# The Health Reformer.

NATURE'S LAWS, GOD'S LAWS; OBEY AND LIVE.

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## BIBLE HYGIENE.

BY ELD. JAMES WHITE.

IN the records of God's providential dealings with the race, the Hebrews hold a high rank. These descendants of the worthy patriarchs, Abraham, Isaac, and Jacob, were proud of the blood in their veins, and, in the days of Christ, are heard to say boastfully, "We have Abraham to our father."

Abraham was a truly grand character in his day. "I know him," says the great God, "that he will command his children and his household after him." Gen. 18:19. He is made the father of all the faithful. Rom. 4:11, 16. The reason his children were to be in number like the dust of the earth, Gen. 13:16, or, as the sand upon the sea-shore, chap. 22:17, or as the stars of heaven, chap. 15:5; 26:4, is given thus: "Because that Abraham obeyed my voice, and kept my charge, my commandments, my statutes, and my laws." Verse 5. The secret of his moral greatness lay in the fact that he was true to principle, and possessed unlimited faith in God, and in his providential dealings with the faithful.

There is much of thrilling interest in the sacred sketches of Isaac, of Jacob and his twelve sons, the slavery of Joseph, his elevation, the subsequent slavery of the Hebrews, and their miraculous deliverance. God designed to do great things for them; hence his prohibitions which restricted appetite, and provided for them the most healthful food.

During four hundred and thirty years of slavery in a heathen land, the habits of the Hebrews became more or less corrupted. And as their moral power became weak, in the same degree appetite and passion grew stronger. With an outstretched arm, God brought them from the land of servitude into the wilderness, where he purposed to reform them. Their wrong habits in Egypt had made them irritable, and had disqualified them to endure the pangs of thirst, or the gnawings of perverted appetite.

Their wrong habits were such that a change to the simple manna was a great one. But this change, God being judge what was best for them, was necessary to their physical, mental, and moral good. God well knew that unless they could control appetite, they could not be controlled by law; hence the test in restricting them to the manna. "Then said the Lord unto Moses, Behold I will rain bread from Heaven for you; and the people shall go out and gather a certain rate every day, that I may prove them, whether they will walk in my law, or no."

God designed to bring a whole nation near to himself, and give them opportunity to develop a perfect character before him. He tested them on appetite, as he did our first parents in Eden, and with about the same results. Had they stood the test, God would have taken them through the wilderness in the brief space of eleven days, and would have triumphantly planted the hosts of Israel whom he had borne on eagles' wings from Egypt to the land of promise.

But the Hebrews failed to endure God's test. Appetite dethroned reason, and reigned in childish murmurings and rebellion. And as a consequence of yielding to the clamors of corrupted appetite they wandered forty years in the wilderness, and strewed their carcasses all along the way, so that only two of the adults that left Egypt were permitted to reach the good land of promise. Let the sacred records be carefully searched, and see if the murmurings of the children of Israel, which are made very prominent in both the Old Testament and the New, may not be traced

back in every case to restrictions, or to their fears, as to what they should eat and drink.

The waters of Marah were bitter, and a general cry of murmuring rang through the host of Israel, and reached the ear of Moses, "What shall we drink?" A certain tree cast into the waters made them sweet. This quieted their murmurings for the time. And the Lord "made for them a statute and an ordinance, and there he proved them, and said, If thou wilt diligently hearken to the voice of the Lord thy God, and wilt do that which is right in his sight, and wilt give ear to his commandments, and keep all his statutes, I will put none of these diseases upon thee, which I have brought upon the Egyptians; for I am the Lord that healeth thee." The gracious God of the Hebrews regarded the health of his people as a matter of first importance. He promised them health if they would obey. Indeed, no fact appears more distinct upon the sacred record than that, in the great work of reforming them, and restoring them from wrong habits contracted in Egypt, God commenced with the appetite.

And the Lord does not propose to work miracles for the health of his people while they indulge in habits injurious to health. He designs to make them healthy and happy by restricting their diet, and thereby restoring natural appetite and mild temper. He was soon to take his people to the land of promise, a second Eden, marred somewhat by the curse, and establish them there a healthy, holy people. But before doing this, he would reform them in their dietetic habits, by taking them back, step by step, as near as possible to the purity of his original purpose when he provided the simple fruits, grains, and vegetables, as the best food for man.

Thirty days after the departure from Egypt, the Hebrews were encamped in the Wilderness of Sin, and there the circumstances of their position tested their trembling faith. It was evident that the chances for food were against them, unless God should work a perpetual miracle. And the infidel question was murmured through the camp, "Can God furnish a table in the wilderness?" And the whole congregation murmured against Moses and Aaron, saying, "Would to God we had died by the hand of the Lord in the land of Egypt, when we sat by the flesh-pots, and when we did eat bread to the full; for ye have brought us forth into this wilderness to kill this whole assembly with hunger." Ex. 16:3.

