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INTERNATIONAL HEALTH STUDIES.

BY FELIX L. OSWALD, M. D.

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

38.— San Domingo.

A BIOGRAPHER of Edward Trelawney, the "British Sinbad," remarks that a young man may "sow his wild oats" in a most reckless fashion, and after all achieve fame and fortune, provided that his indiscretions did not include the vice of drunkenness.

It is equally true that a country may be mismanaged to a preposterous degree, without impairing its intrinsic value, so long as the misdeeds of its colonists do not include the folly of forest destruction. With that single exception, every outrage that the malice or stupidity of bigots and barbarians could conceive, has for centuries been perpetrated on the island of San Domingo, without affecting the essential conditions of its former prestige as the most valuable colonial possession of the Spanish crown.

After the followers of Columbus had explored the coasts of the New World from Florida to the mouth of the Amazon, the great discoverer himself chose for his home a hill farm on the "*Insula Hispana*," as the pet colony of Spain is called in the superscription of a sketch by his own hand. His brother, Don Diego Columbus, when afterwards offered a governorship in the West Indies, likewise chose San Domingo in preference to Cuba, and in 1586, when England attempted to cripple the transatlantic power of Spain, Sir Francis Drake selected the same island as the most desirable prize of his expedition.

"I have seen India and the eastern Mediterranean," Columbus wrote from Port Concepcion, "but never have I seen better harbors." The heaviest rain-showers being absorbed by the moisture of the inland forests, floods were almost unknown, and the mouth of every larger stream afforded good anchorage and landing places unobstructed by sandbars.

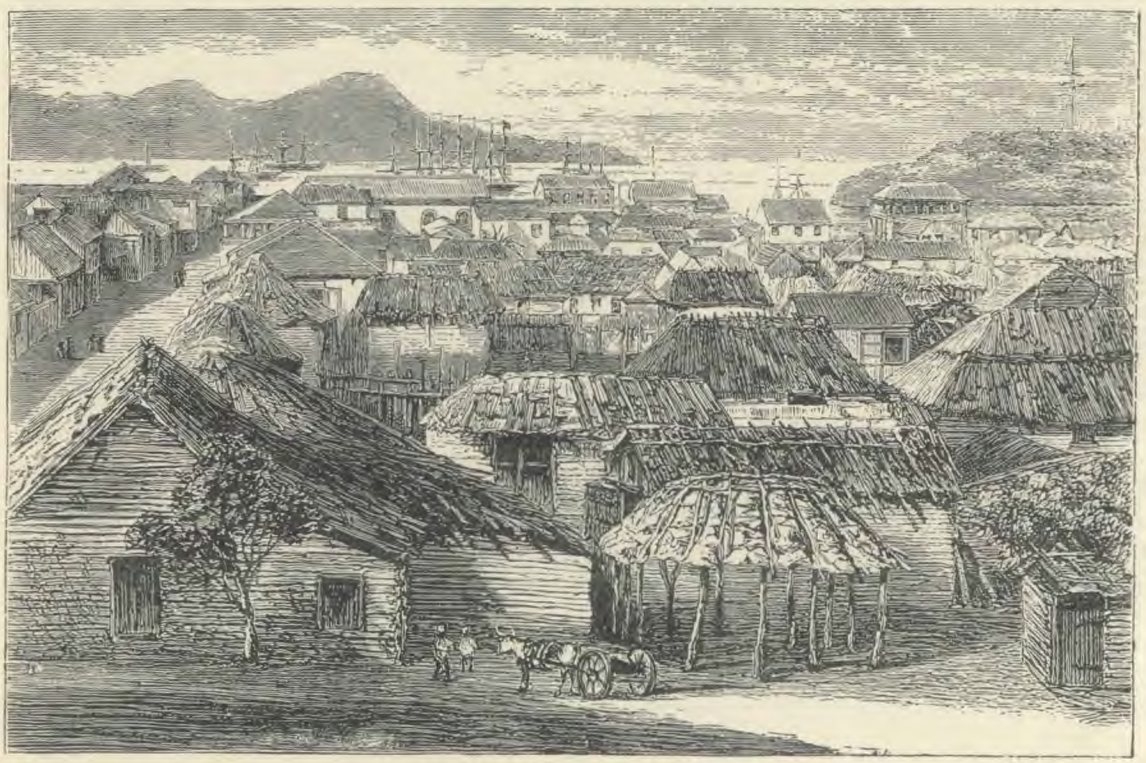
For the same reason the coasts are generally free from swamps — an immunity which is by no means an inalienable privilege of every mountain country. Greece, Italy, and the coastlands of the western Mediterranean were originally the healthiest regions of the temperate zone, but by the reckless destruction of their highland forests hundreds of their river deltas were made subject to chronic malaria. The soil of steep mountain slopes, being no longer protected by the roots of forest trees, was apt to be washed down by every heavy shower, and being carried seaward by swollen streams, gradually lined their estuaries with mudbanks, accumulating from year to year and avenging their cause by malignant epidemics. The aggregate annual rainfall of San Domingo is about three times larger than that of modern Italy, yet with few exceptions the rivers of the woody island still run clear from their highland source to the sea, while the streams of the classic peninsula are turbid with mud for six months in the year, and sometimes the year round.

"*Corre la Brenta al mar, tasita é bruna,*" while the danger of inundations has to be obviated by the construction of higher and ever higher dams, a labor which in Lombardy alone involves a yearly outlay of $6,000,000. On the south coast of Cuba, where the hill forests have been extensively cleared by the coffee planters, the same effect has begun to follow

the same cause — a risk which in San Domingo has been prevented by the laziness, rather than by the foresight, of its present population. The rapid extermination of the Aborigines seemed to justify the inference that they were an unusually feeble race, weakened by vices or the influence of an enervating clime; but the truth appears to be that they could have survived the hardships of slavery if the labor imposed by their inhuman taskmasters had not been aggravated by wanton cruelties and starvation.

In 1498, the discovery of rich placer mines in the district of Cipango, caused a general rush for the new Eldorado; plantations were abandoned, the natives were driven away from their garden homes, and marched in chain gangs to the mines, where provisions soon became so scarce that the Spaniards themselves were frequently reduced to a diet of salt beef and wild grapes, while their slaves were fed on half rations of sun-dried fish sent up now and then from the coast settlements. The laborers had no noon-time rest, and their hard toil of twelve consecutive hours was interrupted only by the three daily visits of the *corregidor*, with his gang of tormentors, the scourge being the panacea for sickness, weakness, and ignorance, as well as for indolence and obstinacy. Deserters were pursued with bloodhounds; at every promising discovery of new diggings the laborers were spurred to extra exertions; it was cheaper to work them to death and supply their places with new captives than to treat them with forbearance and liberality. The result was a series of desperate but hopeless insurrections, followed by a perfect saturnalia of suicide.

In Benzoni's illustrated chronicle of Hispaniola, there is a rude woodcut, representing that rush of fugitives across the Stygian ferry. Life-weary Indios are seen leaping from the brink of a steep cliff or from rocks overhanging the deep sea; others swallow poison or impale themselves on a pointed stake; one refugee whose soul has already reached Nirvana dangles limp from a projecting branch, while at the root of the tree a compassionate father beats out his little boy's brains with a club.



TOWN AND BAY OF PUERTO PLATA.

When the Spaniards effected their first settlements, Hispaniola was governed by five Caciques, or independent native princes; and Don Diego Columbus computed the aggregate population of their territories at 2,500,000 — hardly an overestimate, if we remember that San Domingo is about as large as Ireland, and at least twice as fertile. Ovando, who had an interest in exaggerating the importance of his dominions, pretended to have taken a census of the eastern half of the island, and found it to contain 4,000,000 "Indians," and 2300 white colonists.

Las Casas doubts if her entire population ever exceeded three million, and Don Diego's estimate may have come nearest the truth.

Thirty years after, when the *data* of a pretty accurate census included all but the highland districts of the extreme West, the native population of the island was found to have dwindled down to 75,000. In other words, the Aborigines had been hounded to death at the rate of a hundred thousand a year.

AN OLD FRENCH PLANTATION.

San Domingo also enjoys the unenviable honor of having been the first stage of that tragedy of horrors, the negro slavery of the New World. In 1540, hundreds of Spanish planters owned from ten to a thousand African serfs who were treated fully as cruelly as their copper-colored predecessors, and the difference of result is due chiefly to the circumstance that the vacancies caused by torture and over-work were speedily filled by fresh importations. Charles V. and his successor were constantly besieged with petitions of courtiers and necessitous *hidalgos* competing for a government license authorizing them to try their luck in the slave traffic, and numerous adventurers took the risk of dispensing with that license and smuggling in a cargo of darkeys *en pirate* — with or without the connivance of the Dominican coast guards.

Then followed the era of buccaneer wars and French conquests, rival governments complicated by incessant rebellions, till chaos and barbarism achieved their crowning triumph in the successful revolt of the French plantation slaves. With rare exceptions, those slaves were unmitigated savages, and their idea of warfare was on a par with that of the Zulu Caffirs, but the time of their insurrection could not have been chosen better,— the crisis of the Napoleonic wars, when all the coasts of France were watched by British cruisers, and when an armed expedition to the West Indies would have been snapped up before it could get halfway across the Atlantic.

At all events the revolt proved a success, and Hispaniola has ever since been governed on the Dahomey plan. The system of agriculture, too, is that of Western Africa, and constant famines are prevented only by the inexhaustible fertility of the soil and the abundance of spontaneous edible products. There was a time when well graded roads crossed the mountains in all directions, and when the *aguazzos* of the natives (water-banks fed by natural springs) were kept in good repair by the Caciques, and for a little while after by the Spanish planters. Those roads have now mostly disappeared. In a single year the sun of the tropics, aided by frequent rains, will cover an abandoned field with weeds, and the neglect of a century has sufficed to obliterate the very trace of three out of four of the old colonial highways. The waterworks of ten of the twelve principal towns have fallen to decay, and one can pardon a French traveler who compares the negroes quartered in the villas of Spanish grandees to "hogs stabled in the halls of the Alhambra."

But for all that Hispaniola is less irreclaimably ruined than such islands as Madeira, or Sicily. Throughout those long centuries of misrule and waste the magnificent highland forests have remained almost untouched; some eighteen thousand square miles of virgin woods still nourishing the fountains of perennial streams, and tempering the heat of the tropics with cool breezes. A mountain chain, just about

A DOMINICAN SCHOOL.

the average height of our southern Alleghanies, crosses the island from east to west, and the steepness of its coast ranges explains the remarkable difference in the healthfulness of the Dominican Republic (in the eastern part of Hispaniola), and the "Empire" of Hayti, in the extreme West. As elsewhere in the West Indies, the prevailing direction of the trade-winds is from northeast to southwest, and the valleys of the east coast thus act as natural wind gates in conducting currents of cool breezes from the seashore to the interior. On the west coast, on the other hand, the inland mountains oppose a barrier to the prevailing air currents, and the climate, in consequence, is rather too sultry to suit Northern emigrants.

The terrace lands of the east coast enjoy thermal luxuries unsurpassed by those of the Mexican *tierra templada*. Snowstorms may occur in the summit regions of the Mornes, but are unknown up to a height of 5000 feet, and winter, as the dry season, is by no means the least pleasant time of the year. The nights on the broad levels of the coast range are always cool; between 8 and 10 o'clock in the morning the thermometer may rise to ninety degrees in the shade, but an hour before noon the sea breeze begins to assert its power, and continues to blow more and more briskly till 3 P. M., when it gradually subsides, and dies away in time to let the sun sink behind a wall of almost immovable clouds. In midsummer those clouds are illuminated by electric twitches after dark, and nocturnal thundershowers are rather frequent; flashes of chain lightning running along the horizon like will-o'-the-wisps, and thunderpeals like salvos of heavy artillery awakening the echoes of the inland mountains. As much as a foot of rain has been known to fall in a single night, but the thick vegetable mold of the woodlands absorbs the showers as fast as they descend, and when the morning sun rises from the sea, only the streaming foliage bears witness to the tremendous drenching; the mountain brooks run as glassy clear as if nothing had happened.

The evil reputation of San Domingo as a "graveyard of foreigners," is due chiefly to two co-operating causes: 1. the fact that nearly all the foreign residents are merchants, and as such, are obliged to make their headquarters in one or the other of the six principal seaport towns; and 2. the indescribable filthiness of those coast towns. Mules falling dead in the suburbs are left to rot where they drop: *gallinazzos* (baldheaded vultures) are the only scavengers; not garbage and butcher-shop refuse only, but worse things, accumulate in the gutters of the principal streets, and the water supply is derived chiefly from rotten old cisterns, often covered with a green film of semi-vegetable substance.

Beyond the water-front residences of the harbor towns here, is a mulatto quarter of fairly decent houses, and outside of that a ring of negro suburbs, composed of muck heaps, and unspeakable hovels, adobe-built, and covered with a thatch-work of reeds and grass. Animals of all sorts share the shelter of these dens. Pigs and dogs run in and out, tortoises crawl about the floor of the butcher-shop, tame snakes (a cheap substitute for cats) glide through the thatch-tangle in pursuit of mice. Riverside cabins have a special partition for the accommodation of ducks, and when Captain Samuel Hazard entered a village school, he found a fighting-cock perched alongside almost every youngster in the room. "Do you sell those birds"? he inquired.

"No, they are not our own," was the reply; "they belong to the school-teacher, who makes them fight on Sunday."

The proprietors of those domestic menageries are subject to remittent fevers and to a variety of skin diseases that would puzzle a committee of medical specialists. Their language is a strange mixture of French, Spanish, and Indian terms, and their religion an equally queer compound of Christianity and fetich-worship. Voodooism has a strong hold on the country population, and as a specimen of their faith cures, a Moravian missionary relates the case of a mulatto who tried all kinds of fever cures till at last his neighbors advised him to consult a soothsayer. The female clairvoyant at once diagnosed the cause of his trouble. He was the victim of witchcraft, she said, and if he hoped to recover he had to spend a night in prayer, and after taking post at the corner of his lane and a side alley, he would before long see an old woman, and could rely on it that the spell would be broken if he would break a stout broomstick over her back. The program was acted out to the letter; the patient prayed from sunset till 4 A. M., then mounted guard at the designated place and nearly killed the first aged female of his species coming along, though she happened to be his own wife, who had heard him open the garden gate and stepped out to solve the mystery of his conduct!

The one redeeming character trait of the Dominican darkey, is his self-denying charity. Like all gregarious races they are very sympathetic, and would rather incur the reproach of being improvident than inhospitable. In many communities the eviction of an impecunious tenant would be considered an unpardonable offense, and in 1872, when the proposed annexation of the island came so near

being realized, an old French resident warned the U. S. commissioner that the reconstruction of the harbor towns would be a tougher job than the contract work of Hercules in the stockyards of King Augias.

That difficulty, however, could be easily obviated. The east and south coasts abound with good natural harbors, surrounded by long-abandoned, but still fertile fields that would favor the rapid growth of new seaport towns.

MENTAL HEALTH AND HYGIENE.

THE question first arises, "What constitutes mental health?" Is it normal activity, tone, efficiency, equilibrium, or what? Or is it, negatively stated, the condition marked by the absence of any factors or qualities tending to deteriorate or lessen efficiency?

If mind and brain are identical, then a healthy mind like a healthy brain, would be one whose functional powers were intact. Here we have to distinguish between the strong mind and the healthy mind. We can conceive of the arm as being perfectly healthy while far from being strong, as, for instance, the arm of the laborer as compared with the arm of the man of leisure. There may be various degrees of strength, varying from that of a Hercules to that of a child.

The healthy arm is one in which the functional processes are intact and capable of normal development though undeveloped. I suppose, therefore, that the healthy mind is one in which there is a harmonious balance of powers and capacities. The term *healthy* is the logical opposite, too, of disease, and we may be helped to a conception of its meaning by considering the marks of a diseased mind. A diseased mind is one in which the normal is varied from in the direction of a lowered potentiality. Or, considering disease as an active agent, the diseased mind is one tending actively toward further deterioration.

It is necessary to have a clear conception of the terms involved, or there is a liability to confusion in discussion.

A weak memory or deficient imagination may be due either to lack of use or to some pathological condition. If we are to regard, therefore, both a weak memory and a diseased memory as evidence of an unhealthy mind, the hygienic rules to be adduced will not be the same. So, lack of balance or harmony of physical powers may be due either to disease or disuse, to pathological or non-pathological conditions, and the discussion of means to restore the balance of power might, by the necessity of our definition, fall outside the category of hygienic rules.

Moderation and Regularity of Use. — Limiting the field of discussion to those rules which may be considered as more purely mental, I would first emphasize the need of moderation and regularity in the exercise of mental powers. It is a well-known fact that the great majority of mankind use their minds with greatly varying degrees of moderation or excess. Now, we all know what the effect is upon the body of spasmodic or excessive use. One unused to hard labor goes into the field to mow or pitch hay or hold the plow. The result is physical exhaustion, and undue strain upon the nervous system, followed, it may be, by temporary prostration. Now no one is so ill-informed as to the injurious effects of such practice as to doubt for an instant the unwisdom of such a course.

