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[See Happy Fireside.]

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INTERNATIONAL HEALTH STUDIES.

BY FELIX L. OSWALD, M. D.

Author of "Physical Education;" "The Bible of Nature," etc.

1.—Germany.

A PAGAN philosopher observes that "all nations worship beginnings, and love to trace the origin of important things." Even without the aid of theological motives, that instinct of origin-worship will always continue to fill Mecca and Jerusalem with pilgrims longing to trace the source of tradition and breathe the air that inspired the founders of their faith.

For similar reasons, the traveler who enters the continent of Europe by way of the North-German sea-port towns, might tarry to study the birthland of a race which, directly or indirectly, has established its supremacy over an area of fourteen million square miles, or more than one fourth of the habitable globe. In the course of the last three hundred years, English speaking nations have brought under their sway a territory far exceeding in extent that of the Roman Empire in the zenith-period of its power, and the secret of that success can still be traced to its germs in the ancient homes of the Anglo-Saxons. Every Holstein hamlet is an epitome of the tree-embowered garden cities of Yankeedom and Australia. Trees line the streets, roof the village green, and shelter every dwelling-house from Bremen to Koenigsberg, and that same woodland love of the British emigrants has saved their colonies from a mistake which by this time has turned some seven million square miles of Southern garden-lands into deserts. Wherever the Spanish conquerors planted the standard of their king, they began by building a prison of the holy Inquisition, and destroying the forests with ax and fire; and in that way have already managed to devastate one fourth of their American colonies in less than four hundred years. Their own peninsula is now as barren as the dreariest regions of Asia Minor, while England and Germany are still as fertile as ever, even in districts where chill winters and the absence of coal would furnish an excuse for the exhaustion of arboreal vegetation. Another cause of Saxon success is the hereditary worship of physical prowess. The monkish indifference to bodily health was, on the whole, the ugliest symptom of mediæval anti-naturalism, and avenged itself in the rapid degeneration of a race which had produced the conquerors of three continents,—"eagles turned into owls and the battle-shout of the centurion tuned down to the falsetto of whining priests." But that mania of self-abasement failed to overcome the manlier instincts of the old Northmen. Their very monks were tonsured athletes, mail-clad prelates, or saints of the Friar Tuck species; and when the age of tournaments gave way to the era of industrial expositions, the instinct of physical exercise found a vent in the *Turner-bund* movement, the enthusiastic culture of the manly powers by means of gymnastic training-schools.

Out-door exercise is a passion of the Germanic nations. Without such extra inducements as base-ball and kites, our American boys would often prefer to pass a warm day in the shade, whittling or novel-reading; but in Germany, out-door sport has almost become a synonym of recreation. Every German

A HOP GARDEN.

school-boy of eight years up has a butterfly-net and a private collection of butterflies and beetles, possibly also a "caterpillar-pen," for feeding the larvæ of gaudy night-moths, all of which he knows at sight, together with their haunts and favorite food-plants.

"What are you doing on that tree, Fritz?" you ask a little Saxon lad of ten. "You are going to break your neck for nothing; those cherries are not half ripe yet."

"Please, help me up, sir," pleads Fritz. "It isn't cherries I'm after. I only want to get a few top-leaves for my caterpillars; blue Orden's-band moths, you know, and they won't eat nothing but sloe-buds and young cherry leaves."

Fritz knows all about it, and would be able to identify the larva or chrysalis of any indigenous moth known to the naturalists of his native land. An American youngster would be apt to get up a cherry-tree unassisted, if the cherries should promise to repay the trouble; but he would refuse to go a step out of his way for the prettiest butterfly of the Western continent. There are exceptions, of course; but the average entomological tendency of our young countrymen was pretty well defined by the answer I once got from a Tennessee mountain boy, whom I had asked to catch me a few specimens of the *Papilio Turnus*, a magnificent double-tailed butterfly abounding on the highland meadows of the Southern Alleghanies. "Yes, I would like to get that dime," said Jim, scratching his tow head; "but I tell you what's a fact, Mister, I don't take much stock in them *bugs*, and I never took notice if they got one tail or two tails!"

Fritz explores every hill-side with his butterfly catcher, and in a year or two will invest his savings in a *Botanisir-trommel*, a portable tin case, arranged for the assortment and preservation of botanic curiosities. In vacation time, young German students club their means to effect an expedition to the next highland region, and enjoy a few weeks' outing in the literal sense of the word, camping in the woods, ranging the wilderness in quest of "specimens," and eating a frugal lunch at a mountain spring, happy as fairy-land princes, at an average expense of half a mark a day — a little less than twelve American cents. In midsummer, the German woodlands swarm with picnic parties, and every occasion is utilized for an extra outing, — *Kirmes* (dances on the village green), May festivals, harvest feasts, vintage picnics, and even a

hop-garden festivity, where ladies and city belles mingle with the laborers of the hop-harvest, and finish their day's work with a round dance to the tune of a rustic fiddle.

If it were not for the concomitant alcohol-revels, we could almost envy our Teutonic friends the custom of their Sunday afternoon excursions to some out-door rendezvous, — a fine picnic grove, a fishing camp on the shore of the Baltic, but still more frequently some popular look out point, the top of a ruin-crowned hill, or a promontory in a range of wood-clad mountains. The prominent citizens of every community in the German hill countries vie for the honor of getting a hilltop resort of that kind christened after their name, and all Rhineland and Thuringia consequently abounds with "Frederic's Rests," "Wilhelm's Hoeh" ("William's Hight"), or "Karl's Steins," just as our opulent fellow-citizens are apt to perpetuate their names in a "Sniffkin's Seminary."

The visitor of an old-fashioned German residence is, however, apt to ascribe that outing-passion to the defects of sanitary achitecture, which by dint of contrast must make out-door life a blest relief. In point of ventilation, the lodgings of a small American shop-keeper are, in fact, models of sanitary improvement, compared with the residence of the average German nobleman. The night-air superstition and the dread of draughts are chronic complaints all over continental Europe; but considering their owners' general love of comfort, German family-dwellings, as a rule, are stuffy and overheated to a really surprising degree. The ceilings are low — so much so, indeed, that a Kentucky backwoodsman would often find it risky to rise to his full hight in the parlor of an old-fashioned East German city-mansion; and from October to May the windows are rarely opened for ventilatory purposes. If the tenants of such air-prisons feel the need of refrigeration, they take a stroll in the garden, or step out on the balcony, where, indeed, many families prefer to take their meals, screened from the gaze of outsiders by a thick mantle of wildering ivy. The attempt to open a parlor window (except in the dog-days) would, however, elicit a prompt protest, and even a sick headache would, on the whole, be considered preferable to the risk of a direct "draught."

Public taverns and club-rooms are even worse. Not village topers only, but intelligent and well-educated citizens volunteer to pass long evenings in an atmosphere saturated with an ineffable mixture of nicotine fumes and alcoholic effluvia, aggravated by a temperature that would rout an American furnace-laborer. In the fierce heat of a Pittsburg rolling-mill, three or four wide-open doors create a constant through-draught, while my host of a Bavarian or Saxon *Bier Stube* would flatly refuse to open his curtained window even for half a minute.

Should it be possible that the animal organism can adapt itself to a chronic deficiency of oxygen? Squirrels retire to the penetralia of a knot-hole, in an air-tight oak-tree, after stopping the entrance with moss and leaves, and bears hibernate in stifling caverns; but only the testimony of my own eyes could convince me that Pomeranian farmers pass their nights in a wall-closet — a niche surrounded on five sides by solid masonry, and closed in front by a blanket-curtain, which if opened, admits the air, not of the out-door world, but of a stuffy sitting-room, often serving the additional purposes of a nursery and a kitchen, and reeking all night with the heat and the fumes of a smouldering turf-fire. Dormitory hygiene is evidently not the *forte* of Fatherland. German beds, as a rule, are both short and narrow, and afflicted with the incubus of a "feather-bed" — a sweltering hillock of miscellaneous feathers, crammed into a sack that would hold a hundred pounds of loose cotton. A similar bag not infrequently serves the purpose of a mattress, and the over-lapping folds of that feather-shroud almost prevent the sleeper from turning, besides distressing *non-habitues* with perspiration and night-mare horrors. In the first-class hotels of the large commercial cities, spring-mattresses and clean woolen blankets make the American traveler feel quite at home, and even woven-wire beds can be found in the Rhineland summer-resorts, here and there; but in the villages of Southern Germany, the proportion of feather-bags to quilts or blankets is about as ninety-nine to one.

In dress-reform, on the other hand, the rustics of Central Europe could give us several points ahead. As a rule, the peasants of Germany and Austria dress for comfort rather than for show. The toilet of our American country-folk, both male and female, is modeled after the fashions of their city exemplars, and modified only by the limits of individual resources. The cross-road dandies of a Western backwoods settlement, enjoy their Sundays in patent cravats and immaculate shirt-fronts. The belles of a Texas negro village strut about with home-made bustles. German peasants, on the other hand, do not care one straw for French fashions, and within a dozen miles of as large cities as Stuttgardt and Munich, well-to-do farmers in knee-breeches and skull-caps can be seen promenading a *Fraulien* in the costume of the sixteenth century. Boys, up to fifteen, wear a *Kittel*, a sort of dalmatica, buckled around the waist with an elastic girdle, but otherwise wide enough to leave room for any desired

TESTING RHINE WINE.

multiple of shirts, while caps of a variety of pretty patterns take the place of our cumbersome hats. A student of international dress-customs is tempted to the conclusion that the best head-dress would be our cover of natural hair; in other words, that artificial head-covers, especially in a warm climate, are wholly superfluous, since no fact in the domestic history of the ancients is more fully established than the circumstance that the long-lived Greeks and Romans of the classic period covered their heads only in time of war. Their stock of head-wear, in truth, was limited to their helmets. The Emperor Hadrian traveled bare-headed through the sixteen provinces of his vast empire, to show his faith in the loyalty of his subjects, as for similar reasons oriental potentates put aside their swords in the presence of their friends; and only one hundred years ago the founder of a British charity-school stipulated that the pupils should go "bare-headed, after the fashion of their hardy forefathers." Bare-headed farmers, plowing their fields under the glare of a summer sun, can be frequently seen all over Southern Germany; and acting upon the principle that in a choice of evils it is the best plan to select the smallest; the students of the German universities generally limit their head-dress to the smallest practicable minimum of a make-believe cap — a mere circular patch of cloth, held in place by a chin-string. A very similar cap, however, is worn by the peasant girls of Baden and Wirtenberg.

The uplands of Southern Germany harden the constitution of their inhabitants in a school of the roughest sort of out-door work. From four in the morning in summer, and from day break in winter, to sundown, men and women can be seen at work in the fields, and women often mend the roads or work with mattock and spade along the line of a new railway, preferring contract-jobs to days' wages, as the better chance to get the full benefit of their indefatigable sinews. Bavarian wood-cutters sleep in self-made shelter-cabins, and swing all day an ax that would wear out any arm used to the clever modification of our American tool-makers; yet after a long day's work with that anachronistic implement, the Alpine lumberman is ready for a rustic waltz, perhaps even for a wrestling-match, if the laborers of a neighboring forest should stroll into camp. Wrestling-matches and foot-races form the staple amusement of South German village-boys, and the school-teacher, instead of discouraging such sports, is frequently induced to act as umpire or stake-holder. Gymnastics, indeed, now form a branch of compulsory education in many German village schools, though the propaganda of the *Turner-bund* might seem rather superfluous in districts where every male adult has by force of circumstances become an athlete.

The redeeming influence of such habits explains the remarkable degree of physical vigor which our lager-beer sophists persist in ascribing to the stimulus of fermented beverages. The American tourist admires the herculean forms of rustics who nevertheless worship beer as the supreme blessing of life, and concludes that beer-shops, after all, must form the basis of a muscular development unattainable by total abstinence, but omits to observe that those physical paragons have from boyhood been inured to habits that would turn our dandies into athletes. The moment the pressure of that counterpoise is relaxed, the debasing effect of alcoholism begins to assert itself with fearful rapidity, and the bloated, enervated topers of certain German manufacturing towns can be matched only in the gin-cursed slums of the North England weaver cities.

Dietetic sins, in fact, go far to offset the otherwise happy physical tendencies of the Germanic nations. The well-to-do classes, especially the nobility, have become more temperate since education has begun to furnish them better sources of pastime; but it would be a mistake to suppose that intemperance has, on the whole, decreased. Millions of mechanics and farm-laborers now enact the role abandoned by the descend-

ants of the bibulous cavaliers, and in every large town of Germany and Western Austria, there are hundreds of men who literally devote every leisure hour to the consumption of alcoholic stimulants, and whose ideal of a pleasure-resort would be incomplete without the fumes of beer or wine. The vineyard districts of Rhenish Prussia are in that respect no whit behind the lager-beer centers of the South, and in the tavern gardens of Coblentz and Bonn, clergymen and teachers can still be seen hobnobbing with cobblers and hod-carriers.

Still the practical redemption of the upper classes is a hopeful sign, and has already wrought a decided change in the ethics of a land where sobriety was once a matter of reproach. The temperance lessons of science, too, have begun to leaven the masses of a nation which, after all, is a nation of health worshipers, and which will not always continue to sacrifice the highest blessing of earth on the altar of the poison-habit.

(To be continued.)

SHORT TALKS ABOUT THE BODY, AND HOW TO CARE FOR IT.

BY A DOCTOR.

No. 4. — How Food is Digested.

The Digestive Fluids. — From the study of the organs of digestion, we learn that there are five digestive fluids; *viz.*, the *saliva*, the *bile*, the *gastric juice*, the *pancreatic juice*, and the *intestinal juice*. We learned in a previous "talk" that there are five digestible food elements — starch, albumen, fats, sugars, and salts. Now let us notice with care the use of each digestive fluid in relation to the food elements.

What the Saliva Digests. — When a crust of bread is chewed for some minutes, it becomes sweet. This is due to the fact that the saliva contains a peculiar principle, which, when brought in contact with boiled starch, converts it into grape sugar, and the digestion of starch depends upon this conversion. It is essential, however, that the starch should be boiled, or otherwise cooked, as the saliva cannot digest starch in a raw state; for each granule is surrounded by a thin shell of woody matter, or cellulose, which the saliva cannot dissolve.

What the Gastric Juice Digests. — Pepsin is the active principle of this digestive fluid, and acts upon the albuminous elements of food, such as the gluten of grains, the albumen of eggs, the fibrine of meat, the caseine of milk, etc. By the action of pepsin, all of these various substances are converted into one simple substance, known as peptone, which is absorbed readily into the blood; while the undigested elements cannot, to any great extent, be absorbed, but if absorbed, they could be of no use in the system.

The food is prepared for further digestion by the gastric juice, which dissolves the substances by which the various elements of the food are held together.

What the Bile Digests. — The bile is like the saliva and the gastric juice, inasmuch as it digests a single one of the digestible food elements. Its action is wholly upon the fatty portions of food, which it emulsifies, or divides, into fine particles. Fat is not changed by the action of the bile, as is starch by the saliva, or albumen by the gastric juice. That is, it is simply emulsified, and not converted into a different substance.