The case was an urgent one. Something must be done. The people must have food. And the necessity of his people was God's opportunity there to send them supplies from Heaven. It came in abundance, and lay round about the host. The God and Father of his people most certainly gave them food which was best adapted to their wants. Well, did he send down to them cattle, sheep, swine, lobsters, oysters, clams, eels and the like, tea, coffee, and tobacco? This he could have done, and would have done, if these were necessary to life and health. But none of these were given. What did the God of Israel provide as food for that vast host? The simple language of the Sacred Record gives the following interesting facts:—

"Then said the Lord unto Moses, Behold, I will rain bread from Heaven for you; and the people shall go out and gather a certain rate every day, that I may prove them, whether they will walk in my law, or no." Ex. 16:4. God was about to repeat his law in the ears of all the people. Would they obey? Their appetites and passions were such that the matter was one of doubt. This, however, seems to be established in the Divine Mind, that unless they could control appetite they could not be controlled by law. God proposes to prove their moral powers, and he does this by testing them in the matter of appetite.

From the description of the manna given in Num. 11:7, 8, one might safely conclude that it would be quite as disagreeable to morbid taste as graham bread. Its shape, color, taste, and the manner in which it was prepared for food, are thus given: "And the manna was as coriander seed, and the color thereof as the color of bdellium. And the people went about and gathered it, and ground it in mills, or beat it in a mortar, and baked it in pans, and made cakes of it; and the taste of it was as the taste of fresh oil."

It appears from the record that the people were not at first restricted to manna alone.

In the morning they were to eat of the manna, and in the evening they were to eat of the flesh of the quails. Whether flesh was given them once a day at first, that the change of their habits might be more gradual, or because of their frenzied murmurings, may be a matter of debate. But at a later period they were restricted to manna alone, as the following statement of their frantic murmuring shows :—

"And the mixed multitude that was among them fell a lusting; and the children of Israel also wept again, and said, Who shall give us flesh to eat? We remember the fish which we did eat in Egypt freely; the cucumbers and the melons, and the leeks, and the onions, and the garlic. But now our soul is dried away. There is nothing at all beside this manna, before our eyes." Num. 11 : 4–6. God gave them flesh—not because it was best for them—but to teach them that he best knew their real needs. As other means of instruction had failed, he let them have their own way this time to humble them and bring them to submission.

The leader of murmuring Israel was instructed to say to his people, "And ye shall eat flesh; for ye have wept in the ears of the Lord, saying, Who shall give us flesh to eat? for it was well with us in Egypt; therefore the Lord will give you flesh, and ye shall eat. Ye shall not eat one day, nor two days, nor five days, neither ten days, nor twenty days, but even a whole month, until it come out at your nostrils and it be loathsome unto you; because that ye have despised the Lord which is among you, and have wept before him, saying, Why came we forth out of Egypt?" Chap. 11 : 17–20.

We are sometimes gravely informed by those knowing gentlemen who give their influence on the side of indulgence of morbid taste, that the appetite indicates that which is best adapted to the wants of the system. And tens of thousands are acting the glutton, and hastening to a premature, wretched end over this miserable untruth. How terribly false in the case of the Hebrews! On the same ground men may justify the drunkard, the opium inebriate, and the tobacco slave.

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HEALTH and morality go hand in hand.

## Dress Reform.

[THE following is the first portion of a lecture delivered in Boston a year ago by Abba Goold Woolson as the conclusion of a series of lectures on the same subject. The balance of the lecture will be published next month. We copy it from a work entitled "Dress Reform," published by Roberts Bros.—ED.]

No further argument is needed to demonstrate that the requirements of health and the styles of female attire which custom enjoins are in direct antagonism to each other. But, before passing to the consideration of other phases of the question not yet touched upon, it may be well to sum up these antagonisms, as they have been presented at length, in a few brief and general statements.

It has been plainly shown that our present dress violates health in three important ways : First, by its compression of vital parts of the body; second, by its great weight, and the faulty supension of this weight; and, third, by the unequal temperature which it induces.

Thus, health would say: "If your dress is to be tight, let it be tight anywhere but over the region between the upper, fastened ribs and the hips. If its weight is to be great, let it hang from the solid framework of the shoulders, not from this sensitive central region where there is nothing to support it. If any part is to be overheated, let it be the extremities, and not this. For here lie the vital organs whose unimpeded action is essential to your very life—the lungs, the heart, the liver, and the stomach. That they may have the fullest opportunity to expand and move, they are covered only with loose flesh and a few movable bones."