But what do we observe quite commonly as a mental phenomenon?—A man unused to hard mental labor, making some protracted and exhausting mental effort, the working up of a brief, the preparation of a sermon, the intense and prolonged application to some business project, resulting in the consumption and loss of nervous force, followed, as in the case of muscular excess, by nervous prostration more or less complete.

Nothing is clearer than that the oarsman in training for the race, or the pugilist for the ring, must exercise moderately and regularly — not spasmodically and to excess, but with a due regard to the plain hygienic principle that force is accumulated and tissue hardened by slow and regular processes. Hence, I would lay down this hygienic rule for the maintenance of mental health — that there should be regular systematic exercise of mental function. Just as certainly as muscular vigor and strength cannot be attained by intermittent exercise in the gymnasium, so mental health cannot be conserved by occasional and spasmodic exercise.

There is no more common and reprehensible practice in the schools than that of injudicious lesson-giving. The teacher for a day or week, it may be, works her class leisurely, until she takes it into her head to "make a spurt," as the oarsman would say, when she ruthlessly, and innocently, too, makes demands upon her class that if attained must be attained only by an excess of effort that will leave the

children in a greater or less degree of resultant weakness or prostration. All this is wrong. It arises in practice from the fact that the analogy between the condition of mental and physical hygiene is not clearly apprehended.

Regularity and moderation in mental exercise are absolutely imperative to mental health.

Variety of Mental Occupation.—Still another rule of mental hygiene may be derived from a comparison of physical and mental phenomena. Just as a change of diet and of atmosphere is often desirable, so variety of mental employment is conducive to mental health. The best physical results are often obtained not by complete cessation from work, but by a change of occupation or environment. The practice, so prevalent nowadays, of going into the country or to the seashore during the summer time, is a good one. True, the social exactions are often greater than at home, but the change conduces to recuperation of waning physical powers.

The physiologist has proved beyond a doubt that certain mental operations employ their particular groups of nerves and brain centers. These nerve groups and brain tracts by constant and exacting use become fatigued, and a change of mental occupation, such, for instance, as from mathematics to fiction, becomes imperative. The flow of blood is diverted to different brain areas and new and fresh groups of nerves are brought into play. The particular effect is that of giving temporary rest to one set of factors, but the process is quite different in its mode and effect from complete cessation of brain or mental exercise. The difference is quite analogous to that of resting one arm by using the other. An equilibrium of conditions is established that is more healthful than using one set of muscles to excess and a corresponding set none at all.

The schoolroom application of this rule is seen in diversity of studies. The change from the arithmetic to the drawing or music, from the grammar, with its exercise of the logical and discriminative faculty, to the reading, with its call for an exercise of the imaginative and expressive powers, are both in the line of true hygienic practice.

Too many persons, however, in adult years, allow themselves to become engrossed in business, in money-getting or saving, to the extent that certain brain tracts are used almost exclusively, with the result that a break-down occurs at an untimely age. An observance of the practical rule we have stated, viz., of change or variety of mental occupation, would have saved many a man without having lessened in any degree his necessary application to business.

Insomnia has become an almost universal malady. Drugs are taken to counteract the abnormal excitement and consequent weakness of the affected nervous centers. Far better would it be if the unfortunate victim of this insidious and insatiable foe to health and comfort were fought off by change of mental occupation rather than by drugs or other physical agents or sedatives.

Weak, Insufficient, and Unbalanced Use. — Still again we have observed that a physical organ loses its functions, not only by disuse, by improper or excessive use, but by weak or insufficient use. Just as a muscle needs to be exercised up to its full demands in order to be kept in a healthy condition, so the mind must be engaged to the full limits of its normal requirements. The best gymnastic culture demands that no one part of the body should be cultivated to the disadvantage of another.

The test of the strength of a chain is its weakest link: the test of mental efficiency is determined by its weakest power. If a man be deficient in memory for instance, he will be unable to marshal the facts upon which a correct generalization depends. Hence, to strengthen the generalizing power the weak memory must be cultivated. Each part is necessary to the whole. The strengthening of one part tends to strengthen the whole. Habits of careless and illogical thinking are to be guarded against, for they beget a mind prone to a limited survey only.

Careless and Inexact Use.—So, also, the habit of careless and inexact expression is fostered by an incomplete and hazy thought. A clear thought is the only one of value, and can always be clearly expressed if time and care are taken. The common expression, "I know but cannot express it," is not true; whatever is known clearly can be intelligibly stated. The person that pleads this excuse is one who does not think clearly; he has only a vague notion of what he would say. The relations and dependencies of the images that have risen into his consciousness have not been distinctly apprehended. Such thought should always be put to the test of clear and exact expression. No rule for mental growth is more important than the foregoing.

Overfeeding the Mind.—The mind should not be overfed. We are all familiar with the effects upon the body of overfeeding, namely, a clogging of the digestive apparatus, a disordering of the assimilative processes, and a general nervous disorganization. There can be a healthy mental condition only when the mind's food supply of sensations, images, and thoughts is properly digested and assimilated.

Every different nerve that takes a message to the

central ganglion, every nervous center that receives a message it cannot attend to by reading it off and converting its stimulus into motor activity, is acquiring a permanent habit, good or otherwise. One who accustoms himself to look over the daily newspaper in a half-hour must guard against the danger of acquiring the practice of *reading without knowing*. Not the least by any means of the evils of this newspaper age, is the loose mental habit inculcated by the rapid perusal of the multitudinous columns of the daily press. Time was when a man having few books or papers, read to remember. Now, few men read to remember. Hence, the average memory is vastly below its former standard. It may happen that long before man develops into a hairless and toothless animal, he will become a memoryless one, and need to carry around a pad and pencil in every pocket. It is a good rule every day to read something to be accurately remembered. — *N. Y. Independent's Abstract of Lecture by Prof. A. B. Poland.*

Safeguards of Health. — While disease at one front of battle is ever yielding to the advances of medical skill, at another it is as surely surrendering to the progress of hygiene. To-day the physician is asked not only how the sick may be healed, but how the well may stay well. From year to year investigation lengthens the list of diseases strictly preventable, and diphtheria and typhoid only linger to mark the neglect of well understood precautions. Vaccination has been so striking an example of what prophylaxis can do, that hundreds of eager experimenters are endeavoring to bring consumption and scarlet fever into the same category as smallpox. From maladies less serious, but much more common, the public is fast learning that immunity is largely a question of taking care of one's general health and vigor. Seeds of disease which find a foothold in an enfeebled frame are either repelled by a sound and hearty constitution or harmlessly digested by it. To maintain this happy condition, wholesome food, abundant exercise, personal cleanliness, temperance in all things, and the avoidance of worry are indispensable.

There are a good many people who know their lung-tissues to be delicate, or their heart action to be irregular, who suffer from some other constitutional weakness. Among this class the custom is gradually spreading of consulting a physician, not when acute difficulty has arisen, but as soon as the infirmity is detected, and periodically thereafter. Not seldom health is maintained in this way and life lengthened, for it is in their early stages of development that many diseases, especially the obscure diseases of the nervous system, can be most successfully treated. Perhaps it is the daily glass of spirits or the weekly supper party, which the physician interdicts. Quite as often it is the allurement of the stock exchange or the card table, which he has to prohibit. Whatever his advice, it has incalculably more value in preventing a crisis than in dealing with it after it has come to pass. Just as the best services of the lawyer are not in advocacy so much as in steering his client clear of the courts, so the doctor finds his worthiest skill to be in keeping his patient free from the need of cure or healing. In the task of maintaining healthful conditions, general and special, a science has grown up in which not only the physician but the architect, the sanitary engineer, the purveyor of food and drink, the manufacturer of clothing, have deep interests. — *Popular Science Monthly.*

Vegetable Diet. — The very strict ascetic sect of vegetarians who only live upon seeds and uncooked food look down upon their weaker brethren who eat eggs and milk and butter, in fact, everything which does not necessitate the taking of life; which appears to me to be the only reasonable standpoint. It is certain that the giving up of animal food cures many illnesses which no medicines can reach. Everybody knows the bad effects of butcher's meat in gout and rheumatism. In affections of the heart it is often the only remedy, and the wonderful results are not difficult to explain in a case where rest often means cure, if one reflects that while the meat-eater's heart has seventy-two beats in the minute the vegetarian's only has fifty-eight beats, therefore 20,000 beats less in the course of the twenty-four hours. Insomnia and nervousness are affected in the same way; there is less wear and more repose in the constitution. I could enumerate many other illnesses in which vegetable diet does marvels, but will only mention those of the skin. Most vegetarians have unusually clear and often beautiful complexions. I need only remind those who know them of the old Carthusian and Trappist monks, who all have smooth, white, and pink *Fra Beato Angelico* kind of faces, which are not found among the Orders that do not habitually live on Lenten fare.

The splendid teeth of the Italian peasantry, who never touch meat, speak for themselves, and it is the same in other countries where the people live under similar conditions. . . . It is far easier to cure a

drunkard if you deprive him of meat. As a high authority says, "It is clear that meat contains some not nutritious particles, which excite the nervous system so much that it at last becomes exhausted and unstrung. In this state of exhaustion unhealthy reaction follows, which brings on a paroxysm and violent desire for spirits and the excitement which they create." G. Bünge, professor of physiological chemistry at the University of Bâle, writes, in his book on vegetarianism: "The appetite of the drunkard is directed almost exclusively to animal food, and vegetarians are quite right when they teach that spirit drinking and excessive use of animal food are in connection with each other."

Vegetarianism is often called a fad, but it is a healthy and an innocent one and the natural reaction against the present state of things. It imparts lightness and elasticity to the body, brightness and clearness to the mind. The vegetarians I know are all unusually strong, active, and young-looking people for their age; one of them walked without stopping for thirty-four, and another time twenty-seven hours, without a rest, while on an excursion in Norway, —feats not easily equaled by an inveterate beef-eater. Traveling, mountain-climbing, all seem easier and less fatiguing on this light and soothing diet; and why should it not give strength to the limbs and sinews if one reflects that all the strongest animals who do the heaviest work in the world, like horses, oxen, and elephants, are entirely herbivorous? It is not my intention to be understood to say that I look upon vegetable diet, even with its necessary accompaniments of fresh air, frequent ablutions, gymnastics and exercise, as a panacea for everything, and that medicines become useless. We are mortal, and there is no perfection in this imperfect world. Nobody has a greater belief than I have in remedies judiciously given during illness, but it is the many who are out of health and below par, without hardly knowing what is the matter with them, who would be all the better for trying whether their discomforts spring from too high and rich a diet or from the inability to procure any but inferior meat or fish.— *Lady Paget, in Nineteenth Century.*

THE SPENDTHRIFT TENDENCY AS TO HEALTH. — In his excellent work, "Hereditary Health and Beauty," Dr. Shoemaker says: —

"We examine our canceled checks, add to them those still outstanding, and by comparison of the sum-total with our deposits in bank, carefully cast the balance to find out what still stands to our credit there. But in life, even in robust health, how many carefully reckon up the income and outgo to ascertain what is the balance of endurance left? So far are most reasoning creatures from following such a course, that it is generally enough for persons to be robust for them to consider their capital unlimited. Pleasure, vanity, and a thousand other frivolous notions, induce us to spend lavishly of the greatest of all treasures. The old woman in the fairy tale, with mumbling jaws and rheum-streaming eyes, was eager to exchange all her riches for the poor girl's blooming cheeks and rounded form, and not less eager was the maiden, in ignorance of the value of her priceless possessions, to seal the bargain. But the mutual transfer made, how immediately the maiden saw, from her withered, living grave, that all the riches of the earth cannot compensate for the joy that wells in the heart of youth, health and beauty."

Customer (to waiter) — "Some cheese, please."

Waiter — "Beg pardon, sir. Very sorry, sir, Cheese is out, sir."

Customer — "That so? When do you expect it back?"

HURRY AND WORRY KILL MEN. — "It was heart failure," say the doctors, and they say it so often that we put on our thinking caps. One business man after another falls out of sight, and when we ask what the trouble was, the reply is sure to be, "Heart failure!" A great deal of worry, a habit of constant hurry, keeping at high tension year after year — that's what's the matter. We sleep with one eye open, talk business in our dreams, swallow a whole meal — soup, entrees, roast, and dessert — with one gulp, and then when we hover about the fifties, the heart gets disgusted at its treatment and closes up the concern. — *N. Y. Herald.*

A PRESCRIPTION.

My pallid friend, is your pulse beating low?
Does the red wine of life too sluggishly flow?
Set it spinning through every tingling vein
By outdoor work, till you feel once again
Like giving a cheery, school-boy shout;
Get out!

Are you morbid, and, like the owl in the tree,
Do you gloomily hoot at what you can't see?
Perhaps now, instead of being so wise,
You are only looking through jaundiced eyes;
Perhaps you are bilious, or getting too stout;
Get out!

Out in the air where fresh breezes blow
Away all the cobwebs that sometimes grow
In the brains of those who turn from the light
To all gloomy thoughts instead of the bright;
Contend with such foes, and put them to rout;
Get out!

— *Philadelphia Medical and Surgical Reporter.*

CLIMATOLOGY IN RELATION TO CHILDHOOD AND OLD AGE.

As regards childhood, we may safely lay down the general laws that children respond more readily to change than their elders, that they commonly do very well at the seaside, that they often benefit most signally by a sea voyage, and do not suffer severely from the discomforts attending such a voyage, that they enjoy and benefit by a country life, that they suffer more than grown people from the depressing influences of city life, and that, as a rule to which there are probably many exceptions, they do not specially benefit from the climate of high altitudes. Such, in brief, seem to be the leading principles of the climatology of childhood and early adolescence. That children love the sea, and that the sea very generally suits them, are familiar facts of observation. The explanation is to be found in such considerations as that children are commonly in a condition to bear stimulation, not having used-up nervous systems; that they are attracted by the sea and its products, and by the amusements natural to the seaside; and that some of their commonest ailments, such as struma and rickets, are among the affections most amenable to marine influence.

It is very striking how happy children are, as a general rule, on shipboard; how readily they accommodate themselves to their novel conditions of existence; how little they suffer from seasickness or the other inconveniences of the life at sea; how deeply they are interested by the rather monotonous round of sights and sounds, and how astonishing is frequently their progress toward health under such conditions. The enjoyment and benefit which children derive from country life do not call for comment. That city life, especially under the unsanitary and unwholesome conditions prevailing in many of our large centers of population, is prejudicial to the normal and healthy development of the child, is a fact sufficiently obvious, but for which it is difficult to find an adequate remedy. The question is too large to be discussed incidentally in this connection, but it is not too much to say that the great problem in hygiene which the twentieth century will be compelled to solve will be how to reconcile the growth of great cities with the preservation of the national health.

That the mountain climates are not very suitable for children is probably a true general principle, but one upon which it would be rash to insist too rigidly. The explanation would appear to be that, upon the whole, the general conditions of climate and life which exist at high altitudes, although highly stimulating in certain morbid conditions, do not promote in a similar degree normal physiological development. We must admit, however, that this point has not been at all adequately worked out, and that any hard-and-fast rules are at least premature.

The climatology of old age may be roughly summed up as follows: Elderly people in general do well with equability and moderate warmth; they bear cold badly; they benefit by abundant sunshine. The high altitudes are very rarely suitable to them, and are usually decidedly injurious; they do best in level places, where there is abundant shelter. They may or may not benefit by the seaside or a sea voyage, but these measures cannot be recommended with at all the same confidence as in the case of children. Most of these principles become almost obvious upon a little consideration. The failing vitality, by which we mean impaired vigor of circulation, assimilation, and excretion, which characterizes advanced years, and the special maladies most frequent at that time of life, such as rheumatism, cardiac disease, gout, and renal affections, serve to determine the climatological problem. Moderate warmth with fair equability, abundance of sunshine with adequate shelter, and level walks, evidently meet the most obvious indications called for by these affections.

The unsuitability of the mountain climates to the aged is due partly to the cold, which depresses those in whom the circulation is feeble either constitutionally or as the result of age, partly to the sudden changes, which are especially trying to the rheumatic or the subjects of renal disease, partly to the impossibility of obtaining sufficient easy exercise on the level ground, which is a serious difficulty in cardiac cases. A sea voyage, though by no means out of court at any period of life, is often a doubtful experiment for the old, who do not take kindly to such a revolution in their daily habits as life at sea necessarily involves, who often suffer severely on shipboard from seasickness and insomnia, and who may not possess sufficient elasticity of spirit to rise above the depressing influence of separation from home and friends. The elderly constitute the class most likely to benefit by the various spas, which now enjoy at least a sufficient vogue. The effect of mineral waters is in most cases to promote elimination, and this is often the first indication in the case of those advanced in years. It should never be forgotten, however, that vigorous eliminative measures are a great drain upon the system and may easily be abused.

