cactus luxuriates in a climate where few leaf trees can survive the first summer. In the gardens adjoining the railway stations of the Santa Fe line, experiments with eastern shade trees involve an amount of trouble hardly compensated by the result, and young elms and walnuts, drenched with the lawn sprinkler at daybreak, will often look shriveled with heat before 2 P. M., and if left to the tender mercies of the climate, with its average of twelve rain showers a year, will wither to the roots before the end of June.

But the vast territory — nearly twice as large as all the New England States taken together — comprises all sorts of soil and climate. The plateaus are not all *despollados;* there are large tracts of upland covered with mesquite groves and at least six of the sixteen countries can boast of extensive mountain forests. Some forty miles due east of Santa Fe, the gaps in the gray cliffs of the foothills reveal a higher mountain range stretching away to the far north, in an endless succession of billowy ridges, all covered with dark green pine forests, blending in the distance with the bluish tints of the sky. Nor are these woods limited to the narrow fringe of arboreal vegetation which here and there follows the ridges of the western Sierras; at an altitude of eight thousand feet above sea level a continuous mantle of coniferæ spreads over the summits and dells of successive mountain chains, some thirty miles from west to east, and maintaining that average breadth, extends two hundred miles north, beyond the borders of Colorado and the valley of the upper Arkansas.

These highland parks are the haunts of numerous deer, elk, and swarms of wild turkeys, and are beginning to attract tourists from all parts of the United States. Groves of stately pines, shading a hundred-acre patch of summit levels; then a grassy dell, with dwarf juniper shrubs and mountain ivy; and in the interspaces of a seam of cliffs small thickets of cedar bushes; squirrels scampering over the shady glens in quest of windfalls; crossbills and other pine-loving birds twittering in the tree tops; now and then a turkey startling the wanderer with its heavy-winged flight, or the scream of a hawk, followed by the cawing of pursuing ravens, but hardly a trace of insect life. At the sunniest hour of a midsummer day a small yellow butterfly may now and then be seen flitting about the bramble blossoms of a ravine, or tiny specimens of the ichneumon wasp will come in sight as they chase a spider round and round the stem of a half-withered fir-tree, but travelers seeking refuge from the mosquito plague of the lowlands, may shout their Eureka on every pine ridge of the upper Sierras.

Rains come more abundant to these highland forests than to the best wooded river valley of the plains,

PUEBLO SQUAW.

that of the Rio Grande not excepted; still the maximum of the evergreen Sierra parks hardly exceeds a moisture supply of fifteen inches a year, melted snow and all, to eighty inches of the Oregon Coast Range and sixty-five of the Oregon coast plain. Malaria, as a consequence, is almost unknown in the uplands of New Mexico, and the percentage of deaths from pulmonary diseases is smaller than in any other portion of the United States, Arizona alone excepted. The high mountain ranges of the north countries combine, indeed, in a remarkable degree the four natural specifics for the cure of consumption: Pure air, sunlight, the balm of pinewood odors, and dry frosts. In cold winters the mercury on the forest Sierras east of the great divide sometimes sinks to twenty degrees below zero, while the heat of the warmest day rarely reaches ninety degrees in the

shade, except in the highlands of Colfax county, where basalt rocks and numerous hot springs indicate the proximity of subterranean fires. Just about a year ago, the Cerro Prieto, an extinct volcano of the Taos Range, some twenty miles south of the Colorado border, was, in fact, reported to have had a relapse of fire vomit accompanied by smoke whirls that were seen by the miners of the Tierra Amarilla district, at a distance of seventy miles. It would be worth knowing if the settlers of that extra-dry volcano region enjoy exemption from the rheumatic affections rather prevalent in other parts of the territory, and which the local physicians ascribe to the practice of sleeping on the bare, damp ground. Tourists, in the hunting grounds of the Midland Sierras, are not apt to be deterred by that risk. There is more game in the summit parks than anywhere northwest of the Florida Everglades, and far less danger of purchasing the privilege of a day's sport with a week on the sick list. In spring, when the weather often stays dry for months together, the trout brooks of the highlands become as clear as crystal, and being fed by melting snow, are almost everywhere fit for drinking purposes. Lovers of wild scenery may visit the tower peaks of the Organos Range, or the falls of the Rio Virgin over a thousand-yard precipice and the "natural tunnel," where one of its tributaries passes through a limestone grotto two hundred feet long and arched some fifty feet above the level of the stream.

In the placer mines of Colfax county, bipeds of our species may be seen enjoying fairly good health on a diet of crackers and *carne secco* ("jerked beef") washed down with spring water, after the jugs of stronger fluids have been drained to the dregs. The profits of that industry have shrunk to two dollars a day, *minus* the costs of imported comestibles, but the independence of a goldwasher's life would reconcile Western Americans to smaller emoluments, and many of the miners could achieve independence if they would give gamblers and aguardiente peddlers a wider berth.

There are silver mines, too, often with the ruins of old Spanish smelting furnaces, but their present rate of productiveness would hardly have warranted the construction of railway lines if it had not been for the situation of New Mexico on the overland route from the Gulf States to the Pacific. As it is, two great trunk lines, the Texas Pacific and the Topeka and Santa Fe, cross the Territory from end to end, and with their branches penetrate every larger valley of the Silver Sierras, and give travelers of moderate means a chance to visit one of the greatest ethnological curiosities of our continent,— a village of the Pueblo Indians, where frugality and obstinate conservatism have held their own within a stone's throw from the outposts of restless American enterprise.

The Lotophagi of old can hardly have eaten their vegetable fare in more perfect content than the agricultural Indians that settled the valleys of Taos and San Mateo, and their grotesque hybrid religion need not deter their visitors from studying their sensible customs: their system of co-operation, their water worship, their long noon-tide rests, and their educational rule of exempting children under twelve years from all sorts of hard labor. Caution and thrift are two unpopular virtues, and "Trikoal Niggers" is one of the mildest nicknames, fastened by the carnivorous cowboys upon the tillers of the Pueblo truck-farms, whose staff of life, next to a cornmeal pancake, is a dish of *frijoles*, or brown beans,— a natural aperient, and not the worst staple diet in a dry, hot climate. The Pueblos are too discreet to betray their synonyms for their restless neighbors, and probably console themselves with the fact that the balance of average longevity is some twenty years in favor of beans *vs.* bull beef.

(To be continued.)

THE MARVELOUS BACTERIA.— The reproductive power of many species of bacteria is so marvelous as to be entirely beyond belief. Prof. Lau says that he has experimented with several different forms of these minute organisms that were capable of doubling their number every hour.

When in good condition an average specimen of bacterium will produce 16,777,200 individuals of his kind in the short space of twenty-four hours. In forty-eight hours the offspring from a "germ" measuring not more than one-fifteen-thousandth of an inch, will have increased until the bulk cannot be put into a half-pint measure, the total number of individuals then exceeding 281,500,000,000. If these deductions are correct (and scientists of ability have proved that they are as near as such figures can possibly be approximated from the very nature of the experiment), is it any wonder that "germ" or bacterial diseases are so difficult to control?

Dr. Adametz, the Swiss savant, says that there may be more living, breathing creatures in a pound of cheese than there are inhabitants on the globe.—*Sel.*

HEALTHY HOMES.

VIII.

HELEN L. MANNING.

SLOPS AND GARBAGE.

EVERY house-mother should constitute herself the sanitarian of the premises, if she would guard her dear ones from conditions which invite disease and perhaps death. To enter upon this task intelligently, the plainest and simplest expositions of sanitary science should be as familiar to her as her cook book or fashion magazine. It is often unsafe to trust to the plumber and the carpenter to arrange fixtures, without giving them personal oversight. Sometimes in their haste they will do a job slightingly, and again, they may err through ignorance.

The location of drains and sinks should be carefully considered, and their condition frequently inspected. The drain pipe from the kitchen sink should lead several rods away from the house, and if the outlet reaches the roots of trees or shrubs which especially delight in moisture, such as the willow or the quince, a double good will be accomplished. An open box should never be used to convey any form of slops. Even a box or tube conductor of wood should not be tolerated, as in a short time it becomes thoroughly saturated with filth and the breeding place for germs innumerable. Tile is better than wood, and being porous, much of the moisture oozes out along its whole course. An iron pipe is good so long as it remains intact, but it is, of course, easily corroded with rust. Lead is the most durable of all, but also the most expensive. However, the matter of expense should be lightly considered when the health of the household is in the balance, to say nothing of the offset of doctors' bills and other expenses incident to sickness.

But whatever material is used for conductors, the necessity of flushing the pipes with some good disinfectant solution at frequent intervals, remains the same. Once or twice a week is none too often, in hot weather. Copperas is a good disinfectant for ordinary use, and has the advantage of being cheap, — about three to five cents per pound. Dissolve in the proportion of one half a pound to a gallon of water, and use very freely. Plug the outlet, and pour enough into the sink to fill the pipe its full length. Use the solution as near the boiling point as convenient, for the reason that a hot fluid is more penetrating than a cold one,— an advantage, if tile or wood is used,— and also because a hot solution acts as a solvent of whatever waste particles may have lodged at various points. Dishwater usually contains more or less grease, and this will be melted and washed out if the disinfectant is poured in hot.

Where no drainage pipes are provided, as not infrequently happens, dishwater, suds, and other slops are emptied directly upon the ground. In this case, pains must be taken to carry the slops a considerable distance from the house, and distribute them around over quite an area. Mother earth is a great purifier, but her receptive capacity may be overtaxed without this precaution. Where hard water is used for dish washing and other purposes and the slops are all poured in one spot, the lime will in a short time form an impervious coating in most soils, rendering absorption impossible. Thus the filth is left to accumulate on the surface, and speedily breeds germs. Take warning if you see flies swarming around a given spot, and know that these little scavengers have found decaying matter to remove. Anticipate their friendly offices by pouring over the place a generous quantity of a solution of copperas prepared as indicated above, or else by covering it with chloride of lime, or with quicklime.

The dust and other sweepings from carpets and floors should be carefully burned, not thrown out into the yard to be blown back into the house, for dust always represents a multitude of micro-organisms. Kitchen refuse, like the parings of potatoes and other vegetables, should either be burned or buried, never permitted to decay upon the surface of the ground. In the country, the atternative of feeding vegetable refuse to stock may be chosen, in which case let it be so disposed of while fresh, instead of allowing it to accumulate. Sour milk is sometimes poured upon the ground, but it makes a most unwholesome stench. It should be buried in a trench instead. Where natural gas or gasoline is used for fuel, the cremation of waste becomes quite a household problem. Sometimes a small stove or furnace is fired up at frequent intervals on purpose to destroy garbage, and sometimes it is removed daily by a scavenger cart. In this latter case, the sanitary condition of the temporary receptacles must

be scrupulously cleansed. Chloride of lime in the proportion of six ounces to a gallon of water, is a good disinfectant for wooden vessels.

Garbage crematories for the disposal of waste built on a large scale, are coming into favor in cities. It is certainly a much more wholesome manner of disposing of it than dumping everything into some convenient river, lake, or other waterway, as is frequently done. Boston has a huge garbage crematory, with a capacity of several tons. The furnace is fed with crude petroleum. A blower run by a six-horse-power steam engine forces the intense heat into the receptacle for the garbage. Combustion is so rapid that the garbage disappears almost as fast as it can be shoveled in. There are two chambers for its reception, together with a system of draughts by which all the smoke and gases go from one to the other, making a complete circuit of the crematory, and then what is left escapes to the air through a tall chimney. Scarcely any ashes are made. All kinds of stuff are cremated here, just as it comes from the places where it is collected, including tin cans, bottles, and bones. The amount of garbage collected by the city each day is two hundred tons, and it is estimated that all this can be consumed by four furnaces at a cost of about twenty-five cents a ton. The whole operation is remarkably free from odor, and scarcely an offensive smell is noticeable as coming from the furnace.

A NEW BEATITUDE.

BY MARY WOOD ALLEN, M. D.

It is a self-evident fact that the condition of the mind affects the attitude of the body.

If a child approaches us with head erect and chest elevated, we know at once that his mind is free from depressing thoughts. He is courageous, happy, has nothing to conceal. If he comes with drooping head, and with chest contracted, we read the thought of fear or shame in his demeanor. If a man is seen walking with hands behind him and head bent forward, we know he is thinking earnestly, perhaps even despondently; but if his head is up and his eyes look straight before him, we know that his mind is not brooding over troubles, but he is ready to face the world with cheer and courage.

It is just as true, though not as well understood, that the attitude of the body is reflected upon the conditions of the mind.

Let the brave, active, courageous facer of the world and its problems, droop his head and lower his chest, and he begins to lose courage, and to doubt his ability to overcome the obstacles that oppose his path. Let the bowed brooder over life's trials lift his head and raise his chest, and courage begins to flow into his heart, and he feels that life is not as gloomy as he had imagined. When Clara Barton went to take charge of the Sherbourne Reformatory for women, some years ago, she found that the regulations decreed that they were to walk with downcast eyes. She said: "They can never reform while compelled to assume that attitude. They must look up;" and so the rules were changed, and with the uplooking attitude of body came an increase of aspirations for nobler and better things.

The military carriage of the soldier has much to do with making him courageous, and the moral effect of a nation of men trained to an upright bearing is worthy of consideration. With this thought in mind the rounded shoulders and depressed chests of many of our school-children become of national significance, indicating not only lack of vital physical power, but a lessening of moral force, lack of courage, deficient will.

I once heard a young girl, whose misuse of words was often amusing, exclaim of a friend that "she struck a be-attitude." The attitudes that we see every day on the street, in the parlor, everywhere, are often far from be-attitudes.

For several hours one day, I watched the crowds of people who were thronging the streets to witness a public parade.

Elegant costumes were prevalent, faces of refinement not uncommon, but grace, dignity of bearing, elegance of carriage, were seldom seen. We could not wonder at the rounded shoulders and sunken chests of the aged men and women whose lives had been spent in patient, unceasing toil; but we saw the same outlines of figure in the children not yet in their "teens." It was pitiful to see the curved backs, the hollow chests, the protuberant abdomens, in girls of ten or twelve; or the round shoulders and heads deflected forward over the depressed chest of boys of the same age; pitiful, yes startling, when with prophetic eye we saw what it all meant for the native in the years to come.

Not long since I read in a newspaper an article against physical culture in public schools, calling it a "fad" not to be countenanced by wise parents. The writer evidently did not realize the significance of the bodily deformities that are consequent upon the cramped positions of school children. He no doubt would desire that American manhood and womanhood should mean the noblest that those words imply, but the truest nobility of thought and purpose cannot exist where the constant bodily attitudes are contradictory of noble impulses. The teacher who insists upon an upright physical bearing has done more to prepare the pupil to be a worthy, honorable citizen than the teacher who gives his attention to cramming his pupils' minds with book learning, while he allows their bodies to express servility, dejection, cowardice.

