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BIOGRAPHICAL HEALTH STUDIES.

BY F. L. OSWALD, M. D.,
Author of "Physical Education," "The Bible of Nature," etc.

14. Count Ferdinand de Lesseps.

WARS, like the winds that rid the forest of its rotten branches, often promote the survival of the fittest by weeding out weaklings; but tornadoes uproot the tallest trees, and the storm of the French Revolution undoubtedly impaired its salutary effects by the excess of its violence.

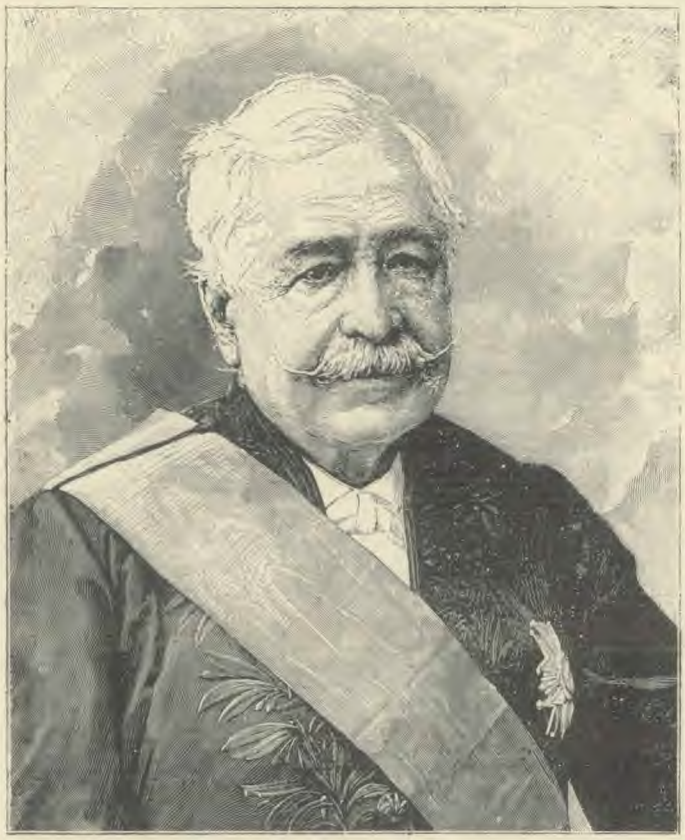
Together with a multitude of feudal absurdities and incredible dogmas, and a rabble of panders, parasites, and hypocrites, it also destroyed a host of cavaliers whose pre-eminence was in many cases founded on something more than the merit of remote ancestors. The privileges of the mediæval aristocrats really tended to preserve them from the degenerating influences that turned millions of freemen into flunkeys, and stout hunters into scrofulous beggars. Their castles were strongholds of personal independence; they laughed at miracle-mongers; they refused to abase their bodies for the benefit of their souls; they vindicated their rights against popes and princes, and measured the claim to honor by a different standard than that of a capacity for mental prostitution. Their maidens joined in greenwood sports and winged their minds in the realm of poetry, like fairies guiding their aerial dances high above the welter of reptiles and maniacs. Frederic the Great, with all his rationalistic tendencies, reserved the posts of military rank for born aristocrats—"not," he said, "because I believe in such nonsense as the divine rights of high birth, but because experience and experiments have taught me that in no other class energy, intelligence, and a keen sense of honor can so often be found combined with physical superiority." Ferdinand de Lesseps had inherited those qualities both from his mother's and father's side. The family of the Lesseps had served the French government for five generations. Two hundred years ago a Martin Lesseps represented his sovereign at the Congress of the Hague. Ferdinand's great-grandfather distinguished himself by quelling a mutiny among the garrison of an East Indian seaport town. When the Court of Versailles wished to conciliate the favor of Czarina Katherine II,—

"Who measured men as you would measure steeples,"

Barthélémy de Lesseps, the tallest officer of the French lifeguards, was sent to Russia, and at once excited the alarm of other favorites, so much so, indeed, that they combined to intrigue for his recall, —though not before his mission had answered its main purpose. Mathieu de Lesseps, the count's father, enjoyed the confidence of the first Napoleon, who sent him to Egypt and Madrid and subsequently to Syria, where he made himself too useful to be slighted by the Bourbons. Louis XVIII gave him a chance to make a fortune as an army-contractor, and finding him too honest to abuse his opportunity, sent him back to Egypt and indulged him with half-year furloughs.

Ferdinand's mother was an aunt of Eugenie de Montijo, the Spanish bride of Napoleon III, and like the young empress, one of the first beauties of Southern Europe; though withal, something of a vixen, if we can credit her cousin Grevigny's account of her domestic life and her rough-and-tumble fights with a series of pretty servant girls. She was a wit, too, and one evening when her hus-

band came home staggering under the influence of what he pronounced "the undoubtedly genuine vitnage of 1782," his wife contented herself with the remark that "at all events she took comfort in the hope that his present condition would not last eighty-two years." It was a public banquet with the foolish adjuncts of obligatory "toasts" that had tempted the count's father to deviate from his rule of taking wine only as a medicine. He had learned the value of temperance in Egypt, and more than once advised his son to "conform to the dietetic



Count Ferdinand de Lesseps.

customs of nations who had solved the grand problem of preserving their physical vigor in a luxurious climate."

Ferdinand de Lesseps was born at Versailles, in 1805, "the zenith-year of glory," as his countrymen call, it in allusion to the battle of Austerlitz,—but passed his childhood mostly at his father's country-seat of Vatan in the department of Indre, a region of forests and small dairy-farms. Like most youngsters of the French landed gentry, he got his first schooling under a private tutor, and remembered a scene in the private room of the teacher who was packing his trunk because Madame Lesseps had called him a "red republican," but changed his mind under the tearful embraces of his little pupils. Ferdinand's father ridiculed the whole affair, and, indeed, hated sentimentality so much that he often said he "would as soon like to hear a girl swear, as to hear a boy cry." At eight years Ferdinand had a shotgun of his own and a pack of beagles, and was encouraged to roam the woody hunting-grounds in all directions. "Let a lad get a basis of physical pluck," said his father, "it is the best foundation for any superstructure you want to build up in after-life; society and experience will attend to wearing off the rough edges." Mathieu himself towered like a giant above the tenants of his estate.

On his sixteenth birthday young Ferdinand measured five feet ten in his stockings, and soon after his father took him to Egypt, where he gave him an opportunity to make the acquaintance of Said Mohammed, the bright second son of the Viceroy. A sort of prophetic instinct told the old diplomatist that the clever young prince would contrive to supersede his elder brother, and the intimacy of the two cadets soon culminated in vows of perpetual friendship. Somehow or other the vivacity and impulsiveness of the Frankish character are less repugnant to an Oriental than the cold phlegm of the representative Briton, and Ferdinand de Lesseps was a prime favorite of the sport-loving pashas in Turkey and Tunis, as well as in Egypt. He repaid their compliments by the confession that the genial culture of the Spanish Moors alone could reconcile him to the horrors of the Middle Ages. "Despotism," he says, "has degraded that noble race, but see what it has made of the Mongols and Muscovites. An Arab may be ignorant, but as compared with an uneducated *Giaour*, the follower of the Prophet generally has the advantage of a greater clearness of mental vision — owing possibly to the absence of brain-befogging alcohol-fumes (*fumes d'ivresse*). We have got them under; but we should remember that for nearly seven hundred years they held the trump-cards of science and prosperity, and we should also remember that seven hundred years is a pretty long time, as compared with the era of our own civilization."

On his return to Paris, de Lesseps senior procured for his big boy a job that fairly launched him in the diplomatic career of his ancestors. He was made consul at Barcelona, and three months after his arrival

had an opportunity to illustrate the correctness of his father's opinion as to the value of physical pluck. A fierce revolt broke out; three of the other consuls left the city, three others hauled down their flags and barricaded their doors, but young de Lesseps kept his colors flying, threw his doors wide open, and invited the panic-stricken foreigners of all nations to trust themselves to his protection and hospitality. They took him at his word, and when his own stock of provisions was exhausted, Baron de Lesseps threw off his coat, grabbed a handle of a big market basket, and invited a Spanish visitor to take hold of the other end. In that manner they made their way through the mob to the next provision shop, where the French consul summoned the proprietor and asked him to help vindicate the fair name of the city by selling him the best the local market happened to afford, adding that he intended to mention his name in his official report. The appeal proved irresistible, the patriotic business man consented to achieve immortality and a fair profit at one stroke, and when the carriers of the loaded basket returned to the consulate, the impulsive mob accompanied them with deafening huzzahs and on the same evening invited the gallant consul to join a committee of their petitioners. In commemoration of that day the French government published a flattering memorial and presented the model consul with a gold medal.

In Spain, Baron de Lesseps made the acquaintance of his cousin, Eugenie de Montijo. He introduced her to Prince Napoleon, the French embassador at Madrid, which led to her becoming Empress of France, but instead of utilizing his opportunities for his personal interest, Baron de Lesseps used his influence to champion the cause of Liberalism, and thus became the idol of French patriots, but at the same time forfeited the favor of the new emperor and retired to his hunting lodge in the Department of Indre.

Here he received the long-expected news that his friend Said Mohammed had become viceroy of Egypt. De Lesseps had left Paris sick with suppressed indignation, but a few weeks' field sports had restored his vigor; the time of the year — the end of September — could not have been more favorable, and he at once started for Cairo with a plan that had ripened in his mind ever since his first visit to the land of the Pharaohs. The viceroy received him with open arms, and urged him to give him the benefit of his political experience.

"Egypt should be independent," said the diplomatic Frenchman, "let 's turn Africa into an island. In that way you can achieve your financial emancipation, too; for as a source of wealth the canal will be worth all the gold mines of the Old and New World taken together." Said Mohammed caught fire at the idea, and all the local preliminaries were settled within a week.

Great Britain and the Sultan of Turkey bitterly opposed the project; Russia feared the loss of her overland trade, Italy intrigued to preserve her monopoly in semi-tropical products, Louis Napoleon welcomed an opportunity to spite the would-be censor, but de Lesseps not only overcame all these obstacles, but raised two hundred million francs,— nearly $40,000,000,— and in 1865 took the field with an army of laborers and surveyors.

The accomplishment of the great project has misled many American writers into supplementing the titles of the projector with that of the "the Great Engineer," but the truth is that the education of Ferdinand de Lesseps had been purely diplomatic. Canal-building was only one of the numerous incidental jobs which he forced to success by sheer strength of will and native ingenuity. He was no trained financier, yet in negotiating his loan, he beat the Rothschilds at their own game. He overcame the protests of George Stephenson by a masterly pamphlet pointing out the errors of all former projectors and the complete feasibility of his own plan. He also devised ways and means to checkmate the tricks of his subcontractors, and kept the supervision of the work under his constant personal control. For the guidance of his European overseers (Germans, many of them) he published a curious code of by-laws, or rather by-suggestions, including numerous sensible health hints: —

"5. Permit no ardent liquors to be sold outside of the headquarters' canteen; do not allow laborers to carry bottles of intoxicating beverages on their way to work. Warn drunkards twice, and discharge them on the third perpetration of disorderly conduct, taking due care to prevent their re-engagement by any of our agents."

"8. Ice-water and lime-juice, or lemons and *pomerances* will be distributed free thrice a day. Offer a reward for the detection of individuals who appropriate more than their due share of lemons, etc., for the purpose of re-selling them.

"9. Prevent the consequences of drunken brawls by at once separating the combatants, and if necessary, disarming them and drenching them with cold water. Privately remonstrate with quarrelsome individuals and warn them that the detection of concealed weapons will be followed by their dismissal."

"14. In case of wounds requiring medical attend-

ance, remove the patient as soon as possible to a shady shelter, and pending the arrival of the surgeon cover the injured part with a moist cloth, folded double, and sprinkled on top with salt or *eau-de-rabarbe*, to keep off flies."

"17. Accept volunteers for night work only at the rate of twenty per cent of the total working force, and, as far as practicable, prevent disturbing noises, especially singing and superfluous vociferation, between 10 P. M. and sunrise.

"18. Keep a list of efficient workmen and indulge them in rest-days, even at the risk of encouraging occasional malingering. A few hours' extra sleep in this climate may nip in the bud disorders which otherwise might soon reach an incurable stage of development. Those habitually behind time may be detained for extra work in the evening, but under no circumstances curtail their noonday rest."

"23. Whenever the heat exceeds thirty degrees (of the Reaumur thermometer), the overseers are authorized to dismiss the men to their tents, and leave it optional with them to resume work in the evening."

De Lesseps himself was repeatedly overcome "by the combined effect of heat and overwork, though never by either alone," and indulged in all sorts of curious conjectures on the cause of the Arab's ability to endure fatigues and recover from wounds that would make an end of the stoutest Northlander. "Long residence in a warm climate," he says, "may have rendered their hide sun-proof, as the Siberian Yakoots are said to be frost-proof, and their enormous marches have possibly steeled them against fatigues of another kind, but what has all that to do with their ability to survive shot wounds? We cannot be expected to believe that the climate has rendered them bullet-proof, for on the whole they are not as tenacious of life as a vigorous Caucasian, and succumb more quickly to smallpox and cholera. One explanation may be found in their temperate habits and consequent freedom from vitiated humors that would tend to make wounds malignant, but, besides, I think the strain on their powers of endurance is less exhausting because they really suffer less,— I mean they are less sensitive to external injuries,— almost like insects that devour food with evident relish a few minutes after an experiment has amputated a couple of their legs."

"But how do they escape digestive troubles?" he continues, "for, though temperate in the Temperance Society's sense of the word, they are not always abstemious of unwholesome food, such as pastry, sweetmeats, and scandalously rancid butter. Of such substances and of coagulated milk they consume astonishing quantities with apparently absolute impunity. Is it because they have not weakened their digestive organs by the abuse of alcohol and the excessive use of hot spices? or shall we suppose that one kind of their strange tidbits counteracts the injurious effect of the other?"

Two other explanatory facts seem somehow to have escaped the attention of the shrewd observer; viz., first, that the surfeits of the Bedouins alternate with long fasts; and, second, that they generally eat their principal meal in the cool of the evening, when, besides a bracing temperature, they have abundant leisure for digestion. The traveler, Palgrave, assures us that the Arabs of Yemen often perform journeys of seventy English miles in a temperature ranging high above the hundred mark of the Fahrenheit thermometer, without tasting a morsel of food, and only now and then moisten their lips, but amply indemnify themselves in their night camp.

De Lesseps had mastered the Arabian language in Egypt, and in his Suez bivouacs often engaged his Bedouin sheiks in facetious disputes on the subject of polygamy. As he merely argued to elicit the private theories of his opponents, he had the advantage of never losing his temper, but confesses that the logic of the swarthy controversialists often drove him into a corner, "where he had to extricate himself by digressions, making banter supply the deficiency of argument." "Some of you chiefs," he said, "take six wives; have you never reflected on the unfairness of the arrangement, since nature produces as many boys as girls in every country of the world."

"Well, what about that?" retorted the sheiks, "don't you consider it both fair and salutary that one real man should crowd out five fops?"

The canal was finished in five years of continuous hard work, and in 1869 was opened in the presence of twenty-eight thousand invited guests, including the empress Eugenie, the empress of Austria, the crown prince of Italy, the Turkish minister of foreign affairs, the viceroy, and hundreds of German and English dignitaries and professional engineers. But the lion of the day was naturally the adventurous projector and plucky manager-in-chief, who would have been made a senator of France and Prince of Suez if it had not been for the lingering resentment of the French emperor, who by that time felt himself firm in the saddle and ruled as arbitrarily as his uncle in the palmiest days of his supposed omnipotence.

The hero of three continents was, however, created a count and returned to Paris with the Grand Cross of the Legion of Honor, and a million of francs — an ample fortune for a man who, like his father, "never gambled, rarely smoked, used wine merely as a medicine, and flirted only in day time."

Once more he exerted all his influence to dissuade the emperor from his arbitrary encroachments on the liberties of his subjects and the yet more fatal errors of his foreign policy. He discerned the gathering storm of ruin, and his pathetic appeals did scare the autocrat into the expedient of a plebiscite. But the reckless provocation of the Prussian imbroglio continued in spite of all protests, and in the summer of 1870 Count de Lesseps, then in his sixty-fifth year, retired to Vatan, almost heartbroken, a few days before the outbreak of the retributive tornado which he had so clearly foreseen and so vainly labored to prevent.

But when the worst came to the worst, it was the same patriot who tried to palliate the horrors of national humiliation by assuring his countrymen that they had all along mistaken their proper sphere of their national glory. "France," he said, "is the favorite land of the masses of civilization, her children were never intended for the bloody butcher-work of professional warriors any more than the cultured Albigenses or the accomplished Moriscoes, who perished when they provoked a life-and-death struggle with their big-fisted, brutal neighbors. Our chance will come in the scientific wars of the future when our chemical and mechanical inventions will rout our enemies as a battery would scatter a horde of savages. And do not allow yourselves to be distressed at the idea that our nation has degenerated since the days of the great Napoleon. Our soldiers are still the same, but we have lost our miracle-working leader. Miracles and the appearance of a genius cannot be expected to happen every day. Have you ever asked yourselves how it can be explained that the ever victorious legions of our Corsican Cæsar were almost constantly beaten under the command of his lieutenants? under Soult and Massena in Spain, under Ney at Dennewitz?"