We hardly need to say, that in nothing is the supe-

rior recuperative power of youth over age more apparent than in the greater readiness and certainty of its response to change of climate. We can confidently recommend to the young measures which we suggest dubiously to the old. In fact, change is rarely at fault in the earlier years of life, whereas it is very often a doubtful, and sometimes a most hazardous, experiment for the aged. In the case of the latter we need to have solid reasons and tolerably definite prospects before we induce them to give up the comforts and safety of home for the uncertainties of travel. — *London Lancet.*

PRESERVE YOUR VIGOR. — A healthy, vigorous system resists disease. Worms burrow in decaying trees; not in the young, the vigorous, and the thrifty. Some persons can almost defy the deadliest diseases. Others fall before the slightest attacks. Many diseases come from germs, which plant themselves within the body, and then multiply and destroy. If we have the vigor that can resist the *first* of these little germs, we escape. But if the system is debilitated; if bad food and bad air have impaired vitality; if stimulants, strong drink, sensual and vicious indulgences, excessive strains, idleness or inactivity, have sapped the vigor of the system, then disease lays hold upon the enfeebled frame and works its overthrow. Many a poor fellow whose life is wasting and wearing away with some incurable malady, is only paying the penalty for those young days, when nothing he could eat, drink or do, ever injured him! He had the treasure of health; he squandered it, and now comes the time of settlement, and he finds "the wages of sin is death." — *Medical Brief.*

SIMPLE BUT EFFECTIVE. — Says the *Youth's Companion*: —

"A certain skilled practitioner had a number of charity patients whom he faithfully attended as occasion required, expecting and receiving only such reward as comes from the comfort of doing good. Among these patients was old Martha, a well-preserved relic of 'befo' de wah.' Being up to all the ways of her white neighbors, she took *la grippe*, and immediately sent for her medical adviser.

"'Why Aunt Martha, you don't mean to tell me that you're under the weather?'

"'I'se away undah it, doctah; away undah it.'

"'Well, what is it?'

"'I doan't know what it is, doctah, but I got it pow'ful bad.'

"The doctor readily comprehended the trouble, and writing out the proper prescription, he gave it to the excellent but aching Martha, and told her to put it in a tumbler of water, stir it well and take a teaspoonful three times a day. Then, assuring her that he would look after her attentively, he departed. The next day he found his patient much better, and by the third day she was in an improved stage of convalescence.

"'Oh, doctah,' she exclaimed, 'yo' med'cine am simply pow'ful. I stir it and take it jes' like you say, and I feel better ebery time.'

"'Well,' said he, 'perhaps you won't need any more; let me see how much you have left.'

"Old Martha lumbered across the room and brought from the shelf a tumbler half full of water.

"'Why, what 's this?' he inquired.

"'Why, dat, doctah, is de med'cine yo' lef' me, and I was very careful to stir it every time, jes' like you say.'

"'Yes; well, Martha, I don't believe you 'll require any more of it; the fact is, I did n't know myself how powerful it was.' And fishing out his prescription, which was rather the worse for its three day's bath, he went away impressed with the belief that the mysteries of medicine had not been half told.'"

THE FEARFUL TAINT OF HEREDITY. — A writer in the *Fortnightly Review* well illustrates the fearful taint which a liquor-loving parent may transmit to his offspring: —

"A few months ago I was present in Dr. ——'s consulting room, watching the prisoners from the depot filing past. We were informed that a child had been brought by its parents to be examined. These people were shown in; they belonged to the respectable working class, and were quiet and well-mannered. The man was the driver of a dray belonging to one of the railway stations, and had all the appearance of a stalwart working-man. The boy was barely six years old; he had an intelligent, rather pretty face and was neatly dressed.

"'See here, *Monsieur le Docteur*,' said the father, 'we have brought you our boy: he alarms us. He is no fool; he begins to read; they are satisfied with him at his school, but we cannot help thinking he must be insane, for he wants to murder his little brother, a child two years old. The other day he nearly succeeded in doing so. I arrived just in time to snatch my razor from his hands.'

"The boy stood listening with indifference and without hanging his head. The doctor drew the

child kindly toward him and inquired: 'Is it true that you wish to hurt your little brother?'

"With perfect composure the little one replied: 'I will kill him — yes, yes — I will kill him!'

"The doctor glanced at the father and asked in a low voice, 'Do you drink?'

"The wife exclaimed indignantly: 'He, sir! Why he never enters a public house, and he has never come home drunk!'

"They were quite sincere. Nevertheless the doctor said: 'Stretch out your arm.'

"The man obeyed; his hand shook with the tremor of an habitual drinker. Had these people told lies, then, in stating that the man had never come home the worse for drink? No; but all through the day, wherever he had called to leave a package, the people of the house had given him something to drink for his trouble. He had become a drunkard without knowing it; and the poison that had entered his blood was at this moment filling the head of his little child with the dreams of an assassin."

THE MANIOC.—Among foods, the manioc is to Brazil what wheat is to Europe and North America. It is a plant with wide-spreading branches and a large, tuberous root, fleshy, white inside and full of an acid, poisonous juice. The root sometimes attains a weight of thirty pounds. It is composed almost entirely of starch and the poisonous acid just mentioned. This poison can be easily separated from the root, however, either by heat or repeated washings. The usual method of preparing it is to scrape the root well, reduce it to a paste, and press out the juice. It is then washed, which extracts the last remains of the poisonous principle, and gives the white, granulated look that it has when it appears on the table. It is called *farinva de pao* (wood sawdust), and it is said to resemble sawdust in taste and smell. It is the common food of all ranks throughout Brazil. The water in which the paste is washed deposits, on standing, a white silt which is very pure starch, and when dried is called tapioca.

The people are so habituated to the use of the wood meal that even when they have wheat bread on the table, they take with every mouthful a little of this meal.—*A Year in Brazil.*

LIGHT ROOMS. — "I shall get quite enough darkness when I move into my last home," said a bright, cheery housekeeper, as she threw open the shutters and let the Southern sun into her sleeping room. "I think that of all follies that a housekeeper can be guilty of, one of the worst is the darkening of rooms and the habit of closing window blinds. I think the superb health of my family is to a great extent chargeable to the habit we have of almost living in the sunshine. Every bright day all of the shutters are thrown open and the entire house gets the benefit of the sunlight. It drives away dampness and mold and microbes and blue-devils, and puts us all in good humor and good health. I cannot imagine good sanitary conditions and darkness. Even my cellar is as light as I can possibly make it, and whatever fruit and delicacies need to be shut away from the light I put into close cupboards or covered boxes. I have sheets of canvas that can be thrown over them before they are put away, and always take pains so to arrange my stores that nothing will be injured by an abundance of light.

"People who live in badly lighted apartments have little color and less health; and I for one do not intend to spend my days in an atmosphere of gloom. That is my greatest objection to living in a flat. It is almost always the case that some of the rooms are so dim and cheerless that they would give the best dispositioned person the blues. I prefer a snug cottage, with any inconvenience which may attach to it, to stuffy closed-in rooms where all the light and air I get are, to some extent at least, second-hand."

BEER DRINKING AND PHYSICAL STRENGTH.—Prof. Peabody says: —

"While many Americans point to Germany as a country where beer and wine are used without harm, the Germans themselves are beginning to look upon the use of these beverages as so much waste, both in money and in physical strength. 'The European nation,' say they, 'which first checks the present increase in the use of liquors will have, it is seen, a tremendous advantage both in physical and economic warfare.' The first newspaper article which suggested that the Germans were aware of the social danger of drink was, curiously enough, the *Army Journal.* It described the autumn maneuvers at Erfurt, where a detachment of reserves was called out to take part in those days of vigorous drill. These men, summoned thus abruptly from their ordinary pursuits, soon showed that they were in poor physical trim and quite unfit for active service; and the military critic attributed this fact to the inactive, beer-drinking habit of life into which they had sunk. 'Unless Germany redeems herself from the saloon, she will look in vain for competent defenders when the test of war is to be met. A man cannot rise from his beer and fight well for his fatherland.'"

THE PHYSICAL VIGOR OF GERMAN GIRLS.

THE housekeeper who is able to secure the services of "a stout German girl" as a domestic servant, considers herself very fortunate. No one ever heard of a housekeeper boasting of her stout American girl. The strong girl is always German, Irish, Scandinavian, or of some other foreign birth. The delicacy and good-for-nothingness of the average American girl is notorious, at home as well as abroad. Physicians who devote themselves to the diseases peculiar to woman, as a specialty, have pondered much upon this fact, and have suggested many apologies for it, one of the most serious of which is that proposed by Prof. Emmett, of New York, who suggests that the American climate is the cause of the physical inferiority of the American woman.

If the first discoverers of this continent had found it inhabited solely by men, there might be some slight foundation for Prof. Emmett's theory; but since, instead, Columbus and his successors found America inhabited by about an equal number of men and women, and women as vigorous, active, and enduring as the men, it must be conceded that there cannot be anything intrinsically harmful to women in the American climate. The fault is not in the climate, but in the sedentary life, or, at least, lack of vigorous physical exercise, especially during the developing period, and we should also add, the pernicious influence of the mode of dress, which is more cruel in its abuse of the body, and more disastrous in its consequences than any deformity-producing fashion which prevails among savage tribes.

The average German girl possesses a body as strong and vigorous, although different in its aptitudes, as that of her brother. This may be in part due to the happy influence of heredity, but heredity alone will not produce a strong physique. The daily practice of vigorous physical exercises, especially in the open air, from early childhood, is essential for the development of strong muscles and the robust health which the average German woman enjoys.

The accompanying cut is an illustration which we borrow from *Le Tour du Monde*, illustrating the game of stilts, a form of exercise much enjoyed by the German girls of Ulm, Wurtemburg, Germany. Such an exercise, which doubtless most American girls would consider quite too vigorous, and possibly also, quite too hazardous, must certainly secure the most thorough activity of every important group of muscles in the body. The frequent practice of such an exercise would certainly develop great strength in the muscles of the trunk, elasticity of the limbs, and a superb poise through the development of the balancing powers of the body. Such exercise could not be undertaken with any degree of success or safety without the utmost freedom of activity in every limb and muscle. As will readily be seen by reference to the cut, the dress of these peasant girls is such as does not in any way restrict the movements of the body. The dignified carriage of the average German woman is not the result of heredity or of chance, but of her early training,—such exercises as that above illustrated, together with her daily work in the fields, bending forward and working with her hands upon the ground without bending the knees, or going three or four miles to market with a hundred pounds of field or garden produce upon her head, and sometimes lending a helping hand to the cow or donkey toiling before the plow, or a too heavily laden cart. The daily observations of the traveler in European or in savage lands would never suggest the idea that woman was intended by nature to be a "weaker vessel."

The idea that work necessarily makes a woman clumsy and ungraceful, is entirely erroneous. Awkward work, work under unfavorable circumstances, imposed constriction of the waist, or hampering of other bodily organs, inevitably results in deformity and decrepitude; but muscular work under favorable conditions, unless enormously excessive, develops bodily vigor, and with vigor and strength come grace of poise, elasticity of movement, and the always attractive expression of robust health.

The other day, the writer, being struck by the remarkably erect figure of a Scandinavian woman of the laboring classes, incidentally remarked: "I notice you have an unusually strong figure. I wonder if you could touch the floor without bending your knees."

"O yes," said she, and immediately bending forward, she placed the whole palm of her hand upon the floor with the greatest ease. This woman was between thirty and forty years of age, the mother of half a dozen children, and had from early childhood been accustomed to hard labor.

Upon further questioning, the fact was learned that she was a native of Scandinavia, where she had resided until nineteen years of age, and had been accustomed from childhood to labor with her father, sisters, and brothers in the field, a large part of the field labor in that, as well as in most other European countries, with the exception of England, being done by women. Then the question was asked, "In working in the fields, were you taught to avoid flexing the knees?"

"O yes," said she; "my father always told me that it was very awkward in working upon the ground to bend the knees, and that only infirm and very aged people should do so."

It might have been supposed that the hard work to which this woman had been accustomed, would have produced a bent and awkward figure, but, instead, when asked to stand straight, she immediately drew her figure into exactly the position which has so often been represented in these columns as the typical and natural poise.

German, as well as Scandinavian girls are taught by their parents that to flex the knees when bending forward to pick up an object from the ground, or in working upon the ground in the fields, is exceedingly awkward, and not to be permitted. The consequence of this constant training, is to develop to a high degree of vigor and strength the muscles of the back and waist, upon which especially depend a good poise, since weakness or irregularity in the development of these muscles almost invariably results in curvature of the spine, either to one side, forward or backward, resulting in an unevenness of the shoulders, round shoulders, flat chest, forward carriage of the head or hips, and other similar deformities which one almost universally meets among the weakly and asymmetrical girls of this country.

GERMAN GIRLS OF WURTEMBURG EXERCISING ON STILTS.

Dr. D. A. Sargent, of Harvard, will send to the World's Fair a bronze cast of what he calls his "perfect man." The measurements are taken from his anthropometric chart, and the sculptor is a man named Noble.

Do not make the mistake of supposing that a practice of any gymnastics, however valuable will take the place of fresh air and sunshine. Physical exercise is needed for muscular development; fresh air and sunshine are needed to oxygenize the blood. They are complements of, not substitutes for, each other. And while proper gymnastic practice may very largely take the place of outdoor *exercise*, it is no substitute for outdoor *breathing*.—*Myra Pollard, A. M.*

WALKING.

[Julian Hawthorne, in Lippincott's Magazine.]

THERE is no evidence to show that the inhabitants of any planet besides this understand the use of vehicles. It is more than probable that they all get about on foot, and in no other way. Legs were given to man to walk with; at any rate, no better use has yet been found for them. And if we of this earth are the only members of the human race who employ locomotive machines, reasonable modesty requires that we regard the practice as an eccentricity, and inquire whether it be a defensible one.

The length of our legs bears a strict relation to the circumference of our globe. This fact is nature's hint against the expediency of all kinds of seven-league boots. Four miles an hour — five if the weather and roads are favorable, and six in extreme cases — is the limit of man's convenient rate of progression; and whatsoever is more than this is vanity, and leads to vexation of spirit. The world was made just our size, so to speak; and every mile that we add to the speed of railway trains and steamboats lessens its dimensions, and makes us too big for it. We really gain nothing by going a mile in one minute instead of in fifteen; if only one of us had the secret, he might turn it to his individual profit; but since there is no secret in the matter, we are, relatively to one another, just where we were at the start, with the addition of an incalculable amount of nervous wear and tear and physical exhaustion. Of the telegraph I do not speak; with all respect to Professor Morse, that invention is a diabolical one; weigh the real good it has done against the unmistakable evil, and the former emphatically kicks the beam.

The evil is of comparatively modern introduction, too. Adam and Eve knew nothing of it, though perhaps the eating of the apple, by making them discontented with themselves and their environment, may have directly led the way to it. Noah cannot be held responsible; he built the ark, it is true; but no sails were spread upon that venerable structure; and to wish to keep afloat, when walking was temporarily impracticable, was after all but natural. The patriarchs and the prophets were stay-at-home folk; the nomadic ages moved, but they moved slowly. Wars, through the medium of chariots and cavalry, were the beginning of the trouble; couriers and stage-coaches followed after an interval; but it is only within the last century or so that steam and electricity have got in their fine work and injured our digestion and peace of mind.

It is in no vainglorious spirit that I say that I have been one of the sensible nucleus from my beginning. I walked because I liked it; and even now, I never let anything else carry me when my legs will do it. Thackeray once remarked, *apropos* of the topic now under discussion, "Nowadays, we do n't travel; we arrive." I must say that the arrival at a given point is less agreeable to me than the approach thereto. Philosophers have always maintained that true pleasure is found, not in realization, but in anticipation. The truth holds good in walking as well as in other pleasures; and, to a refined conscience, there is something illegitimate in being in a place to which we have not traveled on foot. What account can we give of the intervening space? It is not ours, unless we have faithfully measured it out with consecutive paces of twenty-eight inches each. The world is his only who has walked round it. How much of hope, of curiosity, of mystery, of awe, have been lost to us by not sticking to shoe leather! We are thousands of years in advance of our time; and, having exhausted the resources of our own little corner of the universe, we are now cocking our eyes at the stars. But, after all, we are anchored here, and must make the best of it. "Go slow," is a wiser motto than "Go ahead," and we are likely to be unpleasantly convinced of it one of these days.

I have dwelt upon the ethics of walking, because that side of it is generally neglected. To walk is wise, independent, manly, and moral. It is also healthy and agreeable. Our characteristic impatience and fury of competition have introduced artificial and, in a measure, objectionable features into it, to which allusion will be made further on. But let us linger a few moments over its æsthetic and hygienic rewards.

The man afoot on the surface of his own earth is the true king; the so-called monarch who journeys in a coach or in a bomb-proof railway carriage is, in truth, a slave. The pressure of the free foot on turf or road exhilarates the soul; the magnetism of our mighty mother flows into our nerves and nourishes their vitality; our blood dances through our veins and strengthens muscle and organ. The whole atmosphere is our own; it flows rhythmically into our lungs and unites us with the sky. The horizon woos and stimulates the eyes; they become bright and gain power and judgment. Nature instructs us at every step; her beauty must ever remain unknown

to him who has not thus placed himself face to face with her. Distant hills slowly draw near, and unfold to us their wonders of color and form; winding valleys reveal their lovely hearts to our orderly seeking, tempering their surprises by exquisite gradations. The trees are companions; each yields to us its individual charm, and so passes us on to the new charm of its neighbor. The forests veil from us the sky, as if to remind us of the beauties of this earth; the broad plains smile to heaven, in intimation that earth and heaven are inwardly at one. Every insect, animal, and bird vouchsafes us glimpses of its secret life, which shuns the monstrosity of our machines.