"What shall we do with our round shouldered girls and boys?" "Shall we put corsets on the girls, and shoulder braces on the boys?" These are questions constantly asked of the physician, and girls and boys are tortured by surgical appliances, and tormented by importunate commands to throw their shoulders back; and yet the deformity is not remedied, and will not be until we learn that the cause does not lie in the shoulders, and the efforts to throw them back only increase deformity.

The military attitude tends to overcome round shoulders, and yet it does not interfere with them. The orders are to let the arms hang naturally, and the shoulders are straightened by raising the chest and subordinating the abdomen. The cause of round shoulders lies in the weakness of the muscles that uphold the front of the body, and in compelling the bony structures to do the work of the muscles.

When the person allows the weight to rest upon the heels, he has so changed the center of gravity that in order to balance himself the abdomen is protruded, the graceful curve of the lower spine straightened, and the upper curve increased, and the head thrust forward. Add to this the sunken chest and drooping waist muscles that come from lack of exercise, or of vigor for any cause, and we have the source of round shoulders. To overcome this defect we have but to transfer the weight to the balls of the feet and elevate the chest, and the round shoulders disappear.

However, raising the shoulders is not elevating the chest, as many people think it is. It seems very difficult for some people to get hold of the method of elevating the chest. I have found that a good way is to stand with the toes against a door. Usually the person so standing will touch the door with the abdomen, and the chest will be several inches distant. Reverse this, making the chest touch and the space be between the door and the abdomen, and the position will be about right.

"But it tires me so!" exclaims the individual. That is because it brings into play unused muscles, and also because the person is using too great nerve tension. When the attitude has been persisted in until it has become the natural one, the fatigue of standing and of walking will be greatly lessened. In this position all the organs of the body are rightly related to each other. The hips and shoulders are on a vertical line, the head is poised directly on the spine, the chest is unrestricted, the internal organs are lifted, instead of being crowded down, and the mind, reflecting the attitude of the body, is uplifted, elevated, encouraged, and we discover in the increased health and vigor that our new beatitude is but a physical receiving of the blessings promised to "them that walk uprightly."

A HINDOO HOTEL.— A high caste Hindoo is a vegetarian, and so strict is he in abstinence from flesh food, that he will not eat anything which has in any way come in contact with any portion of the body of a dead animal. If possible, he will not allow himself to be touched by, and will not touch, a person who eats meat. He regards the taking of animal life and the eating of flesh as heinous crimes. The Asiatic *Quarterly Review* describes a recently developed establishment at Woking, Eng., known as the Oriental Institute, the purpose of which is to enable Hindoos who cross the sea to live in harmony with the principles of their religion and the laws of their caste. The building was erected on soil which was uncontaminated by the blood of animals. Separate and independent suites of rooms are prepared, each of which is a complete establishment in itself. Water is obtained from newly made wells carefully covered, the water being drawn with buckets which have never touched leather or any other animal product. But fruits and vegetables of all kinds, grains, lentils and other pulses, and a variety of vegetable foods are furnished in abundance; but not the smallest trace of any sort of food substance which has lived and breathed is to be found about the place.

OUR SKIN.

THERE's a skin without and a skin within,
A covering skin, and a lining skin ;
But the skin within is the skin without
Doubled inwards, and carried completely throughout.

The palate, the nostrils, the windpipe and throat,
Are all of them lined with this inner coat,
Which through every part is made to extend —
Lungs, liver, and bowels, from end to end.

The outside skin is a marvelous plan
For exuding the dregs of the flesh of man ;
While the inner extracts from the food and the air
What is needed the waste in his skin to repair.

While it goes well with the outside skin,
You may feel pretty sure all 's right within.
For if anything puts the inner skin out
Of order, it troubles the skin without.

The doctor, you know, examines your tongue
To see if your stomach or bowels are wrong ;
And he feels if your hand be hot and dry,
And is able to tell you the reason why.

Too much brandy, whisky, or gin
Is apt to disturb the skin within ;
While, if dirty or dry, the skin without
Refuses to let the sweat come out.

Good people all ! have a care for your skin,
Both that without and that within ;

To the first you 'll give plenty of water and soap,
To the last little else beside water, we 'll hope.

But always be very particular where
You get your water, your food, and your air ;
For if these be tainted or rendered impure,
It will have its effect on your blood — be sure.

The food which will ever for you be the best
Is that you like most and can soonest digest ;
All unripe fruit and decaying flesh
Beware of, and fish that is not very fresh.

Your water — transparent and pure as you think it —
Had better be filtered and boiled ere you drink it,
Unless you know surely that nothing unsound
Can have got to it over or under the ground.

But of all things the most I would have you beware,
Of breathing the poison of once-breathéd air ;
When in bed, whether out or at home you may be,
Always open your window and let it go free.

With clothing and exercise keep yourself warm,
And change your clothes quickly if drenched in a storm ;
For a cold caught by chilling the outside skin
Flies at once to the delicate lining within.

All you who thus kindly take care of your skin,
And attend to its wants without and within,
Need never of cholera feel any fears,
And your skin may last you a hundred years.

— *From a London Periodical of November 15, 1871.*

THE BREAD OF THE ANCIENTS.

A GERMAN periodical, the *Allgemeine Zeitung*, gives the following interesting account of ancient breads and their use : —

"Among the Greek aristocrats of whom Homer gives us a description, bread was not, as with us, simply adjunct to, but an essential portion of, the principal meal of the day. The chiefs of the so-called heroic period lived almost exclusively on two dishes ; roast meat, over which a little flour was sprinkled, and wheaten bread.

"The flour was ground in a hand-mill by the female servants ; it was then made into dough, and baked (as it appears from the information handed down to us) in a special part of the kitchen.

"Wheaten bread enjoyed a great reputation. Homer calls it the strength of man. Barley bread had been eaten from time immemorial, although barley was preferred in the form of gruel or porridge. Barley bread was not generally used until 500 B. C. Bread was the first thing set before a guest. It represented civilization, whereas meat was representative of the old style.

"When Odysseus fled for refuge to the palace of Alkinoos, bread is specially mentioned among the 'dishes' set before him.

"In the historical Hellas, bread played a similar part ; it was one of the principal foods of the people, was regarded as indispensable by the better classes, and certain kinds of it were even looked upon in the light of luxuries. Barley bread was always very coarse ; wheaten bread was divided into different sorts, according to the amount of bran.

"The place most celebrated for its bakeries — the Vienna of the time — was Athens, but we really know very little about the method of making bread there. Probably their ovens were not very much different from the ordinary ones of the present day; and some kinds of bread were finished off by being roasted or toasted on a spit.

"The fact that the loaves which Seuthes, the Thracian prince, set before the strategists of the army of Xenophon, is expressly described as 'leavened,' has led to the conclusion that it was not customary to ferment the bread.

"It was the rule of Greece, in later times, to sell bread in the market-place, which was quite the opposite to Roman usage. The bakers, mostly wealthy proprietors, made the bread and distributed it to the bread-women, who, as far as politeness was concerned, were on a level with the Berlin women-hawkers, or the London fish-women.

"It is characteristic of the position which bread occupied as an article of food, that the Spartans, at their midday meal, only had wheaten bread on special occasions as a particular luxury. Solon also ordered that those citizens who were fed at the expense of the state in the Prytaneion have white bread only on extra special occasions.

"In Republican Rome it was the custom for each household to bake enough bread for its requirements, and not to purchase; and even under the Cæsars, when there was a goodly number of bakers in Rome, the better-class families adhered to the old style of baking at home.

"Such houses possessed a separate room for baking, situated next to the kitchen; this room was called *pistrina* (mill), for it embraced the place where the corn, etc., was ground. Bakers were called *pistores* (millers) until the fall of Rome, although the two branches had been separated long before.

"In Imperial Rome, the bakers were divided into three classes,—white bakers, milk bakers, and sweet bakers. The white, or wheat bakers were the chief, because they produced food, a means of nourishment. The milk bakers made buns and cakes. The third class were noted for their skill in the baking of tarts and all kinds of sweet confectionery eaten for dessert.

"Butter was never used as a food either in Greece or Rome; it was employed chiefly as a medicament (externally in plasters and bandages, internally much as we take cod-liver oil); had pastry been made with it, the Greeks and Romans would have rejected the confectionery just as we should turn up our noses at a tart made with train oil. It is true that the Thracians ate it, but they were only half Greek.

"In Imperial Rome there were, in addition to bakeries conducted by private people, spacious state bakeries which played an important part in providing for the wants of the people. The Cæsars paid special attention to these establishments, took great care that they should be properly supplied with corn, barley, etc., and even made occasional tests of the goods supplied.

"The Roman ovens were just like ours. A well-preserved specimen was discovered some years ago during the excavations at Pompeii; it contained several charred loaves, on which the baker's stamp could be plainly seen, showing of what flour they had been made.

"The loaves of Pompeii weighed about two pounds; they were round, and indented, to admit of breaking them into eight equal parts. Similar loaves are made even now in Calabria and Sicily."

SHE FUSSES TOO MUCH.—We know what is the matter with him, and have known it all along. He is very delicate, and the least draft of air will throw him into a chill. He suffers from cold feet and darting pains, and has the most miserable kind of an appetite. He is either greatly depressed or highly elated, and has an abiding conviction that he is soon to be called to render up his accounts. He believes in faith cure and Christian science, yet he is the constant patron of his family physician, thanks to his faithful wife. Poor woman! She warms his shoes for him every morning, for fear they may be a trifle damp. She gets all his clothing ready so he may jump into them quickly, without too long exposure of the body to the air. She feels of his head for fear it may be too hot, and chafes his feet that the circulation may be good for the day. We might prolong the picture in this line for a whole page, and yet it would not be overdrawn. The poor careworn, anxious wife declares "He is so delicate," and he, the fool, thinks he is. Now what is the diagnosis in this case?—She fusses too much! If such men had no one to fuss over them, they would become strong and well within three months. We often write of the nervous, hysterical woman; but deliver us from the grunting man spoiled by the mistaken kindness of a devoted wife.—*Nat. Med. Review.*

"No living germ can resist the antiseptic power of essence of cinnamon for more than a few hours," is the conclusion announced by Mr. Chamberlain as the result of prolonged research and experiment in M. Pasteur's laboratory. It is said to destroy microbes as effectively, if not as rapidly, as corrosive sublimate.—*Hygienic Review.*

Rollo—"Tell me, pa, is there any difference between common salt and chloride of sodium?"

Mr. Holliday—"Yes, Rollo, a great difference. Salt is two cents a pound at the grocer's, while chloride of sodium is 50 cents a teaspoonful at the druggist's."—*Boston Transcript.*

SUNLIGHT AND BACTERIA. — Some highly interesting and important experiments on the effect of direct sunlight in destroying bacteria have recently been reported to the Royal Society of England by Professor Marshall Ward. The fact that sunlight is inimical to bacteria has long been known, but Professor Ward's experiments indicate that sunshine may be the most effective agent in keeping air and water free from infection.

The first experiment consisted in filling a small glass flask with water from the river Thames, containing many thousands of anthrax spores, and exposing it for a few days to the light of the sun. The spores were all killed.

Then gelatine plates containing living spores were prepared, and by means of a zinc stencil plate placed over the gelatine the latter was sheltered from the sun's rays, except where the outline of a letter cut through the zinc allowed the rays to fall upon the gelatine beneath.

After the plates had been exposed to the sun for from two to six hours, they were put in an incubator designed to develop the spores. Then it was found that those spores which had been exposed to the sunlight falling through the letter cut in the stencil plate, had been killed, while the others, which had been protected from the sun, had not been affected, and they developed into colonies of anthrax.

Wherever the anthrax colonies thus developed, they clouded the gelatine, so that when the plate was held up to the light, after the incubation, the outline of the letter over which the spores had been killed, remained as a transparent marking in the midst of an opaque plate.

The suspicion then arose that the heat developed, and not the mere effects of the light rays, might have killed the spores; but further experiments showed that this was not the case, and that it was undoubtedly the direct solar rays that acted as the germicide.

Thus scientific investigations are continually revealing new ways in which the sun, the great governor of the solar system, directly influences the destiny and the welfare of the earth and all of its inhabitants. — *Sel.*

TAKING STOCK OF HEALTH RESOURCES. — Every one born healthy into the world brings an endowment of vital capital sufficient to maintain the body, for normal and efficient service, say, for eighty years. This capital serves two purposes, or rather a common one, in two ways. Its income is large enough, and probably somewhat more than enough, for all healthful drafts till maturity; there is provision for the expenditures of the periods, fairly well defined, of infancy, childhood, puberty, maturity, and old age, and it seems to be true that economy at early periods saves for those that follow, but such saving is not likely after maturity is reached. It is in accord with other matters that strength comes by effort, power in natural law in one form by its exercise in others, in the use of vital capital, provided that it be in line with the purposes of the body.

In our present view the cost of living — the outlay for mental or physical work — is met by draft on this fund. To think, to decide, to do, we draw against income first, and, if we will, sometimes from the capital. In the normal life of infancy, childhood, youth (and early manhood, perhaps), the principal draft is for growth and development of powers; and the normal expenditure for these purposes is greater at these ages than afterward. At and after maturity, the draft is for current expenses — living and repair and for special work. With health and a normal record to date, this charge should be easily met from income, but it is a fact that many have "lived beyond their means," and have in various ways drawn on capital which, according to its extent, impairs income and threatens vital bankruptcy, and this may exhibit itself in physical or mental weakness and end in premature death. Both results are in common evidence.

In the way of nature, old age should find one with scarcely diminished vital capital yielding no more income, but sufficient to take one by easy and enjoyable stages of physical rest and mental occupation to the age of at least eighty years, and to euthanasia, the normal end of a happy life. I think it not difficult by this rude but not unfair analogy of the methods of using pecuniary capital and income, to throw some valuable light on the facts of failure or success in managing vital capital, by all sorts and conditions of men. Why would it not be a judicious and business-like act, then, once a year "to take stock," figure the profits and losses, of the twelve months' living and doing that are passed, and learn what one may of the vital prospects ahead of him? It will lead to discoveries worth making, and one of the first will be the fact that the body is endowed with delicate methods of its own, independent of the mind, of discovering and determining the kind, direction, and amount of the response to make to the demand upon its resources, from within or without itself. You will find it a serious mistake to think the mind absolute master of the body, or the last nothing but the creature of the first. — *Dr. C. N. Hewitt, in the Literary Northwest.*

"DANGER."— With the present enlargement of woman's activities is much that is admirable and full of the inspirations of hope for the future; but there are also some elements of peril. There is danger that ambition will contest with love the right to supremacy; danger that admiration will be coveted rather than affection; danger that, driven by the pressure of less ennobling motives into work that is noble, woman will assume burdens greater than her powers. If she does, she is always liable to fall into one or the other of two disasters. Exhausted by overwork, and unrefreshed by any reservoir of strength such as the quiet of old-time homes afforded, she perhaps saps her vitality, falls a prey to nervous exhaustion, becomes a semi-invalid, dreads both the pains and the cares of maternity, and contrives to avoid motherhood, if she does not eschew marriage. Or, endeavoring to avoid this peril, she possibly falls into still greater disaster— depends on opiates for rest and on stimulants for strength. If we may trust testimony apparently trustworthy, the use of both narcotics and stimulants among women has increased, especially in our great cities, to an alarming degree. Fashionable drug-stores furnish in the soda-water fountain a convenient bar, whereat jaded nature seeks to borrow at a ruinous rate of interest, strength from to-morrow to meet the demands of ambition for to-day, and the counter of the same shop serves, sometimes with, sometimes without, a prescription, the means for gratifying the dangerous opium habit. It is possible that public rumor exaggerates the extent of these dangers; it is certain that she does not wholly invent them.