Count de Lesseps had lost his wife during his struggle with the Suez problem, but on his return to France he married again, and to this second union were born not less than ten children — the last of them when the proprietor of the Vatan country estate was almost an octogenarian. As one of his neighbors expressed it, "he grew young again with his youngsters," and could refuse them no reasonable favor. On one occasion when he had an engagement with Lord Baring, he sent a clerk to ratify an important transaction, and my lord "wondered what kind of man M. de Lesseps must be, when he received a note stating that it would be impossible for him to come in person, as he wished to take two of his little ones to a certain matinee that afternoon."

But one of his children, a son of his first wife, proved the black sheep of the family, and wrecked the idyl of the Indre country home. His father's confidence in his integrity involved the hero of Suez in the suspicion of the Panama frauds, and it cannot be denied that he concealed his suspicions too long — perhaps in the overmastering hope of completing the great work after all, and the perhaps less pardonable reluctance to credit the evidences of his prodigal's misdeeds. "*Herqum filii Noxæ*" — "the sons of heroes are a curse to their native land," is a proverb that has held good from Absalom and Caligula to Lesseps Junior and the son-in-law of President Grevy — though with especial frequency in a family of numerous children. Among a dozen youngsters one or the other is always apt to have drawn the black lot in the *trilemma* lottery of hereditary transmission: 1. Best qualities inherited from both sides. 2. Mother's merits neutralized by father's foibles — or *vice versa;* 3. Worst qualities inherited from both sides.

Six years ago the great Frenchman, as Gambetta used to call him, took his little folks to Algiers, to spend a winter month among birds and butterflies, and to return the visit of Abd-et-Lucas, an old ship-master who had managed his commissary business at Suez, and who in 1870 accompanied his employer to Paris, to get his accounts settled — just in time to hear the first thunder of the approaching war-cloud and get his property safely home.

To a fever, contracted on that trip, the count's physicians ascribed the germs of a complaint which gradually undermined his iron constitution, but it is probable that the causes of his failing health had more to do with the shock of the Panama scandal and the haunting dread of some impending national calamity.

"I may not see you again, friend," he told his cousin Grevigny last June, "but rely on it that I am not dying of old age. It is the necessity of silence that kills me, when the prevision of trouble urges me to speak. Ah, well, I may soon have a permanent excuse for conniving with both eyes."

He visited the sanitarium of Frouville sur Mer in August and rallied sufficiently to resume his literary labors, but the oppressive heat of the next month brought on a relapse, and on receipt of the news

from Livadia, he predicted that he would follow the Protector of France before the end of the year. He dictated a number of farewell letters, and near the sunset hour of December 7th died in the arms of his children,— perhaps, after all, as fortunate as his old Algerian shipmaster, in having reached a haven of refuge on the eve of a storm.

FACTS ABOUT SALT.

BY J. H. KELLOGG, M. D.

AMONG civilized people salt is almost universally used, and doubtless much harm comes from its excessive use, although no special disease can be traced to its use in small quantities. Professor Bunge says in his "Physiological Chemistry": —

"It is a very remarkable fact that of all the inorganic salts in our bodies we take only one with our organic food, and that is common salt. We obtain enough of all the other salts from the amount contained in our food, and we never think of providing ourselves with them separately. Common salt forms the only exception, which is the more remarkable as our diet is by no means deficient in it. All vegetable and animal foods contain considerable quantities of chlorine and sodium. Why do these quantities not suffice, and why do we add rock-salt?"

Professor Bunge then goes on to state the following facts regarding the mineral: —

"Our carnivorous animals, the dog and the cat, prefer unsalted to salted food, and show very great dislike to salt food. . . . The amount of salt which omnivorous animals take in with their food is, compared with the weight of the body, generally not much less than that consumed by carnivorous animals.

"The Indo-Germanic languages had no common word for salt. . . . This probably shows that Indo-Germanic tribes knew nothing about salt. . . .

"The eastern Finlanders, who still lead hunters' and nomads' lives, use no salt whatever, and this is the case with all other hunting, fishing, and nomadic tribes in the North of Russia and in Siberia. It is not because they are unacquainted with salt, or cannot procure it, but because they have a decided dislike to it. In all parts of Siberia there are rock-salt strata, salt lakes, and salt efflorescences. The Siberian hunters are only interested in these salt strata because the flocks of reindeer assemble in these places to lick the salt; the hunters themselves devour their meat without it. A large number of Siberian travelers have informed me, both personally and by letter, that such is the case with all the Siberian tribes.

"The mineralogist, C. von Ditmar, who traveled over the whole of Siberia between 1851 and 1856, and lived for a long time among the Kamchadales, writes to me as follows: 'I have frequently in my travels, given these people (Kamchadales, Koriaks, Tschuktschen, Ainos, Tunguses) some of my salted viands to taste, and have noticed the grimaces they made, showing how much they disliked it.' Ditmar relates how the Kamchadales live chiefly on fish, which they throw into large holes dug in the ground, where the whole mass is soon turned into a 'stinking jelly.' The Russian government, disapproving of the Kamchadales' favorite food, which is certainly disgusting to any European, and must be unwholesome, endeavored to introduce the salting of fish by stringent regulations. Arrangements were made at Petropaulowski for obtaining salt from sea-water, and the salt was sold to the Kamchadales at a nominal price. The Kamchadales, who are an uncommonly docile race, obeyed orders, and the fish was conscientiously salted. But they did not eat it. They kept to their decomposing fish; and at the time that Ditmar was in Kamchatka, the Russian government had relinquished the task of persuading them as hopeless. The old people spoke of that period as a time of plague.'"

Bunge mentions also the Tunguses, the Tudas of the Neilgherry Hills of India, the Kirgis, the Numidians, and the Bushmen as examples of people who for ages have made no use of salt as an article of food, notwithstanding they could easily procure it if they desired to do so.

Traveler Wrede states that the Bedouins consider the use of salt as altogether ridiculous. It is recorded by Mungo Park that salt was the rarest of commodities in Africa at the time of his travels in that country. The Indians of North America, at the time of the discovery of this country, made no use of salt; and according to the testimony of Indian traders still living, salt was not in general use among the Indians of the interior a generation ago. The natives of New Holland, at the time of the discovery of this country, employed no salt. The Australian tribes and the natives of the East Indian Archipel-

ago, although largely vegetarians, adding to their vegetable diet only a few fish, made no use of salt. Certain tribes of Bedouins of the Arabian Peninsula, and some races of the East Indian Islands, live almost entirely upon rice. They make no use of salt, although it has been argued that salt is made necessary by the use of vegetable food.

Many wild herbivorous animals, such as hares and rabbits, never eat salt, and according to Bunge, in many places it is not offered to herbivorous domestic animals. Dr. Bunge, although arguing for the moderate use of salt, calls special attention to the fact that "we are accustomed to take far too much salt. . . .

From one to two grams (15–30 grains or ¼–½ dram) of salt in the day would be sufficient to add to a diet of cereals (grains) or leguminosæ (peas, beans, lentils), or a few decigrams (3–5 grs.) to a diet of rice. Instead of this, most people take from 20–30 grams (⅔–1 oz.) frequently and even more. . . .

"We must ask whether our kidneys are really able to eliminate such large quantities of salt? Do we not impose too great a task upon them, and may it not be fraught with serious consequences? When on a diet of meat and bread without salt, we excrete not more than from 6 to 8 grams (1½–2 drams) of alkaline salts in twenty-four hours. With a diet of potatoes and a corresponding addition of salt, over 100 grams (3⅓ oz.) of alkaline salts pass through the kidneys in the day. May there not be danger in this? The habit of drinking spirituous liquors, which, moreover, is reckoned as one of the causes of chronic nephritis, also brings about the immoderate use of salt, and thus one sin against nature. These are questions to which I would direct the attention of practitioners.

"There is no organ in our body so mercilessly ill treated as the kidneys. The stomach reacts against overloading; the kidneys are obliged to let everything pass through them, and the harm done to them is not felt till it is too late to avoid the evil consequences."

"I would further call attention to the slight amount of work that devolves upon the kidneys when rice is the staple food. Only 2 grams of alkaline salts are excreted in twenty-four hours. The superiority of rice (which has for centuries been the food of the majority of mankind,—Persians, Indians, Chinese, and Japanese) over potato is evident. Should not rice be employed as a chief article of diet in patients with renal disease? the same with affections of the stomach, for the potassium salts act as a powerful irritant to the gastric mucous membrane; and rice contains less of these than any other article of food."

Professor Bunge presents a curious argument to account for the use of salt by human beings. He holds that the human race, together with other land animals, has by a process of evolution, been developed from aquatic animals, and that this accounts for the fact that a demand for salt exists; in other words, as he expresses it, a process of acclimatization and evolution is going on by which man is becoming more and more removed from his original state and conditions, and, to use his own words, "we prolong this process of acclimatization by taking advantage of the salt strata which had been left in the land by our primeval element, the salt flood." Granting Professor Bunge's theory to be correct, it appears that we ought to encourage the evolutionary process by abstaining from salt rather than to delay it by making use of the salt strata in which are supposed to be buried the remains of our remote ancestors. Certainly we should be ambitious to get away from the fish state as rapidly as possible. However, it must be granted that if we should make no greater use of salt than that allowed by Professor Bunge,—namely 15–30 grains per diem,—we should not be likely to suffer any serious injury therefrom, and might consider ourselves in the line of progress.

LIQUOR DRINKING THROUGHOUT THE WORLD.—Statistics have been compiled at Vienna of the quantity of alcoholic liquors drank in 1893 in the entire world. Germany heads the list with 1,202,132,074 gallons, an increase of 34,000,000 over 1892, the consumption being thirty-three gallons per head, ranging from sixty-two gallons in Bavaria to twelve gallons in Tothringen; Great Britain, second, 1,165,752,000 gallons, or thirty gallons per head; America, including the whole of the Western hemisphere, is third, with more than a billion gallons, or sixteen gallons per head. The total for the world, not including Asia and Africa, is 4,500,000,000,000 gallons, requiring 7,270,000 tons of malt and 82,000 tons of hops.

Doctor—Has your daughter been delicate always?

Mother—Oh, yes; if she does anything about the house, it exhausts her so that she is not able to dance longer than midnight some nights.

VEGETARIANISM AS TAUGHT IN THE SACRED BOOKS OF THE HINDOOS.

It is an interesting fact that the educated and most enlightened classes of India have for many centuries adhered rigidly to the principles of vegetarianism. An explanation of this is to be found in the fact that for fully 2500 years the sacred books of the Hindoos have inculcated strictly vegetarian principles. As evidence of this, we copy the following quotations from a vegetarian journal, the *Harbinger*, published at Lahore, India: —

"Those are skillful cooks who don't use their utensils for meat."— *The Rig Veda.*

"Thou shalt not kill the cow." "Thou shalt not kill the sheep or goat." "Thou shalt not kill the bipeds" (birds and men). "Protect animals." "Oh, Purifier! Thou protectest grain food." "The vegetable world supports wise men."— *The Yajur Veda.*

"Human beings live upon the products of agriculture."— *Ib.*

"Surely hell fire and repentance are in store for those who for their pleasure and gratification cause the dumb creatures to suffer pain."— *The Zend Avasta.*

"General Bishma, the Commander-in-Chief of the Kooroos said to Emperor Yudhishthhir: 'Unslaughter is the supreme virtue, supreme ascetism, golden truth, from which springs up the ge[illegible] of religion."— *The Mahabharata.*

The *Harbinger* also publishes, with the above quotations from the sacred books of the Hindoos, the following from the Bible: —

"Our Father which art in heaven, hallowed be thy name. . . . Give us this day our daily *bread!* Matt. 6 : 9, 11. Blessed is he that shall eat *bread* in the kingdom of God. Matt. 6 : 15. Better is a dinner of herbs where love is than a stalled ox and hatred therewith. Prov. 15 : 17. Be not among winebibbers; among riotous eaters of flesh: for the drunkard and the glutton shall come to poverty. Prov. 23 : 20, 21. Deliver me from blood-guiltiness, . . . for thou desirest not sacrifice." Ps. 51 : 14–16.

"He who consents to the death of an animal, he who kills it, he who dissects it, he who buys it, he who sells it, he who dresses it, he who serves it up, and he who eats it, are (eight kinds of) butchers."— *The Code of Manu.*

LOW SPIRITS.

"Low spirits" is a common excuse for a great deal of selfishness. It is certainly a matter of doubt whether any one has the right to be melancholy in a world so full of the graciousness and generosity of Providence, and it is a miserable piece of egotism to thrust one's low spirits upon others. Melancholia is undoubtedly a disease, but it is one of those diseases which are largely, if not wholly, under control of the will, contradictory though the statement may seem.

There are many diseases recognized by physicians as brought about purely by patients' allowing themselves to drift into morbid conditions of mind. Even dreaded scourges, like typhus fever and cholera, are known to be induced by morbid fear. Constant brooding over some fancied wrong or imaginary slight, showing an exaggerated state of selfishness, which is too often considered supersensitiveness, will readily induce that condition of mind known as melancholy.

The selfish idler is condemned by every one, but the one who wastes his time in this much more foolish manner, groaning and complaining until he becomes a chronic hypochondriac, often passes for a hard worker from the very excess of trouble he takes to find trouble. As a matter of fact, such persons accomplish very little real work in the world. They are greater wasters of time than the most flippant idler of the world, because they take away from the nerve force and the life of others. Minus quantities, they represent much less than nothing, for they reduce the working power of all around them, enervating them by their continuous dole and plaint.

Strange as it may seem, a disposition to melancholy often appears in children, and, if not discouraged, may develop into a fixed habit in later life. There is no cure better for such morbid tendencies than some method by which the individual can get outside of himself and forget his own selfish interests and desires. Peevishness in a young child should be treated as a serious fault, yet in nine cases out of ten the fretful child is petted, and so rewarded for his fretfulness; and the fretful child makes the complaining, melancholy man or woman. — *Sel.*

LAUGHTER A REMEDIAL AGENT.— The remedial effects of laughter are really wonderful. Cases have been known where a hearty laugh has banished disease and preserved life by a sudden effort of nature. We are told that the great Erasmus, the eminent theologian, laughed so heartily at a satirical remark that he broke a tumor and recovered his health.

In a singular treatment on "Laughter," Joubert gives two similar instances. A patient being very low, the physician, who had ordered a dose of rhubarb, countermanded the medicine, which was left on the table. A monkey in the room jumped up, discovered the goblet, and having tasted, made a terrible grimace. Again putting his tongue to it, he perceived some sweetness in the dissolved manna, while the rhubarb had sunk to the bottom. Thus emboldened, he swallowed the whole, but found it such a nauseous potion that, after many strange and fantastic grimaces, he ground his teeth in agony, and in a violent fury threw the goblet on the floor. The whole affair was so ludicrous that the sick man burst into repeated peals of laughter, and the recovery of cheerfulness led to health.— *Sel.*

BRAIN-WORK AND VITALITY. — As a factor in longevity, the *London Speaker* calls attention to the fact that those people who have been accustomed to the continued disciplinary use of their brains daily, and who have thus placed their nerve power under a highly developed condition of constitutional training, are enabled by these very means to escape the so-called early decay, and to avoid those alarming accidents to health from which so many apparently healthy men succumb. People who use their brains and observe ordinary hygienic care of their bodies, resist diseases in the first place; and when they are actually ill, they prolong their lives or recuperate sooner than do those who have lived less intellectual lives. Thus there is given a new force to the assertion that you may kill a man with anxiety very quickly, but it is difficult to kill him with work.

Whether the brain can actually give power to the muscles is not certain, though the enormous strength sometimes developed in a last rally looks very much like it. That it can materially affect vitality is quite certain, and has been acknowledged by the experienced in all ages.— *Sel.*

HEALTH HABITS OF THOMAS JEFFERSON.— A contemporary, the *Journal of Hygiene*, some time since called attention to the personal habits of Thomas Jefferson, as ascertained from a letter written by him and published in 1841. Among other things Mr. Jefferson says: —

"I live so much like other people that I might refer to any ordinary life as the history of my own. I have lived temperately, eating little animal food, and that not as aliment so much as a condiment for the vegetables, which constitute my principal diet. I drink the weak wines only; the ardent wines I cannot drink, nor do I use ardent spirits of any kind; malt liquors and cider are my table drinks; and my breakfast drink is tea or coffee. I have been blest with organs of digestion which accept and concoct, without ever murmuring, whatever the palate chooses to consign to them, and I have not yet lost a tooth by age.