A day of walking in the country, whether it carry us four miles or forty from our starting-point, at any rate leads us back through the countless noisy ages of civilization to the quiet seclusion and spontaneous insight of the pastoral era, before cities and business were invented. We are not the same at evening as we were in the morning. We have absorbed the day and the landscape; we have journeyed shoulder to shoulder with the sun, and the winds and rains have visited us. A little more, and we should become gypsies; still a little more, and we could comprehend the faun and the satyr.

The best thoughts and the purest moments of a man's life may often come to him when he is afoot. The regular and gentle exertion of the movement gives the body just enough occupation to keep it out of the way of the mind. The heart acts fully, but not to excess; the lungs thoroughly aërate the blood, without becoming overcharged; the other organs discharge their functions with ease and lightsomeness. The little ducts of the skin breathe forth their moisture; the muscles glow and expand, and the brain, finding all well in the domain of its dependencies, turns to its affairs with joyous freedom and alacrity. At evening, what an appetite! At night, what sleep! Were any magical physician to invent an elixir which imparted a tithe of the vivifying virtue of a day's walk in the open air, he would be the Crœsus of pill-makers. How much would we give for a bottle of his concoction? And yet we may walk for nothing, and we may begin to-day; and the more we take of the prescription, the more solid and lasting will be the benefit we derive from it.

(To be continued.)

THE CAUSE OF PREMATURE OLD AGE.

HERE is a young man just out of college where, during the four years of his course, he has taken an active part in gymnasium practice, in field sports, in training for rowing-matches and other forms of physical exercise, and as a result we see a stalwart, handsome specimen of humanity; the square, broad shoulders, deep chest, brawny muscles, erect, graceful carriage, speak in unmistakable tones of the advantages gained by education of the muscles in connection with the brain and nerves.

Fifteen years later we see this young man again, though now at middle age. What a change we behold! Instead of the erect, proud figure, we see a man with round shoulders and drooping chin. The muscles, hard as wood at twenty-five, are now at forty soft as putty: the limbs, strong as oak pillars and lithe as those of an antelope, are now clumsy masses of fat with creaking joints stiffened by rheumatism or incipient gout. A hideous accumulation of fat at and below the belt give to the beholder the impression of a gross animal nature, and suggest the too long lingering at the dinner table.

What has wrought this change? — Not too much work, and not necessarily great excesses at the table. A man may become obese and portly without being a glutton. The man who at forty should have been in the prime of his strength and in the height of his physical glory, is now prematurely old, and his body is rapidly undergoing those degenerative changes which naturally come only with very advanced age; the cause of this is as much to be found in sins of omission as those of commission. After living his active life at school, the young man buried himself in a bank or counting-room, and abandoned his habits of active exercise, and as the result, is undergoing premature decay. There is no means by which the ravages of time and age can be held at bay so effectually as by daily methodical exercise. The joints become stiffened simply for want of use; an undue accumulation of adipose tissue occurs about the trunk, because the muscles of this part of the body are so little employed. Bad habits in sitting, standing, and walking, result in loss of the erect poise which is so essential to health, as well as grace and beauty.

Thus the work of deterioration goes on, until every organ, in fact every structure of the body is more or less damaged through this one neglect. Every human being needs a certain amount of active muscular work each day of his life.

TO BREATHE OR NOT TO BREATHE.

A PARODY.

To breathe or not to breathe, that is the question,
Whether it is nobler for our sex to suffer
The pain and torture of a steel-girt corset,
Or to take up arms against Dame Fashion's tyrannies
And by opposing, end them. To unlace, to breathe
Once more, and with full breath to say we end
The sideache, and the thousand unnatural ills
We make flesh heir to,—'t is a consummation
Devoutly to be wished. To unlace, to breathe,
To make, perchance, the waist too large — ay there's the rub;
For in that life of peace what form may come,
When we have shuffled off this girdle snug
And are at ease! There is the respect that makes tight lacing
of so long life:
For who would bear the sneers and scoffs of men?
The corset tight, the dress's burdening weight,
The pangs of tortured flesh, the lungs' disuse,
The fluttering breath, and all the plaints
That patient Nature to the unworthy makes
When we might restful comfort take
In a loose bodice! Who would corsets wear
To groan and ache under their weary pressure
But that the fear of Madam Grundy's voice,
That dread oracle, from whose decree few women waver —
Holds us slaves, and makes us rather bear the ills we have
Than seek for ease that she would frown upon.
Thus Fashion does make cripples of us all,
And thus the natural form of womankind
Is changed — transformed, till none would recognize;
And figures, by nature of fine mold and movement,
For this are corseted in garments tight,
And lose their power of action.

—*Eudora S. Bumstead, in Woman's Tribune.*

AN OBJECT LESSON IN DRESS REFORM. — A late Chicago paper chronicles the following frightful accident to a woman, occasioned by her dress: —

"A peculiar accident happened on State street yesterday afternoon which nearly cost a woman her life. A lady and her husband attempted to alight from a State street cable train at Jackson street. When Mrs. —— stepped off, her skirts were caught on the platform of the car, and before she could free them, the signal was given for the car to start. The sudden jerking of the car threw her to the pavement, and before the car could be stopped, she had been dragged through the mud and slush twenty-five feet. Her clothing was torn from her body, and when picked up, she was almost nude. She was stunned by the shock, and was carried unconscious into the office of Dr. ——, where restoratives were administered and she was speedily revived. Upon examination it was found that she was not injured beyond severe bruises. The husband attempted to rescue his wife from her perilous position and was also thrown down and rolled in the mud until his clothing was ruined and his body bruised."

It would seem that one such fearful experience for the principal sufferer herself, or one such spectacle for the lookers-on, would constitute an object lesson sufficiently convincing for all time to come, in favor of a kind of dress for women which will afford no length of skirt capable of serving, upon occasion, as a death trap for its wearer.

THE sanitary committee of Vienna are of the opinion that the sweeping of the walks by trailing skirts scatters the germs of disease, and is a nuisance. The municipal authorities have resolved to abate it by way of a tax for the privilege of wearing such dresses.

A GREAT NEWSPAPER'S ADVICE. — The New York *Sun* advises reformers to study the effect of the present bathing dress for women before deciding on the costume they will adopt. "This dress," it urges, "is not unbecoming; in many respects it is remarkable; it allows perfect freedom of movement, it consists of only two pieces, with the exception of the stockings, and it is entirely modest. No better costume for work could be devised, and with suitable undergarments it could be made warm enough for any weather of this climate. Young women and old wear it on the sea beaches without fear of beholders, and hence it might not less appropriately be worn in the public streets. It could also be beautified with color and decoration, so that the feminine desire for adornment would be satisfied."

SHORT skirts, wrinkled top boots or gaiters, and knickerbockers will be worn in rainy weather some day, and the sooner the better for woman's comfort. Any one who has felt the "swish-swash" of wet skirts against her boots, will bless a leader of such reform. — *Tacoma Leader.*

Young Lady — "I like the bonnet very much. It is simply a dream of beauty. But do you think it matches my complexion?"

Milliner — "No, I don't think it does. But that needn't cause any trouble. You can easily fix your complexion to match the bonnet."—*New York Press.*

FALSE HAIR. — Ladies who are in the habit of wearing false hair may learn from the statistics of the hair industry, whose center is in Paris, that the bulk of hair handled by the dealers is not supplied by the *coiffeurs* who travel about the Continent purchasing the flowing locks of peasant girls. It is estimated that in Paris alone ladies comb out daily and throw away fifty *kilos* of hair among the refuse. This the rag-pickers, who carry on a great trade in combings, collect from the dust bins and sell to the *chiffoniers*. The hair is then rolled in sawdust, cleaned from mud, dust, and grease, carded, separated, arranged according to length and color, and sold to the master *chiffonier*, who in turn sells it to the hair dealer. The most expensive shades are white, chestnut and blonde, then brown and red.

A WHEELWOMAN'S DRESS. — A recent writer in the *Bicycling World*, herself a practical wheelwoman of several years' experience, gives the following description of a neat, comfortable, and most convenient costume for cycling: —

"I find the only comfortable dress for a lady is of heavy weight material two and one half yards wide, with two or three rows of machine stitching around the bottom to prevent the hem catching in the pedals. Have just enough fullness in front and sides to fall gracefully when off the wheel, and the rest in the back. The opening should be on the side to prevent catching in saddle when mounting; the length should come to the ankle when off the wheel. A shirt waist of any light material and a zouave jacket, not too short or you will appear round shouldered; about to the waist is the proper length. A round, sailor hat or Tam O'Shanter completes the costume. The equestrienne underwear is much preferable with any bicycle dress. A lady trying this costume will find no trouble in mounting or 'coasting.'"

THE CREATURE WHICH FASHION HAS MADE. — This is a peculiar creature, made up of ridges and angles, instead of the graceful curves which nature gives. She is full of aches and pains and is very useful to the physician, instead of being full of vigor and health and useful to the world. Why in the name of common sense does not a woman try to have a figure like the Venus de Milo or an artist's model, instead of copying after some vulgar fashion-plate which represents the demi-monde of Paris? The Venus de Milo has no waist line, but the waist line of the fashion plate is marked by sharp angles with never a line of beauty. By molding a "form" which shall conform to the distorted outlines which Fashion decrees, does not the fashionable woman tacitly say to her Maker that he did not know how to create the human form divine? But blasphemy was never more dreadfully punished than this, for deformity creates myriads of forms of invalidism and infirmity, and each is accompanied with untold sufferings. Is it not time to call a halt, and let nature resume her rightful sway? Not merely your own destiny but that of the generation to come, is pending upon your answer. — *Kate Lindsay, M. D.*

THE "maternity dress" exhibited by Mrs. Annie Jenness Miller, is adjusted to fit the figure comfortably by having lacings in the dart seams and transverse lacings at the waist line. These are hidden by the adjustments of the front drapery. Mrs. Miller says that motherhood is robbed of half its dignity by the way in which most expectant mothers dress; that instead of fixing up old dresses no matter how ugly and worn, they should take special care to robe themselves neatly and gracefully.

Two ladies in Florida, living in an orange grove, to which they give their personal attention, have adopted for convenience a reform dress similar to the ordinary gymnastic costume.

WORTH, the celebrated Paris milliner, has abolished the trailing skirt for street gowns, and has also consigned crinoline to oblivion.

"A WOMAN'S dress," says Edmund Russell, "should 'sing' not talk. Its lines should yield to every motion of the pliant figure, and should suggest every possibility of beauty and grace. A stout woman looks her worst and shows each line of her figure in stays and close-fitting gowns. A beautiful woman is on her lowest plane in a tight-fitting dress; an ugly woman is on her highest plane in drapery."

WHAT ARE GIRLS RAISED FOR?

[Extract from Lecture by Kate Lindsay, M. D., of the Battle Creek Sanitarium.

IT is very easy to answer the question what a family of boys are raised for, but not so easy in the majority of cases, with regard to girls. Boys are expected to become useful members of society,—producers,—and they are given the right of choice as to what vocation they shall follow when they grow up, and parents educate them with reference to their respective desires; but ask those same parents what they expect their girls to do when they are grown, and they will too often say, "Oh, the girls? *They* will stay at home and probably get married by and by." The parents will tell you that John is going to be a farmer, Harry a merchant, and Frank a doctor, but Mary, Anna, and Kate are merely to wait for the coming man. The girls are expected to marry for wealth and social position, and so they are put into fashionable training of a kind supposed to add to their attractiveness. Their waists are pinched and their feet are cramped; they are given a few superficial accomplishments, and they finally become interesting creatures to hang dry-goods on. The plan is usually quite expensive for the father, but the object is thought to be worthy of making sacrifices for. Suppose it is accomplished; what then? In novels, "they live happy ever after," but alas! in real life this, in such cases, is very rarely true.

This idea of making matrimony the chief and only aim of womankind has filled the world with untold evil, and has been the cause of the downfall of thousands of women. There are always numbers of surplus women who never marry, and with no equipment for self-support, or breadth of education, they either drag out aimless and colorless lives, or if in poverty, are the easy prey of the libertine. In my girlhood, I knew a family of seven girls and two boys whose father was a master mechanic. The two sons followed their father's trade, but the seven girls sat idly at home and let their hard-working father support them. They could not teach school, or learn a trade, or study for a profession; none of these occupations were genteel, and might ruin their chances of securing a rich husband. One day the father was brought home dead, and the mother and the seven daughters were left helpless and inconsolable. The income from the few thousands of insurance money furnishes a meagre living, and thus they live on, dividing their time between pet poodles and fancy work. In other instances which I have known, girls so reared and afterward so bereft, accepted the gilded baubles and fine clothes which a life of shame offered them. They had not been educated to do one thing well which might afford them self-support; they had no resources within themselves for making life worth living; poverty was grinding, and they grew desperate.

Now if girls were treated the same as boys, and educated to do their part of the world's work, society would speedily have a purer and more wholesome atmosphere. Girls should be prepared by perfection of body and cultivation of mind and hand to do something and do it well. Then they would be fitted for wifehood and motherhood, if they had an opportunity to contract a true marriage, and they would be above contracting a mercenary or otherwise unworthy one. There is nothing which would tend more toward the purification of society from its present evils, and so to the elevation of the race. Sound physical health should be considered the first requisite, and the next a good practical education. Girls should be taught not to magnify dress so unwisely, but to relegate it to its proper sphere. More girls fall through vanity and love of display than by reason of any other known cause.

There is nothing that will create self-respect like self-dependence. The girl who can rely upon herself will find that others can rely upon her. Let the girl who goes into business or enters a profession, fit herself as thoroughly as would her brother. The reason why so many girls fail to succeed in any form

of business life is that they adopt it as a sort of make-shift, until they can get married, and so do not apply themselves as thoroughly as they should. The woman who is thoroughly equipped and competent will always find her services in demand in a business way, and later, if she shall become the partner in true home-making, she will be all the better qualified because of this self-discipline. And this will also insure society against a surplus of helpless, inane creatures.

A NEW LEAF.

He came to my desk with a quivering lip,
—The lesson was done —
"Dear teacher, I want a new leaf," he said,
"I have spoiled this one."
In place of the leaf so stained and blotted
I gave him a new one all unspotted,
And into his sad eyes smiled —
"Do better now, my child."

I went to the throne with a quivering soul,
—The old year was done —
"Dear Father, hast thou a new leaf for me?
I have spoiled this one."
He took the old leaf, stained and blotted,
And gave me a new one all unspotted,
And into my sad heart smiled,
"Do better now, my child." — *Sel.*

A Gigantic Crusade. — Below we give a summary of the work done by the Society for the Suppression of Vice, in New York City, of which Mr. Anthony Comstock is the head. This will without doubt be interesting reading for all friends of social purity. Mr. Comstock is the brave, undaunted champion of this principle, and has given twenty years of his life to a gigantic crusade against vice and impurity in all its public, visible forms. No one at all interested in clean and wholesome living and blameless citizenship can fail to wish him and the worthy Society behind him, a fervent God-speed. We quote the chief facts from the *Union Signal* : —

"Nearly 2,000 persons have been arrested by him, the total of their penalties amounting to over 319 years in prison ; nearly $112,000 worth of fines have been imposed, and over $83,000 worth of bail bonds forfeited to the public treasury, making a total of nearly $200,000 secured for the public treasury through the efforts of Mr. Comstock's Society. It has seized nearly 50,000 pounds of obscene books and sheets ready to be bound, over 127,000 pounds of stereotype plates for printing such books, over 820,000 impure pictures and photographs, and over 5,000 negatives for making photographs ; over a million and a half of circulars, catalogues and leaflets issued in the interest of 'green goods' and other specialties too dreadful to mention ; over thirty-two newspapers containing advertisements well calculated to bring purchasers, and nearly a million names and addresses of persons to whom circulars have been sent, besides a large amount of other matter of criminal character to say nothing of gambling bills, including over two million lottery tickets, nearly two million pool tickets, over 400,000 book circulars, and a vast amount of other gambling material, making about fifteen tons of such paraphernalia, and forty-four tons of impure matter."

The *Union Signal* makes the worthy suggestion that "a committee from every local W. C. T. U., should wait upon the municipal authorities asking them to adopt at once an ordinance requiring that all theatrical and other posters shall be submitted to a committee appointed by the city fathers, before such posters can be placed on the bill boards," saying that "this would do very much to improve the appearance of our streets, which are now often rendered schools of vice for the young by reason of the exhibition of these miserable handbills."

The Influence of a False Philosophy upon Character. — It is not habit that works the worst ruin of a man, but opinions and principles that lie close to the fountains of character. There may be hope for a man if he does wrong, if he thinks and feels right, but there is no hope for one who thinks wrong, whatever his conduct may or may not be. A man who deliberately justifies himself in vicious conduct robs himself of safe and sound principles in all departments of life. In the last century there was, as there is in the early and rude periods of all nations, a great deal of what may be called impulsive or natural vice — the product of simple appetite ; but it was not justified by any theory of morals. It wrought little injury compared with the vice of the present, which attempts to justify itself by a species of sophistry called a philosophy of life. Just so soon as one begins to think wrong on this subject, he will think wrong on all subjects. There are some vices and many unsound opinions that a man may carry external to himself ; they do not necessarily touch the core and substance of his character ; but wrong thinking here spreads like some foul contagion throughout the whole man, subduing — "like the dyer's hand in what it works in" — everything to its own false complexion and quality. — *Sel.*

ALCOHOL IN PATENT MEDICINES.