Nervous exhaustion, insomnia, alcoholism, and the opium habit are symptoms of a serious disease. They mean that nature is exhausted, either by the demands of real work or those of unreal and conventional recreations. They mean that life is exhausting the energy more rapidly than natural methods are supplying it. Experienced teachers report that when the young girl returns to school after her vacation, it often requires a week or two for her to recover her tone. Social pleasures, which taken in moderation would have reinvigorated her, have been taken in such lawless excess as to exhaust. She requires a vacation to recover from her vacation. But the mother lives all the year round in the maelstrom into which the daughter is swept for only a few weeks. Both have caught the infectious fever of the age; and the same heat burns in the veins and maddens the brain of woman in society that saps the vital energies of her husband on 'Change.

We need a return to simpler ways of living; need to reflect upon the homely but wise saw, "It's no use killin' yourself to keep yourself;" need to ponder Christ's suggestive words, "The cares of this world and the deceitfulness of riches." Not only are the restful ways of love at home better than the fascination of admiration in society, but even in the best and most consecrated of lives, a careful adjustment of accepted duties to the endowments of strength is necessary to the most enduring and effective life.— *Christian Union.*

HOW RAPIDLY WE THINK.— Helmholtz showed that a wave of thought would require about a minute to travel a mile of nerve, and Hersh found that a touch on the face was recognized by the brain and responded to by a manual signal in the seventh of a second.

He also found that the speed of sense differed for different organs, the sense of hearing being responded to in the sixth of a second, while that of sight required one fifth of a second to be felt and signaled. In all these cases the distance traversed was about the same, so the inference is that images travel more slowly than sounds or touch. It still remained, however, to show the portion of this interval taken up by the action of the brain.

Prof. Donvers, by very delicate apparatus, has demonstrated this to be about seventy-five thousandths of a second. Of the whole interval forty thousandths are occupied in the simple act of recognition, and thirty-five thousandths for the act of willing response. — *Pacific Record of Medicine and Surgery.*

A CLEAN SWEEP.— That it is easier to fell the tree of stimulation than to lop off a branch, is attested by a man of rare resolution, Edward Baltzer, the father of German Vegetarianism. Again and again he tried to break himself of a single bad habit — smoking — but failed. When he made a clean sweep of stimulants and narcotics, alcohol, tobacco, and flesh meats, the change was *kinderleicht* — mere child's play.— *The Vegetarian Messenger.*

Physician — "Well, my friend, what ails you?"

Patient — "I cannot sleep, doctor."

Physician — "What are you doing during the day?"

Patient — "Well, I work like a horse, eat like a wolf, and am tired as a dog when I come home, and still can't get any sleep."

Physician — "Sorry I cannot help you; but you will have to consult a veterinarian." — *Home and Country.*

EXERCISE AND SYMMETRY.

BY J. H. KELLOGG, M. D.

(Continued.)

ANOTHER way in which exercise is beneficial, is in promoting bodily symmetry. This is illustrated in the average savage. Entirely free from all conventional trammels, he is a fine specimen of a well developed man. He stands erect, his figure is symmetrical, his limbs are finely rounded, his shoulders are square, there is a graceful curve in his spine, and there is a general expression of strength in his whole figure and bearing. The Yuma Indians, the most primitive of all the Indian tribes of North America, furnish many grand specimens of the human figure. I shall never forget how I was startled when one of them suddenly sprang out in front of me as I was walking one day by a thicket in their reservation near old Fort Yuma. I did not know but he was going to scalp me, but as he stood before me with a form like an Apollo, broad shoulders, deep chest, and rounded limbs, I envied him. He would certainly have been a good model for a sculptor.

It is not true, however, that all savages have a finely developed physique. The Patagonian sitting on his horse looks like a giant; but when he stands on the ground, his gigantic appearance disappears in consequence of the disproportionate shortness of his legs, which are small and undeveloped in comparison with the rest of his body. This is because he lives mostly on horseback, and has very little use for the muscles of his legs. The blacksmith affords an almost equally striking illustration. Day after day he swings his heavy hammer with his right arm until it becomes disproportionately developed, while his left arm is disproportionately small. As a result of the excessive development of the muscles of the right side, the spine of the blacksmith often becomes curved toward the opposite side.

The purpose of exercise is to develop every group of muscles in the body, so that the skeleton may be held erect, supported equally on every side, like the masts and spars of a full-rigged ship.

Another way by which exercise promotes symmetry is by the proper distribution of fatty tissues. An enormous accumulation of fat in a particular part of the body is evidence that that part has been idle, it has not been doing its duty.

This matter of symmetry is a very important one, because when we have established external symmetry, we have also established internal symmetry. Whenever there is external deformity of any kind, as a curved spine, a flattened chest, projecting abdomen, there is an internal deformity corresponding to the external deformity; this internal deformity, this lack of internal symmetry, is a matter of vastly greater significance than the external deviation from the normal condition. People are very much troubled about external deformities, but they seldom think of the internal deformity. A deviation of the spine toward the right side means a shortening of the muscles of the left side; and a deviation of the spine toward the left side means a shortening of the muscles of the right side. A flat chest means a compression of the lungs; a protruding abdomen means a compression of the stomach, liver, kidneys, etc., and

perhaps prolapse of all the organs of the abdomen and pelvis and an abnormal strain upon the sympathetic nerves and nerve centers. So these external deformities indicate corresponding internal deformities, and are evidences of internal disease. Thousands of persons are suffering from these deformities, external and internal, although they may be unconscious of their existence. I have made thousands of observations in reference to these deformities, and have proven the relation between external and internal deformities.

Another of the general advantages of exercise is, that it preserves the suppleness of the body, the elasticity of the muscles, and the flexibility of the joints, tendons, and ligaments. If the muscles of a certain part of the body are not used in such a manner as to stretch them, they become shortened, and after a time all use of them beyond the habitual extent becomes impossible. If the arm is kept flexed for a long time, it becomes impossible to straighten it, because the muscles of the inner surface of the arm have become shortened from not being duly stretched.

Nature abhors idleness, and punishes the idle organ by complete extinction or partial obliteration ; so if a muscle is not used to its full capacity, if it is not stretched to its full length, nature shortens it. This shortening may be so permanent in character as to be irremedial. One can almost tell the different occupations of the persons he meets, by the way in which they carry themselves. For example, the blacksmith, the cabinet-maker, and many other mechanics who use their hands chiefly in their work, walk with half-flexed arms, elbowing their way along the street. The farmer from his habit of bending forward to his work and sitting in a relaxed position, as he may be often seen resting with his elbows upon his knees, becomes round-shouldered. This deformity in the case of the farmer may be partly due also to the shortening of the muscles of the chest by which the shoulders are drawn forward.

The different positions assumed are due to the fact that the muscles which have been flexed the most have become shortened, and the muscles which have been constantly on the stretch have become lengthened. Now in order that the body should be kept symmetrical, such exercises should be taken as will keep the muscles at the proper length. Much of the deformity of old age is due to unequal exercise.

But exercise also keeps the joints flexible. Notice the young child. It is not uncommon to see a child lying on its back and putting its great toe up to its mouth, or holding its foot up by the half hour where it can watch and study it. There is no adult, unless he has kept himself under training, who could keep his legs in such a position for so long a time ; because the muscles on the back of the thigh have become too short to permit the leg to come forward, and the muscles in front are so weak that they cannot contract enough to draw the leg up. Now by proper exercise, beginning at an early age, the muscles can be kept so active, so strong, and so elastic that the whole body can be kept under control ; not only the muscles, but the joints as well. When the joints are not flexed to their fullest extent, when they are not moved just as far as they are capable of being moved, it is frequently the case that the articulating surface over which the bones glide becomes restricted. And not only this, but the extensible tissues upon which the latitude of movement depends, become rigid ; calcareous substances are deposited in the ligaments, so that they become stiff and rigid, and lose their natural flexibility ; and the consequence is, the limb is restrained in its movements. Now, by active daily exercise, by constant and full use of the muscles and the joints, these hardening and ossifying processes can be prevented.

Miss Anita Kellogg makes a strong plea for physical culture among musical artists in a recent article on that subject. She says that incredible apathy is manifested on this point. Awkwardness in sitting, standing, and walking, lack of self-possession, and absence of all grace of motion offend the eye before the musical talent has a chance to charm the ear. Nine out of ten singers, she says, stand incorrectly, and nine out of ten performers of any kind on a concert program walk awkwardly and salute the audience with bows devoid of grace. This is not because they do not love harmony, but simply from neglect of physical rhythm. They fail to realize that their physical organism is the instrument of expression, and that the laws that underlie expression are the laws that underlie all art.— *Werner's Voice Magazine.*

Some one having asked Mr. Gladstone the secret of his remarkable activity, he replied with a story : "There was once a road leading out of London on which more horses died than any other, and inquiry revealed the fact that it was perfectly level. Consequently the animals in traveling over it used only one set of muscles."— *Sel.*

PHYSICAL TRAINING FOR WOMEN.

THE following was translated and condensed for the *Literary Digest* from a paper by A. Mosso, in *Deutsche Revue*, Breslau : —

The physical training of women is, in certain respects, more important than that of man. At this moment, the question is of peculiar importance to those interested, from the fact that gymnastics in the schools is being actively opposed. There are perhaps fewer difficulties in the way of reform of female than of male education. No preparation for military service is demanded of women ; the only objects of physical training are physiological and hygienic.

Gymnastics is very commonly regarded simply as a means of developing the muscles, without reference to its influence on other organs ; its most important purpose, however, is its bearing on the internal organs and their functions.

It is to be regretted that gymnastics is usually brought to a close at too early a period in a girl's life. It is most beneficial to girls from the fourteenth to the twenty-fourth year, the very years in which girls take the least exercise. Young ladies despise gymnastics as something childish.

Gymnasiums attract only a few well-read girls, or those conscious of exceptional physical gifts. Our duty is to bring the weak under its influence, that they may be trained into strength. Above all things it is necessary to convince the mothers that the design is to secure the healthy physical development of their children.

The fact that poor food, undue mental strain, dejection, or great weakness, all tend to hinder the ripening of maidenhood, should convince us that at this critical period of life our care should be redoubled to provide for the physical development under the most favorable conditions. Many people are of the opinion that a life of repose is beneficial to girls at the age of puberty, but physiologists all tell us that at this period exercise is especially necessary to promote digestion and the circulation of the blood.

Hysteria, of which we hear so much nowadays, is a degeneration of the nervous system. It is a melancholy characteristic of women and feeble men, and a disease which is regarded as a condition of chronic weariness. To avert it, the organism must be strengthened. Exercise, sunshine, and fresh air strengthen the nervous system, and frequently suffice to dispel the disease.

Many people, and among them self-constituted authorities, appear to think that gymnastics, to be effective, must be conducted with great energy. This is all very well for military training, or for the attainment of rapidity of execution of any special task, but is not what is required in the training of young women. Muscular capacity depends on muscular contractibility, and this condition is best promoted by frequent moderate exercise.

The muscles can even be enlarged and strengthened by the massage treatment without contraction, and this has led to investigations which leave it beyond question that one of the chief benefits of gymnastics is that moderate exercise promotes an independent "kneading" of the muscles, which is more conducive to the accelerated flow of blood and lymph than more violent exercise.

In most gymnasiums the training is confined mainly to the development system by means of the arms and legs, and the idea is that most energetic exercise is necessary to that end. I believe, on the contrary, that moderate exercise, of limited duration, continued daily, is more efficacious in enlarging and strengthening the muscles. Such exercise can be conducted by dumb-bells or clubs. In concert with Dr. Manca I have carried out a series of investigations in the strengthening of girls from eight to thirteen years old by means of dumb-bells. Our experience was that fourteen days' training sufficed to double or treble the strength of the arm, but I do not think that a like result would be reached by horizontal strain. In the experiments referred to, the girls stood before a metronome, holding in each hand a dumb-bell weighing three pounds ; during the beat of one second, the girls raised their arms as high as possible over their heads, lowering them with the beat of the next second, the movements being performed in time-rhythm until the arms were weary. A girl of nine years, during the first three days, raised the dumb-bells daily thirty-three times before she was tired. After two weeks' practice, twice a day, she reached a limit of 137 times. A thirteen-year-old girl averaged 160 times the first three days, and after two weeks' practice, reached 369 times.

Strange as it may appear, Dr. Gruber, of Berne, has shown that training not only increases the strength of the muscles, but results in their working with greater economy ; *i. e.*, less gas is exhaled, and consequently less nutrition called for.

SINGING AS AN AID TO HEALTH. — The time will soon come when singing will be regarded as one of the great helps to physicians in lung diseases in the incipient state. Almost every branch of gymnastics is employed in one way or another by the doctors, but the simple and natural function of singing has not yet received its full meed of praise. In Italy, some years ago, statistics were taken which proved that the vocal artists were especially long lived and healthy, under normal circumstances, while of the brass instrumentalists it was discovered that consumption never claimed a victim among them. Those who have a tendency toward consumption should take easy vocal exercises, no matter how thin and weak their voices may seem to be. They will find a result at times far surpassing any relief afforded by medicine. Vocal practice, in moderation, is the best system of general gymnastics that can be imagined, many muscles being brought into play that would scarcely be suspected of action in connection with so simple a matter as tone production. Therefore, apart from all art consideration, merely as a matter of health, one can earnestly say to the healthy, "Sing that you may remain strong," and to the weakly, "Sing that you may become strong." — *The Echo.*

SYSTEMATIC EXERCISE FOR WOMEN. — Gymnastics for women are not designed for the attainment of extraordinary physical endurance, but for imparting ease and grace of motion.

Ernst von Brücke, formerly professor of physiology in Vienna, writing on the subject of gymnastics for women, says, "The Sabine mountain women have the most graceful and queenly gait of any women in the world. They owe this in part to their splendid physical development, but partly also to the habit of balancing loads on their heads. All girls could not acquire their gait, but the body being held erect, and the movements of the arms being kept entirely independent of those of the legs, every girl not a cripple may acquire a graceful and easy gait." Nothing is more conducive to this end than carrying a light load on the head.

It is not, however, desirable to prescribe detailed rules for training in every distinct motion. The physical training of women should be designed to further the proper exercise of the functions of all the organs, and impart that healthy physiological condition indispensable to freedom and grace of motion. Most of our girls have a tendency to turn the shoulders inward, and to walk with the head slightly bent, due to their being compelled to stand with folded arms. Unfortunately, there are very few books which classify gymnastics according to their physiological importance, and are at the same time so written that they may be read with pleasure.