"I was a hard student until I entered on the business of life, the duties of which leave no idle time to those disposed to fill them; and now, retired, and at the age of seventy-six, I am again a hard student. Indeed, my fondness for reading and study revolts me from the drudgery of letter-writing, and a stiff wrist, the consequence of an early dislocation, makes writing slow and painful. I devote to sleep from five to eight hours, according as my company or the book I am reading interests me; and I never go to bed without an hour or a half hour' previous reading of something moral, whereon to ruminate in the intervals of sleep; but whether I retire early or late, I rise with the sun. I use spectacles at night, but not necessarily in the day, unless reading small print. My hearing is distinct in particular conversation, but confused when several voices cross each other, which unfits me for the society of the table. I have been so free from catarrhs that I have had one, on an average, but once in eight or ten years through life. I ascribe this exemption partly to the habit of bathing my feet in cold water every morning for sixty years past. A fever of more than twenty-four hours I have not had more than two or three times in my life. A periodical headache has afflicted me occasionally, once, perhaps, in six or eight years, for two or three weeks at a time, which seems now to have left me; and except on an occasion of late indisposition, I enjoy good health — too feeble indeed to walk much, but riding without fatigue, six or eight miles a day, and sometimes thirty or forty."

"WHAT is the action of disinfectants?" was asked of a medical student.

"They smell so bad that people open the door and fresh air gets in," was the reply.

RESPIRATION IN MEN AND WOMEN.

At the ninth annual meeting of the American Association for the Advancement of Physical Education, held at the Yale gymnasium, New Haven, Conn., under the presidency of Professor Sargent, of Harvard, an interesting paper, entitled, "A Study of Types of Respiratory Movements," was read by G. W. Fitz, M. D., of Harvard University. The following is a brief abstract of a portion of the paper: —

By means of a specially devised form of pneumograph by means of which the movements of the different portions of the trunk during respiration could be conveniently recorded, the author of this paper has made a careful study of respiration in 35 school boys, and 72 school girls, 123 University students, 52 young ladies, and 124 persons of different nationalities who were attendants at the World's Fair. The author found that, among the school boys, in by far the greater majority, the thoracic and abdominal respiratory movements were about evenly balanced. Among the school girls the abdominal movements exceeded the thoracic in more than one half (52.7) per cent. Among college men, the abdominal was equal to or exceeded the thoracic in 78 per cent. Among females with unconstricting dress, the thoracic movements were predominant in 50 per cent. With reference to this class the author remarks: "No evidence can be found in this group that race, age, or child-bearing affects the respiratory ratios. . . . The clothing of adult women in almost all races is constricting in some degree."

Among males without constricting dress, in 72 per cent the abdominal movements were found equal to or exceeding the thoracic. In males with constricting dress, those who sustain their clothing by a belt, the thoracic movements were found to exceed the abdominal in more than half (58.4) per cent. This class included Bedouins, Hebrews, Greeks, and Syrians, of whom the author says: "On the whole, these people are much given to wearing tight belts and sashes, and many have been tightly constricted from the time of swaddling clothes. The effect of this constriction is shown in much the same way that we shall find it manifested in a group of American women."

Among females with constricting dress, the thoracic movements were found to exceed the abdominal in 97.7 per cent. In American women, which included both women addicted to tight lacing and those who had never worn corsets, the thoracic movements were found to exceed the abdominal in 69.2 per cent.

Here are some of the conclusions which the writer draws from his observations: "So far as the data go, the evidence suggests that there is no essential sexual difference between male and female breathing movements." We quote further as follows: —

"The relation of the movements of respiration have been several times the subject of investigation, with diverse results. Boerhaave called attention to the differences between male and female respiration in 1744. Hutchinson observed and made drawings of changes in antero-posterior diameters by having the shadow of his subject thrown upon a plain surface. He applied the terms diaphragmatic and costal to types of respiratory movement, and by these terms he meant not the extent of movement, as is generally supposed, but their time relations. He observed that in men the respiratory movements begin with the abdomen, and that the increase in antero-posterior diameter passes progressively upward; while in women the contrary conditions

prevail. He says, further, that all difficult, sudden, and extraordinary breathing is costal in the same sense. From the drawings he gives to show the conclusions at which he arrives, the increase of diameter of the abdomen in males seems to be about two or three times that of the chest, while in females it is from one half to two thirds that of the chest. He observed this preponderance of thoracic movement in twenty-four young girls, and was at a loss to account for it, but suggests that it may be a 'reservation against the period of gestation.' He supposes, therefore, that there is a specific sexual difference. Mays, in a comparison of the respiratory movements of Indian girls, concludes that the difference between the movements of civilized males and females is due to the differences of dress. He shows, as typical of normal conditions, tracings in which the abdominal movement is four or five times as extensive as the thoracic. He supposes, apparently, that in these conditions the abdominal movement is much in excess, and says 'the diaphragm has the power of more than doubling the chest capacity, and it is therefore the most essential factor of respiration.' Kellogg shows tracings of males and females having the same general appearance as those shown by Mays, and reaches similar conclusions. Wilberforce Smith, on the basis of a series of observations, decides that there is no sexual difference.

"On the evidence considered by Foster, Rosenthal, and Carpenter, they conclude that a sexual difference exists; Waller and Kirk suppose that any observed differences are due to habits of dress.

"Without reference to the question of specific sexual differences in respiration, there can be no doubt that dress must interfere with the movements of the diaphragm in those cases where it takes the form of tightly laced corsets, heavy skirts hung from the waist by belts, belts heavily laden with ornaments or tightly drawn. With clothing of this character the abdominal movements will be partially or wholly restricted. This may be called the restricting influence of dress. There is another possible influence which may be called the inhibiting effect of dress, and this demands our attention. The nervous control of the muscles of respiration has a natural coordination. Constricting dress interferes with part of the muscular action which would otherwise result from the stimuli sent out from the respiratory centers, and it does not seem improbable that these centers would, in the course of time, become trained to a new coordination which would change the character of the respiration very materially, even after the constriction was removed, the normal coordination being recovered slowly or not at all. The restricting effect of clothing must vary greatly in proportion to the extent of the constriction, and it is exceedingly difficult to determine, since, in one way or another, the clothing which produces it will make the use of the ordinary apparatus for recording the movements impossible. . . .

"Again, the statement has been that thoracic breathing is a provision of nature against the period of gestation, but we find individuals who have borne children, scattered throughout the tables without regard to respiratory ratio, showing that gestation is not a factor in the production of thoracic respiration, and hence is not a factor in heredity. Our feeling is, after a careful study of the individuals tested, and of the tables of results, that there is no difference between male and female respiratory types other than that produced by clothing.

"As regards the influence of dress, we may state the results of the investigations as follows: There is a very clear relation between preponderance of thoracic respiration and the evidence of constriction in dress, and this association is much closer than is shown by the table, for our classes are undoubtedly mixed in most cases. . . .

"To sum up, we may say: —

"1. That in children of both sexes there is apparently very little difference in the type of respiratory movements.

"2. Between girls and women, boys and men, there is very little or no difference.

"3. That child-bearing does not seem to affect it.

"4. That the usual type of respiration is one in which the movement is fairly equally distributed between chest and abdomen, the abdominal being somewhat in excess.

"5. From the standpoint of the amount of air moved by the chest and abdomen for typical unconstricted individuals $\left(\frac{\text{Th.}}{\text{Ab.}}\ 0.6,\right)$ the movement of the chest contributed about the same bulk of air as does the movement of the abdomen.

"6. That constricting dress causes preponderance of thoracic movement in ratio to its restriction of movement and the sensitiveness of the nervous coordination.

"7. The difference in respiratory movements between civilized adults, males and females, are chiefly due to this effect of dress."

THE BRAIN AND GYMNASTICS.

MODERN studies of the brain have placed in a very clear light the fact that in gymnastics, piano playing, and skilled movements of all sorts, the training consists not simply in a discipline of the muscles involved, but is especially a training of the cells at the surface of the brain,—the so-called cortical portion of the brain.

In many cases of paralysis, the failure of the patient to recover the use of the affected muscles is the result of neglect properly to train or educate the muscles. The patient is not always able to do this himself, for the reason that after the injury involving the cerebral region, has been repaired, the muscles are often left in a state of such complete disability that the patient is not able to command them by his will; that is, although the connection between the will and the muscles is restored, the muscle is too weak to respond — not that the muscle is unable to contract, but it is unable to contract and at the same time do the work required of it in moving the parts to which it is attached. In these cases, passive movements are of the greatest assistance. The masseur should say to the patient (in a case involving the lower extremities, for example), "Draw up your foot," and at the instant when the patient makes the effort to draw up his foot, the masseur should raise the foot for him, or give such assistance as is necessary to raise the foot, perhaps leaving the patient to suppose that he has executed the movement himself, thus giving him encouragement and restoring his confidence. After this procedure has been executed for a few days, it will be noticed in many cases that there is a decided increase in the voluntary control of the patient over the affected part; and after a prolonged course of treatment, reaching, if necessary, over weeks or even months, the patient may be able to control the paralyzed parts in a very satisfactory manner. In like manner, the patient may even recover the power of speech after having once lost it. If the patient is able to understand the words spoken to him, although unable to utter them himself, in some cases it is possible to restore the ability to speak by calling his attention to the form assumed by the muscles of the lips and other muscles involved in articulation, and directing him each day in executing these movements, just as a deaf person is taught.

In a case recently reported in a foreign journal, a patient by this means acquired the use of more than a hundred words by only six weeks' practice after having been speechless, or nearly so, for nine years, as the result of a stroke of apoplexy.— *J. H. K., in Modern Medicine.*

FEMININE WAIST PROPORTION IN ZULULAND.

THE idea that smallness of waist is a necessary mark of femininity is one of the widespread errors which has long been used in bolstering up the injurious practice of waist constriction which is practiced all but universally among civilized women. For a number of years the writer has been engaged in collecting facts which demonstrate that the average woman's waist is not naturally smaller in proportion to height than is the masculine waist to the height of the average man. Indeed, the facts which the writer has gathered upon this point show that the feminine waist is slightly larger, in proportion to the height, than is the masculine waist. A physiological reason for this is found in the fact that a woman's liver is larger in proportion to her size and weight than that of man. The propriety of this is obvious when it is considered that the functions of motherhood demand of the liver in woman a higher degree of efficiency and activity than in man. To meet this demand, nature provides woman with a somewhat larger liver than man.

Observations made among the Yuma Indians of this country, by the writer, showed a waist proportion considerably greater that that of the average civilized man; likewise, measurements made of some of the most celebrated specimens of ancient Grecian art, both Apollos and Venuses, show that the waist proportion considered by the ancient Greeks to be idealistic for woman is somewhat larger than that given to the ideal man by those masters of art whose work has furnished the best models for modern sculptors.

There has recently fallen into our hands, a collection of pictures of the natives of South Africa, which enables us to make some new observations upon this point. Careful measurements made of excellent photos of well-developed Zulus, male and female, confirm previous observations. The waist proportion in a woman, in width, was found to be 16.7 per cent of the height, while that of a man was found to be 16.2 per cent.

Women must be divested of the idea that the small

waist is natural or beautiful for woman, while the very reverse is true. So long as women imagine that a small waist is a womanly characteristic, their highly developed æsthetic sense will lead them to endure any torture in order to obtain the desired end small, feminine waist.

The civilized woman needs a large waist as much as does the savage women ; indeed more, for a larger pelvis in the civilized woman is significant of conditions which require a larger waist also. Thoughtful women will certainly give heed to these cogent facts.

A HINDRANCE TO CORRECT WALKING.— Few people know how to walk correctly, and therefore walking is not to the great majority a means of recreation or a mode of travel. One hindrance to correct walking is improper footwear. Most people have neither proper shoes nor proper socks. In consequence of wearing bad shoes from childhood, their feet are distorted. Perhaps not more than one out of four persons uses his toes in walking, and the toes are an important part of the means of locomotion. In walking once with a man of good physique I noticed that he walked entirely from his knees. By this I mean that he put one foot forward, and did not push himself with the toes of his other foot, but leaned forward and pulled the other foot after him. I found that he made no use of his toes, owing to his having worn badly-made shoes from childhood.

At the age of twenty-one I was interested in a pamphlet, "Where the Shoe Pinches." After reading it I procured lasts made on anatomical principles. Their use has prevented the usual deformity of the foot. Some fourteen years ago, and after I began regular walking, I found even these lasts faulty, and had another pair made. As I progressed in the knowledge of walking, I found even the second pair of lasts unsatisfactory. In order to obtain a correct form for my shoes I made plaster casts. In a box large enough to contain both feet I made a partition, and covered the bottom with a layer of putty. Then I put each foot in the putty, thus making an impression. Into the impression I poured plaster-of-Paris. On lasts formed from these models I obtained the best possible shoes.— *Eugene Lamb Richards, in the Century.*

THE MENTAL STIMULUS OF SPORTS AND GAMES.— Prof. George W. Fitz, of Harvard College, has the following to say about physical culture: "We want to-day to do away with the results of conventional life ; we want to do away with its limitations, which make us weak ; we want to give to our children strong bodies, and in doing that we want to give them stronger minds and brains. Now, how can this be accomplished? Can it be accomplished by using each muscle individually, by lifting dumb-bells, or can it be accomplished by such games as football, tennis, baseball, etc. It is a question of activity ; it is not a question of merely muscular strength. Activity such as the Greeks had is the ideal activity. The forms they gave us in marble are ideal forms, many of them, and those forms resulted from active, unrestrained life, from the absence of compressing and restricting clothing. To-day we want that kind of activity, and it can be gotten best in games and sports, because there you get the mental stimulus of the play, and you get activity and brain development. The games and sports that have commanded the time of the small boys have been those that demanded activity, that demanded skill, that demanded a quick perception of conditions and quick action upon that perception, the doing something instantly, and doing it at the proper time. It was a question of brain development as well as of muscular activity. Sports and games give this all-round development better than any other form of systematic training."

We would agree with the above writer except that we should like to add work of the sort adapted to the individual as one of the most wholesome and sanitary means of exercise. When heartily engaged in, work may be as healthy a stimulus to activity as play. In fact, if a child has been properly trained from infancy up, he will find in useful, productive work, a stimulus to earnest and prolonged activity far more powerful than that of mere play, and as most plays are strongly competitive, it may be questioned whether the motives of conduct which are most actively brought into operation in games and sports are best calculated to develop truly manly traits of character.

A YEAR'S WALKING.— A Swiss doctor took the trouble to carry with him for an entire year, a pedometer, by means of which he was able to record the exact number of footsteps taken during the year. The total was 9,760,900, or 26,740 per day. Of the total daily number, from 1500 to 2000 were taken in climbing stairs.

Home-Culture

LITTLE BOY BLUE.

BY MARTHA WATROUS STEARNS.

"Little Boy Blue, come, blow your horn,
The sheep are in the meadow,
The cows in the corn,
Where 's the little boy that tends the sheep?
He 's under the haycock fast asleep!"

The truth of it was, Little Boy Blue was n't asleep at all. He *was* under the haycock, and he had entirely forgotten about the sheep and cows, because, being a small boy who had a great many eyes, he saw so many interesting things that he sometimes forgot something he ought to see; — not that he actually had more eyes than the average small boy, but he knew so well how to use the pair he had that they equaled half a dozen ordinary eyes.

Just why he was called Little Boy Blue nobody but Mother Goose herself could say definitely. It may have been because he had poetic blue eyes, or because he wore prosaic blue "overalls;" it is certain his name was not a reflection of his character, for a more jovial small boy never herded cattle.

It was a soft summer day as he lay there in the shadow of a mound of new-mown hay. It seemed as fragrant as roses to him, and he wondered people did n't make "new-mown hay cologne," it was such a sweet, drowsy smell. The cicardas enjoyed it too; they kept whirring by with their sleepy songs, till it is probable Little Boy Blue would have gone to sleep according to report had he not been very much interested in watching a grasshoppers' picnic.

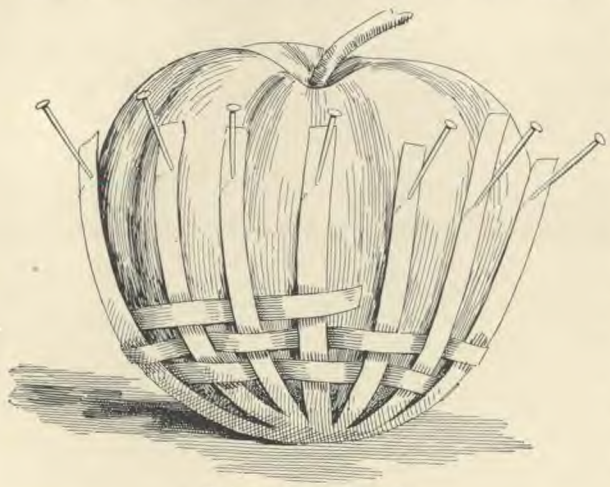
Little Boy Blue.