A RECENT paper read before the American Association for the Cure of Inebriates, gives the following list of patent medicines with the amount of alcohol which each contains: —

Per cent of alcohol.

Dr. Buckland's Scotch Oats Essence..... 35.
(Also ¼ gr. morphine to the ounce.) A more insidious and dangerous fraud can scarcely be imagined, especially when administered, as this is recommended, for the cure of inebriety or the opium habit.

The "Best" Tonic..... 7.65

Carter's Physical Tonic..... 22.

Hooker's Wigwam Tonic..... 20.7

Hoofland's German Tonic..... 29.3

Hop Tonic..... 7.

Howe's Arabian Tonic. "Not a rum drink."..... 13.2

Jackson's Golden Seal Tonic..... 19.6

Liebig Co.'s Cocoa Beef Tonic..... 23.2

Parker's Tonic..... 41.6
"A purely vegetable extract. Stimulus to the body without intoxicating. Inebriates struggling to reform will find its tonic and sustaining influence on the nervous system a great help to their efforts."

Schneck's Seaweed Tonic..... 19.5
"Distilled from seaweed after the same manner as Jamaica spirits is from sugar-cane. It is, therefore, entirely harmless and free from the injurious properties of corn and rye whisky."

Atwood's Quinine Tonic Bitters..... 29.2

L. F. Atwood's Jaundice Bitters..... 22.3

Moses Atwood's Jaundice Bitters..... 17.1

H. Baxter's Mandrake Bitters..... 16.5

Boker's Stomach Bitters..... 42.6

Brown's Iron Bitters..... 19.7
"Perfectly harmless. Not a substitute for whisky."

Burdock Blood Bitters..... 25.2

Carter's Scotch Bitters..... 17.6

Colton's Bitters..... 27.1

Copp's White Mountain Bitters..... 6.
"Not an alcoholic beverage."

Drake's Plantation Bitters..... 33.2

Flint's Quaker Bitters..... 21.4

Goodhue's Bitters..... 16.1

Hartshorn's Bitters..... 22.2

Hoofland's German Bitters..... 25.6
"Entirely vegetable and free from alcoholic stimulant."

Hop Bitters..... 12.

Hostetter's Stomach Bitters..... 44.3

Kaufmann's Sulphur Bitters..... 20.5
"Containing no alcohol." (In fact contains no sulphur, but 20.5 per cent alcohol.)

Kingsley's Iron Tonic..... 14.9

Langley's Bitters..... 18.1

Liverpool's Mexican Tonic Bitters..... 22.4

Pierce's Indian Restorative Bitters..... 6.1

Z. Porter's Stomach Bitters..... 27.9

Rush's Bitters..... 35.

Dr. Richardson's Concentrated Sherry Wine Bitters..... 47.5
"Three times daily or when there is a sensation of weakness or uneasiness at the stomach."

Secor's Cinchona Bitters..... 13.1

Shony's German Bitters..... 21.5

Job Sweet's Strengthening Bitters..... 29.

Thurston's Old Continental Bitters..... 11.4

Walker's Vinegar Bitters..... 6.1
"Free from all alcoholic stimulants. Contains no spirit."

Warner's Safe Tonic Bitters..... 35.7

Warren's Bilious Bitters..... 21.5

Wheeler's Tonic Sherry Wine Bitters..... 18.8

Wheat Bitters..... 13.6

Faith Whitcomb's Nerve Bitters..... 20.3

Dr. Williams's Vegetable Jaundice Bitters..... 18.5

Doubtless thousands of persons have been led into habits of intemperance by the use of these patent nostrums, never suspecting that in employing a "Parker's Tonic," a "Boker's Stomach Bitters," a "Richardson's Sherry Wine Bitters," or "Hostetter's Stomach Bitters," they were taking alcohol in larger doses than if they were swallowing ordinary whisky. The quotations from the labels of such nostrums as "Parker's Tonic," "Schneck's Seaweed Tonic," "Richardson's Bitters," and "Walker's Vinegar Bitters," are very strongly suggestive, as is also the fact brought out by an analysis, that some of these nostrums contain morphia as well as alcohol.

THE KEELEY CURE METHOD. — If we may place any confidence in newspaper reports, more persons have been killed within the last few months by the various methods employed for the cure of the opium habit and inebriety than have died from the effects of these poisons. An alarming number of cases of insanity resulting from the use of these remedies have been reported, and recently the proprietors of a concern located in Ohio were arrested on the charge of murder, as the result of a coroner's investigation, for being the cause of the sudden death of a patient under their care.

CELERY COMPOUND. — A correspondent inquires for an analysis of "Payne's Celery Compound." We are not familiar with this particular compound, and have seen no analysis of it, but presume it is an imitation of a patent nostrum known as "Celerina," which is composed of equal parts of "fluid extract of celery," coca, wild plum, and the kola nut, alcohol, spirits of wine, and water. Celery is put in simply to give the drug a flavor; it does not possess the medical properties which are claimed for the other drugs.

GIGANTIC CHARLATANRY. — The more fully the methods employed by the Keeley Company, that professes to be able to cure drunkenness by means of its secret remedies, become open for public inspection, the more apparent does it become that the sole purpose of this concern is money and not philanthropy.

According to a recent newspaper note, one of the former patients of this company has brought suit for $10,000 damages, not only for failing to carry out its contract to cure the patient of inebriety in six weeks, but for abusive treatment after the treatment was acknowledged to be unsuccessful.

A case was recently reported in which a poor working woman spent $150 of her small hard-earned savings of many years, in sending her brother to Dwight, to be cured of inebriety. He was discharged cured, but on his way home went on a terrible "spree" which ended in delirium tremens and death. Such cases are becoming more and more numerous, and yet there are still persons who believe in the Keeley cure.

The following, which we quote from the *Organizer*, a temperance journal, presents the deplorable failures of this method: —

"Doubtless all of our Unions have learned through the daily papers, of the deplorable condition of Luther Benson since his unsuccessful treatment at the Keeley Institute at Plainfield, for the cure of the alcoholic appetite. Not the alcoholic habit, for Luther Benson has never perhaps been a steady drinker, but cursed from his birth with an inherited appetite that comes upon him at intervals with overmastering power, leaving him for months at a time free from any desire for drink. Perhaps no man has ever made a more heroic fight than he, and now that he is suffering tortures indescribable, both physical and mental, his condition calls for the sympathy of all our white ribboners, and their prayers that He who can save to the uttermost may cast out the demon and make of Luther Benson a monument of his saving power."

It seems as if the time had nearly arrived when every intelligent person should be able to recognize the inherent weakness of this so-called specific for the vice of intemperance.

A SPECIMEN KEELEY-CURED PATIENT. — Within the last six months the writer has had under his care a chronic inebriate who had tried the Keeley method with the same ill success which has lately been reported in other cases. He describes the effect of the remedy as follows: —

"At first, it made me very stupid. By the fourth day, I was really very sick; my eyes watered constantly, and I had a severe headache. I was in no way bettered by the treatment."

While the patient was sick from the effect of the powerful poison administered to him, he, of course, had no desire for alcoholic drinks; but as soon as he had recovered from the effects of the Keeley-poisoning, his desire for drink returned.

It is as logical to undertake the cure of the vice of intemperance by medicinal antidotes, as to undertake the cure of lying, swearing, stealing, or any other form of immorality by hypodermic injections or pill-swallowing.

If bad habits could be antagonized by drugs, the whole scheme of missionary operations among the heathen would be revolutionized. All that would be necessary to convert a barbarous tribe, would be to drive the natives into a corral, capture each one, and inject under his skin a few drops of the remedy appropriate to his particular type or degree of moral obliquity. This method would doubtless be much easier than the methods now employed, and far less expensive. Armed with a hypodermic syringe and a medicine bottle, a single resolute missionary could by such means convert more heathen in a year than would a whole shipload of missionaries of the present type, in a lifetime.

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

NEURASTHENIA.

NEURASTHENIA, although a term not by any means new to the medical profession, is yet to a great extent novel to the non-medical public. Still less understood is the condition to which this term has been applied. The term "neurasthenia" is, in some sense, a synonym for the familiar terms "nervous debility" and "nervous exhaustion," but does not exactly represent the conditions to which these terms are commonly applied. The following description of this disease, which we translate from a recent work by the eminent Dr. Fernand Lagrange, a prominent French physician, we feel sure will be appreciated by our readers: —

"The physician is often consulted by patients who complain of a variety of pains without presenting the symptoms of any characteristic disease. These patients are tormented by sensations which are most distressing, and sometimes really alarming; by pains in various regions of the body, and by functional disturbances of the various organs. The stomach, heart, and brain are painfully disturbed by the most insignificant causes. One is especially struck by the lack of nervous equilibrium in these patients. Some are depressed, besieged by sad ideas, weak and prostrated; others, on the contrary, are excited and irritable, and exaggerate all their physical sensations and their mental and moral impressions. When a physician finds no explanation of these varied troubles, by which they may be attributed to a definite disease, they are understood to depend upon a *nervous state*, in which the sufferers are said to be neurasthenics.

"What especially strikes the observer in these nervous states, is the lack of equilibrium between the impressions experienced and the acts which they provoke. This is true of the internal organic acts, as well as of external acts. All neurasthenics present in common, this symptom: they are not masters of their impressions. This may be manifested externally in words and in gestures, or in disturbances of the organic functions. In some women, and even in some men, this condition is indicated by a disposition to jump violently at the slightest unexpected sound, or burst into tears, or do other unreasonable things when contradicted in the slightest degree; in others, slight causes produce violent internal reactions, such as palpitations of the heart, contractions of the stomach or intestine, ending, perhaps, in an attack of indigestion or diarrhea.

"In a well-balanced human being, it is the brain which maintains the balance between the impressions received through the senses, and their internal and external manifestation. It is the brain, the instrument of the will, which moderates and represses the automatic activities which are set up by sensations of physical or moral pain. We are ignorant of this force which we call the will, but we know that it can only manifest itself through the aid of the brain; that it disappears with the brain, and that it follows in all its variations of force, all the modifications in the nutrition of the brain. We also know that it diminishes when the brain is by any cause enfeebled, and increases in force when the cerebral substance is in an organic condition the most favorable for its activity.

"In the most vigorous man the will weakens under the influence of all causes which may lower the nutrition of the brain, or diminish the quantity of blood which it receives. Cerebral anæmia, and even simple inanition, the temporary deprivation of food, may bring the most energetic man into the condition of a being without will. Who has not observed this in himself? And who does not know, also, the effect of a temporary physical feebleness which di-

minishes the vital activity of the brain, at the same time with that of all the other organs, in lessening the dominance of the will?

"When the brain is in possession of all its voluntary energy, it establishes, in some way, a barrier between the impression received and the organs upon which the impression is reflected. It closes the way by which the vibration of sensitive nerves causes the muscles to tremble, or to disturb the organic functions. It is due to the active and energetic will that physical pain produces no trembling in the muscles of the face of a courageous man, and that a violent contraction produces not even an acceleration of the pulse of the man who is 'master of himself.' When the will takes no part in the phenomena which follow a physical or a moral impression, there result acts called reflex, which are absolutely automatic. The quick and unmeditated withdrawal of the hand, following a burn or a prick, is a reflex act. In the same way tears are reflexes of moral pain, and violent gestures are the reflexes of anger. In the same way also, certain disturbances of the heart and the stomach are the reflexes of the various physical or moral impressions.

"The brain, the instrument of the will, is the moderator of the reflex effects, and in neurasthenics all reflex actions are exaggerated because the energy of the brain is diminished; there is a deficient equilibrium between the sensations received, and the resistance which the brain is able to oppose to their manifestation in the well-balanced man: that is to say, in a man endowed with a sufficient degree of cerebral energy, sensitive impressions encounter, if one may so say, a barrier which obstructs their way, and prevents them from disturbing distant organs. In the neurasthenic man, the cells of the brain cannot send forth a sufficient amount of energy to arrest the shock of impressions which attack them. They are themselves disturbed by the sensitive vibration against which they are powerless to react, and the disturbance propagates itself to the most remote portions of the body."

GROWTH OF MICROBES IN WATER.

It is well known that water which has stood for even a few hours, in a room of ordinary temperature, acquires an unpleasant flavor, or loses its freshness. Water which has stood for some time in this way not infrequently produces a slight nausea when swallowed. It is, perhaps, generally supposed that the unpleasant properties of such water are due to absorption of odors, or gases from the air. This may be true to a very small degree, but the real cause is doubtless the rapid development of microbes in water standing in a warm room, or even a room of ordinary temperature. This fact has been clearly demonstrated by Dr. Miquel, Chief of the Micrographic Laboratory of Paris, who has for some years been engaged in a careful study of water supplied for the public use of the city of Paris.

One series of experiments was conducted for the purpose of observing the rate at which microbes, which are always found in natural waters, increase at ordinary temperatures. The following results were noted in three experiments: —

Experiment 1. The water contained, when taken from the reservoir, 228 microbes in each dram or teaspoonful. An hour and a half later the number of microbes in the same quantity of water was found to be 572, and at three o'clock in the afternoon the number had increased to 1,824.

Experiment 2. The fresh water contained 192 microbes per teaspoonful. Two hours later the same quantity contained 500 germs. One day after, the number had increased to 152,000; two days after, to 500,000; and at the end of three days the total number of germs present in each teaspoonful of the water was 2,360,000.

Experiment 3. The fresh water contained 28 microbes per dram. The next day the number was 12,800, and at the end of five days 3,200,000.

Surprising as it may seem, even when so large a quantity as 3,000,000 germs per dram were present in the water, there was still very little, if any, appearance of turbidity. Clear and sparkling water is often found to be swarming with microbes, which, when taken into the stomach, produce mischief in proportion to their numbers. When it is understood that these minor organisms are continually and actively engaged in the production of poisonous substances, many of which are possessed of exceedingly unpleasant flavors, it is certainly no wonder that water which has stood in an ordinary room for a few hours, or over night, is unpleasant to the taste, and it is also evident that its use must be very unwholesome.

The low temperature of the water in subterranean springs prevents the rapid development of microbes, but when the temperature is raised by contact with the air of an ordinary dwelling, the microbes take on very active growth and multiply with great rapidity. If water must be kept any considerable length of

time at an ordinary temperature before using, it ought to be first carefully boiled, then closely stoppered. Water needs to be sterilized in order that it may keep wholesome, as well as milk, and other organic liquids. It is true, the changes which occur in water as the result of microbes are not so apparent to the eye, or even to the sense of taste, as in the case of milk and other liquids, but that a great change really does occur, has been proved by many careful microscopical researches which have given results similar to those already referred to in the present article.

Tapeworm and Fishes. — The Secretary of the Michigan State Board of Health recently received from a correspondent of the Board, two fishes (bass) containing parasites of some sort. Accompanying the fishes was a request for an opinion as to whether or not they were dangerous to public health in consequence of parasitic infection. Prof. Cook, of the Michigan Agricultural College, made an examination of the parasites, and reported as follows : —

"This is the *cysticercus* stage, or encysted form of the tapeworm, probably the *bothriocephalus latus*, but we could not tell from this stage. That is the broad tapeworm of man, and it works in fish. Such fish should be well cooked." (Cooked tapeworm is a harmless diet.)

The popular idea that fish are safe from infection is thus shown to be false. As a matter of fact, fish are more exposed to infection than almost any other class of animals, especially those living in rivers receiving the sewage of towns or cities. The water of such streams invariably contains great numbers of eggs and living embryos of various parasites which infest the alimentary canal of human beings. By eating these eggs or embryos, fish as well as other animals may be contaminated. A New York naturalist some years ago made a careful study of the fish of New York harbor; he found more than 14 varieties of parasites affecting fish in that locality alone.

Beef-tea Poisoning. — The late Dr. Austin Flint, the most eminent of American physicians, put himself on record, a year or two before his death, as a decided opponent to the use of beef tea, especially in fevers and conditions in which the system is already struggling to eliminate poisons from the body. Dr. Flint had had made by an expert chemist, a careful analysis of beef tea, which showed its composition to be closely allied to that of the urinary secretion. This is what one acquainted with animal physiology would naturally infer, since the juices of the tissues must contain in solution the poisonous substances which constantly result from the destruction of the tissues as a consequence of vital work. A great number of these poisons, leucomaines, ptomaines, toxines, etc., have been carefully studied by noted chemists in recent years, and some of these substances have been shown to be most deadly poisons. That beef tea contains enough of these poisons to render it really unwholesome, is shown by many facts. Numerous physicians have testified to the fact that beef tea is fully as powerful a stimulant as brandy; it is accordingly often used as a substitute for brandy.