What the Pancreatic Fluid Digests. — The three principal food elements — starch, fats, and albumen — are digested by the pancreatic juice. It converts starch into sugar, as does the saliva, albumen into peptone, and emulsifies fats; thus it appears that the work of the pancreatic fluid is the same as that of the three digestive fluids — saliva, gastric juice, and bile.

The Intestinal Juice. — This fluid has but one characteristic digestive property. Ordinarily, cane sugar is digested only in the small intestine, and by the action of the intestinal juice. The intestinal juice also digests starch, albumen, and fats.

All of the digestive fluids act upon the salts of the food. The digestive process begins the moment a morsel of food enters the mouth, and continues through the entire length of the alimentary canal, or until the food has been wholly digested and absorbed.

Mastication. — The first act in the digestive process is mastication, or chewing the food, the purpose of which is to crush the food and divide it into small particles, so that the various digestive fluids may easily and promptly come in contact with every part of it. The tongue and the muscles of the cheeks aid in mastication, by moving the food about in the mouth and keeping it between the teeth.

Salivary Digestion. — During the mastication of the food, the salivary glands are actively pouring out the saliva, which mingles with the food, and by softening it, aids in its division and prepares it for the action of other digestive fluids. The saliva also acts upon the starch, converting a portion of it into grape sugar.

Deglutition, or Swallowing. — After being reduced

to proper fineness by chewing, and sufficiently softened by the saliva, the food is swallowed. In the act of swallowing, the food does not drop through an open tube into the stomach, but is seized by the muscles at the back of the mouth, and by a process of squeezing and pulling is carried down into the stomach. This fact is clearly seen in horses, cows, and other animals which habitually eat and drink with the head lower than the body, so that the food must travel upward in its passage to the stomach. By practice, persons often acquire the ability to drink while standing on the head, and exhibit this in connection with other feats in traveling shows.

Stomach Digestion. — Much of the information which has been gained respecting the action of the stomach upon the food, is due to the persevering and accurate observations of Dr. Beaumont, a surgeon in the American army, who in 1822, while stationed in what was then known as Michigan Territory, was called upon to take charge of the case of a young Canadian by the name of Alexis St. Martin, who had been accidently wounded in the side by the discharge of a musket loaded with shot, at a distance of one yard from his body. A portion of flesh as large as a man's hand had been torn away from his side, leaving large openings into both the stomach and the chest. In the process of healing, there was considerable sloughing, so that the openings became still larger. The one communicating with the chest cavity closed up entirely, but the opening into the stomach remained, after recovery being about two and one half inches in diameter. Through this opening, whatever was taken into the stomach passed out, making the wearing of a pad or a compress necessary for some time; but in time, nature remedied the difficulty by growing over the opening, upon the inside, a loose fold of membrane, which effectually closed the opening, yet could be easily pushed aside, thus allowing a full view of the interior of the stomach.

Dr. Beaumont recognized the value of the opportunity afforded him for the study of the digestive process, and three years after the accident, when St. Martin had entirely recovered, began a series of experiments and observations which he continued at intervals for several years. At the time of the accident St. Martin was eighteen years of age. He afterwards married, and resided in Canada until a few years ago, when he died, surrounded by his children and grandchildren, at the advanced age of more than three score years and ten. The opening in the stomach remained during his life, but became considerably diminished in size. Several cases somewhat similar have occurred in other countries, and have contributed to the knowledge of this important and interesting subject.

The contact of the food, and the saliva mingled with it, with the mucous membrane of the stomach, causes the latter to begin to pour out the gastric juice, which first makes it appearance in little drops scattered thickly over the surface of the stomach, like beads of sweat upon the face when perspiration first begins. As the quantity increases, the drops run together and trickle down the sides of the stomach, and mingle with the food.

The muscular walls of the stomach contract upon the food, moving it about with a sort of churning action, thoroughly mixing the gastric juice with the food. During this process, the opening into the stomach and the opening leading from it into the small intestines are tightly closed, so that the food cannot escape through either channel.

The natural action of the whole alimentary canal is downward. When a person becomes nauseated, or sick at the stomach, this action is checked or even reversed. In vomiting, the action becomes so violent that the contents of the stomach are forced up into the lower end of the gullet, and ejected by a simultaneous contraction of the muscles of the abdomen.

While this thorough commingling of the food in the stomach is going forward, the peptic glands are actively engaged in producing the gastric juice, which by the same churning process is mingled with the food.

The gastric juice acts upon the albumen and similar elements of the food, dissolving the cement substance which holds the tissues together, thus aiding in separating it into minute particles which can be easily acted upon by the digestive fluids which are afterward to come in contact with it.

Recent experiments seem to show that the work done by the stomach does not as a rule complete the digestion even of the albuminous elements, but begins the change, which is perfected by the pancreatic and other digestive fluids.

The gastric juice also coagulates milk, the caseine or curd of which it partly digests. The complete digestion of milk is best performed by the pancreatic juice. The property of coagulating or curdling milk possessed by the gastric juice, is what gives to rennet its value in the process of cheese-making. A rennet is the dried or preserved stomach of a calf. This is soaked in water, and the solution added to milk, which is speedily curdled by the action of some substance contained in the mucous membrane of the stomach, and dissolved and brought out by the water.

In our next, we will continue the subject, considering the digestion of the food after the stomach has performed its appointed task.

NARCOTICS, AND THEIR USE IN INDIA.

BY REV. E. C. B. HALLAM.

NARCOTICS, in great variety, are indigenous to India, and are found there in perfection. Prominent among these are tobacco, opium, the product of the poppy, and *ganjha*, the product of the hemp plant. Had these been confined to the apothecary's shop and the doctor's pharmacy, where they properly belong, it would have been well; but, alas! in India, as elsewhere, "man has sought out many inventions," and these dangerous drugs are used as indulgences.

The abuse of these drugs is the bane of society in almost all ranks in India. We say "almost," for it is a matter of fact that orthodox Hindoos of the very highest castes do not use them in any form. For instance, a Kulin Brahman — unless he be one of the enlightened (?) ones, who have received Western culture, and with it, Western vices — would never think of polluting himself with either of these pernicious drugs. Even the almost universal tobacco is forbidden in any and every form to the Kulin Brahman. He would consider it pollution to use either narcotics or ordinary intoxicants.

Not so with the lower castes (and their name is legion). Among them the use of tobacco is universal. Even the women, and not a few children, some infants yet in arms, (it must be understood that infants are in arms and at the breast until over two years of age in India,) have learned to like it. They smoke it, many snuff it, and some eat it with a mixture called *pan*, but the quantity taken in this last-named manner is so small that it is scarcely worth naming. The abominable practice of chewing tobacco they leave to their Western *confreres*, and the goat, the only quadruped that will eat the weed. We have seen the goat nibble a green tobacco leaf, fresh from his owner's garden, and eat it with apparent relish; but he would turn up his nose at the so-called prepared tobacco, — the common plug, — with which the tobacco-chewing biped of the Western world regales himself. We also knew of a monkey's trying to work up a relish for the quid; but not being versed in the art, and being unable to communicate with his master intelligibly on the subject, he failed. The best he could do was to pull the plug to pieces, bit by bit, rolling a morsel over his tongue occasionally; but to chew and expectorate as his biped master did, "Jacko," could not manage, and he gave it up in disgust.

The native of India has his own way of preparing his *tamaku* (tobacco). He pounds it in a tread-mill until reduced to a coarse powder, and then mixes it into a thick, black paste, with molasses and water. For more refined (?) tastes and heavier pockets, he flavors it with sweet essences, such as rose-water. A small piece of this paste, about the size of a medium-sized hickory-nut, is dropped into a clay pipe bowl (See Fig. 3 or 5), and this is placed upon a stem (Fig. 2 or 4) with a receptacle at the bottom containing

PIPES FOR SMOKING TOBACCO, GANJHA, AND OPIUM.

water. Sometimes this receptacle is made of brass, as in Fig. 4; but it generally consists of a hollow cocoa-nut shell, as in Fig. 2. The mouth is then applied, in the one case at the end of the stem; in the other, at the little hole in the cocoa-nut at the base of the stem.

The native smoker draws and puffs only until the *tamaku* is thoroughly *ignited*; he then takes a long, heavy pull, drawing the smoke down into the lungs, and then passes the pipe to his neighbor; that is, if he be of the same caste as himself; if not, he quietly removes the bowl from the stem (as in Fig. 5), and hands it to the friend of another caste sitting by. He may use the same pipe bowl, but not the same mouth-piece. If the friend happens to have his own *hookah* with him, he just places the pipe bowl upon it, and takes his smoke; if not, he then adroitly converts his two hands into a pipe stem, and draws the smoke through them, in which case he has not the advantage of the water in the cocoa-nut shell to cool the smoke. The native smokes but little at a time, but takes it rather often.

In Bengal and the northwest provinces, the act of drawing the smoke into the lungs is called "drinking smoke," and an invitation to "drink smoke" is a courtesy which is never forgotten. In Orissa they speak of it as "eating *tamaku*," sometimes as "eating smoke." It is probable that the mixing of the tobacco with other and less injurious substances prevents, in some measure, the very pernicious effect of inhaling pure tobacco smoke in the manner described.

SIVA, OR MAHADEB, UNDER THE INFLUENCE OF NARCOTICS.

It would seem as though intuition had enabled the unenlightened natives of India to perceive that this practice of "drinking smoke" is, to put it mildly, not respectable. A youth in a respectable native family would never think of smoking in his father's presence; he would consider it an act of disrespect to his father, even though the father himself were an inveterate user of the weed. Youths of our country (and some pretty old youths, too) think it no mark of disrespect to puff their filthy tobacco fumes into the faces of ladies, and other haters of the weed who are seriously distressed by it. The Hindu knows better than to claim the right, by any law, human or divine, to pollute God's pure air for his other creatures to breathe. Would that our smokers would take a lesson from their unenlightened Hindu fellow-devotees of the pipe!

Before leaving this part of the subject, we will first add that, in some parts of India, the tobacco is used in the raw state. In Orissa, for instance, the native cooly rolls up a few bits of raw tobacco leaf in the leaf of a certain tree, and forms thus a rough-looking cheroot. He inhales the fumes of this home-made cigar in precisely the same way as the *tamaku* is inhaled, but in much smaller quantities.

Another pernicious drug which is extensively used is *ganjha*. This is the hemp plant (*Cannabis Sation.*) The argument for its use is precisely that of the apologist for the use of spirituous and malt liquors in our country. This drug, in its primary action, stimulates, and so *seems* to give strength; but its secondary effect is strongly narcotic, and induces sleep, with agreeable sensations and dreams. This drug is used in various ways: 1. In the form called *charas*. This is said to be the exudation of the flowers of the plant with the dew on them. This is prepared and used as an intoxicating beverage. 2. *Bhanj* is another preparation, made from the green leaves of the plant. These leaves are rubbed into a paste with a little water, in a brass cup; more water is added, and it is then drunk. In this form it is much used in the northwest provinces and the Panjab. The sect known as Saivyas, or worshipers of Siva, are much addicted to it, in imitation of their favorite god. Siva is always represented in a semi-intoxicated state from the use of this drug. Our illustration is a representation of Siva by a native artist. 3. It is used, also, in still another form. The dry flowers and leaves are smoked, and this is, we think, the manner in which it is chiefly used. The habit once acquired is extremely difficult to get rid of. Converts to Christianity who are addicted to it are, of course, expected to relinquish it. They find great difficulty in doing this.

The third and last drug of which we shall write, is opium. This is an exudation from the bulb of the poppy flower. The bulb is scratched by a small instrument with a series of fine teeth, the fluid exudes and dries, forming a dark-colored paste; this paste is collected in the evening. This is the opium of commerce. It is used largely by the natives, that is, by such as are able to afford it; for it is an expensive indulgence, from the fact that it requires great care and much labor in its cultivation. It is used in the pipe. A small pill of the paste is dissolved in a little water, in a brass cup, over a slow fire. When thoroughly dissolved, the mixture has the appearance and smell of the laudanum of commerce. A little straw is then burned to a cinder, but not to ashes, and this is mixed with the dissolved opium, until it forms a thick paste. This paste is rolled up into little balls, and, one by one, placed in a small pipe bowl (Fig. 1) made for the purpose, and upon this hot coals are placed, and the fumes of the opium inhaled. The smoker soon finds himself the subject of most delightful sensations,

and he gradually falls into a stupor, accompanied with delicious dreams. This habit is, perhaps, the most pernicious of the three, if it is possible to discriminate between such fearful evils. The habit is so expensive that the ordinary native, whose means are limited, soon finds himself and family reduced to absolute want. But the craving for the indulgence must be met, hence, in forty-nine cases out of fifty, the victim resorts to theft to supply himself with what he cannot otherwise obtain,

The prevailing impression is that the habit cannot, with safety, be suddenly broken off; that the victim would die in the attempt. This is a mistake. The writer had a cook in India who became a confirmed opium-smoker. As usual, he stole to procure the means wherewith to gratify his craving, and got into jail, where he was kept for six months. Of course his opium supply ceased. After his term was up, the man came out fat and flourishing, in a far better state of health than when he went in.

It is to be regretted that the last two drugs named, — *ganjha* and opium, — as well as all intoxicating beverages, are entirely under government control in India. It holds a monopoly of this trade, raising the opium, and manufacturing the liquors, all of which are made a source of revenue to the government. Not a few European gentlemen occcupy the unenviable position of opium commissioner, having their European and and native subordinates about them to look after the cultivation of the poppy. Others are known as *abkari* magistrates, who have charge of the stills throughout the country. Both intoxicants and narcotics are sold under government license, and it supplies the material to be sold, as well as the license to sell.

This one of the blackest stains on the British escutcheon to-day. We are told by the opponents of prohibition here, that "men cannot be made moral and temperate by act of Parliament." Perhaps not; but men have been made intemperate and immoral by the temptations which a so-called Christian government has caused to be spread everywhere among a people otherwise temperate.

CONCERNING WEATHER-LORE.

MANY of the well-worn couplets in vogue among rural folk concerning the weather, have proved so correct and reliable in our own experience, that the more speculative among us who attach little importance in general to "folk lore," have been led to wonder whether there was not, after all, underlying these homely sayings, a stratum of scientific fact. Two gentlemen, Messrs. Abercrombie and Marriott, have lately instituted an interesting inquiry into what relationship, near or remote, these popular proverbs and traditions hold to actual fact. The result shows that somewhere about one hundred are, under ordinary conditions, to be considered trustworthy. Such being the case, simple folk will naturally incline toward the familiar couplet in preference to the grand, though oft-times foggy and bewildering, scientific terms. So long as "hills clear, rain near" means the same as the long-winded "the presence of a wedge-shaped area of high pressure, accompanied by great atmospheric visibility, is likely to be followed by the advance of a disturbance, with rain and southerly winds," the odds are certainly in favor of the former. In this age of hurry, time is too valuable, and breath too precious, for the thirty-one words to stand any chance whatever alongside the four. So the primitive folk-lore will undoubtedly hold its own.