They really seemed to be the only lively people about that summer day, and kept up a continual round of gymnastic exercises in spite of the heat, till he almost wished he was a grasshopper himself, so that he might learn to jump. They could certainly excel him when they jumped some fifty times their own height straight up in the air. Little Boy Blue began to figure at once as to how they got their start, and soon discovered that they worked on the Jack-in-the-box plan. Their long legs doubling up

like wire springs, would pop them up in the air in a manner surprising to any old Jack-in-the-box himself. Little Boy Blue determined to whittle a wooden grasshopper and operate him on wire legs for a kind of grasshopper-in-the-box novelty; but then his eye caught something else interesting.

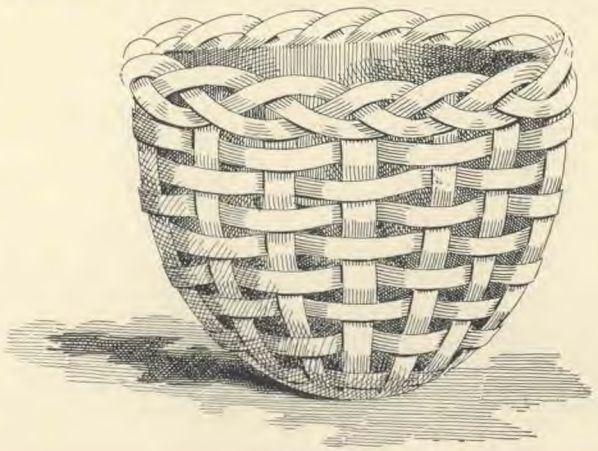
Two Chewinks were busily at work on some intricate weaving, piece after piece of the new-mown hay was being carried off by the enterprising builders, and woven into snug, warm walls. A clump of tall grass just missed by the scythe made a partial screen for Boy Blue. Then, too, they were unusually obliging birds, and went right on with their own affairs in spite of company. Though they had only their bills and feet to work with, they were turning out a very creditable piece of sloyd work, and Boy Blue really felt ashamed that with his two hands full of fingers he could not accomplish as much as birds with foot and bill. He had always supposed a nest to be a very common sort of thing — nothing but a ball of grasses, but his mind was rapidly changing, as he watched the wonderful little builders weave the strands in and out, first the coarser on the outside, then the finest and best last, for the cosy inside. Evidently Mr. and Mrs. Chewink proposed to make the inside of their house the most attractive according to the plan impressed on their little minds, by the First Architect of house and home.

Boy Blue wished it was so at his home, but it was n't; the finest and best there all went into a



Basket woven on an apple.

dreadful place called the parlor, where nobody was allowed to do anything but to sit still and be miserable on state occasions, entertaining somebody that they did n't want to see and pretending they did. All the old common things, that people did n't care about, were put in the children's sitting-room, because they were so "hard on things" — of course, for why should little folks value valueless things? It was a very fortunate thing for Boy Blue that he was a country boy and had a fine pasture land for his parlor, which was much better than the streets that town Boy Blues frequent when the home nest



Basket completed.

wears its attractions for the outside instead of the inside.

By the time Mr. and Mrs. Chewink had finished their grass house, Boy Blue began to think of what he had heard in his last sloyd lesson, and to understand why the teacher wanted everybody to study a bird's nest before they wove another basket. He resolved at once to make a basket on the plan of that nest, but what should he use for a form to weave over? He had no sloyd-room pasteboard out of which to make one, and he had no machine-made wooden form. Dear! dear! what did the people do who lived before everybody else had lived, and thought things out for them! Like some other small folks, Boy Blue had always had the misfortune to have some one tell him what to do and just how to do it, so his mind had grown very lazy, and, like lazy people, would n't work just as long as some other mind would work for it.

While he was puzzling over what he should do, a big, plump apple bumped down from a tree near by, and tumbled an idea right into his head at the same time. He would use the apple for his form! So he pulled out his pocket knife, and ripped a few yards of hat-braid from his old sun-hat and cut them up in even strips, then he went into his trousers' pockets — the unfailing storehouse of every small boy — and found some pins with which he fastened the strands on his apple. It made rather a juicy pincushion, but answered his purpose beautifully after all. Then he took a long strip of straw braid,

and, beginning at the center on the bottom of the apple, wove it around, in and out, till it was all braided. At the top he finished it by braiding three strands together, as he had seen his sister's hair braided. Then he removed the pins, slipped out the apple, and had a cute little basket as round as a bird's nest.

Just then he heard Mother Goose calling —

"Where 's the little boy that tends the sheep?
He is under the haycock fast asleep."

If he was, he did not know it, and had been having a most interesting sloyd dream, worth being worked out by every little "sloyder." Try it!

THE BATTLE CREEK SANITARIUM DRESS SYSTEM.

HAVING by exercise and practice acquired a proper poise of the body, as was advised in our February number, and having discarded the corset and every other device for compressing the waist, the next

SKIRT WAIST — FRONT.

SKIRT WAIST — BACK.

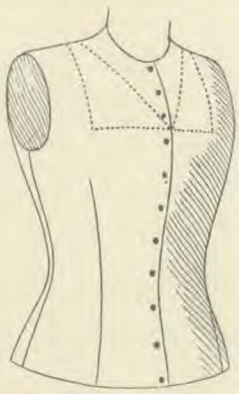
important step should be to regulate the underclothing properly. The whole body should be clothed in soft flannel from neck to wrists almost the entire year round. It is best to have the underclothing for the upper portion of the body and that of the limbs combined in one garment, for the reason that when two garments are worn they generally overlap each other, and so give too much additional heat over the abdominal organs. An undergarment that fits the body snugly will afford many times the protection given by a loose one. Cuts representing our hygienic underwear appear on this page and the accompanying plate, and descriptions of its many excellencies are given herewith :—

The Union Suit.— This is the garment to be worn next the skin. It may be high or low necked, and with long or short sleeves, as preferred. The material used may be silk, lisle thread, merino, wool, or any grade of flannel. It can be made much cheaper than the knit or woven garments can be purchased. The pattern is in four pieces, half of front of body and leg, back, and two sleeve portions. The quantity of material needed is 3¼ yards of 36-inch goods. Price of pattern, 30 cents.

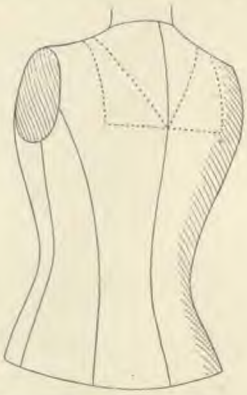
The Combination Suit.— This garment is intended to take the place of both chemise and drawers, and is convenient and elegant in shape. It may be made of cotton, muslin, cambric, linen, or silk, and may be worn without the union suit during the warm season. The pattern is in three pieces; front, back, and band across the back. The amount of material needed is 3½ yards of 36-inch goods. Price of pattern, 30 cents.

The Battle Creek Sanitarium Divided Skirt.— This style of skirt has been in use for several years at the Battle Creek Sanitarium, and is found to be very desirable. The special advantages of the skirt are that in it the body is entirely inclosed, and that the divide does not show. The thinnest of dress fabrics may be worn over it without revealing that it is anything more than an ordinary skirt. Five yards of 36-inch material will make both skirt and waist. Silk, sateen, or brilliantine may be used for the skirt, and percaline, silesia, or silk for the waist. Price of pattern, 35 cents.

The Dr. Lindsay Divided Skirt.— This is a knitted garment invaluable for warmth and comfort, to be worn over the union suit. It is rather close fitting, but being made of wool, is perfectly easy, and so elastic that invalids and those who suffer from chilly



DIVIDED SKIRT WAIST—FRONT.

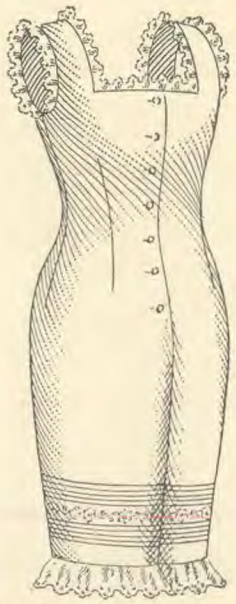


DIVIDED SKIRT WAIST—BACK.

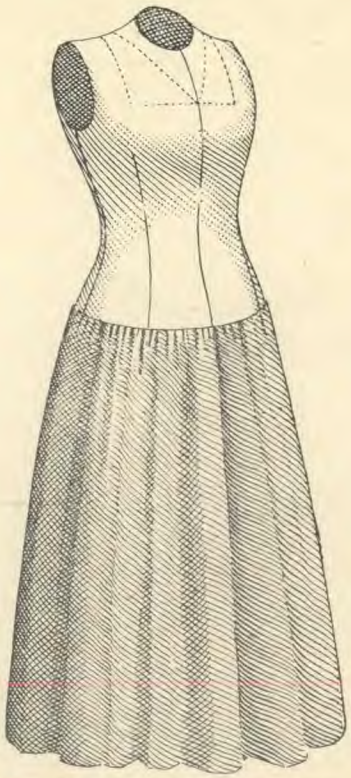
sensations, find themselves comfortable in it without the annoyance of a bulk of clothing. Price, $4.

Tights.— These are Jersey-fitting, and elastic, and are to be worn over the union suit in cold weather. A skirt may or may not be worn. The

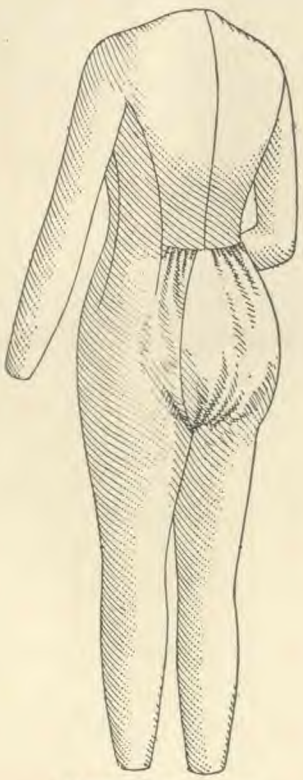
UNION SUIT—FRONT.



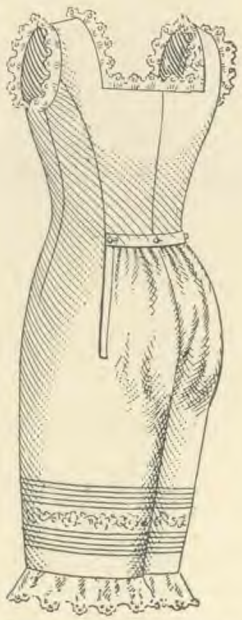
COMBINATION SUIT—FRONT.



IMPROVED DIVIDED SKIRT—FRONT.



UNION SUIT—BACK.



COMBINATION SUIT—BACK.

IMPROVED DIVIDED SKIRT—BACK.

clinging warmth of the Dr. Lindsay skirt, superadded to the protection of the limbs afforded by the tights, constitutes an underdressing which is wellnigh impervious to cold. Tights are especially useful for school teachers and other working women who are obliged to be out of doors in all kinds of weather. For school girls also, and for elderly persons going on a journey in cold weather, they are invaluable as aids to comfort and preventives of cold and chills. These, together with the Dr. Lindsay Divided Skirt, are for sale by the Sanitary Supply Co.

The Divided Skirt Waist.— These waists are admirably adapted for sewing to skirts, thus swinging their weight from the shoulders instead of the hips. This particular waist is in three pieces,—front, back, and under-arm gore. The front is closed with buttons and buttonholes. The pattern is outlined with perforations for either square or V-shaped neck, as desired. 1¼ yards of 36-inch material is required for this waist. Price of pattern, 20 cents.

The Skirt Waist.— This waist is in two pieces, back and front. The front is closed with buttons and buttonholes. Buttons may be sewed on the bottom of the waist, and a skirt made with a simple binding at the top may be buttoned on. The quantity of material needed is ¾ yard of 36-inch goods. Price of pattern, 15 cents.

A PRICKLY PREACHER.

"SISTER, I can't get this sum right. Won't you help me?" asked little Nellie, coming into the room with her slate.

"You must be dreadfully stupid not to understand such a simple thing as that," Marian answered, as she took the slate impatiently out of the child's hand. "Now, if I have to stop and fuss with your old arithmetic, I shan't have any time to practice."

"Never mind," said Nellie meekly, starting to go.

"O, you need n't go away! I suppose I can spare the time somehow."

And very clearly, though in a disagreeable manner, Marian explained the puzzling example, so Nellie found out where her mistake had been.

"Marian!" called her mother from the kitchen, "I am afraid Tom forgot to stop at the grocer's and order the peaches. Did you remind him again before he went?"

"No 'm; I thought he ought to remember for once without being reminded all the time," Marian answered pettishly. "I suppose I have got to go and order them."

"You need not, if you are busy," her mother answered. "I can manage to wait for them until this afternoon, when Tom comes home."

"No, that is n't worth while; I'll go." And Marian put on her hat, and executed the errand.

It was a warm morning, and when Marian returned from her walk, she went out on the porch where it was cool. A green, prickly chestnut burr had dropped from the tree in front of the house, and grandfather pushed it meditatively about with his cane, saying:—

"It 's too bad that anything with as good a heart as a chestnut burr should have such a prickly, sharp covering, is n't it?"

"Yes, I 'd rather go without the chestnut than hurt my hands opening such a prickly burr," answered Marian, fanning herself with her broad-brimmed hat.

"Yet it 's only the outside that is sharp," said grandfather, musingly. "It has a velvet lining to its prickly exterior, and there are no sweeter nuts anywhere than the brown, polished beauties which nestle in their soft hiding-place. That chestnut burr makes me think of some one I know."

"Who?" asked Marian with interest.

"A young friend of mine, who has the kindest heart possible. She is always ready to do a kindness for any one, and she never refuses to grant a favor; but she always is so ungracious about her kind deeds, and says so many sharp, irritable things, that one is tempted to forget the warm heart underneath, and remember only the prickly burr. If she would only do her kind deeds in a kindly way, they would be doubly appreciated."

Marian blushed.

"I suppose you mean me, grandfather," she said, after a little pause. "I did n't think it mattered much if I do grumble a little, so long as I always do what I am asked."

"It makes people feel sometimes as if it was hardly worth while to get their fingers pricked for the sake of the nut," grandfather answered. "Let this prickly preacher preach you a sermon, dear, and learn to do good deeds kindly."— *M. E. Kenney, in the Presbyterian.*

PUTTING THE BLAME WHERE IT BELONGED.— The other day two women were getting out of a street car; one wore a train which the other happened to step upon, whereupon the owner turned indignantly around. The one who had stepped upon the dress said, "I do not feel called upon to apologize to you, for by your criminal carelessness, I might have been seriously injured in getting off the car."

ORIGIN OF THE SPOON.— Two natural objects seem to have furnished the model for the spoon to primitive man — the seashell and the leaf of plants. In Southern China, shell spoons are still used, which are closely reproduced in the familiar porcelain spoon of that country; while metal spoons are found in India, on which are reproduced even the veins of the leaves from which they were copied.

TIME SAVING IN HYGIENIC COOKING.

BY MRS. E. E. KELLOGG, A. M.

ONE of the most common objections raised against the adoption of a healthful dietary is, that "it takes so much more time to cook hygienically than to put materials together by ordinary methods." To the thoughtful mind the reason for this will at once be patent,— such persons have by long practice acquired dexterity in processes to which they are accustomed, and they cannot work out new methods with equal ease and readiness until by practice they have acquired equal skill.

The common testimony of those experienced in hygienic cookery is that more time is saved by this method of preparing food than by any other. Illustrative of how one who is trained to make the most of her minutes can, by careful planning and systematic work, accomplish much in a little time in this direction, we would call the reader's attention to the following daily program, taken from the actual experience of a hygienic cook, the oldest daughter in a household composed of six individuals.

When the cook, who for convenience we will call Ann, entered the kitchen at fifteen minutes before six o'clock, she found the fire, the materials for which had been laid the evening previous, and lighted by her elder brother in the early morning, brightly burning and the oven heat nearly sufficient for baking. Looking at the *menu* written on the kitchen slate, she found it to read as follows: —

Breakfast, January 30.

Apples,
Rolled oats with cream,
Blueberry toast, Graham puffs,
Sliced whole-wheat bread, Granola,
Stewed prunes.

Filling the teakettle and the outer boiler of the grain kettle with water and placing it covered upon the stove, the first step in the breakfast program was carefully to wash her hands, collect the utensils, measure the ingredients, and put together sufficient material for four irons full of graham puffs, made after the following recipe: —

"*Graham Puffs.*— Beat together vigorously until full of air-bubbles, one pint of unskimmed milk, the yolk of one egg, and one pint and three or four tablespoonfuls of graham flour, added a little at a time. When the mixture is light and foamy throughout, stir in lightly and evenly the white of the egg, beaten to a stiff froth; turn into heated iron cups and bake in a rather quick oven."