WALKING. — Stride out to your full measure, but do not try to go beyond it; and try not to fall short of it as you go on. Keep the knees as straight as you can conveniently, and this will oblige you to rise on the ball of the foot behind at each step. The calf of the leg is a valuable element in walking, and yet many walkers, by throwing their weight upon the knees and the muscles of the front of the upper leg, lose the push and spring of the calf altogether. Such men habitually stand with both knees like a "sprung" horse, and only straighten the knees by an effort. The arms should swing freely, the head should be up, and the chest expanded. Breathe deeply and breathe slowly. Few people walk rightly, yet it is an easy thing to learn; and when it is learned, you can walk farther, faster, and more enjoyably than if you do it wrong. — *Lippincott.*

IN a small book recently from the press, entitled "Out-doors," we find the following from the pen of Julian Hawthorne: —

"The small boy and the elderly gentleman, the tradesman and the man-about-town, the seamstress and she for whom the seamstress works, all mingle with equal propriety and enjoyment in the wheeling lists. Bicycling is a free masonry, broader in its membership than any other, save human nature itself. The man of brawn and the man of brains are as one in the saddle. Youth and age alike can do their mile in three minutes or under. The 'winning wave, deserving note, in the tempestuous petticoat,' is never more winning than when it whispers past you on the wheel. A woman on horseback, in a trim riding habit, is an alluring sight; but we miss one important feature, — the rhythmic grace of motion which nothing but the bicycle affords. The entire pose shows the figure to the best advantage; and the slight, unconscious swayings of the body to maintain the balance, impart an element of life to the spectacle, which is more fascinating than the most studied art of mere attitude."

AN Englishman has secured an American patent on a device which he calls a manual gymnasium for musicians. A strip of leather attached above the elbow runs to a series of springs connected with each finger and thumb of the hand. The arrangement allows the gymnast to gain strength and agility by working the fingers. — *Inventive Age.*

THE MOTHER'S PRIVILEGE.

BY MRS. J. H. KELLOGG.

[Read at the World's Social Purity Congress.]

ONE of the foremost philanthropists of the age was wont to say, "It is worth a life effort to lift a man from degradation; to prevent his fall is better." This work of prevention is in the highest sense the mother's privilege. To her is entrusted in a great measure, the working out of God's ideal for each child in her care, and upon her will it largely depend whether their characters shall be rounded in the fullness of a noble manhood or womanhood or dwarfed by neglect and deformed by sin. No prerogative can compare in its wondrous possibilities with that of true motherhood. In no other relation in life are the finite and infinite more closely connected than in the work of the faithful mother. Indeed, she who conscientiously strives to fulfill her mission is a co-worker with God.

It is a great and blessed privilege to start aright the one just entering upon the perilous journey of life, and with reverent care to foster and develop the God-image implanted by the Creator, seeking to bring the lower nature into subjection to the higher, so that as he advances to mature years he may have a will within himself to "choose to do good and refuse to do evil."

The hope of the world lies not so much in reformation as in right formation. If the foundation be laid sure and strong, there will appear little need of propping and rebuilding as the years go by.

The minds of noble and earnest men and women the world over are engrossed with the problem of how to elevate purity and root out its antagonist, evil; but that problem would largely solve itself for future generations did the mothers of this generation appreciate to the full, their privilege, and with consecration of heart and life seek enlightenment and fitness for their God-given work, beginning at the very outset of the lives of their children to help them to become in their childhood and youth what they ought to be as men and women.

Social purity is too commonly looked upon as something associated only with the seasons of youth and maturity, and which in no way concerns the little ones of tender years, so the most impressionable period of all life's existence is left unguarded in this direction. Prevention is always the better way to cope with evil. Child-nature may be likened to a field of fertile soil, receptive for the seeds of both good and evil; a field also in which there are already germs, some of weeds, and some of more desirable plants, seeds sown by generations of ancestors. Into this fertile soil the discerning mother may scatter so abundantly the seeds of good and with careful hand cultivate them into such thrifty plants that the evil will be crowded out. Even the weeds of inheritance may be by patient effort destroyed, while the heritage of good seed may be fostered, developed, and strengthened into growths of sterling worth.

It is easier to see the weeds when they are grown and putting forth leaves and branches; but then it may be too late, the roots will have become firmly grounded; and though with zeal we labor to uproot them, there is always danger that some rootlet will remain to sprout again when least expected. The surer way is to preoccupy the field with good before the mischief-making seeds have had time to germinate.

It is the misfortune of many mothers that they fail to awaken to their responsibilities at a sufficiently early period in the lives of their children. They think as they watch their little ones in their cradles,

as they hold them in their arms, or guide their first footsteps, "When my child grows older, I will endeavor to train him wisely." If for the present his physical needs are well supplied and the enjoyment of his waking hours assured, that is considered all sufficient. But in this the mother is mistaken. Her golden opportunity lies, as did that of Jochebed, in the *earliest years* of her child's existence.

One of the most universal sources from which arises the stream of impurity, is the lack of proper training of the appetite, in that its gratification is not made subservient to right and reasonable ends. The appetite, like all natural instincts, is susceptible of education both in a right and a wrong direction. This fact is often unrecognized, and the child's appetite left to a chance development which far more frequently than otherwise leaves him subject rather than ruler of it. Depraved appetites are often inherited, but are as often created through lack of proper care and training, sometimes at the very beginning of life. Picture, if you will, the first epoch of the life of the average child. Eating is the first, and for some time the chief, activity of his babyhood. During this period of helplessness he is fed in season and out of season, without thought or regulation. Expressions of pain and discomfort are habitually met with proffers of food, until the gustatory sense, habitually gratified to appease the demands of all the other senses, becomes the regnant propensity. The immediate result of this treatment is the inauguration at the very outset of life of a disordered digestion and a morbid condition of the stomach, which creates a constant craving for the pleasurable sensation produced by eating and drinking. The ultimate outcome of such management is that it teaches the child to crave animal sensations, and establishes a dominance of appetite, a love to gratify the senses for the sake of the sensation, which indulged in one direction will be hard to restrain in others, and which will cast its influence over his entire life.

The abnormal appetite created by deranged digestive functions, opens a door through which, if unguarded, the whole train of evils — gluttony, intemperance, and impurity — may enter later on in life.

Purity of heart is a condition quite incompatible with sensual pleasuring of the appetite. How hardly, then, shall the soul that has, through years of wrong education in childhood, been in bondage to the appetites and propensities, arise and shake off its shackles, and bring the body under when the years of youth and maturity are reached. Wrong tendencies as well as right ones are continuously strengthened by exercise. The desire to gratify inclination and satisfy the taste does not lessen with the increase of years. As has been aptly said, "Impressions, inclinations, appetites which a child may have derived from his food, the turn it may have given to his senses, and even to his life as a whole, can only with difficulty be set aside when the age of self-dependence has been reached. They are one with his whole physical life, therefore intimately connected with his spiritual life."

In how strong a light do these facts place the responsibility of motherhood! At the same time they emphasize the mother's wondrous privilege to intercept temptation and build up bulwarks against vice, by the establishment of correct habits of eating and drinking controlled by the real needs of life.

The mother's privilege in the line of preventive work is, however, by no means limited to the education of the appetite. Impurity is so closely interlinked with other sinful propensities that the only sure immunity from evil comes from the right formation of character in its entirety. In her efforts to establish obedience, conscientiousness, reverence, courage, self-reliance, self-respect, self-control, and other necessary elements in her child's character, the mother is continuously engaged in rearing bulwarks against vice. Obedience in one direction aids to obedience in others. The child who cheerfully and willingly obeys his parents will the more readily submit to the laws of his being and those of his Maker. The child who is taught to respect his own body as the temple of the Holy Spirit, lent him for his temporal use, to be returned pure and undefiled to its Creator, will find it far easier to exercise control in the use of it. Self-reliance early taught will aid in making the child capable of self-entertainment in wholesome and profitable ways. The boy or girl who is wholly dependent upon some one else for entertainment and happiness, who does not know how to spend a leisure hour profitably, is in great danger. Such an one is easily led into pernicious associations, and may only, because of favoring circumstances, escape the path to ruin. Each good trait of character, like each single block in a granite wall, fills a special purpose in making the structure strong to antagonize vice.

It will require less effort to accomplish the right formation of character, if begun at the beginning of life. "It is difficult to turn the course of a great river, but that of a small stream at its source may be easily changed." The mother's greatest hope for her children lies in utilizing in the best possible manner the very first years of childhood. If she neglects

this period, allowing the years to slip silently by unimproved, she may labor with what zeal she will, the results will never be as perfect as might have been secured from the careful ingrafting of precept and principle in those early years. For, as one of the wisest of teachers has said, "It is impossible to correct in the second year the wrong doings of the first, thus heaping the shortcomings of one year upon those of the next." Impressions received by a child before its seventh year have more to do with the formation of its character than those received at any other period of its existence. Mothers are alarmingly careless in regard to the use of these first years, not infrequently delegating to an untaught hireling, the nurture of the little ones, with whom every look, every hand touch, every act, every word, is formative work. The personal ease, the social pleasures, the time thus gained for other pursuits and enjoyments, can in no wise compensate for the loss both to herself and her child which accrues from such a sacrifice of her God-given privilege.

We would in no wise undervalue reformatory work nor present discouragements to those who from any reason have failed to know and appreciate the advantage of beginning in the happy day of small things. Despite the poorly laid foundation, it may even be still the mother's privilege, like Nehemiah of old, to build up the wall where it is weakest.

The mother's work does not end with childhood. Through all the years even till manhood and womanhood, continued watchcare and guidance, advice and counsel, may be needed; but fortunate is the mother, who, having planted and cultivated the seeds of good thoughts and actions in the early years, has need only to prune and trim and watch as the child grows older.

It must be remembered that all effective preventive work must be twofold. It is not enough that we guard the outer approaches of character, seeking immunity from evil by efforts to keep it out of sight and knowledge of the young. We must instill into the hearts, high ideals and purposes, and fill their minds with pure and noble principles. Something will fill the mind, something will leave its impress; if it be not good, it will be evil. As was forcibly illustrated by the young man condemned to death, whose mother, visiting him in prison, exclaimed, "O my boy, what has brought you to this awful end?" The young man sternly replied, "Mother, you are the cause." Bursting into tears, she sobbed, "Why? what wrong have I ever taught you?" To which the son made the sad reply, "You taught me no wrong, but you neglected to teach me any good, and as I knew no better, I have sunk lower and lower until I am here."

Mothers may not hope to bring up their children in entire ignorance of the vice that is in the world, but it is their privilege to so forearm them with necessary knowledge that they may pass through the world unscathed; to so occupy their leisure with that which is profitable that idleness, the tempter's golden opportunity, will not be pleasurable; to so fill their souls with pure and heavenly music that the siren voices of temptation will pass unheeded.

It is her privilege to walk so closely side by side with her children, starting with them upon their own level, and so united in heart and sympathy that she may possess through life their fullest confidence, thus forming around them one of the surest and most lasting safeguards against vice which it is possible for human love and wisdom to construct. Said a mother of growing sons, when asked how she managed to keep her boys so firmly attached to home and so willing to spend their evenings there, "I live *with* them, and try to be not only a faithful mother but an agreeable companion." If mothers could only be made to realize what a tower of strength such a living *with* their children may become, no effort would be considered too great to be spent in cultivating this sympathetic relation; for it must be cultivated if it is to be continuous. It must grow with the children; it must broaden with their years and take in their play, their playmates, their studies, their reading, their work as well as their pleasures, their joys and sorrows, and their deepest yearnings. Like a thread of gold interwoven through all the years of life, it will form a bond of union between the mother and her child which will enable them to work together to overcome evil and build up a life the beauty and symmetry of which will bear the light of Heaven.

A CHILD'S FAVORITE. — In a class of small children the teacher desired, by illustration, to define the word *favorite*. She said: —

"Well, children, if there was some one you loved more than anybody else in the world, and wished always to keep her with you, what would you say she was — what name would you give her?"

A small boy held up his hand, and when told to answer, promptly responded: —

"My mother!"

SLOYD WITHIN A CIRCLE.— NO. 8.

BY MRS. M. F. STEARNS.

An interesting way in which to teach the children differences in form, and to make them quick to see those differences, is by collecting crystals both as they occur naturally and are produced chemically.

FIG. 21. MODEL NO. 10.--WORKING DRAWING.

Some of these they would be able to make themselves, many could be purchased of the druggists, and a sufficient variety could thus easily be obtained to show most of the crystal forms. Then let them study these forms, and look for them in nature, works of art, and manufacture; and as they thus get a knowledge of their shapes, they will be the better able to reproduce them.

Their minds are like "sensitive plates," always receiving impressions, and we must be careful that the subject of the "picture" is well lighted if we would see it reproduced in all its details; for what the "lens" does not see will not be "taken."

The all-important thing is correct seeing. Suppose a child is going to make a square box; the crystal form of that would be the cube, perhaps, as he has it in some iron crystal. If his attention is called to it before making, he will see the equality of it in all its sides and corners; and if it is impressed on him as it should be, he will fairly feel it to his finger tips as he shapes his box; and to just the degree that he feels it, will his box approach the perfect cube.

Or suppose he is making a triangular wall pocket from equilateral triangles. Take the corresponding crystal form, the tetrahedron, as he may have it in his collection, and let him examine it carefully till the idea of a triangle is formed in his mind, then he will be prepared to produce a successful result with his wall pocket, for he will see that his drawing is simply the little three-sided crystal spread out on paper.

The mental habit thus fixed with him of not attempting to do anything till he thoroughly understands his work, will be invaluable. Correct seeing in one thing forms the habit of correct seeing in another.

How many one-sided minds we are constantly meeting, that can only grasp one side of a subject, in other words, they only *look* at one side. Their mental vision seems to be located about like a hen's eyes,— on opposite sides of its head; so like our feathered friend, they can only give a one-sided stare at a subject. It is impossible for them to focus their mental vision in such a way as to take in the whole of anything, and as a natural result they are out of focus with the world around them. If these minds had only been trained in all they did to look at all sides of their work and plans, and see them in all their minuteness, how many failures in life would have been prevented!

Where only the general idea is had of the thing to be accomplished, and the all important "small items" are not seen in the account, sure failure results; for it is the little things, the atoms, of which a thing is composed, that make the perfect whole.

Success in life, as in art, depends upon remembering, as Michael Angelo expressed it, that "trifles make perfection, and perfection is no trifle."

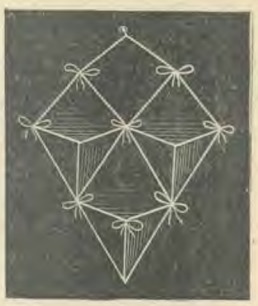


FIG. 22.--WALL POCKET COMPLETED.