WHEN an acre or ground has produced long and well, we let it lie fallow for a season; when a razor has seen long service, and refuses to hold an edge, the barber lays it away for a few weeks, and the edge comes back of its own accord. We bestow thoughtful care upon inanimate objects, but none upon ourselves. What a robust people, what a nation of thinkers we might be, if we would only lay ourselves on the shelf occasionally, and renew our edges! — *Mark Twain.*

FRANCESCO HUPPAZOLI, a Piedmontese born in 1587, was one of the few men who lived to date their letters in three centuries. He drank no fermented liquors, ate little meat, went to bed with the chickens, and rose with the lark. His first illness, after teething-time, was when he was 114 years old. At the ripe age of 100, his hair, beard, and eyebrows, which were snowy white, became jet black. At 112 he had two new teeth, but before his death, both the old and the new teeth disappeared, and the old man was obliged to live on soup. He was five times married, and was the father of forty-nine children, four of whom were born after he was 99 years old. At the age of 82 he was appointed consul of Venice at Smyrna. He died in 1702, aged 115 years.

THE INFLUENCE OF DRESS UPON CHILDREN.

BY KATE LINDSAY, M. D.

EVERYONE is now ready to admit the mighty influence dress wields over woman, — an influence that has its physical, social, intellectual, and moral phases ; but to the fact that it also invades the realm of childhood, yes, even babyhood, few seem to be awake. Yet, in truth, if we would get to the root of the matter, the influence of dress is pre-natal in its antecedents. The little child just born into the world has often a corset to thank for its weak back, puny body, and impure and impoverished blood. The unhealthful dress of the mother, thoughtless though it may be, inflicts a birthright of evil on the innocent little victims of fashion, that oftentimes no after-care can remedy.

The sufferings entailed in this manner are hardly less than those brought on in after life by improper dress. And so the evil grows and the circle widens. The tight-laced, skirt-burdened daughter of a similarly distorted mother, becomes in turn wife and mother, and inflicts a wasp-waist, with its attendant train of disorders, on still another generation. No wonder the women of the present day are but fragile shadows of the original type. The only wonder is that, considering the mothers, there are even any strong men. Were it not that boys are generally emancipated from the dress-torture as soon as they are taken out of long clothes, there would seem to be very little chance for a proper representative of the civilized human species.

Yet with its birthright of dress-ailments, baby's troubles are generally but just begun ; for most babies are dressed on the same priniciple that their mothers are dressed. This is about the way an ordinary mother dresses her baby : First a band, the tightness of which depends upon the nurse's strength ; then a low-necked, short-sleeved linen shirt ; next a pinning blanket with a band, and another flannel skirt, and that has a band ; then a white skirt, with a band, and last of all a thin little muslin dress. These, with other articles, make from ten to twenty thicknesses around the body, while over the arms and chest is a single thickness of muslin gauze. I have thought, sometimes, that a baby so dressed looked like a short-handled mop. I have often seen them bandaged so tightly that it seemed as if I could take and break them at the point of bandaging as I would a stick.

No wonder babies have breaches and all sorts of weaknesses, considering the amount of abuse they suffer before and after birth from their mothers. Their beautifully and heavily embroidered tucked-and-ruffled skirts, stiffly laundried, must be at least a yard long, and sometimes sweep the floor, — and all suspended from a poor little back so girt up in bands that the helpless morsel of humanity has barely a chance for a breath.

I once knew a child who was counted a famous baby-tender, and the secret was this. She would take the little fretting things, loosen all their bands, pull out the pins (sometimes one or two was sticking into or scratching the tender flesh), and rub their poor creased bodies till they were soothed to sleep. The mothers did not like it, but it was a bit of freedom and rest for the innocent victims of torturous compressions. So if you have a cross, fretful baby, you will often find that the secret of converting it into a quiet, happy one is to dress it comfortably.

Jean Jacques Rosseau says a good thing on this point: "Try your method on a full-grown man," says he ; "bandage him like a mummy ; put him flat on his back, fastened in a way that he can stir neither hand nor foot, and see if he will not shriek out in agony before the end of the first half-hour. Yet the same cruelty is daily practiced on thousands of helpless children, whose supposed peevishness excites the amazement of the silly nurse, though the only wonder is that they do not scream themselves to death."

"But," some one says, "how about weakly babies? Is it not necessary to put snug bands around them?" No doubt you have been taught that it is, but did

any one ever teach you that it is necessary to bandage little kittens and puppies? They need it as much as babies do. Little babies are obliged to submit to a great deal of torture, and the only redress they have is to cry and fret.

We want to emancipate babies as well as mothers from the band-agony, and give them a fair start in the world's race. It seems a great pity that every infant cannot have the benefit of hygienic dressing. For a skirt, the little petticoat should be made of flannel throughout,—no wide cotton band to soil easily and give the nurse a chance to brace and pull to see how snug she can make it fit. It should be fastened simply with ties of wash-ribbon or tape. The only separate band worn should be knit of soft wool, which will not tie down the muscles and prevent their development. There should be at least one thickness of flannel over arms and chest under the dress, and the latter should be less trimming and more fabric; less burden and more comfort.

Those who are interested in this subject, and would like to know more about the healthful dressing of babies, can obtain patterns of an infant's hygienic wardrobe, complete, with directions for making, by sending to the Sanitary Supply Co., Battle Creek, Mich. This wardrobe consists of seven pieces, and is so arranged that but one pin is necessary.

When babies have outgrown their babyhood, the same simple rules of dressing will obtain. Growing muscles need room. How many times it is in managing a fractious child, that when bedtime comes the naughtiness and willfulness are folded away with the garments (perhaps to be donned again with them next day), removed with the pressure of the clothes, and the child in its little night-robe is as tractable and loving as mother's heart could wish. Would that the mother-hearts all over our land might heed the lesson, and children's daytimes be as dress-free as their nights. There would be fewer troublesome children, we are sure.

WHAT DRAGS THE LIFE OUT OF A WOMAN.

THOSE heavy skirts, varying in number from three to seven or more, all suspended from the waist, and pulling down upon the hips, are enough to drag the life out of a Hercules. A strong man would not endure for a single day one tenth of the discomfort which a fashionable woman suffers every day of her life. It is useless for woman to think of rising above her present level while she is chained down by the burdens imposed by heavy, trailing skirts.

The unnecessary and injurious weight occasioned by superfluous length and number of skirts is greatly increased by the addition upon the outer garment of an indefinite number of flounces, folds, heavy overskirts, and various other useless accessories.

But the evils and inconveniences above referred to are not the worst which result from the wearing of so great a weight of clothing as is customary among fashionable people. The most serious consequences are those which are suffered by the delicate internal organs. The many heavy skirts and under-garments which are hung about the waist with no support from above, drag down the organs of the abdomen, and after a time the slender ligaments which hold them in place give way, and various kinds of displacements and other derangements occur. The tightness with which the garments are drawn at the waist greatly increases the injury.

The custom of wearing the pantaloons buttoned tightly at the top, and sustained by the hips, produced so much disease even among the hardy soldiers of the Russian army, that a law was enacted making the wearing of suspenders compulsory. If strong men suffer thus, how much greater must be the injury to frail, delicate women! The constant pressure and unnatural heat to which the lower part of the back is subjected, is one of the chief causes of the frequency of kidney diseases among women. Here is found the source of "weak back," lumbago, pain in the side, and several other diseases of the trunk which affect so many thousands of American women. J. H. K.

JUST think of it! It costs $1,250,589.10 to keep the women of this country in imported corsets for one year. What a waste! and what waists!

THE Chinese women of Amoy have formed a unique dress-reform society, called the "Heavenly Foot Society." Rev. John Macgowan, missionary at Amoy, now in England on a visit, in a speech delivered at Manchester recently, stated that the society was the result of his persistent teaching that the Chinese custom of binding the feet was in open violation of the precepts of the gospel. It is his belief that the example will be extensively imitated, and that the final result will be a death-blow to the barbarous practice.

TEA *VS.* CIGARS.

BY S. ISADORE MINER.

"FRED, I must have some money this morning. I am ashamed to wear that hat another time to church. I felt as if every one was looking at it last Sunday, and I made up my mind I would n't go again till I had a new one. But Mrs. Tolliver will be here next week, and I can't make that an excuse for not taking her, and I know she wants to hear Dr. Clarke."

"I have n't a 'five' to my name, Genie, and you'd want as much as that."

"Why, Fred! you had three of 'em, I know, just the other evening."

"Yes, but there was the grocer's bill, — just a five, — and the wood, and I paid the office-boy two dollars."

"Well, but you must have more than five dollars then, or as much anyway. What became of the rest?"

"The rest? Let's see, — why, cigars, I guess."

"I knew just what you'd say. That's the way it always is. The new dress I ought to have had went up in smoke, and so did my gloves and a good many other things. You are the most selfish creature! If you would smoke less cigars, you would have the money for some of the many things I really need."

"If you would drink less tea, you would n't be so cross."

The front door closed with a bang just then, as Fred stalked out and officeward, with his hat drawn low on his forehead, while Eugenia, with flushed cheeks and brimming eyes, pushed back the cup of strong tea that the heat of their discussion had n't been able to keep warm.

"The idea of comparing my tea with his cigars! Why, it does n't cost a tithe. It's the one luxury I get; for, just as I said, all the rest, and even necessaries, go up in smoke. But Fred can be so aggravating!"

But say what she would in self-justification, the idea kept constantly recurring to her all that day. "I wonder if tea really does make me cross? for I think I *am* more touchy than I used to be. Where was it I read that tea was an irritant — no, stimulant — well, perhaps both; for it must be an irritant if it makes me irritable, and its being a stimulant accounts for my always feeling so much stronger and livelier when I take it, and so wretchedly weak and 'all-gone' when I do n't. I wonder if Fred really meant what he said. Why, if I thought I was very cross, and that tea made me so, I do believe I would go without it. It would be hard, but I believe I could."

And so Eugenia and her better self held council all day, and not that day only, but several, for Fred was out of town on business. She was quite a sensible little body, after all, and inclined to pry into things. So she hunted up several articles on the tea-habit, pro and con, and not only read them, but thought about them, and applied their arguments to herself. She could trace in her tea-symptoms and their tea-cures the incipient stages of the nervousness and irritability of the *habitue*, accompanied by distressing bodily ailments; and she was forced to admit that she was indulging in a harmful practice.

"This writer certainly tells the truth," she said decisively, shutting the book with some vigor. "It *is* only one form of drunkenness; the principle is just the same. I have always felt out of patience when I heard of men who would n't stop drinking because they said they could n't. I see something how it is, now, and I'll stop while I can. I will not be tied to any habit."

So Eugenia reasoned; and good intentions were apt to be put in practice at once with her, not laid on the shelf till some more convenient season. To know was to act.

Fred, strange to say, for all his tobacco-using, had

a profound contempt for tea ; not from any thoroughly hygienic principle, however, but because to him its use seemed relegated by nature to the "women folks," and because he had formulated an idea which he thought was the only properly hygienic one. "Tea," he argued, "is irritating in its effects ; tobacco smoke is highly soothing" (Fred, unlike most tobacco-users, was proverbially good-natured) ; "therefore it is patent that there is no harm in cigar-smoking, but that humanity derives great benefit from it ; while in tea-drinking there is great harm to humanity, and no benefit." (He had often hectored Eugenia about what he called her "teapot tempers.")

Eugenia concluded she would say nothing to him of her new resolution, but see which he would notice first — the absence of the teapot or the absence of the tempers. But Fred's quick eye noticed the loss of the little Chinese affair that had invariably ornamented the place opposite him, and his first remark was —

"Out of tea, Genie ? or did you forget to make any ? Did n't know you'd be so pleased to see me back that you'd lose your head to that extent. Hurry up, I'll wait till it draws."

"Oh, I've given up drinking tea."

"How long since ?"

"About a week."

"Oh !"

Fred looked pretty thoughtful. He said not another word about tea, and Genie thought he had forgotten it. But he was making mental calculations to see how nearly that date would coincide with the one when he made that ugly speech about her being "cross ;" for Fred's conscience, too, had been troubling some, and he had admitted to himself more than once that Genie was half right. He did send too much money up in smoke — money that he should have given her for things she really needed. She looked quite shabby now, compared with the time he first met her ; or rather, her clothes did ; Genie herself looked prettier than ever, he thought loyally, glancing up at the bright brown eyes and the smooth cheeks with such a happy flush on them, surmounted by a halo of fair hair that curled and waved bewitchingly over a low white brow.

They chatted of this and that till dinner was over ; then, just as he pushed back his chair, Fred asked abruptly, "Say, Genie, have you got that chicken-fixing you wanted for your head yet ? Here's a 'ten' for it and something else, and he flipped a bright gold eagle across the table in such an unconcerned way that the liberty bird's head fairly swam, — as if he had any number of the *rara avis* stowed away in the depths of capacious pockets.

"But can you spare it, Fred ?"

"Oh yes ! I did a little extra while I was off." (Some of that money was to have bought a fresh box of cigars that very afternoon. He had intended to give her just a "five," but somehow the "ten" came easier.) "Be sure to get a pretty one, pretty as those you used to wear before we were married," and he kissed her smiling mouth, so temptingly near.

And that did n't end it for Fred. He wanted — oh, how he did want ! — a cigar to top off his dinner, as usual ; but when he got to his office, he took the empty cigar-box from its place, and sitting by his desk, stared into it long and solemnly. If he did say, "Poor little Puss !" several times, he was not referring to the office cat, for that feline rubbed against his manly legs unnoticed. What he thought no one knows ; and perhaps no one knows that he sat staring into that empty box all that blessed afternoon, till a bright little face in a bright new bonnet was thrust between him and the dingy, unsavory receptacle, and a merry voice inquired, "Day dreams ? a penny for your thoughts !"

"They're worth more than a penny," answered Fred, half frightening Eugenia by throwing the box clear across the room to the opposite wall, where it was shattered into slivers. "That's the last cigar-box I'll ever own !"

"O Fred !"

MAY.

(See Frontispiece.)

Oh, why are skies so strangely fair ?
And why is earth so gay ?
There's joy and beauty everywhere,
As if for holiday.

The heavens are bright with tender tints
And clouds of drifted snow,
That drifting down have left their prints
In pink and white below.

For there's a lavish wealth of bloom
On flowering shrub and tree,
That ladens heavy with perfume
Each breeze that sweeps the lea,

And there's a carpet 'neath our feet,
Of richest velvet pile ;
And nestling in the green retreat,
The shy spring blossoms smile.

And there's a wondrous burst of song
From myriad tuneful throats,
That echoes catch, and soft prolong
In sweet and silvery notes.

Then why are skies so strangely fair ?
And why is earth so gay ?
Why joy and beauty everywhere ? —
Oh ! 't is the month of May !

—*S. Isadore Miner.*

CAPTAIN JOHN ERICSON.

BY PROF. A. SWEDBERG.