But custom says : "Let your dress be tight nowhere but over this very region between the ribs and the hips. Loosen your clothing over the bone-encased shoulders; from your hips to your feet hang wide-floating draperies; but bind and pinch and tighten over the lower air-cells of the lungs, over the throbbing heart, the active liver, and the expanding stomach. Fortunately there is nothing there, by way of bones, to prevent you from squeezing yourself all you wish; and only by squeezing yourself there can you be made beautiful in my eyes."

She says also : "You are weaker than man in physical strength, from a lack of exercise in youth, and from an in-door life. Carry, then, about yourself four times as much weight as he; multiply your garments; lengthen your skirts; weigh them down with ornament; and gird them all over the shelf of your hips. There they will drag upon stomach and in-

testines, but I do not concern myself about that."

When health insists upon an equality of temperature, with a greater amount of clothing over the extremities in order to insure this equal warmth, custom, as antagonistic as ever, has these orders to give: "Clothe slightly legs and arms; but encompass your body, just where the active internal organs create the most heat, with a torrid zone, an inch or two in width, of twenty thicknesses of material in the form of bindings. Below these, plait, gather, and reduplicate your cloth till it is ten-fold the thickness it is above the belted zone from which the skirts depend. If the nerve-centers that lie beneath, in stomach and spine, become weakened and disordered, it is nothing to me."

Health says also: "Have your dress durable and simple, that you may go abroad readily in all weathers, and be afraid of neither sun, rain, nor wind." But custom makes it perishable in fabric, and engrossing in the care it demands; and, being also burdensome and tight, it discourages exercise, save of the milder sort and in the blandest weather.

Such differences as these which have been pointed out are too broad to be reconciled. Who can wonder that we seek to change custom, and to work a reform in her requirements, since the physical laws with which these conflict must remain for ever inflexible?

In considering the hygienic aspect of this subject, physicians remember not only the daily physical discomfort and suffering of women, but the excessive agonies which childbirth brings upon them, the frequent death which it entails, and the inferior children to which such mothers must inevitably give birth. A leading female physician of Philadelphia is convinced, from her own observation, that there has been an alarming increase of ill-health among women during even the past two years, and that maternity is fast becoming an unnaturally fearful peril. She believes the dress commonly worn to-day to be the cause of all this.

That weakness and disease are not inherent in our sex, as is too commonly supposed, will be plainly apparent, if we remember the strength and vigor possessed by the women of savage tribes, of the toiling peasant classes of Europe, and of the harems of the East. What makes the difference in this respect between them and the ladies of Europe and America? No medical authority who has ever worn the dress of the latter can doubt that the habitual disregard of physical laws which it imposes will alone suffice to account for the existence of all their diseases, new and old. Medical authorities who have never worn it may look far and wide for other causes, but it is because they ignore or undervalue evils which they have never experienced.

We are ready to trace a connection between two facts which Mrs. Leonowens states concerning Siamese women; viz., that they wear only a few ounces of loose silk cloth for covering, and that they are wholly ignorant of the long train of female weaknesses of which we hear so much.

Looking over the world at large, it would appear that, just in proportion as a nation advances in general intelligence and Christian virtue, in just that proportion does the female half of its people delight in dressing so as to defy nature's laws. It is a curious anomaly, which I will not stop to explain. So long as women remain heathen, they may be servile, ignorant, and frivolous, but they do appear to have some respect for their bodies. The free-flowing outlines of the costumes worn by Greek and Roman maids and matrons were not more beautiful to the eye of the artist, as he pictured them in the sacred processions that wind across their vases and bas-reliefs, than they were conducive to the full development of that body whose strength and beauty their people worshiped with such reverent homage. And could mothers begirt with corsets, laced and panniered after the modes of our time, have given birth to the race of athletic young heroes who strove before their assembled countrymen for the crowns of honor at national games? All the women of the East, as well as those of Siam, drape themselves to-day with light folds of unsewed cloth, and know nothing of our elaborate fastenings and complicated layers of inconveniences. Of the women of the Sandwich Islands, a traveler tells us: "Their loose dress gives grace as well as dignity to their movements, and whoever invented it for them deserves more credit than he has received. It is a little startling at first to see women walking about in what, to our perverted taste, looks like calico or black stuff nightgowns; but the dress grows on you as you become accustomed to it. It lends itself readily to bright ornamentation; it is eminently fit for the climate; and a stately Hawaiian dame, marching through the street in black *holaku*, as the dress is called, with a long necklace or *lei*, of bright scarlet or brilliant yellow flowers, bare and untrammeled feet, and flowing hair, compares very favorably with a high-heeled, wasp-waisted, absurdly bonneted white lady." Barbarous tribes allow still greater ease and freedom in their attire.