Two interesting physiological experiments also demonstrate the poisonous properties of beef tea: If a muscle be separated from the body of a frog and placed in connection with the poles of a battery, it may be made to contract at intervals, for some hours, or even days, if suitable arrangements have been made. It is found that the application of meat juice to such a muscle paralyzes it, while weak solutions of salt and similar substances have no effect whatever upon it. It has also been found by physiologists, that if a portion of the skull of an animal is removed and the poles of a battery are applied to the surface of the brain, the muscles of the corresponding portion of the body will be made to contract; but if meat juice, or some of the substances contained in beef tea are applied to the portion of the brain experimented upon, it at once becomes paralyzed and will not respond to the electrical current. From these experiments, it is evident that beef tea is a poison to both muscles and nerves. The effect of meat juice upon the brain and muscles may account for the lethargic condition of carnivorous animals after having eaten heartily of meat.

Vinegar. — It is encouraging to note that the public is finding out that vinegar is by no means so necessary a substance as has been supposed, and that one can easily dispense with this harmful acid with its wriggling multitudes of eels. Good vinegar always contains these creatures as soon as it becomes a little old. Lemon juice is now being adopted by caterers in some of the finest hotels of the large cities, as an agreeable substitute for vinegar. Lemon juice is a food rather than a poison, and it also possesses a far more delicate flavor than the acetic acid of vinegar with its varied impurities and prod-

ucts of fermentative processes, to say nothing of the wriggling creatures which always accompany the acid, when obtained by the fermentation of cider or other fruit juices.

La Grippe in Ancient Greece. — A student at Amherst College, claims to have discovered that *la grippe* is not a modern disease, but prevailed nearly 500 years before Christ, said student having found a description of the malady in Book II, of Thucydides. This ancient author gives a very accurate description of the disease, and refers especially to the mental depression which accompanies the ailment and is one of its most distressing symptoms.

The Influence of Exercise on Digestion. — For a generation physiologists have been quoting the experiments of a European savant for the purpose of determining the influence of exercise on digestion. The experimenter claimed that he fed two dogs an equal quantity of meat, then sent one to sleep behind the stove, and took the other with him on a fox hunt. After several hours he returned, killed both dogs, and found that the dog which had been asleep had digested his breakfast, whereas the other, which had been subjected to the violent exercise of a fox hunt, still retained his breakfast in his stomach.

This experiment has been used to prove that sleep is conducive to digestion, although it must be apparent to any one who will give the matter a moment's intelligent thought, that the experiment, even if correctly observed and reported, proves nothing of the kind. Recently Dr. Streng, of Giessen, Germany, has been making some experiments for the purpose of determining the relative influence of rest and exercise upon digestion, the results of which, as reported to the German Medical Society, are as follows: —

The first experiments were made upon two dogs. One remained, for three hours after eating, in absolute bodily rest, while the other was made to take active exercise. After three hours the contents of the stomach of each were obtained and analyzed, but no essential difference was observed, although the author gave it as his opinion that the violent exercise slightly retarded digestion.

Twenty-five similar experiments were made upon three men with healthy stomachs, each of which ate some mince meat, a bun, a plate of beef broth, and a small quantity of mashed potatoes. An examination of the food was made at the end of four and one-half hours after eating. The exercise coxsisted of gymnastics and walking; the rest was in bed. The results in these experiments were the same as those upon the dogs. The author gives it as his opinion that, on the whole, the action of the stomach is not materially influenced either by rest or exercise.

Flesh Food and Nervousness. — Dr. Allan McLain Hamilton condemns the use of flesh food by children. He asserts that "meat produces hysteria when taken by young girls, and when taken by boys is likely to produce convulsions."

Finger Marks. — The value of finger marks as a means of personal identification has not been appreciated until recently. Mr. Francis Galton, the eminent anthropologist, has lately called attention to the fact that the impression made by the lines of a thumb or finger are positively characteristic of the individual. While these lines are arranged on the same general plan in different persons, they have for each individual peculiarities which cannot possibly be imitated, and singular as it may appear, this peculiarity exists from youth to old age. Mr. Galton has made many thousands of these impressions by spreading a very thin film of printers' ink on a sheet of glass and afterwards printing the impression on paper.

School Hygiene in Germany. — School hygiene is, in this country, a rather novel term. Probably the average teacher would not recognize in the word any greater significance than some possible reference to heating and ventilation. It is very singular indeed that a country of free institutions and possessed of so great enlightenment and such a disposition for investigations and progress as this, should be so far behind some of the most conservative countries of the Old World in a matter of this sort; but, according to Dr. G. Stanley Hall, far more attention is given to the protection of the health of school-children in Germany than in this country. Laws enacted by the legislature, and decrees issued by the administrative department of the government, cover, in their specifications and sanitary restrictions, not only the schoolhouse with its cellar, walls, stairs, windows, floor-cracks, desks, seats, etc., but also the playground, and even the wall or hedge which surrounds it. One of the chief traits of German character is thoroughness, and it is hoped that the enterprise of our legislatures will lead them to profit by the good example of our German cousins across the water in giving to this matter of so great importance the attention which it deserves.

COLD BATHS IN TYPHOID FEVER.

THE following is from the *Bacteriological World and Modern Medicine:* —

"There are numerous drugs by the administration fo which the temperature in fever may be lowered, out the effect obtained is always toxic, and it is a question well worthy of consideration, whether the patient is likely to suffer more from the elevation of temperature than from the depressing effects of the drug by the administration of which the temperature is lowered.

"Recent experiments seem to show that in fever there is not usually a very great increase of heat production, but that the rise of bodily temperature is due rather to decrease of heat elimination. What is desirable, then, is not the administration of a drug by which the heat production shall be checked, but the employment of means by which heat elimination shall be increased.

"The best means of increasing heat elimination are the various methods of applying cold to the surface. Large compresses consisting of a folded sheet wet in cold water, the cold wet sheet pack, cold sponging, the graduated cool bath, and the cool enema are the best means of lowering the temperature by aiding heat elimination. The temperature can almost always be brought down by this means from ½° to 2° F; and when lowered in this way, the temperature usually remains at a lower point for some hours, whereas, when the temperature is brought down by the administration of a drug, it quickly rises again.

"We are glad to note that these means of lowering the temperature, particularly the cool bath, are rapidly coming into use in this country. They have for some time been the regular treatment for febrile conditions in France and Germany. This method was adopted some little time ago by the German Hospital at Philadelphia, as the result of which the mortality in typhoid fever has been reduced to 4 or 5 per cent, a great contrast with the fatality of 17 per cent, which previously prevailed. The Hospital of the University of Pennsylvania, the Presbyterian Hospital, The Pennsylvania Hospital, and the Johns Hopkins Hospital of Baltimore, have recently followed the example of the German Hospital in introducing these means of treating fever. We have relied upon these means in the treatment of typhoid fever for nearly seventeen years, and with the most satisfactory results. In one instance we treated thirty cases of typhoid fever in succession, without losing a single case. The absence of severe complications was particularly noticeable in these cases. Severe intestinal ulceration occurred in only one case, and there was marked delirium in only two other cases.

"A caution ought not to be forgotten whenever cold is recommended in the treatment of typhoid fever cases. It should be remembered that the purpose of the cold application is to facilitate the elimination of heat. If the surface is already cold and has a bluish appearance, then, of course, cold applications should not be made. Instead, a hot blanket pack or a hot bath should be administered. A large hot enema is, in these cases, a very valuable means of overcoming the spasm of the cutaneous vessels, thus bringing the blood to the surface and encouraging the elimination of heat. Cold should never be applied in such a manner as to produce prolonged chilliness, as this will defeat the very purpose for which the application is made. The surface must be kept warm. This rule is imperative. The writer has frequently seen the temperature reduced from 104° or 105° F. to 101° or 102° F. within two hours, by the application of the blanket pack, woolen blankets being wrung out of hot water and snugly

wrapped about the patient. In such cases, the application of cold might be fatal in its results. Cold applications are a very powerful therapeutic means, and may do great damage instead of good when not properly applied. This treatment should always be given under the direction of an experienced physician.

"Dr. E. C. Elliott, resident physician in the St. Agnes Hospital, Philadelphia, reports a reduction of mortality in that hospital from 26.6 per cent in 1889, and 24.6 per cent in 1890, to 6.5 per cent in 1891, after the adoption of the cold bath as a means of reducing temperature."

CAUSE OF HEMORRHOIDS. — In a recent paper, Lauder Brunton calls attention to the fact that excessive eating is a frequent cause of hemorrhoids through the increase of the size of the hepatic cells by the increase of glycogen, thus obstructing the circulation through the liver, and causing a distension of the portal vein and its tributaries. He also mentions chilling of the legs as a frequent cause of this disease. According to Dr. Brunton, in hemorrhoids not only the veins but also the capillaries and the arterioles are also dilated. He recommends an ointment consisting of vaseline and hamamelis.

INDIGESTIBILITY OF CHEESE. — Von Klenze (*Allgemeine Medizinische Central Zeitung*) has recently made a series of very careful experiments for the purpose of determining the degree of digestibility of cheese, which is so largely used with the idea that it is an aid to digestion. Dr. Klenze studied the digestibility of a large number of different kinds of cheese, employing an artificial digestive fluid, which contained, however, a quantity of fresh gastric juice. The conditions supplied, were as favorable as possible for rapid and complete digestion. Here are some of the results: Length of time required for the digestion of Emmenthaler, Gonzoler, and Neufchatel was eight hours; Romadour required nine hours, and Kottenberger, Brie, Swiss, and all but two of the eleven remaining varieties required ten hours for digestion. When it is remembered that the stomach digestion of an ordinary meal is usually completed in four or five hours, and in a vigorous stomach in even less time, it is apparent that cheese is a great hinderance to digestion rather than an aid to it, and that there is not even the semblance of a foundation for the old distich, —

> "Cheese is a mighty elf
> Digesting all things but itself"

That cheese is indigestible is not to be wondered at. Microscopical and bacteriological studies of cheese show that it swarms with microbes of various sorts, and, as is now well known, the flavors characteristic of the different varieties of cheese are wholly due to the products of microbic action; the older the cheese the more numerous the microbes, hence the greater probability that its presence in the stomach will set up fermentative or putrefactive changes in the food-substances which have been eaten. Prof. Vaughan's researches have shown that cheese always contains a larger or smaller amount of tyrotoxicon, and doubtless also the microbes by which this powerfully toxic agent is produced. Cheese must certainly be regarded as a questionable article of diet. It should be mentioned, however, for the benefit of those who will insist upon retaining it in their dietary, that its most noxious properties may be neutralized by cooking. If the sterilization of milk is a wholesome and advantageous proceeding, certainly the sterilization of cheese is a dietetic duty which ought not to be neglected, since milk contains only about 6,300,000,000 microbes per quart, while the proportion of these organisms in cheese is vastly greater.

THE GERMICIDE PROPERTIES OF CINNAMON. — It is printed throughout the country that M. Chamberland, of Pasteur's Institute, in Paris, has discovered the antiseptic power of the essence of cinnamon. He claims that it destroys all kinds of germs in a few hours. It is not the first time that this fact has been brought before the public. It is said that it was used long ago, during the plague in London. It is doubtful, however, whether the rationale of its use was understood; it was rather an empirical practice. Science has now explained the ground for its beneficial effects. It is recommended, as a consequence, that a decoction of cinnamon be taken freely by persons living in places affected by typhoid fever or cholera.

We might go further, and say that possibly it would be a fine disinfectant of the mouth. Cinnamon bark could be chewed, and the essence could be used by itself with a tooth brush. The nature and origin of certain maladies, such as diphtheria, suggest that if people would cleanse their mouths thoroughly morning and evening and after each meal, using a borax solution, say for rinsing purposes, and a few drops of cinnamon essence on the brush afterward, the germs of this disease would likely be destroyed. A number of other germs enter the system through the mouth, and could be de-

stroyed by proper antiseptics. Among these, may be included the bacillus of tuberculosis, the pneumococcus, and various parasites of the alimentary canal, among which quite a number develop in the mouth first, and then are swallowed down with water or food, or enter the air-passages with the flow of atmospheric air inhaled. The properties of cinnamon in such cases, make its use practical and rational. Common salt as a tooth powder, is an excellent antiseptic, as is also bicarbonate of soda.— *Bacteriological World and Modern Medicine.*

To Prevent Diphtheria.— It is believed that children may be prevented from taking diphtheria when the disease is prevalent in the neighborhood, or when it has broken out in the family, by spraying the throat every two or three hours with peroxide of hydrogen. The pure solution of fifteen volumes' strength should be used with an ordinary atomizer. It should be applied freely every two or three hours. This preparation is one of the best germicides known, and if thoroughly used in this way, will perhaps prevent the microbes, which are the cause of this disease, from obtaining a foothold in the mucous membrane. However, its use should not lead to neglect of isolation.

Dr. Smith has recently called attention to the fact that the complications which occur in scarlet fever may be prevented by the same means, if employed early.

Flat Foot.— This very common deformity is due to weakness of the connective tissue or binding structures of the body. This weakness manifests itself especially in the feet, on account of the extraordinary strain brought to bear on the arch of the instep. The various bones which form this arch are held together by means of ligaments and connective-tissue bands. When these structures are abnormally weak, a strain imposed upon the body by such acts as standing and walking, results in a gradual stretching of the binding structures, until the arch becomes flattened, or even convex below, instead of above, thus lowering the instep and spreading out or flattening the foot, giving rise to the condition known as flat-foot.

The direct causes of flat-foot are, chiefly, prolonged exertion upon the feet, continuous standing for many hours upon a hard surface, and in young subjects, too severe labor at an early age. This deformity usually makes its appearance somewhat suddenly, after a prolonged exertion, the supports of the arch having been previously weakened until a little extra strain causes them to give way, and the foot flattens.

Many methods of treatment have been proposed for cases of this sort; one of the most common is the wearing inside of the shoe of an iron or wooden pad placed just below the instep on the inside of the foot. Such a support is very helpful, but not always curative. A horse-hair pad is much to be perferred to one of wood or iron. For a radical cure, a surgical operation is sometimes necessary, but in cases in which the disease has not been of many years' standing, a cure can usually be effected by rest of the foot and manipulation of diseased structures, by which they may be strengthened. This is much to be preferred to surgical treatments, which are more or less uncertain in their results.

Intestinal Gymnastics. — In many cases of chronic constipation, the cause of the disorder is simply the lack of muscular activity in the lower bowels. Many methods have been employed for increasing the muscular activity of the intestines, — such as massage, muscle-breathing, the galvanic and faradic currents, and a variety of gymnastic exercises. Walking, horse-back riding, and especially Swedish gymnastics, are certainly very useful means of stimulating the intestinal peristaltis. The purpose of this note is to call attention to a fact well enough known to practical physiologists, but perhaps not so widely known among practicing physicians as it should be. Physiological experiments have shown that rapid voluntary movements of the external sphincter ani and the levator ani produce very active peristaltic movements of the large intestine. This effect is produced by the mechanical excitement of the plexus mesentericus of Auerbach. This curious automatic center lies between the two muscular coats of the intestine, and controls the peristaltic movements. A patient suffering from constipation should make powerful movements of the sphincter ani, and of the levator ani, in as rapid succession as possible, continuing the exercise for three or four minutes, or until the muscles are fatigued. The time chosen for the exercise should be either before breakfast, or an hour after breakfast, according to the natural habit of the individual in respect to the evacuation of the large intestine. — *Bacteriological World and Modern Medicine.*

A Remedy for Sneezing. — Cocaine hydrochlorate, 2 grains; menthol, 4 grains; boric acid, 28 grains; roasted coffee, powdered grain. Snuff a little of the powder every two or three hours.

ANSWERS TO CORRESPONDENTS.

DIET FOR CHILDREN HAVING BOWEL TROUBLES.— "A mother" asks, "What diet is best for a young child having bowel trouble, who has been fed in the usual way for two or three years?"

Ans.— The best diet for young children is fruits and grains, with a moderate allowance of milk. A young child needs bread and milk with good fruits, such as baked sweet apples, strawberries, stewed prunes, peaches, and grapes. These fruits can be eaten by a child with perfect impunity, and are indeed the best food for any one whose digestion is not very strong.

"BILIOUS" SPELLS.— H. B. H., Michigan, has what he calls "bilious" spells, when he will grow dizzy and extremely nauseated; remains dizzy for a week or more, and feels very dull until the attack gradually subsides. Would like to know what causes these spells, and what protective treatment, if any, to use.

Ans.— Bilious attacks are always due to retention and decomposition of food in the stomach. The patient probably has dilatation of the stomach, with reference to which we refer him to an article found on page 218 of the July number of GOOD HEALTH (1891).

VALVULAR DISEASE OF THE HEART.— A. W., New Jersey, asks, "1. What causes valvular trouble of the heart? 2. What is the proper treatment for it?"