A GREAT man of our century has fallen; a long and useful life has just closed. John Ericson, the great engineer and inventor, the one man to whom, perhaps, both Europe and America are more in debt than to any other, is dead. We doubt if a better commentary could be found upon the course of sanitary reform which GOOD HEALTH has advocated for twenty years, than this man's life affords. At the time when the average man is beginning to shift off his burden of work and care upon younger shoulders, spending longer seasons in the easy chair and shorter ones at work, going earlier to bed and rising later in the morning, in short, settling into the general comfortableness of a care-free old age, this man of the vigorous frame and the tireless brain, with his simple, regular habits, his temperance, and his vegetarian diet, was just as it were beginning to live, and with twenty years of life yet before him, he only paused to gird himself anew.

As an inventor, John Ericson was the pride of America as well as of Sweden, and his world-renowned name, will, for all coming time, shine as a star of the first magnitude among our constellation of brilliant inventors. Every Swede is justly proud of a countryman who in so illustrious a manner has extolled the Swedish name, and shown an astonished world that—

> "As the ore of the rock is a solid part,
> So there dwelleth a power in the Swedish heart."

The life history of Captain Ericson is best and most durably portrayed in the numerous useful and wonderful constructions which remain as monuments to his inventive skill. At the age of ten he constructed a pump which attracted much attention from Count von Platen, the first promoter of the Gotha Canal. At twelve he became connected with the corps of engineers employed in the construction of this canal, and from this time on made rapid advancement. At the age of twenty-three he left his fatherland and went to London, to introduce a locomotive of his invention. Three years later he competed with Stephenson for the prize offered for the best locomotive. Although he did not win the prize, his locomotive, "Novelty," constructed in seven weeks' time, surpassed all others in speed.

Among his many important inventions we will mention the first steam apparatus for throwing water, the propellor, the caloric (hot-air) engine, the *Monitor* and the *Destroyer*. Just before his death he completed his so-called sun-engine, which takes its motive power from the sun. The practicability of this engine is, however, not yet determined by test.

Captain Ericson was in many respects a remarkable man. He attained the mature age of eighty-five years. During this long and busy life, he never saw a sick day. His continued health and longevity were principally due to his strict habits of life. He took time for daily exercise, which he obtained partly by means of gymnastics at his home, immediately after rising in the morning, in connection with a cold bath, and by a walk in the open air in the evening. His diet consisted of simple and easily digested food, taken at regular hours. He never ate suppers. Tobacco and intoxicants never passed his lips.

He never allowed any time to run to waste, but kept himself busy at his inventor's bench during his regular working hours. This strict devotion to his favorite employment made him an uncommonly reserved man. Of late years he seldom formed new acquaintances, for fear precious time would be wasted, and the calls of his most intimate friends were short and formal on this account.

At the time of his death, the 8th of last March, he was a resident of New York City, whither he came in the year 1839. He left a fortune estimated at $142,000.

PUNDITA RAMABAI.—Our readers will be interested to know that this brave woman has reached her native land, having sailed from San Francisco last November, reaching Bombay *via* Japan and China, the first of February. The *Palm-Leaf*, a Bombay English periodical, informs us that under the advice of influential citizens of both cities, she has decided to open her school for high-caste Hindoo widows in Bombay, instead of Poona, as first intended. It is gratifying to learn, also, that her enterprise is being seconded by generous-hearted persons in our own country, and that the prospects for its success are excellent.

THE TRANS-CASPIAN RAILWAY.

In this go-ahead age, when the shortest route is chosen with little regard to any of its other merits, and the quickest way is pre-eminently the best way, even the drowsiest of us will brighten up, and incline our heads at a listening angle, to hear of some fresh happening. But even after all the bright and novel things which science is constantly doing for us, and its many feats of jugglery in our midst, we are yet hardly prepared to accept in a matter-of-course way the idea of a locomotive's whistle, and the thunder of the rushing train, invading the eternal solitudes of the very heart of Asia. But this has become not a matter of speculation, but of actual fact, during the past year. Even now trains are running from the Caspian Sea, across wide deserts and trackless regions, which up to a few years since had never been penetrated by foot of man, on through to Samarcand, in Russian Central Asia. This railroad takes the classic Oxus in its way, crossing it on a bridge almost a thousand feet longer than our own Brooklyn bridge, which we have thought such a marvel. The scheme is a triumph of modern engineering, too, as it is of modern exploration. The wise ones of the earth had "laid their heads together," and decided that a railroad could never be built upon such an unstable foundation as the sands of the desert of Kara-Kum. This chiefest difficulty the genius of the Russian General Annenkoff met, by overlaying portions of his road-bed with clay, placing in his embankments layer upon layer of a certain desert shrub, and lastly, by cultivating along his projected route thousands upon thousands of varieties of desert plants whose roots catch and fasten the sand, — unique ideas all of them, but one and all serving their purpose well. The other problems of a water-supply and of light and heat through regions destitute of fuel of any kind, though sufficiently involved, seem like mere child's play in comparison ; certainly he could compass the former by pipes from the mountains, and by means of canals and artesian wells ; while petroleum would supply all the demands for the latter. The entire scheme of this wonderful railway, from its inception to its triumphant realization, reads like a chapter from the "Arabian Nights ;" but it is, instead, the opening chapter of a continent's enfranchisement and civilization. Russia, already aggressive in improvement, may well be proud of the honor of having conceived and wrought out this another wonder of the nineteenth century. E. L. S.

A CONVERSATION WITH THE GRAND LAMA.

George Kennan's contribution to the March *Century* is a description of his visit to the Grand Lama of the Trans-Baikal, who is a religio-political ruler, and the acknowledged head of the Buddhist Church. From it we quote the following: —

"After dinner I had a long talk with the Grand Lama about my native country, geography, and the shape of the earth. It seemed very strange to find anywhere on the globe, in the nineteenth century, an educated man and high ecclesiastical dignitary who had never even heard of America, and who did not feel at all sure that the world is round. The Grand Lama was such a man.

"'You have been in many countries,' he said to me through the interpreter, 'and have talked with the wise men of the West; what is your opinion with regard to the shape of the earth?'

"'I think,' I replied, 'that it is shaped like a great ball.'

"'I have heard so before,' said the Grand Lama, looking thoughtfully away into vacancy. 'The Russian officers whom I have met have told me that the world is round. Such a belief is contrary to the teachings of our old Thibetan books, but I have observed that the Russian wise men predict eclipses accurately; and if they can tell beforehand when the sun and the moon are to be darkened, they probably know something about the shape of the earth. Why do you think that the earth is round?'

"'I have many reasons for thinking so,' I answered; 'but perhaps the best and strongest reason is that I have been around it.'

"This statement seemed to give the Grand Lama a sort of mental shock.

"'How have you been around it?' he inquired. 'What do you mean by "around it"? How do you know that you have been around it?'

"'I turned my back upon my home,' I replied, 'and traveled many months in the course taken by the sun. I crossed wide continents and great oceans. Every night the sun set before my face, and every morning it rose behind my back. The earth always seemed flat, but I could not find anywhere an end nor an edge; and at last, when I had traveled more than thirty thousand versts, I found myself again in my own country, and returned to my home from a direction

exactly opposite to that which I had taken in leaving it. If the world was flat, do you think I could have done this?'

"'It is very strange,' said the Grand Lama, after a thoughtful pause of a moment 'Where is your country? How far is it beyond St. Petersburg?'

"'My country is farther from St. Petersburg than St. Petersburg is from here,' I replied. 'It lies almost exactly under our feet; and if we could go directly through the earth, that would be the shortest way to reach it.'

"'Are your countrymen walking around there heads downward under our feet?' asked the Grand Lama, with evident interest and surprise, but without any perceptible change in his habitually impassive face.

"'Yes,' I replied; 'and to them we seem to be sitting heads downward here.'

"The Grand Lama then asked me to describe minutely the route that we had followed in coming from America to Siberia, and to name the countries through which we had passed. He knew that Germany adjoined Russia on the west, he had heard of British India and of England,—probably through Thibet,—and he had a vague idea of the extent and situation of the Pacific Ocean; but of the Atlantic, and of the continent that lies between the two great oceans, he knew nothing.

"After a long talk, in the course of which we discussed the sphericity of the earth from every possible point of view, the Grand Lama seemed to be partly or wholly convinced of the truth of that doctrine, and said, with a sigh, 'It is not in accordance with the teachings of our books; but the Russians must be right.'

"It is a somewhat remarkable fact that Dr. Erman, the only foreigner who had seen the lamasery of Goose Lake previous to our visit, had an almost precisely similar conversation concerning the shape of the earth with the man who was then (in 1828) Grand Lama. Almost sixty years elapsed between Dr. Erman's visit and ours, but the doctrine of the sphericity of the earth continued throughout that period to trouble ecclesiastical minds in this remote East-Siberian lamasery; and it is not improbable that sixty years hence some traveler from the wester world may be asked by some future Grand Lama to give his reasons for believing the world to be a sphere."

TEMPERANCE NOTES.

CONSTITUTIONAL prohibition was defeated at the recent New Hampshire election.

THE *Pall Mall Gazette* states that a woman living in Russia, always a strict teetotaler, recently celebrated her one hundred and fortieth birthday.

IT is reported that since the removal of the tax on whiskies in Norway, insanity has increased fifty per cent, and idiocy one hundred and fifty per cent.

THE president of the West Shore Railroad, of New York, has recently issued an order forbidding the sale of beer or liquor in the houses owned by that Company.

THE Kansas State Teachers' Association recently passed a resolution condemning the use of tobacco by teachers, and prohibiting its use by pupils in or about the school premises.

IT is said that in the States between the Mississippi River and the Rocky Mountains, there is on the average one saloon to every forty-three voters. East of the Mississippi the average is one saloon to one hundred and seven voters.

IT is stated that rum is directly and indirectly depopulating Madagascar.

THE first temperance society in this country was organized in Saratoga county, N. Y., in March, 1808.

IN Belgium, a person arrested while drunk is compelled to sweep the public streets for two hours after he gets sober.

THE National Christian Temperance Union is to have an exhibit at the Paris International Exposition. A temperance hotel, under the auspices of the French W. C. T. U., is to be opened near the Exposition building.

THE Pennsylvania Woman's Christian Temperance Union have begun a crusade against the practice, which is becoming alarmingly prevalent, of putting liquor into candy. In many places the children have been found coming home from school manifesting every symptom of intoxication from the use of these pernicious sweets. The manufacturers claim that so small a quantity of liquor is used in making these candies that ten pounds of them would not cause drunkenness. But the facts go to prove the contrary.

POPULAR SCIENCE.

A FUSIBLE METAL. — A compound consisting of eight parts of bismuth, three of tin, and five of lead, will melt at the temperature of boiling water.

THE first balloon ascension in America was in 1783. A man was hired to go up in a balloon which consisted of a car with forty-seven small balloons attached.

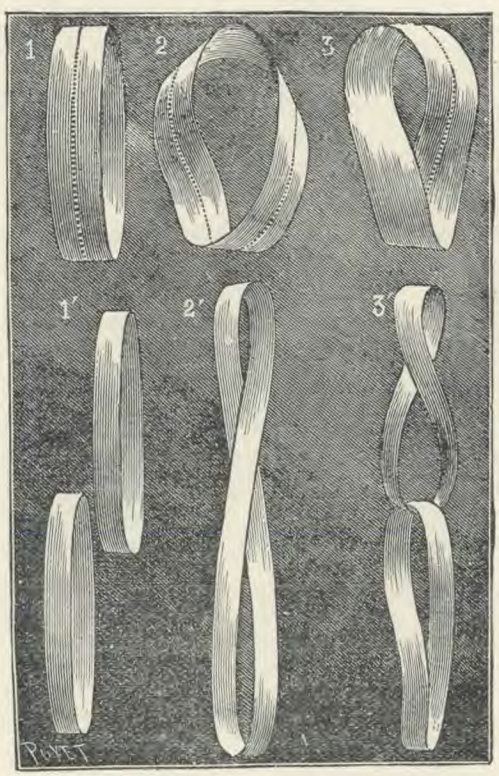
THE *American Architect* is the authority for the latest experiment in the placing of permanent foundations under large buildings. It is as follows: "Before commencing the footing, cover the entire area of the excavation of the building with a thick stratum of concrete, laid directly upon the top of the clay hardpan. The depth of this course is nearly two feet, and its object is to stregthen the clay, that the settlement may be reduced to a minimum."

ELECTRIC POSTAL RAILROAD. — Three hundred miles an hour is the proposed speed for the electric postal railroad of the future. An experimental line has been erected at Laurel, twenty miles from Baltimore, Md. A compromise between the pneumatic tube and the ordinary railroad carries a miniature train of two cars, solely for mails and light parcels, without any attendance. The road has three rails, one above the car for carrying the current, and two below, which carry the cars. The cars are built of sheet iron, and are two feet square and twenty-one feet long. Speed will be regulated and power or brakes applied by electricity, solely. If the experiment at Laurel succeeds, it is stated that similar roads will be laid between Baltimore and Washington, and elsewhere. — *Popular Science News.*

THE ELECTRIC LIGHT. — Among the many ways in which the electric light is being made useful, we notice that the latest is its utilization in the pearl fisheries. And the call is now made for an electric globe to shine in twenty fathoms of water, for this purpose. This will undoubtedly give new impetus to this comparatively restricted industry, as the work has heretofore been confined wholly to shallow banks. In fact, this light must prove a blessed boon to all "toilers in the sea." It is also being used for the recovery of drowned bodies. The body of a boy in Winchendon, Mass., was lately recovered in this way. It may yet do good work in rescuing the drowning, as well; at least we shall be glad when the electric light is included in the outfit of each of our life-saving stations up and down our entire sea-board.

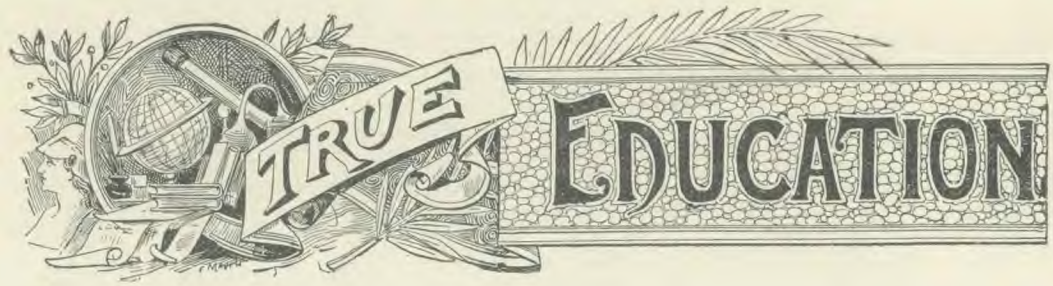
THE art of paper-making has reached a point where a growing tree may be cut down, made into paper, and turned out as a newspaper, all within thirty-six hours.

THE extraction of oil from wood is becoming an important industry in Sweden. Even the stumps and roots of trees are utilized, and subjected to methods of treatment by which, it is said, not only wood oil, but also turpentine, creosote, acid of vinegar, charcoal, and tar are produced.



PUZZLES IN PAPER.