Our models this month are two paper cases. No. 10 is made by bisecting the diameter of the twelve-inch circle. Then describe a 2½ inch circle, by connecting the points where the circle cuts the diameters, and we have a square. On this make four oblongs, and on these oblongs, with compasses set 4 inches, the width, draw intersecting arcs, which will just touch the outer circumference. Measure in from the points where these arcs meet the circumference, in arcs A and B, 1¼ inches. At this point in A mark out tongue for slipping in a ¼ inch strap

FIG. 23. MODEL NO. II.—WORKING DRAWING.

made at corresponding point in B. Cut out, fold, and glue, being particular that the edges are well creased and that no glue adheres to any but the proper places.

Make model No. 10 by forming a hexagon in the twelve-inch circle. Draw from each angle a line to center. This will give six large triangles within the circle. Then subdivide each of these angles into four equilateral triangles, and cut and fold according to diagram on lines marked with letters F and C. Tie with colored silks, as indicated in the completed drawing, and an effective and useful little wall-pocket is the result.

Model No. 11 continues the practice in forming equilateral triangles, and is drawn like No. 10, the difference being in cuting and folding, and more triangles are utilized. After cutting out the crossed portions, fold and cut and tie, as shown in drawings. No. 11 will be found useful as a pocket for assorted strings.

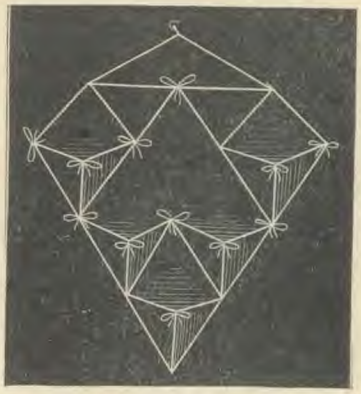


FIG. 24. — STRING POCKET COMPLETED.

A SPECTER OF UGLINESS.— According to the newspapers, we are threatened with the return of the hideous and uncomfortable crinoline, or hoop-skirt. Certain it is that the width that the skirts are made at the bottom will compel the wearing of a more substantial skirt than the silk, which was so comfortable because of its softness and lightness. But the fullness of the skirt of to-day becomes perfectly hideous when it falls around the feet without any stiffness. It is said that both Felix and Redfern condemn crinoline, and one of them has said that he would go out of business rather than make a garment to be worn over it. The weight of the skirts is considerably increased by the stiff interlining which the present cut makes necessary. It is stated that Mr. Redfern has said that the dressmakers of to-day are not the authorities that they were a few years ago ; that now women insist on having their own ideas followed out in the making of their clothes. It is to be hoped that women will withstand this attempt to reintroduce a hideous and unnatural garment.— *The Christian Union.*

DO NOT REMOVE THE SKINS.— Dr. Letheby, an eminent English authority on foods, made a series of careful examinations some years ago for the purpose of determining the effects of cooking potatoes without removing the skins. He found that when the potatoes were cooked without removing the skins, the loss of nutritive material by extraction of the juice of the potato was about three per cent. When the skins were removed before boiling, the loss was fourteen per cent, or one seventh. It thus appears that removal of the skins before boiling is a very wasteful process, and these experiments explain why baked potatoes are more palatable than boiled. It is also evident that a roasted or baked potato is more nutritious than a boiled potato.

THE HEATHEN AND CORSET-WEARING.—Mrs. Annie Jenness Miller relates the following : "A missionary returned from Turkey once told me that a Turkish woman told her that she 'never knew what it was to be sick until she became a Christian and wore corsets.'"

A MAN "to busy" to take care of his health is like a workman too busy to sharpen his tools. —*Sel.*

CONCERNING MOTHERS.

THERE was once the idea that mothers were the antiseptic quality in society, that they preserved its moral tone, by insisting that the language used and the subjects discussed before them should be such as were suitable for virtuous women. But there is one kind of bad mothers to whom questionable subjects seem highly suitable. She discusses them without reserve in the presence of her daughters, and she makes her drawing room the forum for women with queer domestic views. Is any girl sweeter or even safer for knowing about the undercurrent of filth below the glittering crust of gilded society? The Chinese quarter is a fact, yet is there a mother who would like her daughter to visit it? But if it is not fit to visit, it is not fit to talk about. No one is ever the better for knowing of evil, unless he can do something to remedy it.

A good mother will shield her children with proper knowledge from the consequences of their own ignorance, physical and moral, and she will just as carefully shield them from knowledge which is hurtful because premature; just as fruit green and unripe is hurtful. And no guardianship is too close for this end. Mothers will generally admit this fact as regards the children of other people, but as to their own brood they cradle themselves in a general belief of its incorruptibility. Their girls would never do as other girls do; and their girls are consequently permitted a license which they would think dangerous for any but their own daughters. Then some day there is a paragraph in one of the papers, and the men blame the man, and the women blame the girl, and all the time the mother is probably the guiltiest of the parties. She has stimulated her daughter's imagination in childhood, she has left her to the choice of her companions in youth, she has trusted her sacred duty to circumstances, she has indulged a vague hope concerning the honor and virtue of humanity, and thus satisfied her indolent neglect. But what right has she to expect that men would revere the treasure she herself left unguarded? For there has been no special race this era; what Adam, Jacob, Samson, and David were; what Eve, Sarah, Rachel, Jael, and Bathsheba were, the men and women of to-day are, in all their essentials. Circumstances only have made them to differ; and nature laughs at circumstances, and goes back at any crisis to her first principles. Indeed, the good mother of to-day, instead of relaxing, must increase her care over her children. For never since the world began has youth been so catered to, never has it been surrounded by so many open temptations, never so much flattered, and yet at the same time never have the reins of discipline been so far relaxed. Now the spirit we evoke we must control, or else we must become its slave. If we are no longer to revere the gray hairs of age; if young men are to drive the chariot of the sun, and young women are to be allowed to strip the tree of knowledge of good and evil, then it is high time some system of education was invented which will put old heads upon young shoulders. Alas, this can never be, for education is a long and composite process, made up of home influence, surrounding circumstances, and early associations. When books and schools and teachers shall have done all they possibly can, high above every Gamaliel will sit the good mother, the first influence, the first teacher. — *Amelia E. Barr.*

SEASONABLE RECIPES.

Baked Corn. — Select nice fresh ears of tender corn of as nearly equal size as possible. Open the husks and remove all the silk from the corn; replace and tie the husks around the ears with a thread. Put the corn in a hot oven, and bake thirty minutes or until tender. Remove the husks before serving.

Corn Pudding. — One quart of corn pulp prepared as for stewing, one quart of milk, three eggs, and a little salt. Mix the corn with a pint of the milk, and heat it to boiling. Break the eggs into the remainder of the milk, and add it to the corn, turn all into an oiled pudding dish, and bake slowly until the custard is well set.

Baked Corn No. 2. — Scrape enough corn from the cob (as directed below for Corn Pulp) to make one and one half quarts. Put into a baking dish, season with salt if desired, add enough milk, part cream if convenient, barely to cover the corn, and bake in a hot oven twenty-five or thirty minutes.

Stewed Corn Pulp. — Take six ears of green corn or enough to make a pint of raw pulp; with a sharp knife cut a thin shaving from each row of kernels or score each kernel, and with the back of the knife scrape out the pulp, taking care to leave the hulls on the cob. Heat a cup and a half of rich milk — part part cream if desired — to boiling, add the corn, cook twenty or thirty minutes; season with salt and a teaspoonful of sugar if desired. E. E. K

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

COLD FOODS AND DRINKS A CAUSE OF SUMMER DISORDERS.

THE great frequency of certain forms of stomach and bowel derangements has given rise to the term "summer complaints," or "summer disorders." The notorious frequency of the attacks of indigestion and vomiting, and of dysentery, diarrhœa, and cholera morbus in the summer months, has given rise to the impression that there is something particularly dangerous in the elevated temperature which prevails during that part of the year. That this is not true, however, is abundantly proven by the fact now demonstrated by an ample number of experiences, that these disorders may be avoided entirely by the adoption of certain precautions.

Scientific investigations have shown that the immediate cause of all these various disorders affecting the alimentary canal, is germs. Without these microscopic organisms there could be no such thing as sour stomach, summer diarrhœa, dysentery, etc. The cause of these affections is the entrance into the alimentary canal of microbes which produce poisonous substances, which in turn give rise to the various symptoms noted. Whatever will encourage the development of these germs, must be regarded as a cause of these affections. The most direct causes of these disorders is the taking into the system of the germs themselves in the shape of decaying or fermenting food. But germs are comparatively harmless if taken into a perfectly healthy stomach. A vigorous stomach is capable of secreting a digestive fluid possessing sufficiently strong disinfecting properties to destroy any germs with which it may come in contact. Unfortunately, the civilized human stomach is generally treated in such a manner that it becomes incapable of secreting a healthy and active disinfectant gastric juice. The use of alcohol in the form of wine, beer, whisky, etc., and the use of tea, coffee, and tobacco, are common means by which the activity of the stomach and gastric juice is diminished. A more universal cause, perhaps, of this impairment of digestive vigor in human beings, is to be found in the very common use of cold drinks and foods.

Dr. Beaumont showed nearly three fourths of a century ago, in experiments made upon Alexis St. Martin, that cold water, when introduced into the stomach, lessens the activity of the stomach, and checks the process of digestion by lowering the temperature of the stomach. In experiments which we have recently conducted in the Sanitarium Laboratory of Hygiene, we have found that a glass of ice water taken into the stomach diminishes the secretion of the gastric juice and the digestive process to such a degree that in a person in whose stomach a large quantity of gastric juice was ordinarily produced in health, the amount of the secretion and the activity of digestion were diminished more than one half.

This effect of cold water upon the stomach is unquestionably one of the most frequent causes of the development of various digestive disorders of the stomach and bowels. Food is taken into the stomach, together with a larger or smaller proportion of germs. Cold drink, whenever taken at the same time, prevents the secretion of the gastric juice, giving an opportunity for the microbes to grow and develop their peculiar poison. Under ordinary circumstances, no serious results may follow; but if one happens to swallow a somewhat larger number than usual of active and virulent germs, the result is an attack of "summer complaint."

The use of iced foods and drinks is particularly dangerous in the summer season, because at this particular time of the year, germs are more abundant and are more active than at any other season.

A Safeguard Against Cholera.— Doctor Pettenkoffer, an eminent German physician and sanitarian, has recently been experimenting with cholera germs, and found that both himself and his assistant, Dr. Emerich, were able to swallow large quantities of the comma bacillus, the cholera germ discovered by Dr. Koch, without suffering any ill effects other than the very mildest symptoms of cholera. The conclusion drawn from this should not be that the so-called cholera germs are harmless, but that a healthy stomach is able to defend itself against this cause of disease. The facts seem to be that nature has made man superior to germs and capable of defending himself against them as long as he maintains the integrity of his body and its functions. A healthy stomach can destroy cholera germs very rapidly. These mischief-making microbes can do no harm unless they enter the intestines, where they find conditions favorable for rapid development. In the intestines they multiply with enormous rapidity and produce a poisonous substance which, when absorbed into the blood and carried throughout the body, produces the fatal symptoms of this disease. But a healthy stomach presents an impassable barrier to cholera germs. They are quite unable to stand the corrosive action of the gastric juice. A diseased stomach, however, at least a stomach which affords gastric juice of inferior quality or insufficient quantity, is unable to make a successful fight against these virulent germs, which accordingly pass along into the small intestine, and begin there their work of mischief, which in the majority of cases ends in death.

Keeley Cure Waning.— We are glad to see that public confidence in the so-called Keeley Cure for drunkards is rapidly waning.

A dozen years ago a patient showed us a bottle purchased from Dr. Keeley, with another bottle, for the sum of nine dollars. The two bottles were guaranteed to effect a cure. It was not necessary for the patient to visit Dwight. It was only necessary to purchase the two bottles and swallow the contents, and according to the advertisement, a permanent cure would be accomplished. This method proved to be not so lucrative as the proprietor of this nostrum desired, and he accordingly devised a method by which the patients were required to visit him at his home to have the medicine injected by means of a hypodermic syringe. By the aid of certain Chicago newspaper publishers, the system was boomed till a great number of persons were attracted to Dwight, lining the ingenious adventurer's pockets with gain. Dozens of people were led to believe that a genuine cure for drunkenness had been discovered; but the public are being undeceived in reference to this matter.

Rev. J. M. Buckley, D. D., asserts that the claims of Dr. Keeley that ninety-five per cent of his patients are cured, is absolutely false. The Doctor stated that four out of seven of his personal acquaintances who had been treated by this system are drunkards to-day. Dr. Evans, superintendent of the Lunatic Hospital at Morris Plains, N. J., recently made an investigation from which he reported 158 cases of relapse, and eighty-eight cases of insanity, in which the Keeley method had been employed.

The public are beginning to get back to the original and incontrovertible fact that drunkenness is first a vice, and a disease only secondarily. To attempt to cure it by the administration of drugs is as absurd as it would be to attempt to cure stealing, lying, profanity, or any other vice in that way.

Dr. Keeley has endeavored to give the impression to the public that his system is indorsed by Gen. Neal Dow. This seems to be untrue, however, as Gen. Dow is quoted as saying that the system is "of no benefit to those who have n't backbone enough to stick to their determination."

The Persistence of Evil.— There are thousands of people who indulge habits which they know to be wrong, with the idea, which is often expressed, that when they see that they are being injured by the harmful indulgence, they will discontinue it. The idea that a man can turn over a new leaf any time he chooses, is itself a most mischievous error, since it often happens that bad habits acquire such a hold upon the character — upon the very constitution of an individual, in fact—that they cannot be easily abandoned. The case of the chronic inebriate, the opium eater, or the tobacco user, is a good illustration of this principle. A habit which has been long indulged, modifies the structure of the body in such a way that the habit becomes a necessity, notwithstanding the fact that it is causing an injury of the most apparent sort all the time. It is by no means easy to reform, even when one realizes the necessity for doing so. One's experience in reforming is graphically expressed in the words, "The spirit indeed is willing, but the flesh is weak."

But it is a still more important fact, and one of the deepest significance, to which we wish to call attention,— a fact which is almost universally overlooked,— that the habits, physical and mental, of an

individual constitute a mould into which not only his character, but also his body actually grows. His brain is moulded by the habits of thought which control its action. Not only the brain, but the stomach, heart, liver, lungs, and every fiber of the body, grow into the mould created by the habits of each individual. The stomach is modified by the kind and quantity of food placed in it, which, of course, determines the work which it must do. Even the bones owe their form, as well as their strength, largely to the particular kind of activity to which they are subject.

The moral which we wish to point by these facts is this: Instead of indulging a bad habit with the idea that it may be abandoned at any time, only right habits should be cultivated, the fact being kept in mind that bad habits indulged in for any length of time, may make an indelible impression on the body, the consequence of which must be suffering for a lifetime.