But cross the boundaries of any civilized and Christian land, and you behold a race of

gasping, nervous, and despairing women, who, with their compressed ribs, torpid lungs, hobbling feet, and bilious stomachs, evidently consider it their first duty to mortify the flesh, and to render themselves and all humanity belonging to them as frail and uncomfortable as possible. If it be true that the New Testament and the Parisian fashion-book do necessarily go hand in hand, we might well hesitate before sending more missionaries abroad to the happy heathen, endeavoring to save their souls while making sure of ruining their bodies.

But no dress of any time or of any land, be it Pagan or Christian, would answer the requirements which we make to-day. Were all the costumes ever devised spread out before us for our choice, it is doubtful if we should find ourselves well served with any. For the present was not comprehended in the past; and our sisters abroad know little of the duties that we must meet or of the ideas which shape our lives.

The world of the past appears to have asked itself only this question concerning woman, "Is she made to work, or to be looked at?" "To work," replied the barbarous races; and half-clad, like the rest of her tribe, she then found little hindrance in her clothes. No dress-reform was needed for her. "To be looked at," said the Eastern nations, and they still drape her like a helpless doll. But where active, out-door life is forbidden, a dress suited to dawdling about divanned courts is all that is required. "Both to work, and to be looked at," say the civilized peoples of the West; and here, wrapped in the loose folds of the harem, she strives to labor like her sisters of the forest. If the draperies have been somewhat lengthened and tightened, if the labors have become more multiform, and are carried on mostly in-doors, it makes the matter no better for her. In all these cases her own claims and her own feelings are as utterly ignored as if she were a senseless stone.

But a new clause is added to these hitherto approved replies. To-day, woman herself, educated, enterprising, ambitious, has something to say in her own behalf. "Yes," she assents, "woman was made to work, to be looked at, but also to enjoy her own life; living not only for others, but for herself, and most helpful when most true to her own needs."

This is the new doctrine which she is preaching to our age. "I exist," she says, "not as wife, not as mother, not as teacher, but, first of all, as woman, with a right to existence for my own sake."

Believing this, she makes a new demand upon her attire. She must still work in it, she must still look beautiful in it, but she must also be strong and comfortable and happy in it. It is in this requirement which she makes of her present dress that it fails her the most. She does manage to accomplish a deal of earnest work in it, though much less than she is capable of doing. The generations which she must please think she looks beautiful in it, since their eyes have become accustomed to its ugliness; but she finds herself borne down by its weight, breathless from its compressions, and weary with buffeting its opposing folds.

Of all nations of the earth, we suffer the most from the cruel tyrannies of dress. None need a serviceable costume so much as we, and none have one so bad. Indeed, American ladies are known abroad for two distinguishing traits (besides, possibly, their beauty and self-reliance), and these are their ill-health and their extravagant devotion to dress. The styles they affect, in their reckless disregard of hygienic rules, strike sturdy German and English matrons with dismay. The latter shiver to behold the gorgeous flimsiness in which such delicate travelers venture to clothe themselves; and the travelers, in their turn, arch sharp eyebrows and endure twinges of "aromatic pain" whenever these broad-waisted, burly dames cross their vision, in stuffs of coarse woolen and colors too horrible to be borne. At home, our country-woman suffers the more because she is not content to be useless and indolent in all her fine array. Her energy, her intelligence in other matters, must exercise themselves within her house and without it. With strength impaired, she attempts to live the life of the busy worker in a dress that the merest idler would find burdensome and oppressive. The result is a pain and a weariness that lead inevitably to discomfort and disease; but she has not yet learned that, while discomfort is a sin against herself, disease is a sin against God.

The thoughtful, enlightened women of our time have begun to recognize these truths. But they find their pernicious dress imposed upon them as a part of the conventionality into which they are born; and conventionality is a second nature, which they have been taught to respect far more than nature at first hand. Indeed, of the latter they as yet know little. Some day, if they persevere in the path which they are now so bravely treading, they will grope their way back to God's original intent in regard to them. Just because their present dress is a part of this tyrannous second nature, do they find it so hard to get rid of it, even when they have

declared that they cannot breathe, or walk, or work, or play, or be decently miserable in it. But that knowledge of the laws embodied in her physical being, which woman is acquiring to-day through her study of medicine, and through her forced inquiries into the novel and manifold sufferings she is beginning to experience, together with the new demands of a broader and more active life, lead her to bear with ever-increasing impatience the countless restrictions which her conventional dress imposes upon her. It may be faulty in other respects, it may shock every principle of art, it may demand a wanton expenditure of money and time for its purchase and care; but these appear to her small evils compared with the discomfort and the disease to which it leads.