TAKE three strips of paper, and paste the ends together so as to form a ring. Then cut around the center, as shown by the dotted lines. The first strip will separate into two equal-sized, separate rings; the second will form one large ring; while the third will be cut into two rings, linked together. The explanation of this pretty and simple trick lies in the preparation of the original rings. No. 1 is made by joining together the two ends of a strip of paper. In No. 2, the strip is twisted *once*, and in No. 3, *twice*, before joining the ends. It is better to make the rings much larger than those shown in the engraving, as the twisting of the paper is not then so evident.



EDUCATION.

BY MRS. E. G. WHITE.

THE apostle Peter presents the necessity of making constant progress, — of continually adding heavenly graces to our character. He says, "Add to your faith virtue; and to virtue knowledge; and to knowledge temperance; and to temperance patience; and to patience godliness; and to godliness brotherly kindness; and to brotherly kindness charity."

The education spoken of in these words is of a fundamental character, and should underlie all the intellectual training of the schools. The home above all other places is where this work should go on. It should be a model school for the children. The words and acts of the parents are the most potent of educating influences, for they will surely be reflected in the character and conduct of the children. Both by precept and example, parents should guide the little ones during their earliest youth, ever seeking to present before them a character worthy of their imitation.

Parents should feel their responsibility before God to cultivate the physical, mental, and moral powers of their children. They should unitedly take up the work that devolves upon them, with a just appreciation of the true principles of education. In view of a trust so sacred, they should study to become masters of the art of education, that they may properly discipline their children from babyhood to childhood, and from childhood to manhood, thus fitting them to take their respective places in society with sufficient moral power to choose the good and to refuse the evil.

The first knowledge that the child receives, makes a more lasting impression on his mind than the knowledge obtained in more advanced years; therefore it has a greater influence in the formation of his character than the education of later life. This knowledge is received around the fireside at home, and it should be of such a nature that it will give the right mold to the character. It is in the family circle that the mother should begin the work of educating her children, that they may form a character which will prepare them for usefulness in this life, and for the enjoyment of the future, immortal life. The mother should be queen of her home. She should exert a positive and potent influence over the members of her household. The work committed to her hand is a work of sacred importance; and if she would do it acceptably to God, she must be a learner in the school of Christ, as well as a teacher in her home. It is necessary for her to learn self-control, if she would teach her children self-control. She should strictly guard herself lest she betray her sacred trust. Through her own choice she has entered her field of labor, and taken upon herself responsibilities for the discharge of which she is accountable to God. She will have to answer for her influence upon her children. She will have to meet the question whether she has, in the fear of God, done all she could to establish them in right principles of life and in right habits of conduct.

Says the word of God, "The fear of the Lord is the beginning of wisdom." If you desire that your children should be refined in manners, noble in character, pure in heart, and elevated in mind, you must teach them the fear of the Lord. The best method for acquiring the mold of character which our heavenly Father can approve, must be employed if success is to be attained. The parents' words should be select, well-chosen. No impure word, no common, coarse expression, should escape the lips of father or mother. While you should not be severe, stern, and set, in dealing with your children, you should be decided, firm, and patient, learning from day to day to exhibit that perfection of character which you desire to see in them.

If parents are cold and unsympathetic, the same spirit of indifference will be begotten in the children. Let the parents manifest tender love to their little ones; treat them with kindness; and when

they have done well, commend them. Seek opportunities to give words of encouragement and endearment. Let parents regard their children as precious jewels intrusted to their care by the heavenly Father, — jewels that are to be rendered back with all the roughness and coarseness removed, shaped and polished for the heavenly setting.

When Christ prayed in behalf of his disciples, he said, "I sanctify myself, that they also may be sanctified." This is the very thing that parents should do. They should consecrate themselves entirely to God, that their powers of mind and heart may reach a high order of excellence, and be efficient in the highest forms of usefulness. As Christ has given parents a perfect example in his life and character, so the latter should seek to give their children an example of what they should be in spirit and deportment. As fathers and mothers take up their duties with this purpose, they will constantly make advancement themselves; becoming better qualified for their God-given work.

SELF EDUCATION: HOW TO GET IT.

WHAT can a busy man or woman do to keep the results of his school education, and carry on the process still further? In school, we acquire either facts or principles; in life, we must learn how to apply those facts and principles in practical affairs, or they are useless both to us and to others. How, in a busy life, can we get knowledge and apply knowledge? — By observation. Life is all the time talking to us. He will be always learning who keeps his eyes and ears open. Some men are too busy, others too lazy, and still others too self-conceited to hear what life has to teach them. We have two eyes, two ears, and two nostrils to acquire information, and one tongue with which to give it. He is a wise man who understands the proportion which this fact indicates, and devotes six times as much energy to filling up as to giving out.

Good companions are great teachers. The living teacher is better than the dead one. Every man knows something better than you know it, and will be willing to tell you if you are willing to listen to the telling. Most men like to impart knowledge; but there is a choice of teachers — that is, of companions. The wise man will pick out companions wiser than himself. He will seek companionship that is educative and stimulating, not merely that which is alluring and enjoyable. The advantage of school or college is largely the advantage of intellectual companionship.

In the long run, companions mold character. A man is made as well as known by the companions he keeps. He who lives with pigs will learn to wallow; he who lives with birds will learn to fly. The graduate of the billiard-room or bowling-alley or pool-room learns nothing in its companionship. Do not ask, Will this do me any harm? Ask, Will it do me any good? The companionship of much of what we call "society" is little or no better. Small-talk is the smallest of all microscopic subjects — a Sahara of sand to a grain of gold. The best place to find companionship ought to be home. The first duty of the father and the mother is to furnish helpful companionship in the home. But there are many homeless people, and many homes that are not educative, and no homes that can furnish all the education that our sons and daughters need. Where shall we spend our evenings? If there is no literary life in the village, set some literary life a-going. Find at least one companion who will read with you; then a second; these are enough to make a sympathetic circle.

Reading is an educator; whether it is a good or a bad educator, depends on what you read. Read good literature. No man in this year of our grace, who lives in America, needs to be without a good library. The best books are within the reach of the most meager purse. You can get a good companion for as little cost as a good cigar. Your trouble is perhaps not want of money, but want of time. No! We all have time enough to learn, if we have wisdom enough to use the fragments of our time. Henry Ward Beecher used to read between the courses at the dinner-table, and when he got interested in his book, would take it for his dessert. Hugh Miller lay prone before the fire studying while his companions were whiling away the time in idle jest and stories. Schliemann, as a boy, standing in queue at the post-office and waiting his turn for letters, utilized the time by studying Greek from a little pocket grammar in his hand. He is a wise economist who does not waste more than half an hour a day in idle gossip, useless conversation, frivolous amusement, or mere vacuity. Half an hour a day is three hours a week, a hundred and fifty in a year, twenty working days net! The man who uses his fragments of time has nearly one month more in the year than his neighbor who is wasteful of the precious commodity. — *Laicus, in the Christian Union.*

A FEW WORDS TO MOTHERS.

BY MRS. E. E. KELLOGG.

THE engineer who would attempt to run a train filled with human beings, over a road beset with danger, without a thorough knowledge of the perilous points, and a full understanding of how he must guide his engine, either to avoid or pass over them in safety, would be condemned at once by every one, not only as utterly unworthy the trust reposed in him, but as guilty of inexcusable sin in thus jeopardizing human lives, — inexcusable, because if he takes upon himself such a trust, he has no right to remain in ignorance of anything which it is in his power to learn respecting the precautions necessary to insure a safe journey.

If a knowledge of the dangers which surround his way is so necessary to the engineer into whose care is intrusted simply the bodily safety of human beings for only a few short hours, how much greater importance attaches to a knowledge of the pitfalls and dangers which beset life's pathway, for all mothers to whose care and guidance is intrusted not only the physical, but the mental and moral welfare of children for a score of years. It may be true that ignorance is sometimes bliss, but in this case, at least, the results of ignorance are anything but blissful.

In a very great degree the mothers of men and women are responsible for their vices or virtues. Alas that the holy office of motherhood should ever through thoughtlessness or ignorance be robbed of its sacredness, and held of less account than housework, dress, society, the accumulation of wealth or the love of ease! No woman has any right to assume the responsibilities of wifehood and motherhood who does not realize in its fullest sense, the extent of these responsibilities and realizing it, does not do all in her power to fit herself for them.

The evils which influence our children for vice are everywhere prevalent. There are hundreds of different avenues by which they may reach even the most sheltered homes of our land. Mothers cannot afford to ignore these perils. It is blindness to danger that invites moral disasters. As has been aptly said, "Much as parents may desire it, they cannot bring up their children packed in cotton wool, safely stowed away in bandboxes, labeled, 'This side up.'" Whether we will or not, we must face the fact that our little ones, like ourselves, have corrupt, fallen natures, and it depends to a great extent on the training given in the home as to which element shall predominate, — that which is evil and corrupt, or that which is pure and noble.

Many mothers are apt to look upon the subject of impurity as one which in no way concerns their children of tender years, and so neglect to guard them in this particular until the weeds of impurity are firmly rooted in their young hearts. It is easy to see the weeds when they have grown and are putting forth leaves and branches, but then it is too late; the roots are firmly grounded; and labor with what zeal we will to tear them out, there is always danger that some rootlet will remain to spring up again where least expected. The only sure way is to prevent the mischief-making seeds from germinating. The susceptible years of childhood furnish a fertile soil for the reception of evil. Impressions received by a child before its seventh year have more to do with the formation of its character than those received at any other period of its existence. Then watch with the greatest vigilance the dear little ones, lest while we are asleep to duty, feeling they are safe because they are so young, the enemy shall come and sow tares and weeds in their hearts.

There can be no question that impure personal habits begun during early childhood are often the one great influence that draws our children into the vortex of social impurity in after years. It is difficult for mothers to believe that children of such tender age could possibly become addicted to vile habits; but those who have had experience in the matter tell us that sometimes accidentally, often through the viciousness of nurses, frequently through the example of corrupt companions, very small children acquire impure habits which the work of years cannot overcome.

The only sure remedy is prevention. Never intrust

your child to the care or companionship of those whom you do not know to be pure. Instantly correct a child for any act, however innocent in itself, which might result in evil, just as you would if it insisted upon playing on the railroad track in the presence of an on-coming train. As a safeguard against vice, teach the little one from earliest infancy, correct physical habits, especially in regard to sleeping and eating. "The hand-maid of chastity is nature's great restorer, peaceful, unbroken slumber for childhood and youth." Any source of indigestion, too much or too little exercise, cold feet, or other exciting cause of sleeplessness, should be zealously guarded against. The diet of children should be most rigidly looked after. Children allowed to eat at all hours, to partake of rich and highly seasoned foods, sweetmeats and dainties, to use tea and coffee and strong condiments, to overeat, are thus taught self-gratification rather than self-control, and are almost helplessly placed under the dominion of their lower natures.

Abundant exercise is an especially important aid to purity, and the value of wholesome occupation at all times can hardly be over-estimated. The mind will be occupied with something, and the old adage that "Satan finds some mischief for idle hands to do," is an ever true one. Herein lies one the greatest secrets of the prevention of evil, — the keeping of the little ones properly occupied in both mind and body. To do this will require much outlay of time and thought, and much sacrifice of ease and pleasure, on the part of mothers; but nothing should be allowed to stand in the balance against the purity of one's children. Remember that they are like wax to receive impressions, and like marble to retain them. Have something fresh and interesting always ready with which to satisfy the keen appetites of their unfolding intellects. Teach them about stones and flowers, about insects and birds, and read to them about great and useful men and women. Strive to interest them in whatever will inspire in them aspirations for what is good and pure. If the circumstances which surround them are such that there is any likelihood of their being led into evil through the example of others, fortify them against it by warning them of its inevitable consequences.

Guard the associations of your little ones even more carefully than those of older growth. Never allow them in their play to wander out of your sight and hearing in company with some neighbor's child; and do not, to get rid of their noise, banish them to the shed or some room by themselves, where they, unobserved, will feel at liberty to carry out any impulse for evil which may spring up in their minds. If little friends come to visit them, superintend their plays, show them new games, and help them to keep their minds so full of enjoyable thoughts that they will have no time to think of anything wrong. Let them see that you enjoy their guests, and they will soon come to feel that a visit from a friend without mamma to share it will be a great loss of pleasure.

I doubt not much of the feeling which so commonly exists among young people, that to really enjoy the society of their own or the opposite sex they must needs pursue their acquaintance in some room by themselves, on the streets, — anywhere except in the presence of their parents, — grows out of allowing them when yet children to feel that a visit is their own especial pleasure, in which mamma has no share. Aside from this influence, one cannot estimate the value to a child of being under its mother's supervision during its social intercourse with other children. The evil impressions that may be thus thwarted from taking root in their young minds, and the reverence and respect thus fostered for their mother's advice and opinion, ought to be considered full compensation for all trouble on the part of the mother.

Two mass-meetings in the interest of social purity were recently held in Des Moines, Iowa. The citizens are becoming thoroughly aroused to the necessity of correcting the misuse of the city bill-boards, and of investigating the matter of pernicious pictures inclosed in cigarette packages, two prevalent evils which it would be well for the citizens of other places to consider.

THE legislative bodies of Nebraska are said to be reeking with moral turpitude, so much so that even during sessions of the legislature, and though lady stenographers are employed and present, the halls and lobbies are unfit places for women and children. What is said of Lincoln, may also be said of other of our State capitals. They are rendered dangerous cities for the unwary, by the influx of impure, immoral men, sent there by the people to represent their interests and to make their laws. These are the kind of men to whom we are forced to appeal for the framing of laws to protect young girls. Is it any wonder that even childhood is not safe from the clutches of vice when such men sit in judgment? God speed the time when virtue will be a qualification required of candidates for political power, and when the American people will deny their vote to any but the pure.

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

ACROSS THE ATLANTIC.

CROSSING the Atlantic in these days of floating palaces and fast mail-ships, has ceased to be the serious undertaking it was justly thought to be a score of years ago. Now, the journey is accomplished in scarcely more time than is required to cross the continent from New York to San Francisco, and with less than half the fatigue and inconvenience, provided, of course, that one does not happen to encounter a storm. It must be confessed that storms are something of a draw-back to ocean travel as a recreation, although, aside from the seasickness, even a storm affords elements of enjoyment to a landsman, which are, to a considerable degree, a compensation for the inconvenience. There is a genuine fascination in watching the huge foam-capped waves come rolling up against a great ship, dashing themselves in pieces against its sides, scattering the spray high up in the rigging, and sometimes sending a torrent along the hurricane deck. One enjoys the spectacle until his head begins to swim and his stomach threatens to revolt, and then he hurries down to his state-room, with a feeling of unutterable wretchedness, and groanings that cannot be uttered, much less put on paper.