A man who has been a chronic dyspeptic for twenty years, in consequence of errors in diet, is hopelessly spoiled. He can never by any possibility be what he might have been. The damaging influence of those twenty years has left a visible mental and moral blotch upon him, which nothing can remove. One of the greatest needs of the world to-day is missionaries to teach the gospel of health, of physical holiness, the beatitudes of perfect soundness of body and mind.

Illness from Diseased Meat.— A family residing in this city, are at the present time suffering severely from the effects of eating veal which was either diseased or partially decomposed.

Disease from the use of flesh food is by no means so uncommon as is generally supposed. It is quite likely that a large number of the acute intestinal disorders of the summer season may be properly attributed to this source. Recent English papers contain accounts of disease resulting from the use of flesh food. The *British Medical Journal*, referring to this source of acute illness, remarks: "It is an open secret that enormous quantities of the meat of diseased animals are disposed of daily. A health officer of Belfast, Ireland, stated some years ago that more than 20,000 diseased animals are consumed as food in England annually. When the fact is recalled that the food supplies of the people of Great Britain are carefully supervised by qualified officers, who maintain a regular inspection of all places where foods, and particularly meats, are offered for sale, while on the other hand no such supervision is maintained in this country, it is apparent that disease from this source must be very much more common in the United States than in England. That attention is not more frequently called to this fact, is doubtless due to the lack of knowledge upon the subject.

Tea and Digestion.— The popular idea that tea, coffee, cocoa, wine, and other beverages commonly used at meals, promote digestion, has been clearly proven by reliable physiological experiments to be an error. According to J. W. Frazer and W. Roberts, all these substances interfere with digestion. Tea, coffee, and cocoa retard the digestion of proteids, although the action of coffee is somewhat less intense than that of tea. The volatile oil, as well as the tannic acid of tea, was found to have a retarding effect upon peptic digestion. It is well that this fact be known, as the idea has become prevalent that tea is harmless if the infusion is quickly made so as to obtain the volatile oil without so great a quantity of tannic acid as is dissolved by longer infusion. Wine also retards peptic digestion, as was clearly shown by W. Roberts. This effect of wine and other alcoholic liquors was so marked that Sir William Roberts concluded, as the result of his experiments, that wine and other alcoholic liquors are chiefly useful as a means of slowing down the too active digestion of the modern civilized man, thus acting as a safeguard against what he terms "a dangerous acceleration of nutrition." However much the digestion of the average Englishman may require slowing down, the average American certainly does not need to put breaks upon his digestive apparatus.

Both Roberts and Frazer also showed that the effect of wines and tea is inimical to salivary digestion. Tea, even in a very small quantity, completely paralyzed the ptyalin of the saliva, while wine promptly arrested salivary digestion. Salivary digestion was not formerly considered a matter of very great consequence, as it was supposed that the action of saliva upon the digestion of food was quickly suspended in the stomach by the secretion of hydrochloric acid; but the observations of Ewald and others, which have been confirmed by the writer in the chemical examination of more than eleven hundred stomach liquids, indicates that salivary digestion proceeds in a normal stomach so rapidly as to cause the complete disappearance of starch by the end of the first hour of digestion. Many cases of intestinal dyspepsia are doubtless due to the failure of salivary and peptic digestions in the stomach.—*J. H. K., in Modern Medicine.*

New Forms of Intoxication.— Most of the new methods of intoxication seem to have originated in this country. Intoxication by ether was practiced by inhaling the drug, many years before it was used as an anæsthetic in surgery. The writer once received a very graphic account of an ether party given by a physician, who was one of the participants. Tea chewing to the extent of intoxication seems to have originated in Boston. Snuff dipping was invented by a woman of the Southern States. Tea cigarettes were, however, the ingenious invention of Parisian ladies who were tired of the ordinary forms of intoxication.

The *Medico*, a French periodical, gives a recent account of a new form of intoxication which is becoming fashionable with Parisian ladies, in which the desired exhilaration is obtained by inhaling the fumes of naphtha. The intoxication induced by naphtha is similar to that of ether drinking, as practiced in Ireland or as inhaled for surgical anæsthesia, but lasts much longer and is very much more injurious. This mode of intoxication, it is claimed, was introduced into Paris by American ladies who had long practiced it at their homes in America.

There seems to be a mania at the present time for the discovery of some new nerve tickle, or some new means of fuddling the senses. It is time the medical profession raised its voice in solemn protest against the use of all felicity-producing drugs, every one of which is toxic and injurious in its nature.—*J. H. K., in Modern Medicine.*

Goat's Milk. — It has been suggested that the goat might well be substituted for the cow as a source of milk supply. The advantage claimed is, that the milk of the goat more nearly resembles the human product, and further, that the goat is not subject to tuberculosis, as is the cow. It is now well known that cows frequently suffer from consumption, and that their milk becomes contaminated with germs of the disease, which are thus communicated to human beings. It is quite possible that this may be the source of tubercular disease of the bones and joints, a common malady in children. It will probably be some time before goats are generally introduced in this country as a source of milk supply for human consumption, but they are much used in Italy, and in some parts of Germany and France. The fact that out of 130 goats and kids slaughtered in Paris in a single year, not one was found to be tainted with tuberculosis, is strong evidence that this animal is proof against the germ which gives rise to tubercular disease.

A Pork Pie Epidemic. — The *British Medical Journal* gives an account of poisoning from pork pie which recently occurred in an English town, in which twenty-seven suffered, two fatally. In some instances sickness occurred immediately after eating the pie ; in others, twelve to thirty-six hours elapsed before the symptoms made their appearance. The wonder is not that an epidemic of sickness occurred after eating pork pie, but that an epidemic does not always occur after the swallowing of such an indigestible compound as this. The hog is an excellent scavenger, but like other scavengers, was never intended for the consumption of human beings. Pork constitutes the worst kind of diet.

"Hoist by His Own Petard."— This is what we should say, if the victim were a man, but, we are sorry to say, in this case, the culprit and the victim is a woman who is widely known as Mrs. Harriet Hubbard Ayer, who has been for years engaged in the sale of a number of patent medicines, among which is one which has been frequently mentioned in these columns, termed by the manufacturer, "Vita Nuova." This nostrum Mrs. Ayer advertised in a most extravagant and unscrupulous manner in numerous magazines and journals as a harmless rejuvenant. Chemical analysis long ago showed this wonderful life-giving compound to consist practically of an alcoholic solution of cocaine, one of the most pernicious drugs ever discovered. This fact was made public by Good Health and numerous other medical and sanitary publications. But Mrs. Ayer still flourished notwithstanding, bolstering herself up by numerous certificates from distinguished authors, clergymen, and others, asserting that they had been greatly benefited by its use ; so that Mrs Ayer has accumulated a large fortune through the sales of this deadly nostrum.

The day of judgment has at last come, in her case, however, for by the use of her own nostrum she has become insane, and was recently committed, by the request of her husband and daughters, to the Broxville Insane Asylum. Mrs. Ayer will doubtless find among the lunatics with whom she associates some who have been sent there by the use of the soul-and-body-destroying compound which she has placed before the public in such alluring and deceptive colors.

CAUSE AND CURE OF MOUTH BREATHING.

THE cure of mouth breathing, especially in children when sleeping, if a habit, is easily accomplished by tying the mouth up so it cannot be opened. But very often it is not a habit, but a diseased condition of the nasal passages. In that case the cure is much more difficult, and requires careful treatment, perhaps a surgical operation.

This difficulty exists mostly in children. The child takes cold, and has what the mother calls "the snuffles." Its nostrils become filled up so it cannot breathe through them, and it has to breathe through its mouth. Even babies may take cold from some neglect in the first hours of their existence, and be ever after confined to invalidism, in consequence.

Mouth breathing is really a very serious thing. If a habit, it may result in various disorders of the body; if a necessity, it indicates a diseased condition of the nasal cavities.

In the nasal cavity are numerous convolutions of cartilage, covered with mucous membrane, and when a person takes cold, these little protuberances become swollen, and obstruct the passage of air, so it becomes almost impossible for the person to breathe enough to support life. Hence the mouth is opened to get more air, and mouth breathing is established. If the cold continues, the cartilages of the nose become very much thickened, thus causing a serious obstruction of the nose. If this swelling and thickening are repeated many times, the air passages will become permanently filled with the mucous membrane, and then it is impossible to breathe through the nose at all. Either one or both sides may be affected. It is not infrequently the case that tumors, or polypi, form in the nasal cavity; as many as thirty or forty have been removed from a single nose. These polypi cause serious obstruction to breathing, so that the person must open the mouth to supply the air space which has been filled up by the obstruction of the nose.

In consequence of these obstructions of the nasal cavity, certain changes take place in the respiratory organs and in the form of the chest. The constant effort made to breathe produces in a child the deformity known as "pigeon breast." One of the most conspicuous features of this mouth breathing is the change in the form of the face, the mouth remains open and the jaw projects.

It has been found by experiments upon rabbits, that if one nostril becomes obstructed, that side of the face does not develop properly. The passage of the air through the nose equally on both sides seems to be necessary to the proper development of the bones and tissues. As the result of these experiments with rabbits, it was found that one side of the face was not properly developed; so with persons who are suffering with the disease in one nostril. If one would go through a lecture room and take an inventory of noses, he would doubtless find a number of them twisted to one side or the other. People usually attribute such a condition of the nose to some accident in childhood, but these "accidents" are generally the result of disease on the inside of the nose. A person suffering from nasal catarrh shows the signs in a thickening of the bones of the nose, and sometimes of the whole face as well.

Dr. Talbot, a dentist, took some statistics in this line, and found that forty per cent of the persons he treated for unsound teeth had some deformity of the facial bones, in consequence of partial obstruction of the nose. One of the peculiar results of this condition of the nose, is a flattening of the face under the eyes, and there is also a flattening of the arch of the jaw. Sometimes there is a flattening of the arch of the

palate on one side, which makes it difficult to keep the plate of a set of false teeth in position. In a small child, the roof of the mouth is always flat; but as the child grows, and its bones develop, the roof raises, and an arch is formed. In some cases the arch is abnormally developed. In case of a child having this obstruction of the nose in consequence of nasal catarrh, and his being compelled to breathe through the mouth, the roof of the mouth remains flat, and various other deformities of the jaw appear, such as failure of the jaw to expand sidewise, or failure to develop in an anterior direction, in consequence of the fact that the bones do not develop equally.

Mouth breathing should not be regarded as merely a bad habit, but as a matter which has a very important relation to the health, and also to one's good looks. But this question is one which should receive prompt attention from a skillful physician, and the proper remedies employed for its correction.

LIMIT OF THE PERIODS OF INCUBATION AND CONTAGION IN INFECTIOUS MALADIES.

THE Clinical Society of London has recently conducted an inquiry for the purpose of determining more exactly the incubation periods of various infectious maladies and the length of time danger from infection lasts. The results of this inquiry are summarized as follows by *Medicine Moderne* : —

Diphtheria.—The average incubation period is two days, more rarely four days, and occasionally seven days. The virulence of contagion is very great. Infection may occur at any period of the disease, and the disease may be communicated by contaminated clothing or any other objects, for several months after exposure.

Measles.—The incubation period of this disease varies from four to sixteen days. The danger of contagion exists during the whole course of the disease, but disappears very rapidly after convalescence. Danger of transmission of the disease through the clothing probably exists only a short time after contagion.

Scarlet Fever. — The incubation period is very short, rarely reaching six days. The contagious elements persist a long time after recovery, lasting three months at least.

Rötheln (*Rubella*). — The incubation period of this disease is very variable, the average is about eighteen days. The contagion is most active just before the appearance of the eruption and during its development. The contagious period continues for a short time after the eruption is fully developed.

Mumps. — The incubation period is the same as that for Rötheln. Contagion is greatest during the first three or four days.

Small-pox. — The average incubation period is twelve days; the minimum, nine days; the maximum, fifteen days. Contagion may occur at any period of the disease. Infection may occur through personal contact or through the clothing.

Chicken-pox. — The incubation period is fourteen to twenty days. It is less contagious than small-pox, and is greatest during the period of eruption.

Typhoid Fever. — The average period of incubation is twelve to fourteen days; sometimes nine days; occasionally twenty-four days. Contagion may occur at any period of the disease, and even during two weeks after recovery. The contagious elements in the discharges or the clothing remain active for at least two months.

FLOWERS IN THE SICK ROOM. — There has been some prejudice excited against allowing flowers in the sick room; hence the following from James King Crook, M. D., will be gladly read by those who love the sight of flowers when they are sick : —

"If a patient is fond of flowers, by no means exclude them. Much groundless prejudice exists on this score, some supposing that flowers vitiate the air of the room; but if they have any appreciable effect, it is in the opposite direction, as they consume carbonic acid and probably exhale a certain amount of oxygen. Of course rich, highly scented plants, like magnolias, hyacinths, and some varieties of lilies, are not included in these remarks, as they are liable to sicken the patient by their fragrance. Look out for a harmonious combination of colors in flowers. It is said that red has a stimulating effect, while blue is sedative, or soothing."

TO PREVENT BED SORES. — Rub the parts exposed to pressure twice daily with alcohol, then paint the surface with a tincture of nut gall or a strong solution of tannic acid.

STOMACH WASHING FOR SUMMER DISEASES OF CHILDREN. — The various stomach and bowel disturbances with which children suffer so frequently during the summer season, are the result of the disturbing influence of microbes which enter the alimentary canal with the food. The best remedy for this condition, in addition to a proper regulation of the diet, is a thorough cleansing of the stomach and bowels. This may be done by a small stomach tube, or an instrument which will answer equally well is a large-sixed flexible rubber male catheter. The catheter is introduced into the stomach of the child by passing it to the back part of the throat and then inducing a swallowing movement by which it will be carried into the stomach. There is no danger that the child will strangle, although the little one sometimes strongly objects to the treatment, as it is something to which it is quite unaccustomed. However no harm is done to the child by the application of the tube in this way, or by allowing water to run in and out from a fountain syringe.

The bowels should be cleansed in the same way by allowing the child to lie in a rubber blanket in the nurse's lap. The tube is introduced into the anus and passed up as far as possible. When the intestines are full, the tube, water, and intestinal contents will be expelled together. The washing should be repeated so as to insure the complete cleansing of the stomach and bowels. A diet consisting of gruels and fruit juice, avoiding milk, eggs, and all meat preparations, is likely to give prompt and complete relief, even in very bad cases.

CEREBRAL CONGESTION. — A person suffering with cerebral congestion should never sleep with the head low. There is already too much blood in the head, and if the power of gravity is added to the natural tendency of the blood to the head, the difficulty is increased. When the head is raised, the blood naturally recedes from it; the heart has to pump the blood against gravity, and the consequence is, the lower part of the body will have a little more blood than the upper part. So the best position for persons who have a flow of blood to the head, is to raise the upper part of the body. This does not mean to raise the head by a pillow or bolster, but to raise the whole upper part of the body; let the bed be raised to an incline. The effect of raising the head only, is to compress the superficial veins of the neck, so that the blood cannot readily return. During sleep, the head should not be raised above the level of the shoulders, but the whole upper part of the body should be raised.