Thus it has happened that, notwithstanding the many charges which could properly be brought against our prevailing attire, the lectures so far given in this course have concerned themselves almost wholly with its unhealthfulness—and rightly so. Nothing should overshadow that defect, as nothing can atone for it.

Though it be as perfect in outline and ornament as classic taste can make it, as simple and serviceable as the most energetic worker can desire, a costume has no business to exist, is, indeed, an embodied crime, if it deforms or weakens or tortures the body it pretends to serve. For that should be sacred: it is God's handiwork. He made it as he wished it to be; capable, by wonderful mechanisms, of swift and easy motion; shaped in contours which artists despair of reproducing; and so responsive to our will, so varied in its capacities, so lightly moved from place to place by its own powers, that in its perfect state the soul which inhabits it is almost unconscious of its existence, and knows it only as a source of help and pleasure.

A dress which prevents this human body from ever attaining its natural size and comeliness, cannot, however, be simply unhealthful: it must, necessarily, be inartistic, since the highest aspiration of art is to copy and idealize nature. What opposes nature can never be really beautiful. And the dress of woman not only hides the form with which she has been endowed, ignoring it as far as possible, and rendering it as if it did not exist, but it shows it still greater disrespect by seeking to interfere with its ordained growth and development. For God's design, it substitues the design of one of his creatures—as if the work of the Great Architect could be improved upon!—and strives to shape the body in an artificial mold.

Our costumer does not say, "Here is this outline of trunk and limbs—let us, in draping it, destroy as little as possible the divine contours into which it grows;" but she says, "Lo, the cages and casings which mine own hands have wrought! Put this body into them, compress it here, add to it there, till it presents the likness of nothing in the heavens above, or in the earth beneath, or in the waters under the earth. Behold it done! This now is my admirable creation—a woman after my own heart. Do you not admire her?

"What! would you enlarge her casings where they cramp her heart, and curtail her draperies where they clog her feet? Then you despise the loveliness you are too blind to see. You have set up the clownish idol comfort above beauty; and beauty is the divinity we should adore. Go to, unregenerate heathen, who refuse to mingle in our worship! We will have none of you! Depart from our sanctuaries? They who enter here swing censers forever before the face of our goddess; and with agonies of spirit and great mortification of the flesh do they bow down before our veiled, our corseted, our panniered divinity. Great is her name among the children of men."

And we, the unregenerate heathen, who see not as they see, must needs retire into caves and dens, and waste places of the earth, and there, in the outer darkness, wail forth this defiant song: "The idol you worship is an impostor, a false god. We scorn to adore her. Lo, on the mountains, free as air, light-footed as the gazelle, roams the true goddess of immortal beauty! Afar off we behold her as she moves. Her brow is bared to the sweet dews of the morning, and unfading sunshine follows where she treads."

But the song breaks and quavers, and its feeble echoes threaten to die away upon the hilltops; while ever upward float full pæans from the crowded idolaters beneath.

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MEDICAL PRACTICE IN 1700.—*The Chemist and Druggist* quotes, from the *History of Advertising*, the following curious advertisement of a regular London physician, found in the *Flying Post* of Jan. 6, 1700:—

"At the Angel and Crown, in Bassing Lane, near Bow lane, liveth J. Peachey, a graduate in the University of Oxford, and of many years' standing in the College of Physicians, in London, where all sick people that come to him, may have for six pence a faithful account of their diseases, and plain directions for diet and other things they can prepare themselves. And such as have occasion for medicines may have them of him at any reason-

able rates, without paying anything for advice. And he will visit any sick person in London, or the liberties thereof, in the daytime, for two shillings and six pence, and anywhere else within the Bills of Mortality for five shillings. And if he be called in by any person as he passes by in any of these places, he will require but one shilling for his advice."

## A Holocaust to Tobacco.

BY J. H. WAGGONER.