We used to entertain the opinion that seasickness was chiefly caused by bad diet and bad air; and have not wholly renounced the notion; for certainly the malady is greatly aggravated by both the causes mentioned; but we are convinced by experience that one who has been accustomed to live and move and have his being among things with a fixed relation to the horizon, will not find the ever-shifting perpendiculars of a ship in a storm conducive either to levelness of head or equanimity of stomach. The horrible *mal de mer* is no respecter of persons, but remorselessly levels alike rich and poor, old and young, man and beast, hygienic and unhygienic, and without any reference to preconceived opinions. The good stewardess assured us that after our three days in bed, tasting not a morsel, and yet doing homage to Neptune with all the faithfulness of a devout worshiper, we should feel much better; but we did n't. It may be a good thing for the average gormand to turn his stomach wrong-side-out twenty times a day for half a week; at any rate, the opportunity to take an inventory of what he has imposed upon that most useful domestic servant may give him food for profitable reflection. But it did not help our case in either manner. There was a grim sort of satisfaction in being able to look one's stomach squarely in the face without remorse of conscience; for it is almost beyond our recollection since we ate anything we should be ashamed to face; but it was most exasperating to us, after having for years treated our stomach in the most humane and esthetic manner, that it should with so slight a pretext set up such hideous antics, upsetting and shaking itself in a horrible manner, turning somersaults and trying to get away from its rightful owner, emptying itself of more than it could hold, a score of times, as though trying to purge itself of some abominable dietetic mess, when it had seen nothing of the sort for a quarter of a century, at least. It seemed base ingratitude; a plain case of assault and battery without provocation or a single mitigating circumstance. We felt hurt; and we have n't gotten over it yet. It did not do us a particle of good. Seasickness may be a good medicine for those whose stomachs need that sort of a house-cleaning, but it was the wrong kind of medicine for our case.

In spite of seasickness, however, we reached Liverpool in pretty good condition, on Thursday, March 28, eight days after sailing, our good ship, the *City of New York*, having been delayed more than a day by the storm and head-winds of the first three days of the voyage. Stopping in Liverpool only long enough to make a hasty call or two on friends, we came at once

to Birmingham, the Mecca of our present pilgrimage, and where we are to remain for a few weeks, engaged in special medical studies, which can be carried on here more satisfactorily than at any other place in the world. Until within a few years, Birmingham was famous only for its iron industries, and was scarcely heard of in medical centers; but the marvelous successes of Prof. Lawson Tait in certain lines of surgery, have given this English city of insignificant size when compared with the millions of London, a fame which no mere mechanical industry could ever have done. Patients flock to the clinic of Dr. Tait from all parts of the world, bringing with them enormous internal tumors of every description, and go away fifty or more pounds lighter in weight, and twice as many pounds lighter in pocket-book, and leaving a fine specimen in the hospital museum. Dr. Tait apparently thinks no more of removing a tumor from a man's liver or the inside of his stomach than other surgeons do of puncturing a boil or taking off a wen. He operates almost daily upon cases which have been given up to die by skillful surgeons elsewhere; and the extraordinary thing is that of these bad cases who come here as a *dernier* resort, nineteen out of twenty get well. The doctor has recently published a *resume* of his second list of one thousand cases in which he has removed tumors from the abdominal cavity, opening the abdomen in the operation, and is able to report recovery in ninety-five per cent of all his cases. Of the two thousand cases upon which he has operated, the average death-rate is less than six per cent.

Through the courtesy of Dr. Tait, who makes no secret of the methods by which he attains such remarkable success in these hitherto hopeless cases, many of them so at least, we are to spend a few weeks with him to gain an insight into his modes of operating and treating patients of this class. In the meantime, we shall not forget the interests we have left behind, which we are glad to say are in good hands, and, we feel assured, will not suffer by our brief absence. We hope to find time while here to make some studies in hygiene among the peasantry of this country, which may be of interest to our readers.

JAPANESE WELLS.

THE Japanese boast of what they consider their superiority over the civilization of the West in many things, and doubtless with some justice; but however true may be their claims to superior excellence in some matters, they cannot claim any special advantages for their wells. Indeed, the Japanese well seems to be marvelously like our American wells, neither better nor worse. A professor of sanitary science in the University of Tokio, describes in the *Annals of Hygiene* some of the insanitary things which he finds in Japan, and, among others, the wells and their surroundings. The description is profitable reading, because it will serve to bring prominently before the mind a condition of things which may be found in connection with almost any American home, the chief difference being that the Japanese puts his cess-pool in front of his house, the American behind: —

"Round, or at least in front of, every Japanese house is an open ditch of stone or wood, into which all sewage, except actual manure, is poured; and, indeed, a great deal of the refuse of the nature which, in England, is *supposed* to be burned in the kitchen fire, but which generally finds its way into the ash-bin.

"The ditches are frequently roughly covered with boards, but it will be readily understood by those who know anything of sanitary matters, that this is no protection against the gas emanations which, once generated, are certain to find their way into open air. The ditches are, as a rule, quite close to the houses; in a few cases I have seen them actually passing inside. The main ditches in the larger towns are naturally very large. In Tokio they are canals rather than ditches (taking size only into consideration). It is to be borne in mind that the towns in Japan are not mere villages. Tokio is a city of more than one million inhabitants, and is spread over an area nearly as large as that of London.

"The stagnant sewage in the ditches, of course, contaminates the atmosphere; but this is a minor evil. The ditches are not water-tight, and the sewage soaks into the ground. In fact, the soil of all the more thickly packed parts of Japanese towns must be quite sewage saturated, and from this soil the *water for all purposes is generally taken in shallow wells.* I conceive this to be a greater evil than the mere atmospheric contamination. These wells are commonly constructed in a manner differing from anything that I have seen anywhere else.

"They are made of what I may call wooden tubes, sunk in the ground. These tubes are of large diameter, some three or four feet, and cooper-made, of thick wood. The method of raising the water is by a rope running over a pulley. There is a bucket at each end of the rope. Where the wells are very

shallow, it is common to erect a long wooden lever over them. To one end of this is suspended the bucket; to the other a counter-weight. The wooden sides of the well are supposed to be water-tight, and I have no doubt that, but in the case of very old wells, they are, as Japanese cooper-work is of the very highest excellence. Of course, when this is the case, the water rises from the bottom of the well only, and, although this is at no great depth, doubtless a less contaminated fluid is obtained than if it were allowed to flow in from the sides, filtered sewage, merely.

"The Japanese well is not an unpicturesque object. In some small towns, where there are not wells enough, the sight at each of them in the morning is very pretty. From each house there comes a water-carrier, generally one of the girls of the family, and they congregate about the well, waiting their turn, chattering, gossiping, and laughing with the never failing good nature which characterizes the Japanese, especially the womenkind."

INFECTIOUS GERMS.

THE following timely paragraphs we clip from the *Sanitary Era*. We hope that the season just begun may abound in precautionary measures beyond that of any preceding one, and that individuals may co-operate with sanitary boards in supplying the needful "ounce of prevention:" —

"Nine-tenths of all diseases, if not all, are caused by specific low organisms. Among those which we have already isolated distinctly are the bacillus of consumption, typhoid fever, yellow fever, lock-jaw, pneumonia, cholera, dysentery, plague, etc. There is a great difference between these different bacilli, just as there is between large animals. A fence which will be perfectly safe against cattle may prove of no account against dogs; and where cattle may grow we may not be able to raise elephants. Similar differences exist also between those bacilli.

"All of these germs of diseases require moisture for their plantation and growth. They are not killed by dryness; they only do not develop. A well-authenticated case is on record where the plague, which we have now hardly any reason to doubt is caused by a bacillus, broke out in a town in Germany 200 years after the last plague had been there, — and while no cases of plague were within 1,000 miles, — after the tearing down of an old house, in the masonry of which a mummy was found that had been cemented in. From records it was evidently the corpse of a person who had died 200 years before of the plague. This shows the wonderful tenacity of these microbes. The whole medical science has been revolutionized by their discovery.

"Uncleanliness is now much better understood as being the factor in spreading diseases. Virchow examined the nails of school children, and underneath them he found, with particles of dirt, eggs of all the intestinal parasitical worms, and bacilli, which, of course, would be eaten by the children with their daily bread."

Mr. Smart. — Let me carry that dog, my dear, and you carry the baby.

Mrs. Smart. — No, no! You carry the baby. I couldn't trust you with Zip. You might drop him.

WAS N'T TO BE INSPECTED. — A humorous incident is told of the work of women on the New York City school-board. A janitor of one of the schools came last week with a complaint to the principal. He said that he had been janitor of that building for nineteen years, and no one had ever asked to see the basement until one of the women of the school-board came, recently, and said she wanted to make an examination. "And that basement was n't in a fit condition for any one to see," he added plaintively.

THE SENSE OF SMELL. — Perhaps none of the senses are less understood or appreciated than the delightful pleasure-giving sense of the olfactory nerves. By this delicate nerve we are made conscious of the delicious ever-present natural odors of the pure atmosphere, on which the existence of life is absolutely dependent, from the almost imperceptible odor of pure air to the delightful perfume of fragrant flowers. Many flowers are said to be odorless, but there are persons with so fine a sense that they never smell a blossom in which they cannot detect some odor.

The sense of smell should be carefully guarded all through life as a most precious natural gift, for while from it we derive most exquisite pleasure, it is also given to be a shield with which to ward off disease and danger. Those who have a keen perception of unwholesome odors cannot sit quietly in a badly ventilated room, or a crowded street-car, whose gases poison the whole system while being inhaled through the lungs. Fortunate is it for us that this vigorous and tireless sense is constantly on the alert against sewer-gas and decomposing matter.

DR. EDWARD SMITH, in his work on "Foods," states that as the result of imbibing a decoction made from two ounces of coffee, himself and his assistant were made insensible for three hours.

A CASE was recently reported in which a lady became insane through the use of cigarettes. She had been a sufferer from hay-fever, and sought relief by smoking cubeb cigarettes. Afterwards she grew very fond of tobacco cigarettes, and actually smoked herself insane.

NAPHTHA DRINKING. — Boston girls seem to be given to the invention of new modes of intoxication. Recently a couple of servant girls were arrested for being drunk and disorderly. An examination showed that they became drunk by tea-eating. It is now reported that girls employed in the rubber factories are in the habit of producing intoxication by the inhalation of the fumes of naphtha, which is used in large quantities in cleansing the rubber. The manufacturers are obliged to keep it under lock and key to prevent their employees from becoming demoralized.

HEART WORK. — The heart, in its incessant activity, is one of the most wonderful organs of the body. Although muscular in its structure, and hence requiring rest, as do the other muscles, it manages to get the needed relief in small installments, taking a short rest after each beat, before another one. The amount of work done by the heart differs in different persons and different classes of animals. In lower animals, the range is from twenty-five to forty-five in the cold-blooded, and fifty and upward in the warm-blooded, except in the case of a horse, which has a very slow heart beat, only forty strokes a minute. The pulsations of men and all animals differ with the sea-level also. The work of a healthy human heart has been shown to equal the raising of five tons four hundred weight, one foot per hour, or one hundred and twenty-five tons in twenty-four hours. The excess of this work under alcohol in varying quantities, is often very great.

A curious calculation has been made by Dr. Richardson, giving the work of the heart in mileage: Presuming that the blood was thrown out of the heart at each pulsation in the proportion of sixty-nine strokes per minute, and at the assumed force of nine feet, the mileage of the blood through the body might be taken at 207 yards per minute, 7 miles per hour, 168 miles per day, 61,320 miles per year, or 5,150,880 miles in a life-time of eighty-four years. The number of beats of the heart in the same long life, would reach the grand total of 2,869,776,000.

OATMEAL. — The various opinions regarding oatmeal are, to say the least, amusing. No sooner was it reported to be a healthful food, than some declared it produced dyspepsia. Both are true, without doubt, under certain conditions; for if taken with sugar and cream into a delicate stomach, it will often produce acidity and indigestion. So, too, if eaten in a partially cooked condition. But, of course, we get the same effect from the sweets as if eaten in connection with anything else; and almost any stomach will protest in one way or another against half-cooked food. Then let us do the oatmeal simple justice. It is not that which makes the trouble. Carefully cooked, carefully prepared, and eaten in proper quantities, it is, without any sort of doubt, most agreeable, healthful, and nutritious.

FASHIONABLE EXERCISE. — Laziness undoubtedly kills ten persons where work kills one. The business man is worn out at forty when he ought to be in his prime, not because he has done so much work, but because he has so much neglected muscular work. Good muscles are as necessary for good brain work as they are for digging canals or building railroads. Nerve tone depends on purity of blood, which is only to be secured by a proper amount of daily exercise. Many a man has lost his health by striking an oil-well or a gas-well or some other source of sudden wealth. When he was a laboring man, and earned his bread by the sweat of his brow, he had a good appetite, good sleep, good digestion, and good spirits. Nightmares, neuralgias, and "blue devils" never trouble such a man. When he gets rich, and sits down in an office in an easy chair, rides to his place of business in a cushioned carriage, and imagines that he is enjoying life, he begins to prepare for himself a day of retribution which will surely come; and the punishment which will be visited upon him will not be for too much work, but for too little work. Men often worry themselves into a state of disease, but mental work as well as physical labor is in the highest degree healthful when a proper amount of muscular work is combined with it. The trouble is that the majority of mental workers seem to entertain about the same idea concerning exercise as did the Irishman in the story. While a fellow-passenger walked the deck of the ship for exercise, during a long voyage across the Atlantic, an Irishman, also a passenger, lay flat on his back, looking straight at the mast-head. When admonished that he should take some exercise, he replied, "But where's the need of exercise? Does n't the captain say the ship is carrying us two hundred miles a day? Sure, that's exercise enough for any one."

For Hiccough. — Take rapid, deep inspiration. The expiration should be slow and prolonged.

Weak Heart. — All kinds of exercise strengthen the heart, — singing, deep breathing, walking, rowing, mountain climbing, etc.

For Ivy Poison. — Hot water, as hot as it can be borne, is very strongly recommended for relief from the poison of ivy.

Wens. — What is ordinarily termed a wen is a cystic growth formed in the skin from the obstruction of a gland in some way. The secretion accumulates more and more in the obstructed gland, and so the wen grows. Wens are easily removed by a surgical operation; but it does no good simply to cut into one; the entire sac and its lining must be removed.

Sick and Nervous Headaches. — Very few people care to admit that they have sick headache, so they call everything of the sort "nervous headaches." Sick headaches have come to be significant of big dinners and gormandizing. There is this difference between the two: a nervous headache is always a one-sided headache; at any rate it usually begins in one side, in the eye or forehead, but very frequently extends to the other side. It is usually caused from weak digestion and a bad stomach. In sick headache there is a mass of food in the stomach which has set up decay and fermentation, and has thus caused acute catarrh of the stomach. In both cases, prevention is better than cure. For sick headache, stop overloading the stomach and eating improper food. For nervous headache, begin treatment as soon as you feel it coming on. Go to bed; shut yourself up in a dark room; drink plenty of hot water; keep yourself perfectly quiet and calm, letting nothing come near to disturb you. In a little while the impending attack will pass away.