At six o'clock these were in the oven, and seven minutes more gave ample time to place the inner cup of the double boiler, containing the rolled oats which had been cooked the afternoon previous, in the outer boiler, the water in which was now boiling, to reheat; and gather up, clean, and put away the utensils used in making the bread. The milk and cream for the day's needs were next brought from the creamery, and placed in separate double boilers to sterilize. Some lentils put to soak the evening previous were also placed on the stove to cook for dinner. This, with washing and drying the apples for the table, slicing the bread, and dishing the prunes, cooked the day before, occupied the time until half past six. Fifteen minutes more were used in setting the table and arranging the dining-room for breakfast. The milk and cream, being sterilized, were set in ice-water to cool, with the exception of a small portion of the cream, which was kept hot to be used in softening slices of zwieback for the toast. This was next attended to, and the slices, as soon as prepared, were packed in a heated dish, which was covered and placed in a shallow pan of hot water on the range until all the food should be ready for the table. The sauce for the toast was next prepared by heating a quart of canned blueberries to boiling, and slightly thickening the juice with a heaping tablespoonful of flour rubbed smooth in a little cold water. The puffs were then removed from the oven, the cream poured

into individual pitchers, the food placed upon the table, and at seven o'clock breakfast was ready for serving.

Upon resuming work after breakfast, Ann again consulted her kitchen slate, upon which were written the week's *menus*, and found her dinner bill of fare to be : —

Swiss lentil soup,
Baked potatoes with brown sauce, Split pea succotash,
Cracked wheat with cream, Graham puffs,
Stewed apples with raisins,
Prune dessert.

Half an hour after breakfast was spent in starting the grains to cook, looking over and putting to cook the split peas for the succotash, and in preparing the prune dessert from prunes left over from those cooked for breakfast, according to the following recipe : —

"*Prune Dessert.*— Remove the stones from some well-cooked, sweet, California prunes, and run through a colander to remove the skins. Put the prune pulp thus obtained into a square granite pudding-dish, and place it within another dish containing hot water, letting it evaporate in a slow oven until the pulp is dry enough to retain its shape when cut with a knife. If desired, a meringue may be added when the pulp is done. Serve in squares in individual dishes."

This plan permitted of having all the dishes used in the preparation of these foods washed with those from the breakfast table, so that after that task was completed the kitchen could be put to rights and left in good order. While the table was being cleared, the left-over slices of bread were placed in the oven to be browned for zwieback.

On the completion of the dish washing, Ann took a half hour to brown some flour for the brown gravy, wash and wipe the potatoes for baking, and to look over some dried apples and raisins, also some dried cherries, which were put to cooking, the former for dinner, the latter for the next day's meals. Removing the dessert from the oven and placing all the cooking foods in double cookers, improvised when necessary by setting the kettles into larger dishes of boiling water, so they would cook continuously but not burn, she arranged the coal fire to keep for several hours, and leaving the oven door slightly ajar that the zwieback might have no occasion to burn, found herself at liberty to leave the kitchen for the remainder of the morning to attend to other duties, having spent in cooking the breakfast and the preparation of food for dinner, just two hours and a quarter.

The hour for the dinner service being half past two, at a quarter past one Ann again descended to the kitchen, replenished the fire, took the nicely browned zwieback from the oven, and arranged it to heat for baking. Removing such of the foods as were well cooked, from the stove, Ann proceeded to rub the lentils for the soup through a colander to remove the skins. Next she added sufficient water to make the sifted material of the consistency of thin cream, salt to season and a slice or two of onion to flavor, and then turned the whole into a double boiler to reheat until dinner time.

By this time the oven was in readiness and the potatoes were put in. Setting the table occupied the time for the next fifteen minutes, and finding afterward that she had ample time to do so, Ann prepared a quantity of breakfast rolls after the following recipe, and placed them on ice ready for baking during the dinner hour when the potatoes should have been removed from the oven :—

"*Breakfast Rolls.*— Sift a pint and a half of graham flour into a bowl, and into it stir a cupful of very cold thin cream, or rich milk, pouring it into the flour slowly, a few spoonfuls at a time, mixing each spoonful to a dough with the flour as fast as poured in. When all the liquid has been added, gather the fragments of dough together, and knead thoroughly for ten minutes or longer, until perfectly smooth and elastic. When well kneaded, divide into two portions, roll each over and over with the hands until a long roll about an inch in diameter, is formed ; cut this into even lengths of about two inches, place on perforated tins, and bake from thirty to forty minutes in a moderately hot oven."

This, and starting some rolled wheat for breakfast, occupied the time till fifteen minutes after two, but left ample time for Ann to prepare the brown sauce for the potatoes, to add an equal quantity of canned corn to the well-cooked split peas and season the same for succotash, to remove with a fork the pieces of onion from the well-heated soup, and to take the nicely baked potatoes from the oven before the dinner bell rang.

Just three hours and a half were consumed in the actual work of cooking the two meals. Not only the larger proportion of food for both meals had been prepared, but there was in readiness, cooked or being cooked for to-morrow's meals, zwieback for toast, lentils, stewed fruit, graham rolls, and rolled wheat. Not every housekeeper might be able to command her time from other duties to apply herself so consecutively as did our Ann, but by careful planning, the time consumed in the preparation of food may not be greater in proportion to the material prepared.

AIR CONTAMINATION.

THE primary meaning of the word *nurse* is one who nourishes or cherishes. Therefore nursing means nourishing or cherishing anything, or furnishing nutrition to the helpless, and cherishing and protecting them from injury. Another definition is, furnishing the sick and helpless with the things necessary for maintaining life and restoring health. A good nurse should know what is needed to sustain life, and to restore and maintain health, and also how to supply these necessities in proper quality and quantity.

The things most necessary to preserve life and restore health are pure, clean water, good food, cleanliness of body, bedding, and clothing, sanitary dwellings, sunlight, proper temperature, and physical, moral, and mental exercise and repose. Those who are well and strong can, and should, provide themselves with all these needed external things; but the infant, the aged, the sick, and the injured are helpless, and must depend on others for all the means required for the restoration to health and strength and the preservation of life. The well can get away from the influences of bad air, impure water, and poor food by changing the supply or by moving to some other location; but the sick, helpless invalid, the infant, and the feeble aged person, must depend on some one else for their necessities. The supply of these will be good or bad in proportion to the knowledge and skill of the nurse, the mother, or whoever may be caring for the helpless one.

Pure air is the most important of all the elements needed to sustain life. It is much more necessary than solid food, or even water; for life is extinguished in a few minutes when the supply of air is entirely cut off from a human being or an animal, but both will survive for days without water, and for weeks without food.

Air is useful in maintaining health and overcoming disease in proportion to its activity and purity. Like a stagnant pool, unchanged air soon becomes foul and unfit to be taken into the lungs, and the sick and helpless, being unable to move about or change location to get a fresh air supply, must depend upon the nurse, who should supply the proper ventilation. The air is likely to become adulterated with foul gases, irritating particles of solid matter, and disease germs; therefore it is needful for the mother, nurse, or whoever may be caring for the patient, to understand all sources of air contamination, and to know how to avoid them, thus procuring for the sick and helpless the needed supply of pure air.

Pure air is a mixture of seventy-nine and a fraction parts of nitrogen gas with twenty parts of oxygen, the oxygen being the active element, the nitrogen acting only as a diluent to neutralize the activity of the pure oxygen. There is also a slight trace of carbon dioxide, organic matter, and watery vapor in greater or less amount, varying with the temperature of the air, much more moisture being required to saturate hot air than cold air.

To ventilate means to change or displace one volume of air by another. An ideal ventilation is one which changes the air in the room so rapidly that all the air infected by poisonous gases and vapors from the occupants is displaced by a volume of air fresh and free from all impurity so there will be no possibility of taking back into the body the disease germs or other foul matters which have been expelled. This idea can only be approximated, but the nearer we come to it the more healthful will be the air of the room. A room ten feet square and ten feet high, with one person in it, should have the air changed every fifteen minutes. With two or more persons in it the change should be proportionately more fre-

quent, and with the sick it should be still more frequent.

Mankind, sick or well, are always contaminating the air around them; the well, by waste matter eliminated from the body through the lungs and skin; the sick by these poisons, and also by the throwing off of disease germs and poisons resulting from the germ growth and extra tissue waste, which always accompany disease. The air of the room may become foul from outside sources. In winter, especially, the foul, cold air from a damp basement or cellar filled with decaying fruits and vegetables and other stale organic matter, may be invited into the room to fill the vacuum formed by the escape of the warm air. The cracks in the floor afford a ready entrance for the foul ground air into the room. Stationary washbowls, defective closets, and leaking gas and drain pipes, and also impure air from unsanitary outside cesspools, closets, stables, barnyards, and other outhouses, will tend to saturate the air with impurities.

All acute germ diseases are due to foul water, impure air, or poor food. By this I mean that the germs are carried into the body by being either inhaled with the air or swallowed with the food and drink. When they once get into the body, they lodge in the mucous surfaces, and begin to multiply, forming poisons unless destroyed by the healthy cells in the tissues, or the healthy secretions of the glands and membranes of the body.

In an ill-kept room there are many sources of air contamination, as dirty slop-pails, soiled clothing and bedding, dusty carpets, unused closets, the space under the bed, expectorations, and other discharges from the patient's body deposited on the floor or the hankerchief, or on bedding and clothing, and allowed to dry. These discharges, when pulverized into fine dust, infect the air. In most cases, consumption, diphtheria, and pneumonia are contracted from this source. Also probably common colds and influenza are spread in like manner from one member of the household to another. Germs, when dried, may live indefinitely.

In the ordinary sweeping of the room the germs will rise and settle on the walls, shelves, the tops of the picture frames, and on every other projection; the furniture and drapery in the room will be covered, and the feather duster which follows the broom, stirs up the dust again and starts it floating into the air, leaving the air fouler than before. The vapors from the laundry and kitchen often settle on the walls, and produce a dampness in which foul germs develop, and these further destroy the purity and wholesomeness of the indoor air. Poisonous gases are often generated from coal stoves, oil lamps, gas jets, etc., and the air often becomes overheated and dry from steam coils, registers, and air-tight stoves. Unless some method is provided for furnishing moisture to the air, it becomes a source of irritation to the eyes, nose, throat, and bronchial tubes, the dry air robbing them of needed moisture, and causing catarrhal inflammation and granulated eyelids, and other diseases of the mucous surfaces.

To give the sick all the help they can obtain from the influence of good air, the nurse must understand what good air is, how to get it, and how often the air in a room must be changed to keep it pure. She must also know how to keep the air at the proper temperature and how to have proper moisture present. She must know all the sources of air contamination, and how to avoid them. She must understand how to obtain a current of air, and how to set a current of air flowing through the room without injuring the patient by the draught.

To secure ventilation there must be some inlet for pure air and an outlet for foul air, and this every person caring for the sick should strive to find. In a room with two windows, one may be opened at the bottom and the other at the top. In cold weather the hot air, being lighter, will rise and escape at the top, and the cold, fresh, outside air will come in at the bottom. If the air cannot be changed in this way because of draughts, the sash may be pulled up from the bottom and the space closed by a board, allowing air to flow in between the sashes. In case the windows in the room cannot be raised, the outside air may be brought in through another room, and warmed before being admitted. Warm air is not necessarily impure air, nor is cold air necessarily pure. If neither door nor window can be kept open all the time, then the patient must be carefully covered, and hot bottles, bricks, or bags put in bed to keep him warm, and the draught kept off his head and face by a screen or an umbrella. A screen may be made of a high-backed chair, with a shawl, blanket, or quilt thrown over it. A clothes-horse, or anything else on which to hang a screen cloth will answer the purpose. Then open both the doors and windows, and keep them open five or ten minutes, until the air is completely changed. Do this every hour or two, thus frequently changing the whole air in the sick-room. This is often necessary in small, close living-rooms, which well people occupy.

In summer, when the air outside is still and close,

a draught may be created by setting a lighted lamp or candle in the chimney or stove, if there is one in the room. This will start a current outward, and make room for a fresh flow inward. Swinging the door backward a few minutes on its hinges will often change the air in the room and create a current, causing a change in the volume of air and reviving the drooping sick one. The old-fashioned open fireplace or wood stove were excellent ventilators, drawing the foul air up the chimney and making room for fresh outside air.

In many modern houses there are ventilating shafts which have an inlet for fresh air and an outlet for foul air. Sometimes the fresh air is warmed before being admitted into the rooms. A stovepipe by the side of the chimney opening into it will make an outlet for the inside air when there is heat in the shaft. Thus a furnace chimney may be made a ventilating shaft for the whole house by having an air space around it which opens into each room, and the air inside, being heated, forms a current outward for the house air. Whatever means may be used, care should be exercised to see that the plan is working properly. A lighted candle or a pocket handkerchief held near the air inlet or outlet will tell very quickly in which direction the current is going.

Next in importance to securing good ventilation is to cut off all possible sources of air contamination. Great care should be exercised to prevent all sputa and other excretions from the body of the sick, or from the well, from getting on the floor or carpet and drying there. This is especially necessary in cases of lung disease. Many a consumptive has hastened his own death and poisoned all his family by carelessness in this respect. In such cases, sputa should always be received on handkerchiefs, which should immediately be disinfected and boiled, or better still, on old cotton cloths, and burned before being allowed to dry. All clothing and bedding soiled with sputa or discharges from bowels or bladder, or by scales from the skin, should be disinfected and boiled. The fecal discharges from typhoid fever and cholera patients, and others suffering from diseases of the bowels, are full of germs, which, when dried and pulverized, infect the air. The scales from the skin of smallpox, scarlet fever, and measles, and other eruptive disorders, drying on the body, will peel off and float about in the air, carrying with them disease germs. This contamination should be prevented by oiling the patient's body and frequently sponging it, always thoroughly disinfecting the water afterward, either by heat or by a strong bichloride solution. The patient's mouth and all orifices of the body should be kept clean by being frequently washed with some mild antiseptic, as a saturated solution of boracic acid and water, or a solution of one part in sixteen of peroxide of hydrogen. Listerine, one part in eight or ten, makes a very efficient mouth-wash. When nothing else is at hand, a mouth-wash may be made of lemon juice and water, or better still, water four parts and lemon juice and glycerine each one part. If the patient is very weak, cleanse the mouth and teeth with a swab. If nothing better is at hand, the nose may be cleansed with a solution of salt and warm water, an even teaspoonful of salt to a pint of water. All combings from the patient's hair and every soiled thing which cannot be disinfected or washed should be burned.

The sick-room is always better without a carpet. In all contagious diseases, carpets, upholstered furniture, and all kinds of curtains and drapery which cannot be washed, must be removed at once. The room should be kept free from dust, but this should not be done by ordinary sweeping, but by using a damp, disinfected rag to pick up the dust and prevent it from flying about and infecting the air. All dust on furniture should be removed in the same way, and the rags burned.

All vessels and slop-pails, with their contents, should be disinfected and carried from the room at once. Soiled clothing should also be removed immediately. The drain-pipes, gas-pipes, stationary washbowls, and all sources of outside air contamination, should be shut off at once. Stop up the drain-pipes of the washbowl with a cork, and keep it filled with fresh water, which should be frequently changed. Fill up all cracks in the floor which permit foul air to come in from the basement.

A clean patient, clean surroundings, the ability to prevent the discharges from the diseased body from repoisoning the patient himself and others, should be the aim of the nurse. See that the dust is gotten out of the room without filling the air with it. Even in a tenement or a dugout an effort should be made to accomplish this result. No one can tell just how much he can do under the worst conditions until he has tried. Heat is the surest disinfectant, and if nothing else is at hand, as often occurs in the country, the discharges can be poured on sawdust, dried straw, or even leaves, and burned.

The air of the nursery should be carefully looked after, as it is often as badly infected by lack of inside cleanliness as the air of the sick-room. Soiled napkins and other dirty garments are often dried

in the room. Stale food and discharges from the child's bowels and bladder are allowed to dry on the clothing, bedding, and carpets. The baby also gives off a poison through the breath and the exhalations of the skin and the waste is more in proportion to its size than that of the adult, as the functions are more active.

Dr. Routh, of London, gives his experience in regard to the foulness of the air in a nursery which was kept cleanly and occupied only during the day. The room was a large one, sixty feet long, with ceiling ten feet high at the sides and seventeen feet in the middle of the room. It was kept clean, as were also the children, but they died from bowel disorders, thrush, and other wasting diseases. The room was always filled with a faint unpleasant odor. Dr. Routh procured a step-ladder one day, and mounted it for the purpose of investigating the air above the level of the window. He had no sooner reached the sash than he became sick and faint, and had to descend quickly, so foul was the atmosphere in the upper part of the room. He then sent for a workman to remove a few tiles from each end of the room on a level with the highest point of the ceiling. This soon cleared the room air of bad odors, but the workman came down feeling giddy, and was very ill for some time afterward, from the terrible foulness of the upper air. If strong men can be thus affected, what must be the result on the sensitive organization of little children?