TOBACCO is king! This position has been ascribed to various productions of the soil, but the filthy weed will bear away the palm. Nothing else rules with such despotic sway. Nothing is so utterly regardless of the rights of the people; nothing so reckless in violating all the rules of propriety and decency. For extreme selfishness in the indulgence of a low and vulgar habit, the tobacco smoker stands unrivaled. Persons with feeble lungs, and even ladies in delicate health, must be stifled with the stench of his fumes, compelled to breathe the atmosphere absolutely poisoned by his indulgence of a depraved appetite, and he cares nothing for it. The public sitting room, the railroad car, and the steamboat cabin, are each and all fouled with his disgusting presence. We are aware that we write to little purpose, so far as he is concerned; for there is nothing which so completely destroys the moral sensibilities as tobacco-using. Reason to the tobacco slave is no reason; he cannot appreciate it. Boston once tried the only possible means of reaching him, by declaring public smoking a nuisance, and passing an ordinance against it. But tobacco triumphed. In fact, no right can be maintained against its power.

A terrible calamity recently befell San Francisco. About seventy-five pounds of "giant powder" were exploded in the south part of the city, killing five persons outright, wounding a number of others, of whom four have since died, and destroying property amounting to nearly $300,000. We soon became confident that tobacco was the cause of the disaster. And the coroner's jury have come so near this Moloch of destruction as to fix the origin, but did not venture a seasonable word against his worship. The following is a part of the verdict:—

"We find that these persons came to their death by the explosion of a quantity of giant powder, which was being prepared in cartridges in an office occupied by J. N. Risdon, contractor for the removal of Rincon Rock; that the explosion was occasioned by the setting on fire of a fifty-pound box of giant powder by a spark dropped from a pipe, carelessly held by J. Clark, foreman of the work, and one of the sufferers, which flamed up and exploded a box of detonating caps lying on a bench a few feet from an eight-pound cartridge, just filled by J. Curry. We think that J. N. Risdon, the contractor for removing Rincon Rock, and the occupant of the office where the explosion occurred, should be greatly censured for permitting the manufacture of cartridges in such a neighborhood, adjacent to dwellings and business buildings, and suffering detonating caps and giant powder to be stored on the same premises."

No doubt Mr. Risdon should be censured, and all others who manufacture cartridges in a thickly-settled neighborhood, and the jury very properly recommended that a law be passed to prevent it. But the jury did not say a word against the practice of smoking tobacco-pipes in powder houses. Why not? Perhaps they feared to invade king tobacco's dominions; perhaps they were aware that it would be of no avail, because the imperious demands of tobacco may not be denied. Powder may be driven from the neighborhood by law; it is only an article of use, without which the proposed improvement could not be effected. But a law against endangering life and property by smoking tobacco—the idea may not be entertained. What! a law to restrict *the right* to smoke tobacco anywhere and everywhere. What legislature dares to attempt to place the preservation of life and property on a level with the indulgence of tobacco appetite?

We are not certain that tobacco smokers are aware that other people have any rights. Their minds are so befogged or besmoked that questions of right have no effect upon them. Their consciences are so stupefied by nicotine that nothing can arouse them. They are so joined to their idol that we are compelled to let them alone.

We very often read Peter's prophecy of the melting of the earth and the elements with fervent heat; but seldom have we read it without the satisfactory reflection that in that day all the tobacco will be burned up, and not a leaf or stem be left to defile the bright inheritance of the saints. The terrors of that day will be realized even by tobacco users, when it comes; but we fear never until it comes. At present, many would choose their tobacco, and to be consumed with it, rather than to overcome their filthy practices, and cleanse and fit themselves for the pure and holy world beyond.

THE DRUNKARD'S LADDER.—Spices, tea, tobacco, rum.

## Apoplexy.

If there is any one disease that the diligent brain-worker, a little past middle life, has reason to fear, it is apoplexy. Although statistical evidence is wanting, the experience of the physician confirms the popular belief that more of our distinguished men are carried off by this disease, or by one of its sequels, paralysis, than by any other cause. The influences which tend to produce such a result, and the best means of avoiding them, are the objects we propose briefly to discuss.

A middle-aged physician said one day to the writer: "As I was walking down the street after dinner I felt a shock in the back of my head, as if some one had struck me; I have not felt well since. I fear I shall die, just as all my ancestors have, of paralysis. What shall I do?" The answer was, "Diminish the tension on the blood-vessels, and there need be no fear of tearing them in a weak place." Now, this expresses in plain terms the exact cause of apoplexy in the great majority of instances; and it is one, too, which every one has it in his power to prevent. A blood-vessel of the brain, from causes which will presently be mentioned, has lost some of its elastic strength; food is abundant, digestion is good; blood is made in abundance, but little is worked off by exercise; the tension on every artery and vein is at a maximum rate; the even, circuitous flow is temporarily impeded at some point, throwing a dangerous pressure on another; the vessel which has lost its elastic strength gives way, blood is poured out, a clot is formed, which, by its pressure on the brain, produces complete unconsciousness. This is the apoplectic stroke. It will be perceived that there are two leading conditions upon which the production of the stroke depends; a lessened strength in the vessel, and an increased tension on it.