Eczema. — Eczema is catarrh of the skin very similar to catarrh of the nose. The secretion dries up, and is left in little scales upon the surface. It needs astringent treatment. In cases of chronic eczema, where there is cracking of the skin, and where the secretion dries down in little blisters so that there is a thickening of the skin, treatment with hot water, just as hot as it can be borne, from three to five times a day, is the best thing. A hot spray is better than soaking the part in hot water. The effect is to stimulate the blood-vessels so they will contract. An ointment of equal parts of zinc and tar is good. A solution of two teaspoonfuls of soda to a pint of water is another good application. When there is considerable irritation, apply the zinc ointment.

Goitre. — The cause of goitre is very obscure. It has been attributed to scrofula, to the use of hard water, to cloudy weather, and to low latitudes; yet it appears under circumstances in which none of these conditions would surely account for it. There are many cases to be found in the Swiss Alps; in fact, it is quite fashionable there, among men as well as among women, to have a large goitre, of the size of which many seem to be proud. In certain of the cantons, shut in by high mountains, where the sun shines but few hours of the day, it is found that persons with this disease improve if they are removed farther up the mountains, where it is dryer and more sunny; and a hospital has been built there for their accommodation. Goitre often begins in children not more than ten or twelve years of age, and is accompanied by a weakening of the mental powers. The use of iodine, though a popular remedy, is very uncertain; it may drive the swelling away, but it usually returns after a little. The improvement of the general health and the use of electricity are the best remedial agents known. A goitre which has become very hard and firm cannot be cured except by a somewhat dangerous surgical operation.

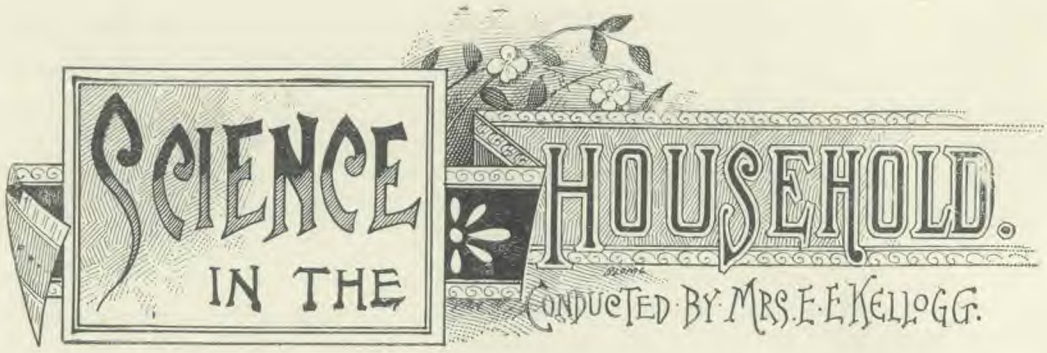
Liver Spots. — The liver is rarely responsible for the dark stains appearing on the face and the body, and which are generally attributed to it. The proper name for these is chloasma. They are due to a large amount of pigment. If the dye extends clear through the skin, there is no getting rid of the spots short of a surgical operation.

Tender Feet. — When feet are tender and painful after long walking or standing, great relief can be had by bathing them in salt and water, a handful of salt to a gallon of water. Have the water as hot as can be comfortably borne ; immerse the feet, and throw water up over the knees with the hands. When the water grows cool, rub feet and limbs briskly with a dry towel.

Hot and Cold Applications for Headache. — It is something very curious that heat and cold may be used interchangeably with like effects. Extreme heat will destroy the skin ; so will extreme cold. Hot applications are stimulating to the circulation, and for some kinds of headache will give immediate relief. If cold applications are more agreeable, then these are probably what are needed. In general, a throbbing headache, with tenderness and soreness of the scalp, can best be relieved by hot applications. Where one is suffering with a bursting pain in the head, as if the brain had not room enough, it is best relieved by cold applications to the head, with heat to the spine and shoulders.

Catarrh of the Stomach. — The symptoms of catarrh of the stomach are the presence of mucus, a heaviness or a feeling as if there was a load on the stomach. The stomach is often much distended, and is found on examination to occupy a much larger area than is natural. Sometimes the disease has so progressed that the stomach is little more than a loose pouch, and food is acted upon in it about as much as it would be were it put in the patient's pocket. In this disease a small quantity of food produces a large quantity of gas, and thus stretches and stretches the stomach. We may consider the stomach in very much the same condition as is the nose in a bad case of nasal catarrh. The introduction of food into the stomach is like taking a fresh cold in the nose, and the only thing to do is to stop eating and give the stomach a rest. Sometimes it is necessary to wash the stomach out by means of tubes of soft rubber, which are made to act as siphons — with a fountain higher than the mouth ; and after rinsing it thoroughly with water, use a disinfectant solution just as in nasal catarrh. There are some cases in which the stomach has become so enormously large that a perfect recovery cannot be made. The best mode of treatment is to fast for a few days, and then begin on one meal a day, so as to give the stomach a long time to recover from the ill effects which follow eating. The linings of the stomach are covered with a tough, tenacious slime, and so digestion is largely prevented. Nutritive enemas are valuable; and it is a good plan to wash out the stomach with hot water. Milk and farinaceous foods are the best, though many are unable to take fluids on account of slow absorption. For such, dry food is better.

Acid Dyspepsia. — It is very easy to correct the acidity by neutralizing it with an alkali — a little soda, for example ; but the object is to cure the patient, and the patient is the stomach in this case. Acidity is caused by the presence of microbes of precisely the same sort as those which spoil milk and make bread sour. Then for treatment, nothing should be put into the stomach that is likely to sour. If one should add sugar or molasses, a piece of rich wedding-cake, old cheese, a can of preserves, or any other perishable compound, to a pan of milk, how long before it would sour? Yet people put such trash into their stomachs, and then expect them to keep serenely sweet. Sweet things are particularly likely to produce a sour stomach, while acid things, with the exception of pickles, have a tendency to sweeten it, popular belief to the contrary. Some will say that they are obliged to eat a great deal of sugar with acid fruits, in order to keep the stomach from souring ; but the addition of sugar does not neutralize the acid. Chemists prove that from a chemical stand-point, sugar is as much an acid as is fruit. An acid is any substance which will combine with an alkali. Sugar will combine with lime, and make saccharate of lime. In making biscuit, the housewife does not combine acid sour milk with vinegar, but uses soda. Sugar added to acid fruit disguises the acid from the palate, but not from the stomach. No food hard to digest should be eaten by one troubled with acid dyspepsia. If so, it remains in the stomach a long time, until that organ is worn out, and gastric juice being deficient, the microbes which are present go actively to work, and set up a ferment. Putting a fresh meal into such a stomach is like straining new milk into a pan from which sour milk has just been emptied, and which has not been cleansed. Too much of even the best food should be avoided. The stomach may make gastric juice enough for a moderate quantity, but not for a large quantity.



SEASONABLE BILLS OF FARE.

BREAKFAST.

California Oranges. Steamed Figs.

Rolled Oats.

Currant Gems. Graham Crisps.

Boiled Macaroni.

Radishes. Tomato Toast.

DINNER.

Tomato and Macaroni Soup.

Baked Potato. Spinach.

Canned Green Peas.

Orange Rice. Almonds.

GRAHAM CRISPS. — Into a cup of ice-cold water stir graham flour enough to knead. Stir in slowly, incorporating as much air as possible. A little sugar may be added if desired. Roll as thin as brown paper, bake in sheets in well-floured tins. Watch, and turn often, and bake until both sides are of a light, even brown. Break into irregular pieces, and serve.

BOILED MACARONI. — Break the macaroni into pieces about an inch in length, put into boiling water, and boil until tender. Drain thoroughly, add a pint of rich milk (part cream), one well-beaten egg, salt to taste, and stir over the fire until it thickens. Serve hot.

ORANGE RICE. — Steam a cup full of rice in milk, slightly sweetened. Prepare some oranges by separating into sections and cutting each section in halves, removing the seeds and all the white portion. Cover the oranges with sugar, and let them stand while the rice is cooking. Serve a portion of the orange on each saucerful of rice.

UNFERMENTED BREAD.

Abridged from Report of Lecture given before the Sanitarium School of Domestic Economy, by Mrs. E. E. Kellogg.

THE earliest forms of bread were made without fermentation. The grain was broken as fine as possible, by pounding it in a mill or grinding it between two stones. It was then mixed with water, and baked in some convenient way. The passover, or unleavened, bread was prepared in this way. An ancient custom of baking bread was to plaster it upon a mold very much in the shape of a pitcher, the fire being inside; when it was baked, it was broken off in flakes.

Unfermented bread made from barley and oats in certain proportions is very largely used by the peasants of Ireland and Scotland. In Sweden, bread is made mostly of rye, and flavored with anise seed, the dough being rolled into large, flat, round cakes, with a small hole in one side, which, when baked, are strung up in the kitchen to keep. The black "*Brod*" so frequently mentioned by tourists as being used by the German peasants, is made from unbolted wheat and rye. The Mexican women make their bread of corn, which they grind in a rude mill, mixing it into dough with water. This they throw from one hand to the other until it is flattened out into thin cakes. It is then placed on a flat stone over a fire, and baked.

Unquestionably, unleavened bread made from the whole wheat or other grain, in some simple way, and properly baked, is the most wholesome of all breads. We preserve the nutritive properties of the wheat in this way perfectly. Of course, it is more difficult to masticate than soft bread, but that is one reason why it is more wholesome. It obliges us to take pains to chew it.

What is usually termed unfermented bread is made light by the chemical action of certain substances put into it for this purpose. When added to a batter, the

action of heat in baking causes the chemicals to act upon each other so as to liberate a gas which, as it rises and seeks to escape, raises the bread. If these chemical substances all disappeared in the gas they set free, there would be nothing harmful in their use. But, unfortunately, there is a residue left in the loaf. That left when cream of tartar and soda is used, is found to be exactly identical with Rochelle salts. Muriatic acid was once used for this purpose, but as it was found to eat holes in the baker's fingers and baking-tins, its use was abandoned.

It is very common among housewives to use soda and sour milk together. When there is an excess of soda, a portion of it remains uncombined in the loaf. This gives a yellow color and an alkaline taste to the loaf, and is very unwholesome, working mischief with the linings of the stomach. The class of substances to which soda belongs are corrosive poisons. The alkali, if properly combined with the acid, is neutralized, and the greater part of both is given off in the gas they unite to form. It is evident, however, that the acidity of sour milk must vary greatly. If a rule is adopted of one teaspoonful of soda to a given quantity of sour milk, there will often occur disproportions, and perhaps quite a large quantity of the soda will remain uncombined. It is impossible so to test the acidity of milk that we can use soda with it in the exact proportions. It is preferable, if one must use any acid and alkaline preparation at all, to use baking-powders which are exactly proportioned. But the difficulty is that baking-powders are so largely adulterated that we cannot be sure of getting anything which is reliable. Some time since, a Government chemist examined numberless baking-powders, and found among them all only one which was comparatively pure.

Baking-powders are made of bi-carbonate of soda and cream of tartar mixed with a small proportion of corn starch or rice flour. Of course we could mix the ingredients ourselves, but cream of tartar is so often adulterated that it is impossible to say what proportion of soda should be used with it. So it is better not to use them at all. We can use, instead, pure air, which is always abundant, and will answer just as well as anything else for raising unfermented bread. The air expands with the heat and causes the loaf to puff up. However, to use air successfully, it is necessary to exercise quite as much care and skill as in the making of fermented bread. You cannot make good unfermented bread without good flour, any more than you can fermented bread, and the other materials should be of the best. The milk must be good milk, and the water pure cold water. It is also just as necessary that the oven be of the proper temperature, and the time of baking carefully watched.

Some people think that unfermented bread is very difficult to make; but with practice it becomes quite as easy as any other, and certainly takes less time. The lightness of the bread depends upon the amount of air contained in it; consequently it must be made with dispatch; the oven must be in proper condition, and the material put together as speedily as possible, and then baked quickly. The oven should be hot enough to form a crust over the top, bottom, and sides before the air can escape; otherwise the bread will fall. It should be so hot that you cannot hold your hand in it comfortably while you count twenty.

If you drop soot on the carpet at stove-moving time, cover it thickly with salt, and it may be swept up without blackening the carpet.

From this bit of domestic experience of Mrs. Jane Carlyle, wife of the English essayist, we do not wonder that Carlyle contracted dyspepsia early in life: —

"My father was very anxious for a boy. He was disappointed that I was born a girl. However, he brought me up as much as possible as a boy. I was taught as a boy. When my mother remonstrated he would say, 'At eighteen I will hand her over to you, and you can teach her all a girl ought to know.' But Carlyle came, and it was forgotten. I did not know how to tack on a button when I got married, but I could write Latin. When we got married he took me to a farm-house, far from the busy haunts of men. A strapping, red-armed wench waited on us. 'It is market-day to-day,' said she to me one day, bobbing in an uncouth courtesy. 'I am going to market; what meat shall I get?' I was reading at the time. 'O, anything you like,' was my reply. 'No, ma'am, not as I like, as you like.' Well, we decided on something. But the cooking was execrable. Day after day our dinner was uneatable. 'My dear,' said Carlyle gravely to me at length, 'I am a philosopher, but I must have butcher's meat properly cooked for dinner.' I had a good cry after that. Then getting a cookery book I shut myself with my pots and pans, and soon mastered the details of practical cookery. In the same way with sewing. Carlyle was away from home, and I made him a waistcoat. It fitted him perfectly. I was very proud of it. 'You want praise for it,' said he, 'but this is only what every woman ought to be able to do. You do not want praise for doing your duty.' But I did, though. Now I am happy to say I can bake bread, cook a dinner, or make a shirt with any one."

QUESTION BOX.

[All questions must be accompanied by the full name and address of the writer, as it is often necessary to address by letter the person asking the question.]

SHORTNESS OF BREATH. — Mrs. E. L., Nebraska, complains of an occasional shortness of breath, accompanied by pain through the region of the heart, and wishes to know the cause of the trouble.

Ans. — It is probably due to a disturbed action of the heart, which very likely depends upon some form of indigestion.

REMEDY FOR POISONING. — S. B. H., Kansas, inquires, "What will kill the poison caused by the poison vine, Rhus Radicans?"

Ans. — The best remedy known at the present time is the fluid extract grendilla robusta. It should be applied freely to the affected surface by means of cloths wet in the extract.

CATARRH. — L. G., District of Columbia, asks for a prescription for nasal catarrh.

Ans. — It is very difficult to prescribe satisfactorily for a case of this kind without personal examination. For this case, however, we suggest the use of listerine, in the proportion of one ounce to a pint of water. Apply with an atomizer two or three times a day.

WHEAT CHARCOAL FOR HEART-BURN — DIET FOR DYSPEPSIA, ETC. — C. F. A., Iowa, inquires as follows: —

"1. Is wheat healthful to use as a remedy for heart-burn, when burned until it has a strong taste? 2. Is oatmeal a good diet for one who is troubled with acid dyspepsia? 3. What diet do you recommend for acid dyspepsia? 4. Is warm water as beneficial as cold, to be taken as a drink?"

Ans. — 1. No. 2. No. 3. A diet of rather dry, hard food, requiring mastication, with a moderate allowance of such foods as graham grits, milk, cream, fruits cooked without sugar, etc. 4. Yes.