Sometimes a little child is not willing to go to bed in a dark room, and so an oil lamp or the gas is partially turned down, and left burning, perhaps all night. This is often done in the sick-room also. Any one coming in from the fresh air will always notice the contamination. A leaky base-burner coal stove, and any other stove with the drafts closed by dampers, is another illustration of air contamination from improper heating or lighting. In many respiratory diseases a moist, warm atmosphere is needed, as dry air is very irritating to the inflamed air passages. In croup, pneumonia, and bronchitis, steam can be generated from a tea kettle on a stove of any kind, and sometimes is conveyed to the patient by a funnel, from which he can inhale the moisture directly. In all cases of illness a certain amount of moisture is needed to keep the air from irritating the mucous surfaces, but this should not reach the point of saturation, and less vapor is required in the air of a cold room than in that of a warm room.

The subject of procuring a wholesome air supply for both sick and well members of the family, is a very important one, and should engage the attention of every housekeeper, and, in fact, of every woman, leading her to study all sources of air contamination, and also how to cut them all off. She should also understand plumbing, and all the various methods of modern ventilation, in order to see that the family have a full supply of clean, pure air.

NERVOUS patients are often much annoyed by the noise made by replenishing a coal fire by pouring on or shoveling in the coal. This can be avoided by putting the coal into old paper sacks, or wrapping it in any old paper, and placing it gently in the stove, paper and all. This is important to remember, for with some nervous patients much of their future welfare and hope of recovery depends upon complete nerve repose.

FEW persons realize how a very little pressure may cause serious foot deformity if exerted on a child's foot during infancy, when the tissues are soft, the bone mostly cartilage, and the foot growing rapidly. The little innocent shoe, a trifle snug when bought, but so cunning, soft, and comfortable-feeling for baby's dainty foot, may exert just pressure enough to cause corns, bunions, and ingrowing toe-nails, and serious deformity in after life. Keep a strict watch of baby's feet, and when the toes begin to become crooked and crowded together, and the flesh of the plump little leg hangs over the shoe tops, discard the shoes at once, and let no mistaken ideas lead you to compel your baby to wear them out on the score of economy.

NEVER insist upon a child's eating food to save it. Better waste a little food than to waste the child's health. Form the habit of putting a limited amount on the child's plate at once, rather than to overload it and then make the child feel that he has done wrong in not eating it all.

If a child's appetite begins to fail, try to discover the cause and remove it. Never tempt the palate with rich, unwholesome foods, as pastries, preserves, highly seasoned meats, etc. Failing appetite is often a symptom of some serious acute disease, or of overfeeding or clogging of the digestive or eliminative organs. Fasting for a few meals at such a time will give nature a chance to successfully contend with and remove the waste and other poisons which were hindering the work of nutrition.

GOOD HEALTH
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PROFESSOR BUNGE ON ALCOHOL.

THERE is no subject upon which physiologists and chemists are more thoroughly agreed at the present time than that alcohol is neither a food nor a stimulant. The best authorities among physiologists and chemists, from Lehmann down to the present time, have held the same view. The following paragraphs from the excellent text-book on "Physiological and Pathological Chemistry," by G. Bunge, present the character of alcohol in its relations to the human body in a very clear light: —

"We know that alcohol is to a very great extent oxidized in the body. Only a small part is excreted unchanged by the kidneys and lungs. Alcohol is, therefore, without doubt, a source of energy when absorbed into the body. But it does not therefore follow that it is a food. To establish the latter supposition, it must be shown that the energy liberated by the oxidation of alcohol is used to aid the performance of a normal function. It is not enough that chemical potential energy is transformed into kinetic energy; the transformation must occur at the right time, in the right place, and in definite parts of the tissues. The tissues are not so constituted that they can be fed with any and every combustible material; we do not know, for instance, whether alcohol can serve as a source of the energy by virtue of which the functions of muscle and nerve are performed.

"It will be objected that the heat which is produced by the combustion of alcohol must in any case be useful to our economy. Even if it does not directly subserve any definite function of a particular part, the combustion of the alcohol must save the using up of other food stuffs.

"But even this cannot be admitted. For while on the one hand the alcohol increases the production, on the other it increases the loss of heat. Owing to the paralyzing action which it exerts on the vasomotor system, a dilatation of the vessels, and especially of the cutaneous vessels, occurs, and consequently there is an increased loss of heat. The total result is a diminution of the temperature of the body, which has been actually proved to take place.

"Alcohol has invariably a paralyzing influence. All the results which, on superficial observation, appear to show that alcohol possesses stimulant properties, can be explained on the ground that they are due to paralysis.

"It is a common idea that alcohol produces a warming effect in cold weather. This feeling of warmth depends, in the first place, on the fact already noticed — that the paralysis of the central nervous system causes an increased blood supply to the surface of the body; and, secondly, in all probability, on the blunting of the sensibility of the central organs which are concerned in the sensation of cold.

"The stimulating action which alcohol appears to exert on the psychical functions is also a paralytic action. The cerebral functions which are first interfered with are the powers of clear judgment and reason. As a consequence, emotional life comes into free play unhampered by the guiding strings of reason. The individual becomes confiding and communicative; he forgets his cares and becomes gay; in fact he no longer clearly sees the dangers and difficulties of life. But the pronounced paralyzing action of alcohol is seen in the way it allays all sorts of discomfort and pain, and, above all, the worst of all pain — mental suffering, anxiety, and trouble. Hence the light-heartedness which prevails at a carousal. It is a prejudice which depends upon self-deception, to believe that a man ever becomes

witty by the aid of spirituous drinks. This error is simply one of the results of the paralytic influence mentioned above; as the power of criticising one's self diminishes, self-complacency increases. The lively gesticulations and useless exertions of intoxicated people are due to paralysis, the inhibitory influence which prevents a sober man from uselessly expending his strength, being removed. Associated with this is the increased frequency of pulse, which is commonly cited as an instance of the stimulating power of alcohol; it has nothing to do with the action of alcohol, but is caused by the surroundings among which the alcoholic drinks are usually taken. It is a consequence of the excited condition, and, according to the experiments hitherto made, does not occur when the body remains quiet.

"A paralytic symptom which is erroneously regarded as one of stimulation, is also found in the deadening of the sense of fatigue. There is a strong belief that alcohol gives new strength and energy after fatigue has set in. The sensation of fatigue is one of the safety-valves of our machine. To stifle the feeling of fatigue in order to be able to work on, is like forcibly closing the safety-valve so that the boiler may be over-heated.

"The belief that alcohol gives strength to the weary is particularly dangerous for the class of people which contains the most numerous members. The poor people, whose income is already insufficient to procure a suitable subsistence, are misled by this prejudice into spending a very considerable part of their earnings on alcoholic drinks, instead of purchasing good and palatable food, which alone can give them strength for their hard work.

"This prejudice of the 'strengthening' power of alcohol maintains so deep a hold owing to the results which are seen and felt in the case of the habitual drinker. Any one who is in the regular habit of taking a considerable quantity of alcohol is better able to do his work while he continues it than if he were suddenly to leave it off. We cannot at present explain this result, although it is quite analogous to the effect of other narcotics on persons who have been accustomed to their use. The opium eater can neither work, nor eat, nor sleep, if his opium be denied him; he is 'strengthened' by the opium. But a man who is not accustomed to a narcotic is most certainly not rendered more fit for work by taking it.

"The uselessness, if not harmfulness, of even moderate doses of alcohol rests on better evidence than scientific deductions and experiments. In connection with the sanitation of armies, thousands of experiments upon large bodies of men have been made, and have led to the result that, in peace and war, in every climate, in heat, cold, and rain, soldiers are better able to endure the fatigues of the most exhausting marches when they are not allowed any alcohol at all. A similar result is observed in the case of the navies, and on thousands of commercial vessels of England and America, which put to sea without a drop of alcohol. Most whalers are manned by total abstainers.

"That mental exertions of all kinds are better undergone without alcohol is generally admitted by most people who have made the trial. Alcohol, then, makes no one stronger; it only deadens the feeling of fatigue.

"One of the disagreeable sensations which alcohol diminishes is that of tedium. This feeling is, however, like the sensation of fatigue, one of the arrangements for self-regulation which the organism possesses. Just as the feeling of fatigue makes us rest, so the feeling of tedium encourages us to exertion, without which nerve and muscle atrophy. It is interesting to observe what curious means a lazy and empty-headed man adopts in order to be free from the demon of tedium without making personal exertion. It drives him without rest from place to place, to this company and that, from one distraction to another. But all these attempts to escape from himself would be in vain, and the bulk of mankind would be driven to exercise their brain and muscles in one way or another, in order to obtain the feeling of rest and satisfaction and to lose their sense of tedium, were it not for alcohol. Alcohol frees them easily and agreeably from this demon. A drinker is never conscious of his own emptiness. He wants no interests and ideas; he has the comfort and satisfaction of narcosis. There is nothing so dangerous to the development of a man, nothing which so undermines his character, nothing which so surely destroys the remaining energy he is capable of, as the continual deadening of the sense of tedium by means of alcohol.

"Another point which is adduced in favor of alcoholic drinks is, that they diminish the waste of the body. It is true that a slight diminution in the excretion of nitrogen, and consequently of proteid decomposition, is observed after moderate doses of alcohol. But it is difficult to understand why this should be made a reason for recommending alcoholic drinks. Why should we wish to diminish the metabolism of the body? Is not metabolism, or the breaking down of the tissues, the source of all our energy? The intensity of this disintegrating

process, this conversion of potential into kinetic energy, is constantly regulated by a complicated nervous mechanism, which now acts in an inhibitory, now in an accelerating, direction, according to the requirements of the various organs. To interfere with this self-controling mechanism by the action of poisonous substances can hardly be wise, since we are almost entirely in ignorance concerning its intimate character. What means have we of judging whether the metabolism is too quick or too slow?

"In large doses, alcohol increases instead of diminishing the excretion of nitrogen. In this respect it resembles certain powerful poisons, especially phosphorus and arsenic, which cause increase in the excretion of nitrogen, but at the same time diminish the amount of oxygen taken up and carbonic acid excreted, and consequently produce fatty degeneration of various organs. It appears that these poisons give rise to the production of fat from proteid; the nitrogen, with a small quantity of the carbon, is separated from the proteid molecule, and the residue, free from nitrogen, is stored up in the tissues as fat. We shall have to consider this process in greater detail in a later section. Possibly the fatty degeneration of the organs sometimes observed in drunkards is to be referred to a similar action. But, unfortunately, the experiments hitherto made have not decided with certainty whether the absorption of alcohol has any influence on the elimination of carbonic acid.

"It is commonly thought that alcoholic drinks act as aids to digestion. In reality it would appear that the contrary is the case. Any one may make the observation on himself, that a meal without alcohol is more quickly followed by hunger than when alcohol is taken. The inhibitory influence of alcohol on digestion has been observed on a patient with a gastric fistula, on several other persons by the aid of the stomach-pump, and by means of numerous other experiments.

"Up to this point I have chiefly considered the action of alcohol on persons who are usually called moderate drinkers. To describe the ultimate consequences of excessive drinking can hardly come within the scope of these lectures. It may be mentioned, however, that the misuse of alcoholic drinks causes a whole host of diseases; that no organ of our body remains free from its injurious action. It is also apparently certain that from 70 to 80 per cent of crime, from 80 to 90 per cent of all poverty, and from 10 to 40 per cent of the suicides in most civilized countries, are to be ascribed to alcohol.

"We must, however, strictly discriminate between the use of alcohol as a luxury and an article of diet, and its use as medicine. In the opinion of many practitioners, it is indispensable as a medicine. It is precisely its paralyzing properties which render it valuable in this case. It is a mild anæsthetic, and acts as a sedative by diminishing abnormally increased reflex irritability. Alcohol is further used as an antipyretic; but proof of its value in this capacity is still lacking."

Hepatitis in India.—According to Stokvis, the mortality of European soldiers from hepatitis in India is from one to two per 1000 each year, while that of the native soldier is only .14 to .4 per 1000. The great fatality from this disease among European soldiers is doubtless due to their excessive use of flesh food.

Tuberculosis from Cow's Milk.—Several of the inmates of an institution for girls recently became ill with consumption, and died. Upon investigation it was found that the milk supply of the institution (a small one) was obtained from a single cow. The possibility of infection from the milk supply was so evident that the animal was killed, and although to all appearance it was quite healthy, upon examination after death it was found to be thoroughly infected with tubercles, making evident the source of the disease. Unquestionably a much larger number of cases of tuberculosis are the result of the use of milk from infected animals than is generally supposed. The use of milk is unsafe unless the liquid is subjected to a temperature of 150° to 160° for ten to fifteen minutes. Scalding of milk is sufficient to destroy all dangerous germs contained in it.

Tuberculosis and Bedbugs.—A European physician calls attention to the fact that consumption may be communicated by bedbugs. A young man slept in a bed which had been previously occupied by a consumptive, and contracted the disease. It was afterward found that he had been frequently bitten by bedbugs which had evidently infested the bed during its use by its previous occupant. The bugs probably derived their germs from the sputa of the tuberculous patient, or from infected linen. It is entirely possible that fleas may operate in the same way. A knowledge of this fact ought to give rise to an active effort on the part of all householders for the extermination of these vermin.

DIPHTHERIA ANTI-TOXINE.

THIS is the name applied to the remedy for diphtheria which has recently been developed in France and Germany. This remedy is based upon the fact that when the system of a human being or an animal is invaded by diphtheria germs, a resistance is set up by the body, and substances are produced in the blood which have the property of antagonizing the diphtheria poison. This substance is known as anti-toxine. It is supposed to be produced by the living cells of the body.

This substance is obtained by injecting diphtheria poison, obtained by growing it in test-tubes in beef tea, into horses, which are thus inoculated with the disease. The dose is, at first, small, but is gradually increased, thus by degrees accustoming the animal to the poison until it is able to take a deadly dose without injury. The animal is now proof against diphtheria, its system having produced in its blood a sufficient amount of anti-toxine to destroy any amount of diphtheria poison which may be introduced. The blood is now withdrawn from the animal, and the serum of the blood, if injected into other animals, is found to impart to them the same protective influence which has been acquired by the horse.

Experiments made with this remarkable product have shown that it is not only theoretically but practically effective in the treatment of diphtheria. In Berlin, when the remedy was applied within two days after the appearance of the disease, the mortality was reduced from 60 per cent to 4 per cent.

Diphtheria injection has already been quite extensively used in this country, as well as in France, Germany, and England, and the reports of its success have been so favorable that the highest expectations are raised in the minds of the members of the medical profession, that a sovereign remedy for this dreadful malady has at last been discovered. It is only recently that the remedy has been available in this country. It may now be obtained, however, from the enterprising firm of Schultze-Berge & Koechl, 79 Murray St., New York City, who constantly keep a fresh supply on hand. It must not be forgotten that the remedy must be used early to be effective. No injurious effects follow its employment.

COFFEE AS A DISINFECTANT.— It is amusing to note how much effort is made, even by scientific men, to bolster up some of the most potently mischievous of human foibles. Dr. Proteorowski, of Russia, has recently come forward with the interesting assertion that coffee is useful as a disinfectant, his experiments proving that a pure water infusion of coffee kills cholera germs in three hours, typhoid fever germs in one day, and the spores of the Siberian plague in nine days, from which he argues that it is valuable as a beverage. The absurdity of the argument will readily appear, when it is recalled that coffee taken as a beverage is absorbed from the stomach in much less than three hours' time, consequently has disappeared from the field of activity long before it can have had time to do any effective work as a disinfectant. The typhoid bacillus given a whole day's start would be likely to have penetrated the lymphatics and gotten itself well established in the lymphatic glands long before the coffee had begun to get in its disinfectant work. And in the case of the germ which is the active cause of the Siberian plague, which coffee can succeed in conquering only after a nine days' battle, it would have had the man killed and buried two or three times over before the coffee had even begun a narcotico-disinfectant action. Our scientist will have to bring forward some more convincing facts before we shall be prepared to recommend coffee as a beverage on the ground of any useful properties.

ANSWERS TO CORRESPONDENTS.

ALABASTINE — YOLKS OF EGGS, ETC. — S. U. B., Iowa, asks: "1. Will alabastine fill up cracks in old plastering, so they will not show? 2. If not, would you advise papering such walls? 3. Do eggs having yolks of a light color possess as great nutritive value as those having dark-colored yolks? 4. Since poultry has almost as filthy habits as the hog, why should the flesh be more healthful food than pork? 5. Why should eggs, then, be considered a proper food? 6. Do you consider onions in any form proper food?"

Ans. — 1. Cracks in an old wall should be filled before the alabastine is applied. This is easily done by means with which any plasterer is familiar.

2. It is desirable to avoid the application of paper to walls if possible. We do not consider this a matter of the most serious consequence, yet it may have an important relation to health.

3. Yes.

4. The flesh of chickens, if they are allowed to feed upon filth, is no more suitable food than that of other animals fed in the same manner. The same is true of eggs.