There are no vessels carrying blood to and from the various organs of the body which so frequently rupture as those in the brain. The causes that produce this result are the fatty degeneracy of the middle arterial coat of the cerebral vessels, whereby their elastic strength is much impaired, the great irregularity of blood distribution to the contents of the cranium, and the little support which the pulpy substance of the brain gives to the weakened vessels embedded in it.

The forms of degeneracy that are found in the arteries of the brain are the fatty and the calcareous. The microscope has made some startling revelations on this fatty decay. The strong, elastic fibers, that should make up the substance of the middle arterial coat, are, in places here and there, no longer to be seen, their place being occupied by fatty globules, which have very little resisting power to a disturbing force.

The chief causes which produce this structural change are the habitual use of ardent spirits and tobacco. Every one is aware that the leading effects of these agents on the body are such as show that the functions of the nervous system are more affected than any other; and the physician also knows that, when symptoms of disorder arise from their use, they are such as denote that the nervous system is almost alone implicated. Delirium tremens, insomnia, tremulous hands, and nervous headaches, are some of the characteristic effects of the habitual use of stimulants and narcotics.

Ardent spirits also tend to produce an overfullness of the cerebral vessels, and to affect the functions of the brain in a manner which strangely blends stupidity, brightness, and exhilaration. Effects so unnatural, and so frequently ending in disease, influence injuriously the nutrition of the nervous centers. And to interfere with the nutrition of any part of the body is simply to impair the life and power of its structure. The evidence of this impairment may not be felt immediately. In fact, the evidences of impairment by any bad habit are seldom apparent during the prime of youthful vigor. But the mischief is going on nevertheless, and the organ upon which the weight of infringement falls will be the one that will first manifest signs of disease, and through which death will make its conquest over the body.

Besides this weakening of the vessels upon which the strong impulse of blood from the heart falls at the rate of sixty times a minute, and the very little external support such defective vessels receive from the soft and pulpy brain, there is another source of danger by a break, in the extraordinary ebbs and tides of blood to which the contents of the cranium are subject. During sleep the brain is almost bloodless; its substance seems to shrink into a lifeless mass; but the moment that wakefulness occurs it swells out, gets red, its arteries and veins becoming distended with a great tide of blood. No other part of the body is subject to such droughts and floods in its blood-circulation. This inequality is yet further increased by severe mind-labor. The ardent student is well aware that deep thought heats the head and cools the feet. The brain is then receiving more than an ordinary supply of blood and the feet less.

The first apoplectic stroke, as a rule, is not a severe one. Sometimes the condition of the cerebral circulation is simply that of active

congestion; but more commonly a little blood escapes by a tiny vent, the shock to the system slows and enfeebles the action of the heart, the distension of the ruptured vessel is thus lessened, the escape of blood ceases, and nature, by means of a slight inflammation, heals the part torn, and in due time removes the blood-clot by absorption.

The process by which a weakened blood-vessel is ruptured by internal distention may be illustrated by observing the effect of attempting to force through an old water-hose attached to a fire-engine a large and rapid stream of water. The weakness of the hose is first shown by the escape of tiny jets of water; but by-and-by a larger vent occurs, allowing the water to escape in a flood. Just so it is with the progressive weakening with the blood-vessels in the brain—the escape of blood is at first small; then, under a greater tension than ordinary, a larger rent is made, allowing the blood to escape in hopeless profusion. It was probably these well-known features of apoplectic strokes that led the great Napoleon's medical adviser to make his celebrated reply in reference to this disease, of which the emperor stood in great dread: "Sire, the first attack is a warning, the second a summons, the third a summons to execution."

Those who have a family tendency to apoplexy and are desirous to escape it, will, of course, avoid all the causes above referred to, especially those which tend to destroy the elasticity and strength of the blood-channels in the brain, or, in other words, to weaken the structure and life of those parts. But suppose, as is too often the case, that the very sort of life has been led, and the very habits indulged in, which are most likely to produce a weakness and fragility in the coats of the vessels of the brain. What is to be done? *Clearly to diminish and keep the tension on these vessels by the blood at a low rate all the time.* As remarked at the commencement of this article, this is fully in our power by cutting off the supplies. A prudent fire-engineer, when his water-hose are old and weak, would not try to force as much water as he could into them. No; to prevent a rupture he would work them at a low pressure. But men seldom think of carrying out the same simple mechanical principle when there is reason to believe that the vessels of the brain are getting weak and brittle. They eat and drink just as much as they feel inclined to, and sometimes a little more. With a good digestion, nearly all they consume is converted into blood, to the yet further distention of vessels already over-distended. This high-pressure style of living produces high-pressure results. Its effects were painfully illustrated by the death of Charles Dickens. The brain work he performed was immense; he lived generously, taking his wine as he did his meat, with a liberal hand. He disregarded the signs of structural decay, forcing his reluctant brain to do what it had once done with spontaneous ease, until all at once, under a greater tension than ordinary, a weak vessel gave way, flooding the brain with blood.