GUM FOR SLOW DIGESTION — CAUSE OF LEANNESS. — F. M. T., Illinois, inquires as follows: —

"1. Is the practice of using white parraffine gum for five or ten minutes after each meal, beneficial, as increasing the flow of saliva? 2. What is the cause of leanness in a person who daily diets on oatmeal, coffee, graham bread, rich meat-stew, and chops, and who exercises some each day?"

Ans. — 1. A person suffering from slow digestion may derive slight benefit by chewing gum for a short time after each meal, swallowing the saliva; but it is much better to chew the food more thoroughly while eating. Chewing gum is not a good substitute for thorough mastication. 2. Leanness is usually due to some wasting disease, or to an inactive liver. In the case referred to, we should judge the difficulty to be torpid liver. The digestion of the chief fat-making elements of food is completed by the liver. When the liver does not do its work, leanness is the result.

A CALIFORNIA correspondent inquires respecting food combinations, as follows: —

"1. Why are acid fruits and milk condemned as a bad diet? 2. What objection is there to the combination of acid fruits with vegetables? 3. What principle of chemistry renders it necessary to condemn the combination of meat and milk?

Ans. — 1. Acid fruits and milk are not necessarily a bad combination. The first change which occurs in milk, after it is taken into the stomach, is coagulation. We have often found it advantageous to a patient suffering from indigestion, to coagulate milk by the use of a little lemon just before eating. This prevents the formation of hard curds in the stomach. The use of such acid fruits as cherries with milk is unwholesome, since the flesh of the cherries is very hard to digest, and on this account retains a considerable portion of the milk in the stomach until fermentation takes place. 2. Vegetables and raw fruits are likely to disagree in cases of slow digestion, for the reason that fruits naturally undergo stomach digestion quickly, while vegetables usually remain in the stomach several hours, undergoing the proper digestive processes, although they are chiefly digested by the fluids with which they come in contact in the intestinal tract. 3. The reason for objecting to milk and meat as a perfect combination is a physiological one. Meat digests chiefly in the stomach, requiring several hours for its complete digestion. Milk is digested chiefly below the stomach, remaining in the stomach only an hour or two. When taken with meat, milk is retained in the stomach longer than it should be, and as the result, souring is likely to occur. The fundamental principle of harmonious digestion is to take such foods as will be digested together, and will occupy about the same length of time in the digestive apparatus. There is no chemical objection to the combination of meat and milk.

LITERARY NOTICES.

"SOCIAL VICE AND NATIONAL DECAY," by Rev. Dr. W. T. Sabine, of New York, is the title of a new social purity leaflet, No. 20, of the "*Philanthropist Series.*" It is a most valuable contribution to social-purity literature, and includes an important lesson for our time and country, drawn from the historic past of older European nationalities. It should be widely circulated. Price, by mail, 20 cents a dozen, $1.00 a hundred. Address, the *Philanthropist*, P. O. Box, 2554, New York.

Demorest's Monthly Magazine for May is stored with valuable things, among them being a finely illustrated article on the African slave-trade, which is a terribly realistic description of the hardships of the poor black in his own country. There is also "Modes of Travel in Japan," beautifully illustrated, and "Ten Woman Poets of America" with their portraits, — a valuable collection, — and numerous other interesting articles, the children also not being forgotten. Altogether a good and worthy family magazine. Published by W. Jennings Demorest, New York City.

THE *Woman's World* for May has for the frontispiece a lady of the eighteenth century in transit, accompanied by an elaborate illustrated article on "Sedan Chairs," by Alan S. Cole. There are also valuable papers, "The Need for More Women Guardians of the Poor," by Caroline A. Biggs; one abounding in reminiscence of the English writer, Mrs. Opie, with portrait, by Mrs. Emma Marshall; one upon "Type-writing and Shorthand for Girls," by Mrs. A. Hetherington; and a finely illustrated one upon "The Gymnasium for Girls," by Mrs. L. Ormiston Chant. Cassell & Co., New York.

Annals of Surgery, a monthly review of surgical science and practice, and the only journal in the English language devoted exclusively to surgery. Each number contains from eighty to one hundred pages of reading matter, thus giving over one thousand large octavo pages per annum. The form and typographical character of the journal is such as to make its volumes especially adapted for preservation for future reference, thus rendering it an enduring record of contemporary surgery, and an invaluable part of the library of every working surgeon. An index of surgical progress, and a reliable guide to new publications. $5.00 a year, in advance. J. H. Chambers & Co., 914 Locust Street, St. Louis, Mo.

THE April *Missionary Review of the World* presents a rich and varied table of contents. Among the ten articles in the Literature Section we note as of special value Dr. Pierson on "Further Testimonies to Missions;" Dr. Ellinwood on "Canon Taylor's Question of Population;" Prof. Hulbert on "China Inland Mission;" Dr. Ludlow's historical paper, "Ulphilas and the Gothic Bible;" "The Distribution of Missionary Agents," by the veteran author, Storrow; Sir William Hunter's "Religion of India," and Starbuck's translations from the missionary periodicals of the world. The number as a whole sustains the high character which this *Review* has already achieved.

Published by Funk & Wagnalls, 18 & 20 Astor Place, New York. $2 per year. In clubs of ten, $1.50.

The May *Scribner* opens with a breezy article, the first of the new angler series, "The Land of the Winanishe," overflowing with picturesque cuts of a country and waters but little known to travelers. Prof. John Trobridge, of Harvard, treats "Photography" at once scientifically and exhaustively, illustrating it with photographs taken under every conceivable condition, and in every conceivable manner — a wonderful group. Eugene Schuyler contributes "Count Tolstoi Twenty Years Ago," and having had personal acquaintance with the eccentric Count, gives much fresh and unpublished material. The next in order of the "Railway Series" is an elaborate paper on "The Freight Car Service," by Theodore Voorhees, in which he explains the technics of that vast and complicated system. Charles Scribner's Sons.

THE opening paper in the May *Chautauquan*, "Physical Culture in Ancient Greece," is by Prof. J. A. Harrison, of Washington and Lee University, and is full of suggestions to modern educators. The series of articles on public questions, which forms a notable feature of the current volume, is represented in this number by an able plea for "Internal Improvements," from Franklin H. Giddings, Resident Lecturer on Political Science in Bryn Mawr College. The form of the *Chautauquan*, beginning with the first number of Vol. X., — October, 1889, — will be changed to a page six and a half by ten inches in size, and contain a greater number of pages. Hereafter the volume will begin with the October issue, and close with September, instead of July, containing twelve instead of ten numbers. In its new form the price will be $2.00 per year. In clubs of 5 or more, $1.80 each.

PUBLISHERS' PAGE.

Our readers will enjoy, we are sure, the article upon the use of narcotics in India, from the pen of Good Health's old-time friend and contributor, Rev. E. C. B. Hallam, for twenty years a resident missionary in India.

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Centennial Celebration of Washington Inauguration. — Chicago & Grand Trunk, Detroit, Grand Haven & Milwaukee, and Toledo, Saginaw & Muskegon Railways will sell cheap excursion tickets from all of their stations to New York and return April 27 and 28, good for return passage on trains leaving New York up to May 6. The rate from Battle Creek will be $20.50 for the round trip.

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Owing to the temporary absence of the Editor-in-Chief, the make-up of the present number has been left chiefly to others. It is hoped, however, that our readers will find the usual interesting variety of practical and instructive articles. The publishers have the permission of the Editor to promise a series of articles from across the Atlantic, giving his views of England and English ways of living, from the stand-point of an American sanitarian.

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We are pleased to note that the subject of ocean penny postage is being agitated. An English member of Parliament, John Henniker Heaton, will shortly visit this country, and while here will bring the subject of cheap international postage before Congress, using his influence to get it established. He thinks, and very justly too, that as both the English Government and our own have made fair profit in carrying letters long distances by rail at the penny rate (two cents of our currency), no loss could ensue to either by the proposed change.

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On the evening of April 15, through the courtesy of Prof. G. L. Henderson, late Superintendent of the Yellowstone Park, the patients of the Sanitarium were given a peep into that veritable fairy-land, by way of a descriptive lecture, given in the gymnasium. From a residence of some eight years amid the phenomena that make our national park the wonderland of America, Prof. Henderson is well qualified to speak authentically on the subject, and our readers will no doubt be glad to learn that we have the promise of an article from his pen at no distant day.

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The delightful April weather which has during the last month given no one a chance to complain of the weather-clerk, has been enjoyed immensely by the little folks of the Sanitarium Nursery and Kindergarten. An elegant out-of-door play-ground had been fitted up, and almost every day over a score of rosy-cheeked little ones may be seen sporting upon it under the watch-care of a vigilant teacher, developing their bodies with all sorts of pretty games, and fortifying themselves against the pernicious influence of a one-sided education. The promoters of this enterprise propose to give the little children who come under their care the benefit of a system of training which has proper regard for the whole individual. With the most careful mental and moral training, they undertake to combine proper physical culture. They propose to demonstrate the possibility of making of a human being a good animal, and at the same time a good man or a good woman. Many years of hard work will evidently be required to accomplish complete results; but in the meantime they feel amply repaid for the expense and effort involved, in the marvelous transformation seen as the result of even a few months of rational educational training. A visitor to the Kindergarten sometime ago declared it to be a veritable paradise for little folks, which is exactly what its managers are trying to make of it. If every child of the present generation could be brought up under such advantages as these, the next generation would have no need for either poor-houses or prisons, and hospitals and insane asylums would be almost deserted.

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Dr. Kellogg's long-promised book on "Nasal Catarrh" has at last escaped from the hands of the printers, and is already in great demand. There is probably no disease so universal as nasal catarrh, and few which resist treatment with greater obstinancy. The Doctor has paid great attention to the treatment of this class of diseases for many years, and has taken pains to familiarize himself with the methods employed by the best specialists in this and foreign countries, from which, as well as from the results of his own experience, he has culled the choicest and most practical prescriptions. These he has presented to the popular reader in a form which makes them of practical use. The work is unquestionably the most practical treatise of the kind which has issued from the press; and one of its chief merits is that no remedy is presented which has not been proved by actual experience to be successful in accomplishing that for which it is recommended. Another of the excellences of the work is the fact that it not only shows how this offensive and most disagreeable malady may be cured, but gives directions by following which one may avoid contracting the disease, and when once cured may prevent its recurrence. The popular notion that the disease is wholly due to climate, and hence is incurable or unavoidable, is shown to be a fallacy. The whole subject is treated in a lively and interesting manner, so that the reader is not wearied in the perusal of the work, but will be induced to finish it when once it is begun, for the benefit of the information imparted, even if he is so fortunate as to be free from the disease of which it treats. Bound in cloth, with eleven illustrations and seven beautifully colored, full-page plates. 120 pages. Sent postpaid on receipt of 75 cts. Good Health Pub. Co.

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A sanitary convention will be held May 2 and 3, at Otsego, Mich., under the auspices of the Michigan State Board of Health. Papers on the following subjects will be read and discussed: 1. The present and future water-supply of Otsego. 2. Disposal of excreta and waste in Otsego. 3. Nuisances: what they are and how to abate them. 4. Ventilation of residences and of public buildings. 5. Restriction and prevention of communicable diseases, from the stand-point of the local health officer and of the State Board of Health. 6. The causes and prevention of consumption. 7. The hygiene of schools. 8. Duty of the State in investigating the cause and preventing the spread of disease.

These conventions are always of great practical interest to the locality in which they are held. As will be seen by the list of subjects presented, the topics considered are not those of theoretical interest only, but concern questions which are of vital consequence to every community. Many of these conventions have been held in different parts of the State, and they are generally appreciated by the citizens of the places where they are held, as of sufficient interest to command a good attendance. A convention of this sort ought to be held in every town and city of the State. The State Board of Health has always held itself in readiness to respond to requests for conventions, when made by a reasonable number of the leading citizens of a locality; and the able secretary, Dr. Baker, is always on hand to render all needed assistance in the organization of the convention, the arrangement of programs, etc. Requests for conventions should be sent to the Secretary of the Board, Dr. H. B. Baker, Lansing, Mich.

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The Managers of the Sanitarium report that successful institution more prosperous than ever before at this season of the year, the entire family at the present time numbering nearly five hundred. The policy of the Managers of this establishment has been to make it the best in the world, and it is the testimony of those who are qualified to judge, that they have succeeded to such a degree that the institution can no longer be compared with any other in this or other countries in the perfection, completeness, and extent of its facilities for the treatment of the sick by rational methods. Notwithstanding this, the energetic Board of Managers are still as hard at work as ever in carrying out new plans for further improvements, and scarcely a week passes which does not witness advantageous changes in some of the many departments of this immense establishment. The mission of the Medical Superintendent, who is now spending a few weeks in Europe, is to add certain features to the surgical department which will place it on a footing with the most famous hospitals in the world. The surgical wards which have been fitted up within the last year, are superior to those of the best hospitals in the country. One of its interesting features is an automatic air-filtering apparatus, worked by electricity, by which the air is deprived of germs without the use of poisonous germicides. During surgical operations, a stream of this purified air is made to pass over the operating table and the patient, so that nothing of a dangerous nature can possibly come in contact with the wound. The results obtained with these perfect appointments are of a very superior character, and such as can only be obtained by equally careful work,

One thing which has perhaps contributed as much as any other to the popularity of the Sanitarium, is the unbounded confidence of its patrons in the sincerity and the frankness of its physicians. Many patients visit this institution from a distance of many hundreds of miles, simply because they believe they can rely upon the information obtained. It is not to be supposed, of course, that the physicians of this institution are the only ones who are to be relied upon in this way; but there is such an army of quacks scattered up and down the length and breadth of the land that the public are often at a loss to know whom to trust. It is the settled policy of the Sanitarium Managers to tell each patient frankly his condition, and, so far as possible, all about his case, and then to keep only such cases as offer a good hope of cure.

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.....	am	am	pm	pm	Dep. Arr.	pm	am	am		am
.....	5.55	7.15	8.00	4.10	.....Port Huron	10.20	1.15	7.35	.....	10.50
.....	7.28	8.31	9.31	5.40	.....Lapeer.....	8.40	11.58	6.17	.....	9.17
.....	8.03	9.10	10.10	6.29	.....Flint.....	7.55	11.27	5.49	.....	8.38
.....	8.48	9.35	10.58	7.15	..... Durand.....	7.15	10.58	5.03	.....	8.00
.....	10.00	10.30	12.00	8.26	.....Lansing	5.20	10.07	4.00	.....	6.35
.....	10.37	11.00	12.30	9.03	..... Charlotte.....	4.42	9.37	3.25	.....	6.02
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6.40	am	12.05	1.20	pm	D } } A	3.40	8.50	2.30	.....	am
7.55	.....	12.50	2.21	———	.....Vicksburg	2.52	8.11	1.44	.....	———
8.12	———	1.00	†2.32	VAL.	.....Schoolcraft.....	2.40	.....	1.33	.....	VAL.
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.....	am	3.41	†5.30	am	.... Haskell's.....	11.54	.....	.....	pm	pm
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