In the opposite condition, as for instance when a person faints and the blood recedes from the head, the opposite effect should be produced, and the head should be lowered; but let the effect always be produced by different inclinations of the whole bed, and not by the use of pillows under the head, as is usually done.

BURNS. — A doctor who had the painful task of dressing some of the wounds caused by the late dreadful fire in the Cold Storage building on the World's Fair grounds, has this to say about the treatment of burns in general: —

"Burns are always painful, but the most painful ones are not the most dangerous. A circumscribed deep burn is less dangerous than a superficial burn covering an extensive surface. The rule in burns and scalds is to exclude the air as soon as possible. This is generally most readily accomplished by wrapping the burned part with gauze or cotton soaked in oil. Cloths wrung out of a solution of 'baking soda' or boric acid are said to relieve the pain promptly. A dressing of flour can usually be obtained at once, and answers as a temporary dressing.

"The dressing should be allowed to remain on as long as possible. All blisters should be pricked and their fluid contents allowed to escape. Burned fingers should not be allowed to touch each other.

"In the treatment of any burn the utmost cleanliness should be observed. Maturation from burns is no more necessary than from any other wound. They should be dressed antiseptically. This can be easily accomplished by having the oil used, slightly carbolized. Carbolized or iodoform or bichloride gauze should be used."

THE *Medical Record* says that in severe paroxysms of coughing, a tablespoonful of glycerine in hot milk or cream will give speedy relief.

BAD FOR SMOKERS. — A careful record has been kept at Yale College during the past eight years, with reference to the physical condition of non-smokers as compared with smokers. It has been found that non-smokers are 20 per cent taller, 25 per cent heavier, and have 60 per cent more lung capacity than smokers. A recent graduating class at Amherst College presented a similar difference in favor of the non-smoker, who had gained in weight 24 per cent over the smoker, and in height 37 per cent, and in chest girth 42 per cent, and also exceeded him in lung capacity.

ANSWERS TO CORRESPONDENTS.

THIN BLOOD.— F. N.W. asks, "1. Is thin blood the cause of a person's having pale face, cold feet in cool weather, and soft, flabby flesh? 2. Why do some members of a family have warm blood and firm flesh (when perfectly indifferent to hygienic diet), and others just the opposite, when both exercise? 3. Do you think that iron in *any* preparation will enrich the blood? 4. If not, is there anything besides good food and baths to tone up the system?"

Ans.— 1. Sometimes; but more generally, the cause of coldness of the feet, is a disturbance of the sympathetic nerves. The form of dyspepsia known as nervous dyspepsia is a frequent cause of this condition.

2. The difference referred to may be the result of difference in hereditary constitutional conditions.

3. Iron does not directly enrich the blood; but it sometimes increases the secretion of the gastric juice, and in such cases may aid digestion, and thus aid in the production of an increased quantity of blood.

4. Exercise, proper diet, cleanliness, and attention to all the laws of hygiene, contribute to the building up of the physical health.

TIME TO BATHE — LIEBIG'S EXTRACT OF MEAT — RAW ONIONS.— A subscriber asks, "1. Is immediately before retiring to rest a proper time to take a bath? If so, should it be hot or cold? 2. Is Liebig's extract of meat necessary for one who does not eat meat in any other form? 3. Are raw onions safe to eat?"

Ans.— 1. Yes, unless there is great exhaustion. The cool bath may be taken with profit at bed time, especially in the summer time. If there is great exhaustion, the bath should be hot instead of cold, and should be short in duration. It may be followed by a very brief application of cold water to the surface, in the form of a shower or spray.

2. No.

3. Onions are not the most wholesome food, yet can hardly be said to be dangerous.

STYES — HEARTBURN — ETC.— M. E. M. sends the following questions: "1. What is the cause of styes, and how can they be cured? 2. What is the cause of heartburn, and how can it be prevented? 3. Is the custom of wearing the hair coiled on top of the head hurtful to the brain?"

Ans.— 1. Styes are most frequently due to some optical defect in the eye, which must be remedied for relief of this condition.

2. Heartburn is due to fermentation. Some cases require washing out of the stomach. In other cases, the use of a dry diet, excluding butter, cheese, sugar, and milk, with charcoal or other antiseptic remedies after eating, are required for a cure. The condition of the stomach in such a case should be ascertained by a test breakfast and an analysis of the stomach fluid.

3. The head is likely to be overheated by such a custom.

FOOD FOR ACID DYSPEPSIA.— D. F., Ill., inquires, "1. Are dates, bananas, or other sweet fruits suitable food for one having acid dyspepsia? 2. If not, what sort of diet would you recommend in such a case?"

Ans.— 1. Bananas and other sweet fruits are not objectionable in all cases of acid dyspepsia, but dates are objectionable for the reason that they are cured in sugar. 2. The best diet for a person suffering from acid dyspepsia is a rather dry diet composed of hard food which will require very thorough mastication. Liquids, highly seasoned foods, pastries, and coarse vegetables should be avoided. In many cases washing of the stomach is necessary to effect a radical cure.

BOILS — "STRONG" CREAM.— W. J. M., Mich., asks: —

"1. What probably causes boils, and what is the remedy?

"2. Is cream which has been added to and taken from day after day, until it has become '*strong*,' a suitable article for shortening? If not, please give the reason."

Ans.— 1. Germs. The remedy is, to open the boil, and let the germs out.

2. No. It contains germs, and is unfit for human food.

CRUDE MAGNESIA.— Mrs. I. W. B., of Conn., wants to know if the continued use of crude magnesia will prove hurtful. She is using about two little cubes a week, taking a little after each meal. It seems to have a better effect than the calcined form of magnesia.

Ans.— Yes. The continuous use of any alkali is injurious.

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.

TEMPORARY HOMES.— It is often necessary to find temporary homes for children, while waiting for permanent homes. We are glad to announce that the following persons have volunteered to take such needy ones in case of emergency. We shall be glad to add to the list. All correspondence should be conducted through this office.

Mrs. E. L. Mc Cormick,	Michigan.	Anthony Snyder,	Michigan.
Mrs. A. M. Osborn,	,,	Henry Snyder,	,,
Mrs. Anna Haysmer,	,,	F. D. Snyder,	,,
J. Staines,	,,	Wm. Kirk,	,,
John Wallace,	,,	E. Van Essen,	,,
N. A. Slife,	,,	Dr. J. D. Dennis,	,,
D. D. Montgomery,	,,	Mrs. Prudie Worth,	Wyoming.
Chester Hastings,	,,	James Dobbin,	New York.
Mrs. E. L. Merry,	Massachusetts.		

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 WEE ONE (NO. 117).— A little baby in Michigan, only four weeks old, needs a good home with Christian people, who can take it and love it as their own. Some motherly heart will surely respond to this.

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 little ones are in immediate 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.

A LONELY FATHER asks for homes for two of his motherless children, two boys (Nos. 123 and 124), aged four and five years. They are bright, intelligent little Danes, and have been brought up so far in a good home, under the instruction of excellent Christian parents. The father is a day laborer, but will help in the support of the boys as far as he can. They live in Minnesota.

"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?

VIRGIE ELLEN (No. 130) is the name of a wee girlie in Indiana, only three months old. The mother is dead, and the father has no home in which to care for the babe. The little one has blue eyes and light hair, and though very small, weighing only nine pounds, is healthy. What a bright addition she would be to some childless home!

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?

HOMES FOUND.— We are glad to announce that the little boy advertised as No. 107 in the June number of this journal, has found a good home with Mrs. Clara Mosher, of Hillsdale, Mich. Having lately lost a dear little boy of her own, she has taken Willie to her heart and home in his place.

No. 121 has also been put in a home.

AT REST.— The colored baby (No. 135), spoken of in our last issue, has since then found his home in the quiet resting place of the dead. His loving Father in heaven has taken him away from the sorrow that too often falls to the lot of these little ones.

ANOTHER CASE (No. 137) is that of a three-year-old baby who needs a home. She is a bright, pretty child, with clear complexion, blue eyes, and auburn hair. She is now in Michigan.

HARRY (No. 138) is a "wee bit mon" only three months old, who finds himself in this world without any place to stay. Who will give him a home?

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?

TWO BELGIAN CHILDREN (NOS. 141 AND 142), a boy and a girl, aged respectively ten and twelve, are reported from Pennsylvania. Their mother is dead, and the father is unable to support them. They are nice, smart-looking children.

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. Won't some one take him quick?

FORSAKEN.— A little girl (No. 146), two years old, has been forsaken by both father and mother, and is now living with an old lady 63 years of age, in the State of Iowa. The dear old lady has her hands full now, and cannot take another child at present. We hope that some one will want a little girl with blue eyes, light curly hair, who is bright, strong, and healthy.

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.

A TOUCHING tribute to the North American Indian comes to us in a little booklet printed on birch bark, entitled, "The Red Man's Greeting," by Chief Pokagon. While all the world rejoices, this lone representative of an almost extinct race, raises his voice in a bitter cry against the white man and his usurpation of this country. "In behalf of my people, the American Indians," he writes, "I hereby declare to you, the pale-faced race that has usurped our lands and homes, that we have no spirit to celebrate with you the great Columbian Fair held in this Chicago city."

Chief Pokagon is an old man sixty-three years of age, but this product of his pen is rich in its wild, rough imagery, full of the eloquence of bitter denunciation. Alas for us that his denunciations should be so well deserved!

The booklet is published by C. H. Engle, Hartford, Mich.

A NEW magazine has lately come to our table,— a feast of good things served in a dainty cover of blue and brown. The contents of this first number of the *Popular Health Magazine* are "Quarantine Laws," by Walter Wyman, A. M., M. D.; "Asiatic Cholera," by W. H. Welsh, M. D.; "Pure Milk," by C. E. Monroe, S. B.; "The Health of our Cities," by Surgeon J. S. Billings, U. S. A.; "The Poor Man and Cholera," by Edward M. Schaeffer, M. D.; and "Sanitary Reforms in Philadelphia," by A. W. Vorse, besides some ten or twelve smaller departments, in which are discussed questions of personal hygiene, healthy habitations, nursery hygiene, physical culture, etc. Altogether it is a bright, readable magazine. Published by the Health Magazine Co., Washington, D. C. Price, $1.00 per year.

Our Little Men and Women for August is an unusually bright number. Mary D. Brine, Louis Hall, Elizabeth Cummings, and Emma Huntington Nason each contribute delightful verse, and the writers of the winning serial stories have, if anything, made themselves more entertaining than ever. "The Duck Flowers," with its apt illustrations, makes a dainty botany lesson; and "Flossie" will amuse and interest all lovers of dumb animals.

Price, $1 a year; 10 cents a number. D. Lothrop Company, Publishers Boston.

Table Talk is devoting its interests this year almost wholly to the World's Fair, giving most of its space to descriptions of the Fair and what is to be found there. In this number Mrs. M. C. Meyer talks to the "Fair Pilgrims," and Mrs. Grayson tells what to do "When You Go to the Fair." Helen Louise Johnson also guides housekeepers through several of the departments, as well as giving them the usual monthly menus, and conducts the "Housekeepers' Inquiry Department" in her usual helpful manner. This magazine is published by the Table Talk Publishing Co., 1113 Chestnut St., Philadelphia. $1.00 per year. They will send a sample copy free to any of our readers.

"WOMAN AND THE HIGHER EDUCATION."— Edited by Anna C. Brackett. 16mo, cloth, ornamental, $1.00. (In the "Distaff Series.") Harper & Brothers, publishers, Franklin Square, New York.

This is the first of a unique series that cannot fail to attract the attention of those who are interested in woman's sphere and work. Each copy of the books in the "Distaff Series" will be the evidence of her handiwork, for the folding, stitching, binding, and much of the other labor required in the making of the books, will be performed solely by women and exhibited at the Columbian Exposition. This first volume of the series appropriately introduces us to the sphere of Higher Education for women. The writing, editing, and making up of books are potent influences for the advancement of women in knowledge, and for the training of their faculties along progressive lines of educational work.

"THE KANSAS CONFLICT."— By Ex-Gov. Charles Robinson, cloth, $2. The conflict between the Slave-State and Free-State men of Kansas in 1855–58 was one of the most remarkable in our history. An account of that struggle, written by one of its most prominent actors, must, therefore, be not only intensely interesting, but of great historical value. While Eli Thayer's "The Kansas Crusade," published in 1889, relates how Kansas was saved from slavery by outside efforts, Governor Robinson's narrative shows how the State was saved to freedom by inside work, and the two books together form the most complete history of the period yet written.

PUBLISHERS' DEPARTMENT.

GLAD HE SUBSCRIBED.—A gentleman writes us from the far West, as follows: "I subscribed for your magazine more to get rid of the agent than anything else, and find the investment to be excellent. Success to you. I can echo a hearty Amen to the reforms you are advocating." We would like to disappoint several thousand more people in the same way.

* *
*

CONCERT AT THE SANITARIUM.—On Saturday evening, July 1, Miss Lilia Smith, of the Aolian Quartet of Hillsdale, assisted by Mr. Niel and the Misses Whitney, of Battle Creek, gave a very pleasing concert. Miss Brewer played the violin obligato and Miss Fulton the piano. The Whitney sisters sang two trios in a charming manner, and Miss Smith and Mr. Niel each sang two or three solos, which were warmly applauded. Miss Brewer and her violin are always cordially welcomed at the Sanitarium.

* *
*

A MEDICAL MISSIONARY AT THE SANITARIUM.—During a recent visit to the Sanitarium, which is well known as a sort of home or headquarters for missionaries, Dr. Kerr, of Canton, China, gave a very interesting account of his special work. He has grown grey in the service there, having labored as physician and surgeon in the Flowery Kingdom for nearly forty years. He went to Canton in 1854, when the port was opened to foreigners. He first opened a dispensary, and as soon as possible began hospital work. The Chinese have no skill in surgery, and do not dare use the knife; for if they sever an artery, they do not know what to do. For a long time Dr. Kerr was the only surgeon for 19,000,000 people. His hospital will now accommodate two hundred patients, and it has three physicians, one of them a lady. Medical and surgical work wins the confidence of the natives as nothing else can do, and so it prepares the way for the preaching of the gospel. The care and attention which is thus bestowed upon the poor and unfortunate is a testimony to the people of the character of the religion which the missionaries wish them to accept. Notwithstanding his long years of arduous toil, Dr. Kerr is well preserved physically, having been blest with a physique and temperament which withstand strain.

* *
*

THE outing of the Mich. State Press Association was taken this year in a trip by water from Detroit to the "White City," July 7–10. Under the thoughtful care of the Secretary, Mr. James Slocum, of the Holly *Advertiser*, the members enjoyed a most delightful time; and to him are also due our thanks for complimentary tickets to the Fair and places of interest on Midway Plaisance, where ten days of delightful sight-seeing followed.