Ans.— 1. Valvular trouble of the heart is really a very grave disease. It is a disease in which the little valves of the heart, which act like the valves of a pump, have become so thickened that they cannot work properly, and so the heart leaps and is altogether irregular in action; just like the action of a pump if its valves were affected. The cause of this thickening is an inflammation. Sometimes this inflammation is set up by germs, and is a parasitic disease. There is no known cause for it, but a person need not, for this reason, conclude that he is liable to die any minute, because nature compensates for this loss. When the heart cannot pump the blood easily, nature makes it stronger, so that it can work harder; it grows larger, pumps harder, and beats stronger, and by this means a heart with leaky valves will do its work as well as the heart whose valves are intact, just so long as this compensation continues. 2. During the first stage of the disease, while this compensation may be excessive, a person will need to keep moderately quiet. I have sometimes sent such a patient to bed and kept him perfectly still for a month, so as to allow this compensation to subside and not become excessive, so as to cause congestion of the brain. But when the compensation is deficient, the proper thing to do is to set that person to exercising moderately,— walking up hill is a good exercise. By making the muscles strong, the heart will become stronger, and then by the aid of the compensating work of nature, it will be able to do its work almost as well as when in a normal condition.

LINGERING EFFECTS OF LA GRIPPE.— Mrs. M. C., Washington, writes concerning a lady member of her family, age 22, who had *la grippe* one year ago, and has never been well since. Menses have been suppressed, and patient has all the symptoms of nervous exhaustion. Mrs. C. asks, "1. What treatment is required in this case? 2. Which would be the more beneficial, hot or cold baths? 3. What diet would you recommend?"

Ans.— 1. It would be impossible to make a proper prescription for the treatment of this patient without personal examination, or a more exact description of the case. 2. A warm sitz-bath followed by a cool sponge-bath two or three times a week, would doubtless be beneficial. 3. The diet should be as nutritious and digestible as possible, but non-stimulating. No violent remedies should be addressed to the menstrual suppression. This symptom is a serious one only as it indicates the enfeebled condition of the whole system. It is not, in itself, a cause but an effect of the patient's morbid state. When the proper tone is restored to the system, this symptom will undoubtedly disappear.

BATHING THE BODY IN ALCOHOL.— This correspondent, a lady, is in the habit of using alcohol upon the entire surface of the body once a week, after bathing. She inquires whether this practice is injurious to the skin or to the system in any way.

Ans.— Pure alcohol applied to the skin is likely to render it dry and rough if the application is frequently repeated. No harm results from the frequent use of alcohol as an external application if well diluted with water. In making a lotion, at least three or four parts of water should be used to one of alcohol.

FRUITS.

Of all the articles which enter the list of foods, none are more wholesome and pleasing than the fruits which nature so abundantly provides. Their delicate hues and perfect outlines appeal to our sense of beauty, while their delicious flavors gratify our appetite. Our markets are supplied with an almost unlimited variety of both native and tropical fruits, and it might be supposed that they would always appear upon the daily bill of fare; yet in the majority of homes this is rarely the case. People are inclined to consider fruit, unless the product of their own gardens, a luxury too expensive for common use. Many who use a plentiful supply, never think of placing it upon their tables, unless cooked. Ripe fruit is a most healthful article of diet when partaken of at seasonable times; but to eat it, or any other food, between meals, is a gross breach of the requirements of good digestion.

While the juice, as we commonly find it, is readily transformable for use in the system, the cellular structure of the fruit is not so easily digested. In some fruits, as the strawberry, grape, and banana, the cell walls are so delicate as to be easily broken up; but in watermelons, apples, and oranges, the cells are coarser, and form a larger bulk of the fruit, hence are less easily digested. As a rule, other points being equal, the fruits which yield the richest and largest quantity of juices, and also possess a cellular framework the least perceptible on mastication, are the most readily digested. A certain amount of waste matter is an advantage, to give bulk to our food; but persons with weak stomachs, who cannot eat certain kinds of fruit, are often able to digest the juice when taken alone.

There is a prevailing notion that the free use of fruits, especially in summer, excites derangement of the digestive organs. When such derangement occurs, it is far more likely to have been occasioned by the way in which the fruit was eaten than by the fruit itself. Perhaps it was taken as a surfeit dish at the end of a meal. It may have been eaten in combination with rich, oily foods, pastry, strong coffee, and other indigestible viands, which, in themselves, often excite an attack of indigestion. Possibly it was partaken of between meals, or late at night, with ice cream and other confections, or it was swallowed without sufficient mastication. Certainly, it is not marvelous that stomach and bowel disorders do result under such circumstances. The innocent fruit, like many other good things, being found in "bad company," is blamed accordingly. An excess of any food at meals or between meals, is likely to prove injurious, and fruits present no exception to this rule. Fruit taken at seasonable times and in suitable quantities, alone or in combination with proper foods, gives us one of the most agreeable and healthful articles of diet. Fruit, fats, and meats do not affiliate, and they are liable to create a disturbance whenever taken together.

Partially decayed, stale, and overripe, as well as unripe fruit, should never be eaten. According to M. Pasteur, the French scientist, all fruits and vegetables, when undergoing even incipient decay, contain numerous germs, which, introduced into the system, are liable to produce disturbances or disease. Perfectly fresh, ripe fruit, with proper limitations as to quantity and occasion, may be taken into a normal stomach with impunity at any season.

It is especially important that all fruits to be eaten should not only be sound in quality, but should be made perfectly clean by washing if necessary, since fruit grown near the ground is liable to be covered with dangerous bacteria (such as cause typhoid fever or diphtheria), which exist in the soil or in the material used in fertilizing it.

Most fruits, properly used, aid digestion either directly or indirectly. The juicy ones act as diluents, and their free use lessens the desire for alcohol

and other stimulants. According to German analysts, the apple contains a larger percentage of phosphorus than any other fruit, or than any vegetable. In warm weather and in warm climates, when foods are not needed for a heat-producing purpose, the diet may well consist largely of fruits and succulent vegetables, eaten in combination with bread and grains. In case of liver and kidney affections, rheumatism, and gout, the use of fruit is considered very beneficial by many scientific authorities.

To serve its best purpose, raw fruit should be eaten without sugar or other condiments, or with the addition of as small a quantity as possible.

It is a disputed question whether fruits should begin or end the meal; but it is generally conceded by those who have given the matter attention, that fruit eaten at the beginning of a meal is itself the more readily digested, and aids in the digestion of other foods, since fruits, like soups, have the property of stimulating the flow of the digestive juices. Something, however, must depend upon the character of the fruit; oranges, melons, and like juicy fruits, are especially useful as appetizers to begin the meal, while bananas and similar fruits agree better if taken with other food, so as to secure thorough mixture with saliva. This is true of all fruits, except such pulpy fruits as strawberries, peaches, melons, grapes, and oranges. It is often erroneously asserted that fruit as dessert is injurious to digestion. For those persons, however, who regulate their bill of fare in accordance with the principles of hygiene, a simple course of fruit is not only wholesome, but is all that is needed after a dinner; and much time, labor, and health will be saved when housekeepers are content to serve desserts which nature supplies all ready for use, instead of those harmful combinations in the preparing of which they spend hours of tiresome toil. —*Mrs. E. E. Kellogg, in "Science in the Kitchen."*

DIRECTIONS FOR SERVING—

CHERRIES.— Serve on stems, piled in a basket or high dish, with bits of green leaves and vines between. Rows of different colored cherries, arranged in pyramidal form, make also a handsome dish.

STRAWBERRIES. — These, after being carefully washed and drained in a colander, may be hulled and used at once, allowing each person to add sugar and cream, one or both, *ad libitum*, to his dish. Or, the berries, if very fine ones, may be heaped in sauce dishes, with the hulls on, to be eaten, as many persons prefer to do,—with the fingers.

ORANGES. — Serve whole or cut the skin into eighths, halfway down, separating it from the fruit, and curling it inward, thus showing half the orange white and the other half yellow; or cut the skin into eighths, two-thirds down, and after loosening from the fruit, leave them spread open like the petals of a lily. Oranges sliced and mixed with well ripened strawberries, in the proportion of three oranges to a quart of berries, make a palatable dessert.

BANANAS.— Cut the ends from the fruit and serve whole, piled in a basket with oranges, grapes, or plums. Another way is to peel, slice, and serve with thin cream. Bananas are also very nice sliced, sprinkled lightly with sugar, and before it has quite dissolved, covered with orange juice. Sliced bananas, lightly sprinkled with sugar, alternating in layers with sections of oranges, make a most delicious dessert.

HOW TO MEND LACE.— The mending of lace is an art in itself, and many women, notably French, or German, earn good wages, in the cities, at this work. A knowledge, more or less, of lace stitchery, is indispensable in mending handsome lace. An exchange gives a few valuable suggestions: —

"If an ordinary piece tears, mend it with lace thread, which comes in small soft balls, at five and ten cents, imitating the groundwork mesh to the best of your ability. Before taking a stitch, baste the lace on a piece of embroidery leather, or stiff paper, otherwise it will be drawn out of shape and distorted by puckers. In pulling out the basting threads after darning a tear, be careful to clip the threads into short lengths."

KATE FIELD believes that this Republic, great as her necessities are in many directions, needs cooks more than all else.

A TRAINING Home for Women has lately been established in Surrey, England. It teaches laundry work, the care of poultry, saddling and harnessing horses, management of the dairy, and everything necessary to fit a woman to keep house on a small income.

LITERARY NOTICES.

THE June number of *Pansy* contains the full complement of short stories, sketches, poems, and anecdotes, while its serial stories and regular features this month develop fresh interest, and possess greater value to the reader. Price $1 a year; 10 cents a number. D. Lothrop Company, Publishers, Boston.

THROUGH the courtesy of the editor, Dr. Manuel Delfin, we have received a copy of *La Hygicne*, a journal "dedicated to the interests of health" and published at Havana, Cuba. The journal is the organ of the Society of Hygiene of the Province of Havana, and is, so far as we know, the only journal of hygiene published in the Spanish language. The copy of the journal before us contains a number of articles on practical and interesting subjects.

THE Cassell Publishing Company, New York, announce that they have the honor to be the authorized publishers of "The Writing and Speeches of Grover Cleveland," which they will issue in handsome and becoming style immediately. Thoughtful members of the political parties will take a deep interest in this volume as representing the public career of one of the greatest political leaders of our time. Many of the documents, letters, and speeches constitute, in fact, an important part of the recent history of the country.

"THE TECHNIQUE OF REST," by Anna C. Brackett. 16mo, cloth, ornamental, 75 cents. Harper and Brothers, New York. A recent article in *Harper's Magazine*, written by Miss Brackett for the purpose of helping women who are tired, was the occasion of so many letters of thanks and appreciation from those who had evidently been benefited by it that it was suggested that more might be said on the same subject. The result was the present attractive little volume, which is commended not only to tired women, but to all busy workers who feel that the amount of nervous force at their disposal is in danger of being overtaxed.

JOURNAL D'HYGIENE.— This excellent journal, the organ of the Society of Hygiene of France, has reached its seventeenth volume under the skillful direction of its able editor, the renowned Dr. Joseph Pietra Santa, formerly physician to the Emperor Napoleon, and for many years Secretary of the Society of Hygiene of France. There are few journals of its size which contain so large a number of interesting facts relating to practical hygiene. The *Journal d'Hygiene* is one of the best and most influential of the numerous foreign and domestic publications relating to health, which regularly come to our table. We take pleasure in giving our readers frequent extracts from this journal, which is doubly interesting and valuable to the public for the reason that its opinions and instructions may always be regarded as authoritative.

MRS. L. T. MEAD'S new story "Out of the Fashion," will be issued shortly by the Cassell Publishing Company, New York. "Out of the Fashion" is the story of four sisters who were suddenly thrown upon their own resources in London. How they made their way, their ups and their downs, is told with all the particularity of a true story. It is a story that will delight old as well as young, and promises to be as popular a book as "Polly, a New-Fashioned Girl," is among girls, more than which could not be expected of any book.

"THE HOUSE COMFORTABLE," by Agnes Bailey Ormsbee. Cloth, ornamental, $1.00. Harper & Brothers, Franklin Square, New York.

A work of much practical value to housekeepers and home-makers, and especially to all such as contemplate making for themselves new homes. It contains detailed instructions, and a great variety of information regarding the arrangement and equipment of the ordinary dwelling, and how to furnish economically and skillfully every part of it from basement to attic. The approximate prices of many articles of furniture are given, and also plain directions concerning the selection of serviceable and desirable goods.

"THE BLUE-GRASS REGION OF KENTUCKY, and other Kentucky Articles" by James Lane Allen, author of "Flute and Violin and other Kentucky Tales and Romances." Illustrated, 8vo, cloth, ornamental, $2.50. Harper and Brothers, Franklin Square, New York. These sketches of Kentucky life and manners are characterized by all that grace and charm of style of which Mr. Allen is an acknowledged master. They embrace most entertaining descriptions not only of the famous "Blue-grass Region," but of other interesting localities, including the great coal and iron district of Cumberland Gap, which has been so wonderfully developed within the past few years.

PUBLISHERS' DEPARTMENT.

THE Sanitarium recently received a visit from Mr. P. Aubeck, of the island of St. Thomas, W. I. Mr. Aubeck's purpose in visiting the Sanitarium, was to make an arrangement with the Sanitarium to establish a branch institution in St. Thomas. This enterprise will perhaps be taken up at some future time.

* * *

THE Good Health Publishing Company announce in press, a small but very useful work on Swedish Movements, or Swedish Medical Gymnastics, by Prof. Hartelius, of Stockholm, Director of the Central Gymnastic Institute, of that city. Translated by A. B. Olsen. This work fills a gap in our American medical literature, as no similarly authoritative work has heretofore appeared.

* * *

THE Sanitarium medical corps consists at the present time of eight physicians, four gentlemen and four ladies as follows: W. H. Riley, M. D., H. M. Dunlap, M. D., A. J. Hoenes, M. D., J. H. Kellogg, M. D., Kate Lindsay, M. D., Addie C. Johnson, M. D., Lillis A. Wood, M. D., Ruth Bryant, M. D.

For many years Dr. Lindsay has stood alone as a lady physician in the Institution, but now has three able co-workers, but the number is none too great to care properly for the greatly increased number of patients which each year brings to the Institution. The managers of the Sanitarium encourage each physician to give special attention to some particular branch of medicine, in addition to his general medical work, thus seeking to encourage a high degree of medical skill and efficiency.

* * *

MRS. KELLOGG'S cook-book, "Science in the Kitchen," is out at last. The last form is printed, and the books are bound, ready for delivery. The work makes a volume of nearly 600 pages, contains nine plates, three of which are handsomely colored, and is brimful of interesting information from beginning to end; from first to last, there is not to be found one dull page. No work equal to it in this line has ever appeared in print. The work is destined to have an enormous sale. Agents are wanted in every county in the United States. Now is the time to apply for territory, before it has been assigned to some one else. Liberal terms are offered to canvassing agents. Address GOOD HEALTH PUBLISHING CO., Battle Creek, Mich.

* * *

A NEW DEPARTURE.— Beginning with June 1, 1892, the publishers of GOOD HEALTH propose to inaugurate a new departure in this line of journalism. No scientific journal has undertaken to give so much in return for the subscription price as does GOOD HEALTH. The expense of the valuable original articles which each number contains, and the numerous illustrations, most of which are made expressly for it, is very great. Add to this the general expensive make-up of the journal, and it will at once be conceded that every subscriber gets more than his money's worth. Twenty-six years ago it was started as a 16-page monthly with a subscription price of $1. a year. After a few years the size was increased to a 32-page monthly. Then the size of the page was increased, a frontispiece and expensive illustrations added, but the subscription price remained the same. The publishers now propose to add to each volume of the journal, a valuable work on some important practical subject, worth from $1.50 to $2 each. The price of the two — the journal and a volume intrinsically worth from $3 to $3.50 — will be placed at the small sum of $2. The book associated with the journal is not offered as a premium, but as a complement or supplement to the journal, dealing with the same subjects. We have no sympathy with the efforts constantly made by publishers to increase their subscription list by offering cheap articles as premiums named at a high price to subscribers, but really costing the publishers but a few cents. It is proposed to offer a work of solid merit to accompany the journal, giving the two for a sum which represents scarcely more than the intrinsic value of one. It is only possible to do this by the publication of large editions, which it is believed will be called for as soon as the merits of this new offer are understood.

No one will be compelled to take the companion volume unless he desires. Old subscribers can obtain the journal alone at the old rate, although the published price will be $2, this price including the companion volume, which will, after June 1, become an established usage with the journal.

The companion volume for the present year will be the new illustrated edition of the "Monitor of Health." This excellent little work, which will be ready in a few days, has been improved by the addition of a number of colored plates illustrating the following subjects: "Bad Ventilation," "Animalculæ and Infusoria in Water," "Air Contamination," "Water Contamination," "Trichinæ," "A Healthy Stomach," "A Drunkard's Stomach," "A Rum Blossom," and "A Gin Liver."

The price of the revised edition is $1.50, but the combined price of the journal and the book is only $2. No family can afford to be without either GOOD HEALTH or this handy little volume, which is a perfect mine of information on practical health topics, concerning which all intelligent persons are constantly making inquiries.

* * *

OLIVET COLLEGE, — *Program of Commencement Week (1892).* Sunday, June 19, 10:30 A. M., Baccalaureate Sermon; 7:30 P. M., Annual Missionary Address, by Rev. Casper W. Hiatt, Kalamazoo.