5. The quality of eggs produced by hens fed upon filth, is greatly injured. They may not actually communicate disease, as in case of diseased meat, nevertheless they cannot be considered wholesome.

6. Onions contain a considerable amount of nutrition, and if cooked in such a manner as to eliminate the volatile oil which they contain, they may be considered as not particularly unwholesome. The odor, however, is certainly very objectionable, and if eaten raw or improperly cooked, they may be a source of indigestion.

FOOD COMBINATIONS — MEAT GRAVY. — F. M. B. asks: "1. Does sterilized milk form a good combination with vegetables? 2. Is the gravy made from meat objectionable as food?"

Ans. — 1. If the person has a sound digestion, milk may be eaten with vegetables without injury.

2. Meat ex racts, broths, gravies, etc., contain the objectionable qualities of meat with little or none of the nutrient elements.

SCIATICA — SHULTZ'S GERMAN COMPOUND, ETC. — Mrs. E. A. H., Ill., asks: "1. Please give advice as to the treatment for sciatica. The pain is severest in the thigh, but extends from the small of the back to the ankle. It started a year ago, and has continued almost constantly since that time. 2. Would the Shultz German Compound be good to use as a liniment? 3. What ought to be done for a child two years old who has no appetite? He eats nothing between meals, and almost nothing at mealtime. Often he will eat nothing at all."

Ans. — 1. This disease requires rest in bed, with fomentations over the lower part of the back and the affected limb. Massage and applications of electricity are exceedingly valuable in the treatment of this disease.

2. We never recommend secret remedies or patent nostrums.

3. The condition of the child requires careful attention. He may possibly be suffering from a fever, perhaps has incipient tuberculosis. The case is one which requires serious attention. A physician should be consulted. Possibly a tepid sponge bath every morning, followed by rubbing with oil, may benefit the child.

DANDRUFF — FALLING OF THE HAIR. — M. A. L., Nevada, writes that his wife has been troubled for several years with dandruff and falling of the hair. The head is washed frequently, but the dandruff has steadily increased in quantity until now the entire head is coated, and the hair is coming out very fast. The hair has been shingled, but it makes no difference. She would be grateful for advice.

Ans. — This case very probably requires the services of a specialist on disorders of the skin. A simple remedy which is often found useful, is shampooing the scalp three times a week with castile soap and warm water, and applying, after drying the hair, a mixture of equal parts of castor oil and alcohol, which should be well rubbed into the scalp.

BLEACHING SUPERFLUOUS HAIR — Miss E. A. R., Conn., inquires: "In the bleaching of superfluous hair by peroxide of hydrogen, would the substance injure the skin, or tend to produce a heavier growth?"

Ans. — Bleaching the hair with peroxide of hydrogen destroys the life of the hair, and, in fact, has no particular effect upon the skin.

FOOD COMBINATIONS, ETC. — A. E. B., Ill., asks: "1. Do sugar and milk form a good combination? 2. Would sugar and cream produce the same effects? 3. Would the cooking of the milk and sugar together, as in puddings and custards, overcome any objection? 4. Are the meats of pumpkin and squash seeds healthful to eat?"

Ans. — 1. No.

2. Cream is tolerated by many persons who cannot eat milk.

3. Milk, as used in cookery, is much less likely to disagree than when taken raw, as a drink, in connection with meals.

4. No.

LACK OF ENERGY — JOINING THE ARMY, ETC. — C. R. W., Penn., writes: "I am a locomotive fireman, but do not seem to take to the work, or have much energy, although I take good care of my health. What is the probable cause? 2. Would you advise a young man to join the U. S. Marines or the U. S. Army? 3. I am fleshier on the right side than on the left. What is the probable cause?"

Ans. — The patient is probably suffering from gastric neurasthenia.

2. No.

3. The increased size of the right side may be due to a disproportion of the development of the muscles.

SUGAR EATING.— M. H. E., Ill., writes: "A correspondent in a certain paper lately claimed to have done an immense amount of work on a diet composed largely of sugar. Was it not by means of the fermentation of the sugar, thereby causing alcoholic stimulation?"

Ans.— Sugar often ferments in the alimentary canal, but fermentation is usually carried beyond the alcoholic stage to that of vinegar or acetic acid. The form of fermentation which takes place is also frequently one which produces lactic acid rather than alcohol or acetic acid. The amount of alcohol caused by fermentation of sugar in the alimentary canal is not likely to be sufficient to produce any decided systemic effect, but in any case alcohol produced by fermentation in the stomach or out of it is not a stimulant in the sense that enables a person to do more work with it than without it. Sugar is, of itself, capable of contributing more support of the forces of the body than is alcohol. It is more than probable that alcohol is in no sense a food, while sugar is a food.

CANNED OR EVAPORATED FRUITS.— M. G. N., Minn., asks: "Which is the easier digested, canned or evaporated fruits? and which would you advise a family to make use of?"

Ans.— Canned fruits are more readily digested than dried fruits, provided too large a quantity of sugar is not employed. But for persons in ordinary health, both canned and dried fruits are entirely wholesome.

HEART DISEASE — NERVOUSNESS — TOOTH PULLING, ETC. — Mrs. J. G. H., N. Y., writes as follows: "1. My age is thirty-six years. Always, upon receiving a fright, I become suddenly very weak. The sensation seems to begin in the left side and extends across the breast and throughout the body, even to the ends of the fingers. Is this the result of heart disease, or is it simply nervousness? 2. My sister was treated with a local anæsthetic for the purpose of extracting a tooth. In a few minutes after the operation she began to gasp for breath, and continued thus for some time. Was this probably on account of weakness of the heart? 3. Has the diet anything to do with the state of the heart and nerves? 4. If so, please give directions as to proper diet 5. What is the proper treatment for a cold in the head? 6. Is drinking hot water in large quantities good in a case of dropsy? 7. Can epilepsy be cured."

Ans. 1.— The symptom referred to is not an indication of heart disease.

2. No; the symptoms are the ordinary symptoms of cocaine poisoning, and indicate that the patient has become susceptible to the drug. An injection of cocaine can hardly be regarded as safe, except in an extremely minute dose.

3. Yes, everything.

4. Eat two meals a day of wholesome, simple, natural food. No more specific directions can be given without the specific indications.

5. An acute cold in the head may usually be cured by the application of heat to the part exposed in contracting the cold, as a hot foot bath, in case the feet have been wet, and the use of the volatilizer for the relief of acute catarrh of the nasal cavity. The volatilizer should be used every hour.

6. The remedy named has succeeded in some cases of this sort.

7. Some cases of epilepsy are curable, but not all cases.

CAPILLARY VEINS.— C. F. S., Ill., asks: "On a thin skin the capillary veins often show through on the nose or cheeks. Is there any remedy for this?"

Ans.— We know of none.

THE NEBULIZER — ASTHMA — HAY FEVER, ETC.— N. N. C., Minn., asks the following questions: "1. As we see questions asked in GOOD HEALTH in regard to catarrh and similar affections, we wonder greatly that you do not recommend the nebulizer. Do you not think it will help in such cases? 2. Will this instrument cure or relieve asthma, using solution No. 6, as recommended? 3. Will it cure or relieve hay fever, using formula No. 5? 4. Which is the better, the common white flour, called 'straight,' or the patent? 5. What will exterminate bedbugs? 6. I cannot eat anything sour without the teeth being set on edge. What is the cause? 7. Is there any help for it?"

Ans.— 1. The volatilizer is preferable to the nebulizer in most cases.

2. The remedy named usually gives relief.

3. The remedy referred to is valuable in relieving hay fever.

4. Patent wheat flour is preferable to other grades.

5. Corrosive sublimate in solution.

6. Peculiar susceptibility of the dental nerves.

7. We know of none except correction of the state of general nervous irritability which probably exists.

TENDER FEET.— "A reader" inquires: "Do you know of any remedy for tender feet? I have long been troubled with soft corns or callouses, which come wherever the toes rub together, and the size of the shoe does not seem to have any effect on them. There are as many as five such places on one toe, and being very painful, they render walking almost impossible at times. The feet sweat quite freely."

Ans.— The parts affected should be protected by a piece of chamois skin placed between the contiguous parts which have become calloused or irritated by being rubbed together. An opening should be made in the chamois skin pad to admit the corn or callous, thus relieving the pressure. Alternate hot and cold bathing of the feet will be found beneficial, also rubbing with dry starch or sub-carbonate of bismuth.

SUPERFLUOUS HAIR — CAKED BREAST.— Mrs. L. S., Iowa, asks: "1. Please give me instructions for removing superfluous hair. 2. Please outline treatment for a caked breast."

Ans.— 1. The popular depilatories are worthless, as the growth of hair returns. The only satisfactory way is to remove the hair by means of electricity, which must be applied to each individual hair.

2. The application of fomentations or cotton poultices combined with massage constitute the proper course of treatment.

RELIEF DEPARTMENT.

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

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

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

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

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

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

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

☞He wishes especially to state that those who apply for children will be expected to accompany their applications by satsfactory letters of introduction or recommendations.]

A LITTLE German boy (No 244), nine years old, is in need of a home. He has blue eyes and light brown hair, and is now living in Florida with his mother, who is unable to care for him. He is said to be kind-hearted, and we doubt not, if he is surrounded by good influences and receives proper instruction, that he will be an honor to those who will thus direct his steps in the right path.

TWO ORPHANS (NOS. 251 AND 252).— We have just received word respecting a girl and boy aged respectively eleven and six years. They are now living in Indian Territory with kind relatives, who have cared for them since their parents' death. The relatives are no longer able to care for the children, and request that they both be placed in the same home, where they will receive Christian training. The children have brown eyes and light hair, are in good health, and are now living in the country. The children know scarcely anything of the care or love of an own mother and father, as they were deprived of such care when very young. Is there not a home in the Southern or Western States that will open its door to these children who are in such great need?

WILLIAM (No. 254) is a boy thirteen years old living in Michigan. He has a slight blemish in one eye, impairing the sight; otherwise the boy is in excellent health, and bright and clean. This boy's mother is dead. His father is in poor health, so he wishes to place the boy in a private family.

STELLA (No. 255) is a little girl eight years old, with brown eyes and hair, and her brother (No. 256) is six years old, having blue eyes and light brown hair. These are just as needy and deserving of a home as are orphans. Their stepfather has deserted them, and their mother, who is failing rapidly with that dread disease, consumption, wishes to see her children placed in good homes. The children have been living in the country, not having had many associates, and have not been neglected. They are now living with relatives in New York, who can care for them but a short time longer.

Two half-orphan girls (Nos. 257 and 258), eleven and nine years old, need a mother to care for them. Their father is not able to work all of the time, on account of ill health, hence desires to place his children in private families. The children both have blue eyes and light hair, and are of a loving disposition. They are now living in one of the New England States. Will some kind friends in the East offer them a home?

No. 259, another Michigan boy, nearly two years old, with blue eyes and auburn hair, needs a home. The mother lives in hopes of sometime being able to provide for the child, but at present she wishes to place him in some good family.

No. 261 is a boy fifteen years old, living in Indiana with a family who took him two years ago. He had had no religious training, but they have given him such privileges as they could, but now they feel as if they cannot assist him in obtaining the education he needs. The boy is a Christian, intelligent and well advanced in his studies, but he longs to have an opportunity of obtaining an education, and is willing to work for his board and clothes while attending school.

NOS. 262 AND 263.— A little boy and girl eight and six years old living in Pennsylvania have been brought to our attention. They are motherless, and their father, being in very poor circumstances, needs assistance. He desires to place his children in the

homes of Christian people. We learn that they are good children, easy to teach, and of good appearance. They are now with their aged grandparents, who cannot care for them longer.

Is there not some one living near a college or high school, who will be glad of an opportunity to help this aspiring youth to realize his noble desires?

WORSE THAN ORPHANS.— Two colored children living in Colorado have lost their mother, and as nothing is now known of their father, they surely deserve the sympathy of those who have an interest in those who are needy. The oldest (No. 266) is a boy twelve years old, while the little girl (No. 267) is only four. These children had a mother who gave them good care, and we earnestly trust that some one will deem it a privilege to take these little ones and direct their feet into the right path. The person who writes us concerning these children says, "I believe them to be bright, active children, with no bad habits."

MYRTLE (No. 268) is a little girl living in Illinois. She is ten years old, has blue eyes and light hair. One who knows her says she is "very bright, active, and affectionate." She is now living with relatives who already have a large family, hence they wish to place her in some good home. Complete legal control can be given.

No. 269 is a baby boy only five months old. An aged grandmother is caring for him until a home can be provided for him. He has blue eyes and brown hair, and is now living in Iowa.

ONE of our friends who had made application for a boy about nine years old, writes, "The Lord has sent me another one, a homeless waif about ten years old. He came here last week and I have given him a home." This is an instance in which an opportunity was presented when the heart was willing and ready to work for the needy. This person might have neglected this homeless child with the thought that he wanted some other child, one perhaps more promising in appearance; but we are glad to know that the little waif was considered as being sent from the Lord, and that this brother obeyed the injunction, "Bring the poor that are cast out to thy house." May we never neglect the opportunities nearest our own doors.

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

VISITING DAYS AT THE HASKELL HOME.

PERSONS intending to visit the Haskell Home will please note that the visiting days are Sundays and Wednesdays, from 4 to 6 P. M. It is necessary to make this announcement, as so large a number of visitors have called at the Home on other days that the very interest of the friends, which we have no desire to discourage, has been something of a hindrance to the workers. J. H. KELLOGG.

CLOTHING FOR THE POOR.

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

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

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

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

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

5. Clothing intended for the Chicago mission should be sent to Chicago Medical Mission, 40 Custom House Place, Chicago, Ill.

LITERARY NOTICES.

"A Story of Pitcairn Island."—By a native daughter. Oakland, Cal., Pacific Press Pub. Co.

This little volume tells a very interesting story of the mutiny of the "Bounty," and a history of the island since its discovery and settlement by the mutineers. The volume is made especially interesting by the fact that it was written by the daughter of one of the mutineers, who has always resided upon the island. Naturally the style is quite original, nevertheless it is such as to command the interest of the reader from beginning to end. The book contains a large amount of information which has never before been made public in any volume. The work is profusely illustrated, printed on excellent paper, and beautifully bound, and is a credit to the enterprising publishers.

One of the most interesting "Nursery Problems" discussed in the March number of *Babyhood* is that concerning the popular apprehension about unusually bright children. The medical editor, Dr. Yale, makes it very clear why such fears are largely groundless. He also answers questions as to "the dangers of excessive crying," "unusual wakefulness," "the causes of stammering," etc. Another valuable medical article deals with the development of the teeth. "A Dissatisfied Baby" gives humorous utterances to the woes of childhood in high life. "Nursery Helps and Novelties," and "The Mothers' Parliament," contain much practical advice on such matters as "teaching our little ones to be helpful," "welcome offerings for the little stranger," "teaching versus training," etc. $1 a year. Babyhood Pub. Co., 5 Beekman St., New York.

Examples illustrating some of the best of the work of contemporary foreign artists distinguish the current issue of *The Monthly Illustrator*, and will form a valuable and always attractive feature of this magazine hereafter. This magazine, in pursuance of its announcement policy, is including articles of more general interest than heretofore. The March number contains several of these, notably one upon "Early Artistic Watches," by George F. Kunz, the gem-expert; another, by Ernest Ingersol, describes the quaint architecture and many curious customs of the Pueblo Indians; and Charles Turner tells of the scenery and legends of Killarney. All these articles are profusely and richly illustrated, as are also the articles upon certain familiar garden-flowers, by Lennie Greenlee; and C. H. A. Bjerregaard's philosophical treatment of a selected series of tropical butterflies. Harry C. Jones, Editor and Publisher, 92, 94, and 96 Fifth Avenue, New York.

Scribner's Magazine for April will be an Easter Number with a special cover designed by Henry McCarter and a series of full-page pictures by four great illustrators,—Edwin A. Abbey, Albert Lynch, W. T. Smedley, and Edwin Lord Weeks,—showing Easter scenes in England, Paris, New York, and Jerusalem. There is also an Easter Hymn with six remarkable full-page symbolic pictures by Henry McCarter.

President Andrews's "History of the Last Quarter-Century," now running in *Scribner's*, has reached the Greeley Campaign, which is to be described in the April number. Among the illustrations are rare pictures of noted members of the *Tribune* staff more than forty years ago, including Dana, Curtis, Ripley, Bayard Taylor, and Margaret Fuller.

"Decorations for a Dining-Room," by Miss Elizabeth B. Sheldon, is the leading article in the March number of *Table Talk*. Her suggestions are both bright and practical, and we are not surprised that her decorations have become a necessity in the homes at our National Capital, before they can be considered complete. Mr. Chas. W. Garfield, Secretary of the Michigan State Board of Agriculture, also gives a very interesting account of the progress of Domestic Science in the Farmers' Institutes of his own State and elsewhere. The regular departments and the Dietetic Lesson are, as usual, full to overflowing with bright and new ideas on all subjects of interest to the house-keeper and home-maker. There is also mention of the newest things in table-service, novelties, etiquette, fashions, literature, and so on. This magazine is published in Philadelphia, at $1 per year, and a sample copy is offered to any of our readers, free.