* *
*

WE take pleasure in expressing our appreciation of the efforts made by Mrs. Julia A. Pond, of the Board of World's Fair Managers for Michigan, to render our stay at the Fair as enjoyable as possible. Her bright smile and hearty words of greeting made the Michigan building a veritable home to all residents of the State. Mrs. Pond has spent some time in the Sanitarium at Battle Creek as a patient, and always has an enthusiastic word of praise for the institution and all connected with it.

* *
*

THE courtesy shown by Major Hanby and the proprietors of private exhibits, was greatly appreciated. Special courtesy was shown to the representative of this journal by the Venetian Glass Works Company, in the presentation of a beautiful souvenir of their work. The outing was one of the most successful ever given by the M. S. P. A.

THE SANITARIUM PICNIC.—Wednesday, July 19, witnessed another of the grand picnics which the Sanitarium managers know so well how to arrange for, sparing neither trouble nor expense to make their guests comfortable and happy. The day was cool and cloudless, the gathering large, and the dinner faultless. A musical and literary program was provided, consisting of a song by Miss Goodwin, of St. Johnsbury, Vt., and readings from James Whitcomb Riley's inimitable poems of summer time, most admirably rendered by Dr. Mary Wood Allen. Prof. C. H. Hartwell gave some reminiscences of his early life in China, closing with a plea for increased interest in missions. Hon. Geo. H. Earle, a very talented lawyer from Philadelphia, also made a short address. A recitation by Mrs. Beamer, teacher of elocution in Wolf Hall, an Episcopal college for girls in Denver, Colo., and a temperance song by a trio of young men from the Sanitarium force, completed the exercises. The remainder of the time was given to the delights which beautiful Goguac naturally affords.

* * *

WE have now with us the Rev. J. Loomis Gould, who has spent fourteen years in Alaska, doing missionary work among the natives, whom he finds to be a very curious and interesting people. He has already delivered two addresses for the benefit of Sanitarium guests, and we have promise of more such favors. His health is considerably impaired by long residence in that uncongenial climate.

* * *

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.

* * *

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 complete, and gives the name, location, number of rooms, etc., so that correspondence may be had and arrangements made before the visitor 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 cents — less really than the value of the maps themselves.

* * *

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 clay. For a free copy of this illustrated pamphlet, address C. C. Power, Foreign Representative, 58 Michigan Ave., Chicago, Ill.

Columbia Bicycles

It may be maintained that there would be

Five=Sixths Less Illness

in the community if Bicycles were more generally used.

Keep Out

in the open air, but do not over-exert yourself in exercising.

Use a Bicycle because

Mechanicians

estimate that it requires

Five= Sixths

less force for a person to propel himself on a Bicycle one mile than would be needed to walk the same distance.

Many persons prefer to ride

Ten Miles on a Columbia Bicycle

than to walk one mile.

5/6

Columbia catalogue free at our offices and at our agencies; by mail for two two-cent stamps.

The best Bicycles are the Columbias

Because

they are the most scientifically designed and constructed, and are made of the best materials by skilled workmen; all parts of the machines are carefully tested before being assembled, and the least imperfection causes rejection; the parts of these machines are made on the interchangeable system and purchasers are protected by the guarantee of the Company.

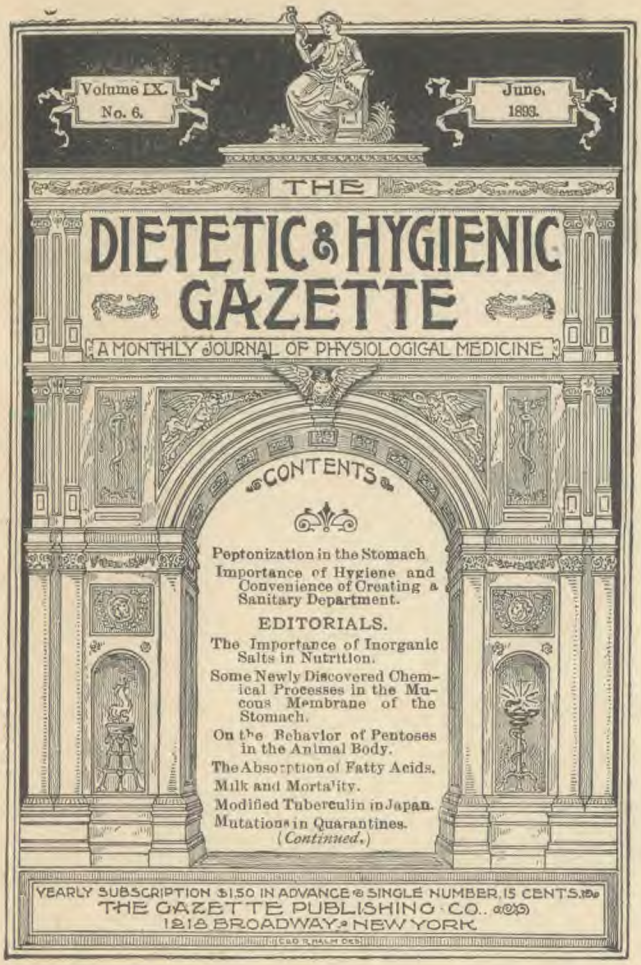
More than five-sixths of the riders in some localities use Columbias.

Oldest Largest Best

makers of Bicycles in the United States.

Pope Mfg. Co.

Boston. Chicago. New York. Hartford.



The "Premier"

embraces the principles of ball bearing to the Carriage, the long type arm bearing with the compensating cone screws. These principles make the machine faster than the human limit, and insure its alignment; the rock shaft gives a light, elastic, even touch to each letter, and enables the construction of a double yet compact key-board; the shift key is relegated to the past; two motions to the ribbon; the brush cleaning device; locking device; platen not raising up, but drawing forward about 1 ½ inches onto the one scale bar, giving great facility of inspection and correction of errors. Send for catalogue to the

SMITH PREMIER TYPEWRITER CO., 101 Griswold St., Detroit, Mich.

UNFERMENTED WINE.

We are prepared to furnish a **Fine Quality** of unfermented wine, for

SACRAMENTAL OR MEDICINAL PURPOSES.

Guaranteeing the same to be made from **fine table grapes,** to be strictly unfermented, and free from any chemical preservative. This wine is put up in bottles hermetically sealed, and will keep indefinitely.

The method of preservation retains the Natural, Delicious Flavor of the Grape, unimpaired, and there is no better appetizer or more healthful tonic for a chronic invalid or a convalescent from any acute disease.

PUT UP IN PINT BOTTLES.

PRICE:

Single bottles, - - 50 Cts.
Cases of one doz. bottles (pints), $5.00.

Shipped, securely packed, to any address, on receipt of price.

SANITARIUM FOOD COMPANY, BATTLE CREEK, MICH.

ILLINOIS CENTRAL R.R. CENTRAL ROUTE. I.C.

CHICAGO TO ST. LOUIS

THE DIAMOND SPECIAL

Solid Vestibule Train

Daily at 9.00 p. m. from Chicago. New and elegant equipment, built expressly for this service. Train lighted throughout by gas. Tickets and further information of your local ticket agent, or by addressing —

A. H. HANSON, G. P. A. Ill. Cent. R. R., CHICAGO, ILL.

INFANT FOOD.

If you are Tired of Trying the high-priced and often worthless Infant Foods so numerously offered at the present time, or if your baby is starving to death on these patent preparations, send for a sample package of our food for infants, which has, in numerous instances, saved the lives of children who derived no nourishment from other foods.

Sample Package, postpaid, - 72 Cents.

SANITARIUM HEALTH FOOD CO., Battle Creek, Mich.

THE GLOBE NEBULIZER

A NEW AND VALUABLE INSTRUMENT FOR HOME TREATMENT. SHOULD BE IN EVERY HOUSEHOLD.

Is especially adapted to the treatment of diseases of the nose, throat, ear, bronchial tubes, and lungs, both acute and chronic.

Many severe spells of sickness can be avoided by its early use. Is especially recommended in "La Grippe," when affecting the air passages, hay fever, and asthma. Full directions and formulæ with each instrument. PRICE $4.00. For Circulars Address,

SANITARY SUPPLY CO., Battle Creek, Mich.

. . THE . .

St. Louis HYGIENIC COLLEGE

—OF—

PHYSICIANS and SURGEONS

Will begin its SEVENTH ANNUAL COURSE OF INSTRUCTION,

Thursday, Sept. 28, 1893.

Men and Women are admitted. A full three years' course, embracing all the branches taught in other medical colleges; also Hygeio-Therapy, Sanitary Engineering, and Physical Culture.

Address for Announcement,

S. W. DODDS, M. D., Dean,

2826 Washington Ave., - - ST. LOUIS, MO.

CHICAGO & GRAND TRUNK Ry

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't'd Ex.	6 Atl. Ex.	8 Erie Lim.	2 R'd Ex.		1 Day Ex.	9 P'fic Ex.	7 Erie L't'd	21 M. & B. Ex	11 Mail Ex.	3 R'd L't'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
1.29	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, 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 June 18, 1893.

EAST.	† Day Express.	*N. Shore Limited.	*N. Y. Express.	*N. Y. & Chicago Limited.	*Atl'ntic Express.	*N. Falls & Buffalo Special.	*Night Express.
STATIONS.							
Chicago.....	am 9.00	am 11.30	pm 3.10	pm 5.30	pm 7.30	pm 8.40	pm 9.50
Michigan City.	11.00	pm 1.12	5.00	7.11	9.25	10.25	11.43
Niles	pm 12.25		2.08	6.00	8.03	10.30	11.25 am 1.00
Kalamazoo	2.08		3.21	7.05	9.07	11.38	am 12.43 2.07
Battle Creek...	2.48		3.57	7.40	9.38	am 12.10	1.10 2.45
Jackson.....	4.30		5.08	8.52	10.48	2.25	2.18 4.15
Ann Arbor.....	5.30		6.08	9.45	11.40	3.50	3.10 5.40
Detroit.....	6.45		7.15	10.45	am 12.35	5.0	4.15 7.15
Buffalo.....		am 2.05	am 6.25	7.40	pm 2.20	11.50	pm 5.00
Rochester.....		4.45	9.55	10.30		5.55	pm 2.40 8.20
Syracuse.....		6.45	pm 12.15	pm 12.25		8.30	4.10 10.20
New York.....		pm 2.40	8.50	7.30	am 6.30	10.30	am 7.00
Boston		4.45	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.	* N. Y. & Chicago Limited.
STATIONS.							
Boston	am 8.30	pm 2.00	pm 4.20				
New York.....	10.30	4.30	6.00		pm 7.15		
Syracuse	pm 7.30	11.35	am 1.55		9.15	am 8.30	am 10.00
Rochester.....	9.35	am 1.25	4.00		am 7.20	pm 2.20	pm 5.00
Buffalo.....	10.45	2.20	5.45		9.55	3.47	6.50
Detroit.....	am 7.15	8.45	pm 1.15	pm 7.45	pm 12.10	8.05	7.50
Ann Arbor.....	8.19	9.45	2.14	9.05	9.10	am 3 15	am 2.35
Jackson.....	9.28	10.48	3.10	10.45	10.32	4.22	
Battle Creek...	10.45	12.00	4.17	am 12.10	12.00	5.15	4.28
Kalamazoo	11.26	pm 12.39	4.57	1.10	am 1.45	6.25	5.32
Niles.....	pm 1.10	1.48	6.00	3.00	2.37	7.00	6.03
Michigan City.	2.18	2.45	7.05	4.35	4.10	8.13	7.12
Chicago.....	4.10	4.30	9.10	6.50	7.55	11.15	9.45

*Daily. †Daily except Sunday.

Accommodation trains go east at 7.48 a. m. and 1.20 p. m. except Sunday. " " west at 1.20 p. m. and 9.03 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 6.45 p. m. daily except Sunday.

North Shore Limited train westbound and New York and Chicago Limited trains east and west are extra-fare trains, and require special tickets and Wagner palace car tickets.

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

GEO. J. SADLER, Ticket Agent, Battle Creek.

ESTABLISHED 1844.

SHARP & SMITH,

73 Randolph Street, Chicago, Ill.,

MANUFACTURERS OF

Brace for Lateral Curvature of the Spine.

Deformity Apparatus,
Of All Descriptions,

Artificial Limbs,

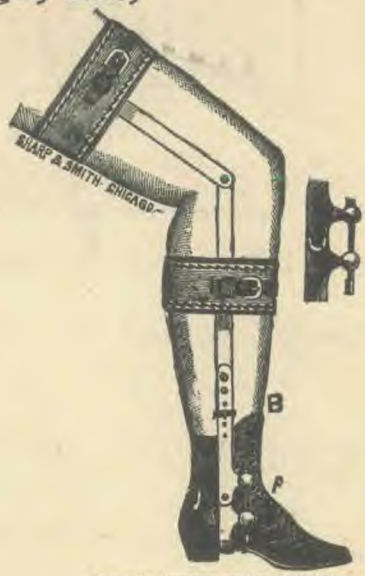
Elastic Stockings,

Abdominal Supporters,

Trusses,

Shoulder Braces, Etc., Etc.

Family Syringes,



Gunn's Apparatus for Club Feet.

Surgical and Veterinary Instruments.

J. FEHR'S

"COMPOUND TALCUM"

"BABY POWDER,"

The "Hygienic Dermal Powder" for Infants and Adults.

Originally investigated and its therapeutic properties discovered in the year 1868, by Dr. Fehr and introduced to the Medical and the Pharmaceutical Profession in the year 1873.

COMPOSITION.—Silicate of Magnesia with Carbolic and Salicylic Acid.
PROPERTIES.—Antiseptic, Antizymotic, and Disinfectant.

USEFUL AS A GENERAL SPRINKLING POWDER,
With positive Hygienic, Prophylactic, and Therapeutic properties.

GOOD IN ALL AFFECTIONS OF THE SKIN.

Sold by the Drug Trade generally. Per Box, plain, 25c.; perfumed, 50c., Per Dozen, plain, $1.75; perfumed, $3.50.

THE MANUFACTURER:

JULIUS FEHR, M. D., Ancient Pharmacist,
HOBOKEN, N. J.

Only advertised in Medical and Pharmaceutical prints.

MEDICAL AND SURGICAL SANITARIUM,

BATTLE CREEK, MICH.

The Oldest and Most Extensive Sanitarium Conducted on Rational and Scientific Principles, in the United States.

SPECIAL ADVANTAGES:

An elevated and picturesque site. Remarkably salubrious surroundings
Baths of every description.
Electricity in every form.
Massage and Swedish Movements by trained manipulators.
Pneumatic and Vacuum Treatment.
All sorts of Mechanical Appliances.
A fine Gymnasium, with trained directors.
Classified Dietaries.
Unequaled Ventilation, perfect Sewerage.
Artificial Climates created for those needing special conditions.
Thoroughly Aseptic Surgical Wards and Operating Rooms.
All Conveniences and Comforts of a First-Class Hotel.
Incurable and Offensive Patients not received.

Not a "Pleasure Resort," but an unrivaled place for chronic invalids who need special conditions and treatment not readily obtainable at home.

For Circulars, address,

SANITARIUM, BATTLE CREEK, MICH.