Monday, June 20, 2:30 P. M., Exhibition of "B" Rhetorical Class; 8:00 P. M., Exhibition of Senior Preparatary Class.

Tuesday, June 21, 2:30 P. M., Exhibition of "A" Rhetorical Class; 7:30 P. M., College Prayer Meeting; 8:30 P. M., Meeting of the Board of Trustees.

Wednesday, June 22, 9:00 A. M., Society Reunions; 8:00 P. M., Class Day Exercises.

Thursday, June 23, 8:00 A. M., Commencement Exercises; 1:00 P. M., Alumni Dinner at the Gymnasium: 4:00 P. M., Alumni Oration, by Hon. Thomas W. Palmer, Detroit; 8:00 P. M., Commencement Concert.

* * *

SUSAN B. ANTHONY AT THE SANITARIUM. — During the recent meeting of the Michigan Equal Suffrage Convention, Miss Susan B. Anthony, the veteran champion of equal rights for women, visited the Sanitarium by special request and made a short address. Among other things she said: "The time is coming when we shall have no use for the medical profession, when it will be regarded as a crime and a shame to be sick, and the education and enfranchisement of women are going to be large factors in hastening its approach. We have been sick, and we are sick now because we have not known how to live. I am sure that the thorough education and development of the half of the race who have not had the privileges of the common schools but half a century, will, when they shall come into full freedom

of thought and action with the other half, tend to the elevation of the race physically and morally, as well as to the true unity of the family and the nation."

Miss Anthony is an exceedingly well preserved woman of seventy-two years of age, erect and with good figure, a refined gentlewoman of the intellectual type, a clear, logical speaker, and withal, gracious and lovable in her social relations.

* * *

AT a recent meeting of the International Board of the Health and Temperance Association, G. L. Miller was assigned to general work in connection with the extension of the circulation of GOOD HEALTH, and such other public duties as are naturally connected with this work. Mr. Miller's success in the introduction of GOOD HEALTH last year, and in the training of canvasser's classes the present season has thoroughly demonstrated his fitness for this work, and we expect when he gets fairly into the field, to see a steady and rapid increase in our already large circulation.

Eld. W. H. Wakeham, who has, during the winter, had principal charge of the Sanitarium Medical Missionary School, expects to visit New England soon, to give a course of lectures at South Lancaster, Mass., in connection with a convention to be held at that place, and will address several other large assemblies in different States on his way back.

* * *

THE Milk Sterilizer sold by the Sanitarium Food Company, is giving general satisfaction. It accomplishes what has not been undertaken by any other sterilizer offered for family or domestic use. Milk which has been subjected to the action of this sterilizer, if properly bottled, will keep indefinitely, We have now on hand, milk which was sterilized nearly a year ago, and which is in as perfect condition as when first put up. No difference can be detected between milk which has been kept a year by this process, and that which is perfectly fresh, even the flavor peculiar to boiled milk being almost imperceptible. The heating of milk under pressure, and without exposure to the air, prevents the formation of a skin upon the surface from coagulation of the albumen, and thus prevents the waste of nutrient matter. This process also prevents the precipitation of the lime or mineral constituents of the milk, which results from the evaporation of water when milk is boiled in the ordinary manner. It is well known that boiling does not sterilize milk, although it kills some of the worst germs which it contains; but in milk which has been subjected to the action of this sterilizer, no germs whatever are to be found; the sterilization is complete.

* * *

AT a recent meeting of the Directors of the Sanitarium, the request of the Bay View Assembly, that the Sanitarium should establish bath and treatment rooms upon the Assembly grounds, was taken into consideration, and it was decided to grant the request for the present year, providing definite arrangements can be made for continuing the work in the future in case it should prove successful. There are doubtless hundreds of persons who would be glad to avail themselves of the opportunity for receiving the benefit of hydropathic treatments, electricity, massage, etc., in connection with the climatic advantages of Northern Michigan. There are probably no better summer resorts in the United States than the shores of the Great Lakes which bound the upper portion of the Peninsular State. Negotiations are in progress, and it is probable that arrangements will be perfected for the permanent establishment of a bath house, and perhaps ultimately a branch institution, in connection with the Michigan Chautauqua at Bay View.

Those who attended Mrs. Kellogg's Cooking School held in connection with the Bay View Assembly at Bay View, Michigan, last year, will doubtless be glad to know that another course of instruction will be given this year. Better provisions will be made for the work than last year, and the course of instruction will possess even more attractive features. The following is a list of the subjects of the six lessons which will be given:—

1. Every-day Dishes.
2. Bread, Ancient and Modern.
3. A Nineteenth Century Dinner (first Course).
4. A Nineteenth Century Dinner (last Course).
5. The Possibilities of Yeast.
6. A Summer Morning's Breakfast.

The course of instruction will begin on Friday, July 22. The second lesson will be Monday, July 25, and thereafter each alternate day until the course is completed.

Miss Mc Dougal, a teacher of elocution and expression whose reputation is too well established to require commendation from us, has been stopping for a few weeks at the Sanitarium, preparatory to beginning her annual work in connection with the Bay View Assembly, where she has charge of the department of Physical Culture, Expression, etc. This year, Dr. J. H. Kellogg will give a series of lectures in connection with the school, and it is probable that a qualified person will be on the ground provided with Dr. Kellogg's strength-testing apparatus, by means of which "charts" can be made for all desiring them, by which the exact physical condition of those tested may be seen at a glance, and hence the requirements necessary for an improvement of the physique.

* * *

THE Sisseton Indian Reservation in South Dakota will be opened to settlement on or about April 15, 1892. This reservation comprises some of the choicest lands in Dakota for farming and sheep raising purposes. For detailed information, address W. E. Powell, General Immigration Agent, Chicago, Milwaukee, & St. Paul Railway, Chicago, Ill.; or Harry Mercer, Michigan Passenger Agent, 82 Griswold Street, Detroit, Mich.

* * *

THE new route to Colorado — First-Class Sleeping Cars — Electric Lighted — run daily between Chicago, Omaha, Lincoln, and Denver, via the short line of the Chicago, Milwaukee & St. Paul R'y — Chicago to Omaha — and the Burlington Route — Omaha to Lincoln and Denver. Leave Chicago 6:00 P. M., arrive Omaha next morning. Denver second morning for breakfast, face and hands washed, ready for business or pleasure. Time and money saved. All Coupon Ticket Agents in the United States and Canada sell Tickets via the Chicago, Milwaukee & St. Paul R'y, or address Harry Mercer, Mich. Pass. Agent, 82 Griswold Street, Detroit, Mich.

* * *

THE HILLSDALE FAIR. — The Hillsdale (Michigan) Fair will give this year for the three largest and best cabbages on exhibition there $100, and $50 to second. These we believe are the largest vegetable prizes ever offered in America. This Fair also offers $40 to the best five varieties of apples for market and $20 for second, and the rules require only five apples of each variety to be shown. Like premiums are also offered for the best five varieties of apples for dessert, and also the best five varieties for cooking.

The above and other premiums offered by this popular society are open to the world for competition. Entries will close September 27. Fair Oct. 3–7, 1892.

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(Signed.) ARMOR & Co.,
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Plain Oatmeal Crackers	10	*Gluten Wafers*	30	*Granola (bulk 10)*	12
No. 1 Graham Crackers	10	*Rye Wafers*	12	*Gluten Food No. 1*	50
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Time Table, in Effect Dec. 6, 1891.

GOING WEST.						STATIONS.	GOING EAST.				
.....	p m 3 00	a m 9 00	p m 7 00	.....	.....	.....Boston.....	.....	a m 6 15	p m 9 50	9.25	p m 7 30
.....	p m 5.00	p m 6.30	p m 8.00	.....	.....	.....New York	.....	p m 9.55	a m 7 40	p m 5 07	a m 10 10
.....	a m 6.20	a m 8.30	p m 1 00	.....	.....	.....Buffalo	.....	a m 8.40	p m 5.30	a m 4.20	p m 9 00
.....	a m 7.45	a m 8 00	p m 2 45	.....	.....	....Niagara Falls....	.....	a m 7 30	p m 4.10	a m 3.10	p m 7.10
.....	.....	.....	.....	p m 1 00	.....	.....Boston.....	.....	8.15	a m 9 50	p m	p m 7 35
.....	p m 8.40	.....	.....	p m 11.55	.....	.....Montreal	.....	p m 8.20	a m 7.40	.....	a m 7 40
.....	.....	.....	.....	p m 1.00	.....	..... Toronto	.....	a m 7.35	p m 5.25	.....	p m 7.35
.....	.....	.....	.....	.....	.....	.....Detroit.....	p m 9.25	.....	a m 7.45	9.25	a m 11.50
Day Exp.	B. C. Pass.	Lmtd Exp	Pacific Exp.	Pacific Exp.	Mail Exp.		Mail.	Lmtd Exp.	Atlte Exp.	Day Exp.	Fst. Fl Pass.
am	pm	pm	pm	pm	am	Dep. Arr.	pm	am	am	pm	am
.....	3.44	.....	.....	.....	6 59	..... Port Huron	10.01	.....	.....	.....	12 00
6.50	3.40	12.35	8.40	7 20	6.04	Port Huron Tunnel.	9.56	12.25	7.30	8.50	11 55
8.05	5.10	1.40	10.07	8 51	7.29	..... Lapeer.....	8.15	11.15	6.17	7.35	10 40
8.35	5.47	2.08	10.45	9 35	8.1.	..... Flint.....	7 30	10.45	5.40	7.05	10.05
7.10	4.30	11.40	8.25	8.25	7.10	.....Bay City.....	8.45	.....	7.22	8.55	11.30
7.55	5.15	12.18	9.00	9.00	7.55	..... Saginaw.....	8.00	.....	6.45	8.00	10.45
9.05	6.50	2.35	11.20	10.30	9.30	..... Durand.....	6.20	10.20	5.03	6.35	9 30
10.02	7.55	3.20	12.15	11.30	10 35	..... Lansing	5.10	9.30	4.00	5.40	8.30
10.29	8.30	3.45	12.46	12.05	11.15	..... Charlotte.....	4.30	9.01	3.25	5.11	7 47
11.15	9.25	4.30	1.35	1.00	12.25	....BATTLE CREEK....	3 35	8.20	2.40	4.30	7 10
11.53	pm	.....	2.20	1.48	1.08	.....Vicksburg	2.33	7.43	1.48	.....	am
.....	.....	.....	.....	†1.58	1.19	.....Schoolcraft.....	.....	.....	.....	.....	.....
12.40	.....	5.45	3.18	1 42	2 06	.....Cassopolis.....	1.29	7.00	12.46	3.07	...
1.20	.....	6.20	4.00	3.30	2.50	..... South Bend.....	12.45	6.20	12.10	2.35	.....
2.45	.....	7.35	5.30	5.10	4.30	..... Valparaiso.....	11 10	5.00	10.30	1.20	.....
4.50	.....	9.30	7.37	7.30	7 00	..... Chicago.....	8.40	3.00	8.15	11.25	.....
p m	.....	pm	am	am	pm	Arr. Dep.	am	pm	pm	am	

Where no time is given, train does not stop.
Trains run by Central Standard Time.
Valparaiso Accommodation, Battle Creek Passenger, Port Huron Passenger, and Mail trains, daily except Sunday.
Pacific, Limited, Day, and Atlantic Expresses, daily.
Meals served in C. & G. T. Dining Cars on all through trains.

W. E. DAVIS,
Gen. Pass. and Ticket Agt., Chicago.

A. S PARKER,
Ticket Agt., Battle Creek.

MICHIGAN CENTRAL

"The Niagara Falls Route."

Corrected Jan. 31, 1892.

EAST.	† Mail.	† Day Express.	*N. Shore Limited.	*N. Y. Express.	*Atl'antic Express.	‡Eve'g Express.	† Kal. Accom'n
STATIONS.							
Chicago.....	am 7.05	am 9.00	pm 12.20	pm 3.10	pm 10.10	pm 9.25	pm 4.55
Michigan City	9.10	11.10	2.00	4.48	am 12.25	11.20	7.00
Niles.....	10.20	pm 12.43	2.52	5.50	1.45	am 12.25	8.25
Kalamazoo	12.00	2.20	3.55	7.04	3.37	2.00	pm 10.05 / am 7.10
Battle Creek...	pm 12.55	2.59	4.25	7.37	4.29	2.45	7.53
Jackson.....	3.05	4.30	5.32	8.52	6.25	4.20	9.45
Ann Arbor.....	4.42	5.25	6.22	9.45	7.45	5.43	10.55
Detroit.....	6.15	6.45	7.20	10.45	9.20	7.15	am 12.10
Buffalo.....	am 3.00	am 3.00	am 3.00	am 6.25	pm 5.05	pm 5.05	pm 8.15
Rochester.....			5.50	9.55	8.10		10.00
Syracuse.....			8.00	12.15	10.20		am 1.00
New York.....			pm 3.45	pm 8.50	am 7.00		7.45
Boston.....			5.40	11.05	10.45		10.45

WEST.	†Mail.	†Day Express.	*N. Shore Limited.	*Chicago Express.	*Pacific Express.	†Kal. Accom'n	†Eve'g Express.
STATIONS.							
Boston.....		am 8.30	pm 2.15	pm 3.00	pm 6.45		
New York.....		10.30	4.30	6.00	9.15		
Syracuse.....		pm 7.30	11.35	am 2.10	am 7.20		
Rochester.....		9.35	am 1.25	4.20	9.55		
Buffalo.....	pm 11.00	11.00	2.20	5.30	11.50	am 8.45	
Suspen. Bridge			3.15	6.25	pm 12.50		
Detroit.....	am 8.20	am 7.40	9.05	pm 1.20	9.15	pm 4.45	pm 8.00
Ann Arbor.....	9.35	8.40	9.59	2.19	10.32	5.52	9.18
Jackson.....	11.25	9.40	10.58	3.17	12.01	7.15	10.45
Battle Creek ..	pm 1.00	11.12	pm 12.02	4.25	am 1.20	8.47	am 12.05
Kalamazoo. ...	2.17	11.55	12.39	5.00	2.22	pm 9.30 / am 6.00	1.07
Niles.....	4.15	pm 1.12	1.48	6.17	4.15	7.40	3.10
Michigan City	5.37	2.14	2.48	7.20	5.35	8.55	4.30
Chicago.....	7.55	3.55	4.30	9.00	7.55	11.15	6.50

*Daily. †Daily except Sunday. ‡Daily except Saturday.

Accommodation train for Jackson and all intermediate points leaves Battle Creek at 6.16 P. M., arriving at Jackson at 7.55 P. M., daily except Sunday.

Accommodation train for Niles and all intermediate points, leaves Battle Creek at 7.53 a. m., arriving at Niles at 10.05 a. m., daily except Sunday.

Trains on Battle Creek Division depart at 8.03 a. m. and 4.35 p. m., and arrive at 12.40 p. m. and 7.00 p. m., daily except Sunday.

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

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

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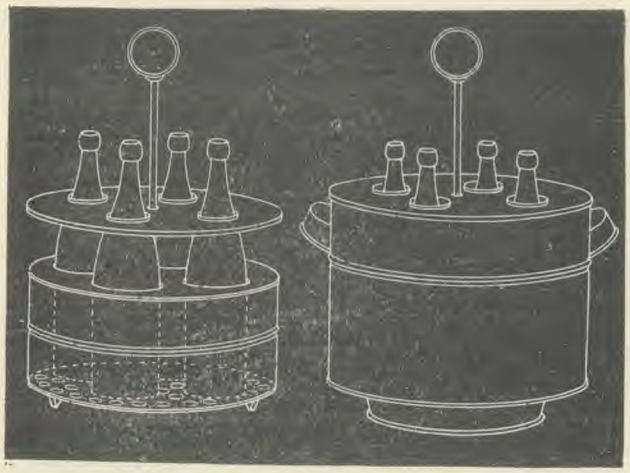

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This apparatus complete, including one half dozen bottles, will be sent by express, on receipt of—

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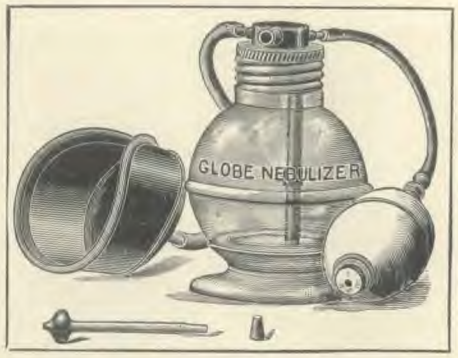

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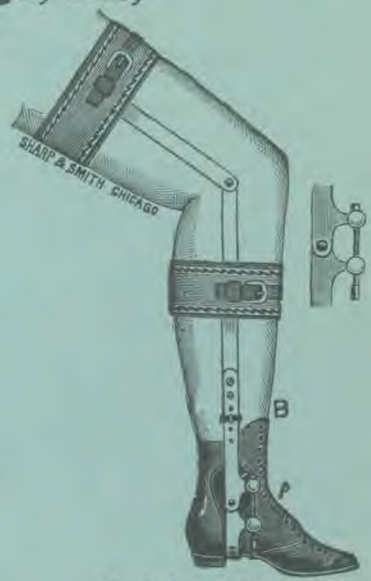

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