Harper's Young People for 1894, volume XV. with about 800 illustrations and 888 pages. Quarto, cloth, ornamental, $3.50.

A volume containing better stories, or more of them, than the bound volume of *Harper's Young People* for 1894, would be difficult to find. The best serials that can be obtained are there to be enjoyed from the first chapter to the last; and there are also the brightest of short stories, historical sketches, practical papers on a variety of interesting subjects, poems, letters, and all the special features that, from week to week, delight young readers.

PUBLISHERS' DEPARTMENT.

WINTER in Michigan is at an end at last, while the bright sunshine of spring, which has arrived with almost the suddenness of an Arctic springtime, is exceedingly delightful. No one seems glad to say "Good-by" to winter for it has really been such a delightful season. The cold has been just sufficient to keep in good condition the fine sleighing, for which nature has furnished snow enough, so that the Sanitarium patients have had the luxury of almost daily exercise in the open air, either in walking, coasting, or sleighing. Coasting parties have been frequent, there being available, for the purpose, a fine hill upon the Sanitarium premises, furnishing a model toboggan slide, and the season has really been very greatly enjoyed by the hundreds of invalids who have patronized the institution during the winter months. The managers say that the institution has had a larger number of patients during the present season than ever before at this time of year.

***

IMPROVEMENTS are in progress at the Battle Creek Sanitarium, as usual. For more than twenty years one substantial improvement has followed another in the building up of this institution, until for many years now, it has been recognized as standing far ahead of all other establishments of the sort in this country, in its equipment. Its newly completed bathrooms, for convenience, adaptation to the uses designed, and preparation for accurate and scientific work in the treatment of disease, are unequaled anywhere. No pains or expense have been spared to give to this department of the institution a degree of completeness, and even elegance, commensurate with the proportions to which this establishment has developed, through the large degree of appreciation which has been accorded it by a discriminating public.

Notwithstanding the high degree of perfection which has been attained in the development of the institution during a number of years back, the managers have been continually compelled to say to themselves, "One thing still we lack." The one thing lacking is, however, soon to be supplied in the construction of a large swimming bath, which is already in progress. The swimming bath will be something more than fifty feet square; dressing-rooms and shower baths will be provided in connection with it, and it will be so arranged that it can be used both summer and winter. Swimming is unquestionably one of the most healthful of all exercises, and is an art which should be acquired by every person. Boys and girls are very easily taught to swim, but the art is somewhat difficult of acquirement by persons who have grown to adult age without learning it. Every person is liable to be brought, sometime in his life, into circumstances which will require locomotion in the water to preserve his life; hence the art of swimming should be considered as one of the modes of protection with which every person should be acquainted. Regular classes in swimming will be conducted in connection with the physical culture department of the institution, and the swimming bath will also be used as a therapeutic measure, not only as a means of exercise, but as a most beneficial form of bath in certain cases.

THE Battle Creek Sanitarium, as is widely known at the present time, is an all-the-year-round establishment, not closing its doors from the year's beginning to its end. The constant improvement in modes of treatment, apparatus, etc., secures a constant growth in the patronage of the institution, and, as its friends and patrons increase, add still further the means of promoting the comfort and convenience of its invalid guests, and to its facilities for expediting their speedy recovery.

***

AT a recent meeting of the Stockholders of the Health Reform Institute, held in Battle Creek, the stockholders expressed great satisfaction in the progress which has been made in the development of the facilities and resources of the institution. A large company, numbering nearly two hundred, were guests for dinner at the institution one day during the meeting. The dinner was served at the "helpers'" dining-room in the young ladies' dormitory. The dinner served was not especially arranged for the occasion, but was simply the ordinary dinner, which was served in precisely the same manner in which meals are daily served to the employees of the institution. It was a gratification to the managers to recognize the satisfaction and approval expressed by the stockholders. A reception was also given to the stockholders on the evening of February 23, which seemed to be thoroughly enjoyed. A brief description of the occasion will be published in the next number of this journal.

***

THE Battle Creek Sanitarium Food Company have been obliged to add continually to their plant during the last ten years, and these additions have continued until the business has quite outgrown its present quarters. Tons of food are being shipped out weekly to all parts of the country. Orders have sometimes been received from the ends of the earth, shipments being made to Australia, India, Burmah, even Persia, the Cape of Good Hope, and the islands of the sea. Wherever these foods have been introduced, they are recognized as filling a place which has never yet been filled by other productions of a similar character. The health foods made by the Battle Creek Sanitarium have the merit that they are genuine products from the best materials, not manufactured simply to sell, but to meet a real want, to the filling of which they have been, by the aid of long experience, eminently adapted. Another merit possessed by the health foods manufactured by the Battle Creek Sanitarium is the moderate price; although superior to any other similar products manufactured in this or any other country, the price at which they are offered is very much less than the prices charged for allied foods made by other manufacturers. Samples are sent on application to the Sanitarium Health Food Company.

***

"BODY RESTED, MIND AT EASE."—That is what it is when traveling on the fast trains of the Chicago, Milwaukee & St. Paul Railway; besides there is no chance to "kick," for the accommodations are up to date, the trains keep moving right along, and get there on time. These lines thoroughly cover the territory between Chicago, La Crosse, St. Paul, Minneapolis, Aberdeen, Mitchell, Sioux Falls, Sioux City, Yankton, Council Bluffs, Omaha, and Northern Michigan. All the principal cities and towns in that territory are reached by the "St. Paul" lines, connecting at St. Paul, Council Bluffs, and Omaha with all lines for points in the far West. Write to Harry Mercer, Michigan Pass'r Agent, Detroit, Michigan, for one of their new map time tables and a *brochure* giving a description of the Compartment Sleeping cars. Tickets furnished by any coupon ticket agent in the United States and Canada. The finest dining-cars in the world are run on the solid vestibuled, electric-lighted, and steam-heated trains of the Chicago, Milwaukee & St. Paul Railway.

***

HOME SEEKERS' EXCURSION.—On March 5, April 2 and 30, 1895, the Michigan Central will sell excursion tickets at one fare for the round trip to all points in Alabama, Mississippi, North and South Carolina, and Tennessee, and to many points in Florida, Georgia, Kentucky, Louisiana, and Virginia. For full particulars call on or write to Geo. J. Sadler, Ticket Agent M. C. R. R., Battle Creek, Mich.

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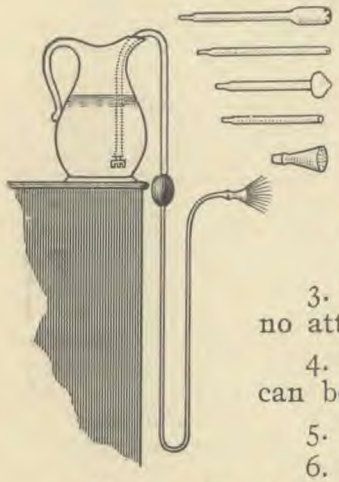

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Edited by

MARY WOOD-ALLEN, M. D.

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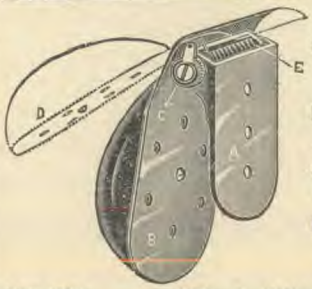

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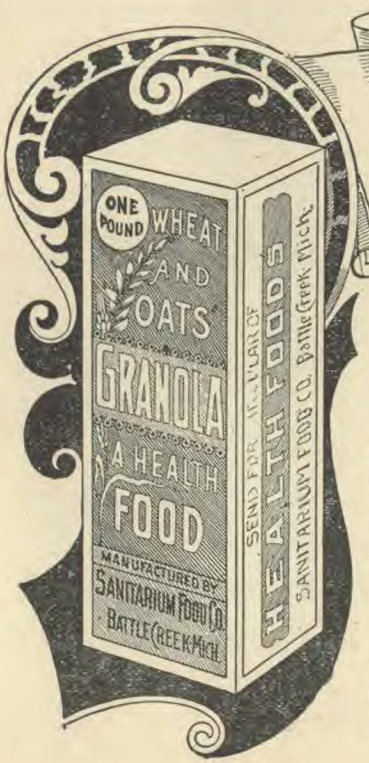

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Time Table, in Effect Nov. 18, 1894.

GOING EAST. *Read Down.*					STATIONS.	GOING WEST. *Read up.*				
10 Mail Ex.	4 L'v'd Ex.	6 Atl. Ex.	42 Mixd Tr'n.	2 Pt. H Pass		11 Mail Ex.	1 Day Ex.	3 R'd L'v'd	23 S. C. Pass.	5 P'flc Ex.
a m	p m	p m				p m	p m	p m		a m
9.00	3.10	8.15	a m	.....	D Chicago A	6.45	1.50	9.10	.....	7.50
11.25	5.05	10.30	6.00	.....	Valparaiso	5.05	11.35	7.10	.....	5.45
p m										
1.05	6.30	12.00	10.05	.....	South Bend	3.10	10.15	5.44	.....	4.10
1.46	7.12	12.45	12.40	.....	Cassopolis	2.15	9.40	5.13	.....	3.28
2.33	.....	†1.33	3.42	.....	Schoolcraft	1.20	.....	.....	.....	.....
2.44	7.55	1.48	4.30	a m	Vicksburg	1.10	8.52	.....	p m	2.37
3.30	8.36	2.40	6.20	7.00	Battle Creek	12.15	8.15	3.55	9.35	1.50
4.33	9.26	3.25	.....	7.47	Charlotte	11.14	7.23	3.07	8.40	12.53
5.10	9.55	4.00	.....	8.20	Lansing	10.30	6.55	2.40	8.00	12.20
6.30	10.45	5.03	.....	9.30	Durand	9.35	6.05	1.55	6.50	11.28
7.30	11.17	5.40	.....	10.05	Flint	8.35	5.35	1.28	5.47	10.35
8.15	11.50	6.15	.....	10.43	Lapeer	7.49	5.02	1.00	5.10	10.01
8.42	a m	6.35	.....	11.06	Imlay City	7.28	.....	.....	4.48	.....
9.50	1.00	7.30	.....	12.05	Pt. H'n Tunnel	6.50	3.50	11.55	3.50	8.45
	p m					a m	a m	a m	p m	p m
9.25	.....	.....	.....	.....	Detroit	.....	.....	10.40	4.05	8.45
	a m	p m					p m			p m
.....	8.15	5.25	.....	.....	Toronto	.....	9.20	.....	.....	1.00
	p m	a m					a m			
.....	8.15	7.25	.....	.....	Montreal	.....	9.15	.....	.....	.....
	a m	p m					a m			
....	8.12	7.15	.....	.....	Boston	.....	8.30	.....	.....	.....
	a m	p m					p m	a m		p m
.....	7.50	4.25	.....	.....	Susp'n Bridge	.....	10.15	7.05	.....	2.25
	a m	p m								p m
.....	7.00	5.40	.....	.....	Buffalo	.....	.....	.....	.....	1.00
	p m	a m					a m	p m		p m
.....	8.53	8.03	.....	.....	New York	.....	8.15	6.10	.....	8.00
		a m								p m
.....	.....	12.20	.....	.....	Boston	.....	.....	.....	.....	7.00

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MICHIGAN CENTRAL

"The Niagara Falls Route."

Corrected Nov. 18, 1894.

EAST.	*Night Express.	†Detroit Accom.	†Mail & Express.	*N. Y. & Bos. Spl.	*Eastern Express.		*Atl'antic Express.
STATIONS.							
Chicago	pm 9.30		am 6.50	am 10.30	pm 3.30		pm 11.30
Michigan City	11.35		8.50	pm 12.17	5.20		am 1.19
Niles	am 12.45		10.15	1.15	6.23		2.45
Kalamazoo	2.15	am 7.20	11.55	2.30	7.40		4.35
Battle Creek	3.00	8.10	pm 12.50	3.05	8.18		5.22
Jackson	4.30	10.00	2.40	4.25	9.35		6.50
Ann Arbor	5.40	11.05	3.50	5.15	10.25		7.47
Detroit	7.10	pm 12.20	5.30	6.15	11.25		9.20
Buffalo				am 12.35	am 6.45		pm 5.30
Rochester				3.38	9.55		8.40
Syracuse				5.40	pm 12.15		10.45
New York				pm 1.45	8.45		am 7.00
Boston				3.45	11.45		10.50

WEST.	*Night Express.	*N.Y.Bos. &Uhl.Sp.	†Mail & Express.	*N.Shore Limited.	*Weste'n Express.	† Kalam. Accom.	*Pacific Express.
STATIONS.							
Boston		am 10.30		pm 2.00	pm 3.00		pm 7.15
New York		pm 1.00		4.30	6.00		9.15
Syracuse		8.30		11 30	am 2.15		am 7.20
Rochester		10.37		am 1.20	4.10		9.55
Buffalo		11.45		2.20	5.30		pm 3.30
Detroit	pm 8.45	am 6.30	am 7.20	8.30	pm 1.10	pm 4.35	11.10
Ann Arbor	10.25	7.30	8.43	9.25	2.12	5.57	am 12.15
Jackson	11.40	8.35	10.43	10.30	3.15	7.35	1.25
Battle Creek	am 1.17	9.48	pm 12.15	11.43	4.31	9.13	2.55
Kalamazoo	2.10	10.27	1.00	pm 12.22	5.09	10.00	3.36
Niles	4.00	11.48	3.00	1 40	6.27		5.00
Michigan City	5.09	pm 12.50	4.25	2.45	7.22		6.00
Chicago	7.10	2.40	6.35	4.30	9.05		7.50

*Daily. †Daily except Sunday.

Kalamazoo accommodation train goes west at 8.05 a.m. daily except Sunday.
Jackson " " east at 7.27 p. m. " "

Trains on Battle Creek Division depart at 8.10 a. m. and 4.35 p. m., and arrive at 12.40 p. m. and 6.35 p. m. daily except Sunday.

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

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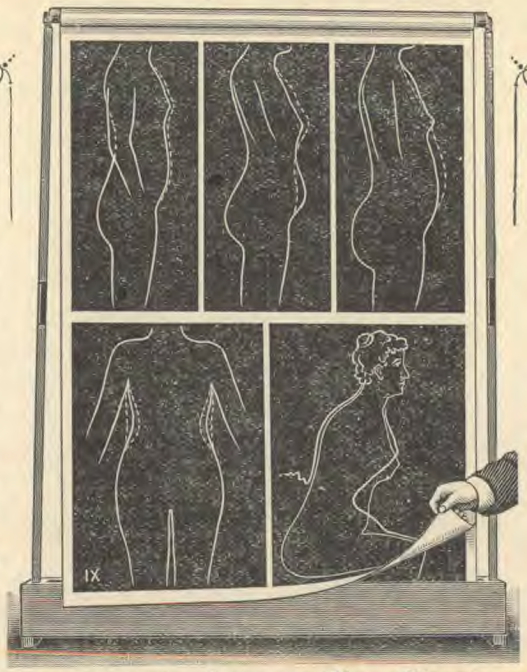

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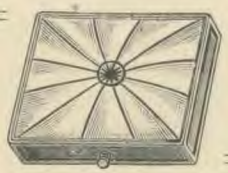
CARRIAGE  CUSHIONS.

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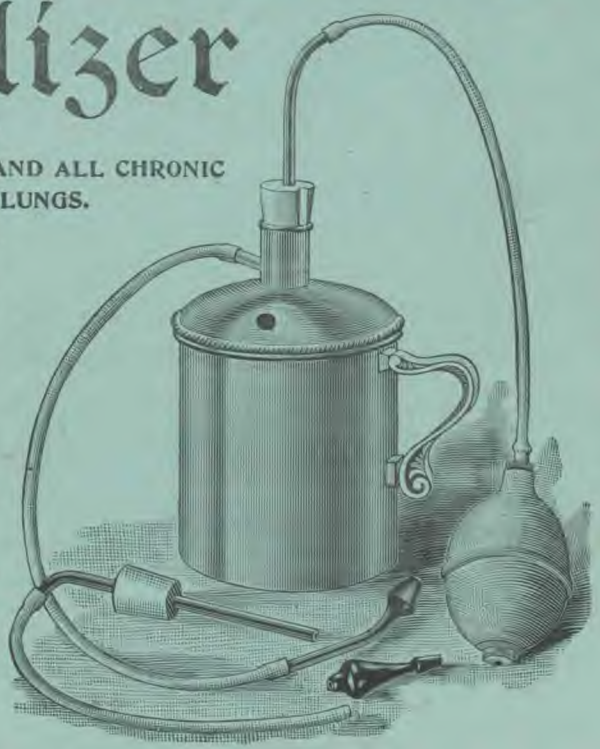

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