Medical writers on this disease all refer to the fact that a stroke of apoplexy quite frequently occurs just after eating a full meal. The experience of physicians also is that violent attacks of vertigo often attend a deranged or inactive condition of the liver. To explain in detail the causes of an unusual pressure of blood on the brain from certain states of the digestive organs, would be somewhat tedious. Suffice it to say that it is produced by what may be termed a back-water action of an obstruction to the circulation of the blood, whereby distention occurs in one of the most distensible of the internal organs of the body, the brain. We have already stated that the distribution of blood to the brain is the most irregular in the body; that its blood-vessels are subject to be weakened by improper habits, and that the pulpy cerebral substance gives very little, if any, support to a weak vessel in it, so that all the conditions favorable to a rupture by a little more distention than ordinary very frequently coexist.

A not uncommon condition of the arteries of the brain, especially at its base, in those far advanced in years, is the displacement in places of the middle coat by lime-particles, which, of course, renders them easily torn. So far as known this condition is incurable, as well as unpreventable. It is one of the changes of structure incident to very old age. The only measure that can be relied upon to prevent a rupture under such conditions is to be cautious about distending them with blood. This is, in fact, the great fundamental principle of prevention when the vessels of the brain are weak from any cause.

To effect this, certain regulations in eating and drinking are far better preventives than any medicine, or even occasional bleedings. The latter method is particularly unsafe. After bleeding from the arm, new blood is often made more rapidly than under other circumstances, and so may become, before a person is well aware of it, very abundant, with a dangerous pressure on the weak vessels. The subject of such a practice is very apt to rely on the abstraction of blood for safety, and take no care otherwise of himself. Besides, he has no accurate means of knowing

when the pressure of the blood is becoming dangerously great.

As soon as old age puts a decided check on the amount of daily exercise, it is time to put a decided check on the amount of food daily consumed. If the supply of new matter is greater than the waste of the old, an accumulation of surplus blood must be the result. The principle is an important one, yet it is little known and less practiced. Men well past middle life, who do not exercise half as much as in their younger years, often eat as freely of highly-nutritious food as they ever did. Such a course is very dangerous. The tension on the vascular system must not be increased, but diminished, if the risk of an apoplectic stroke would be avoided.

The kind of food best adapted to keep down superfluous blood is the vegetable. . . . The amount of vegetable food should not be so great as in middle life. The true rule is, not to eat to entire satiety. Even those of younger years and sedentary habits will feel lighter and better in every way by leaving the table a little hungry.

All strong liquors are unsuited to those with an apoplectic tendency. One of their prominent effects, as we have seen, is to cause a degeneration in the coating of the blood-vessels, and another is to move more blood than ordinary upon the brain.—J. R. BLACK, M. D., in *Popular Science Monthly.*

CASE OF CHRONIC ARSENIC POISONING.—Holm, in the *Upsala läkareförens förhand,* describes a dozen cases of arsenic poisoning from the wall-paper, lamp screens, and curtains of dwelling-houses. In these cases the etiology was evident, and the symptoms very distinct and characteristic. The latter were chiefly the following: headache, with a sensation as of a ligature tightly embracing the head; giddiness and fainting; occasionally a faltering gate and a fog before the eyes; the latter were often red and painful; nausea, occasional vomiting, especially in the morning. Frequently the appetite was bad, the tongue furred, and there was constipation. The sleep was often disturbed by dreams. There was general sinking of the corporeal and mental strength; dullness of the memory and of the power of thought. The appearance was cachetic, and there were occasional tremors and nervous weakness. It happened pretty constantly that the symptoms rapidly disappeared when the poisoned room was vacated for a while, or the arsenical substances were removed; they rapidly returned, however, when the patient reoccupied the room. Poisoning also occurred where arsenical paper had been covered over with paper that was free from this substance, or where the arsenic was present in oil colors. The author is of the opinion that arsenic is present in the air of such rooms in the form of arseniuretted hydrogen, and that it is more probably absorbed into the human body by way of the skin than by the respiratory organs.—*Nordiskt Med. Arkiv.*

## "I Shall Eat What my Appetite Craves."

BY R. F. COTTRELL.

So said a lady with whom I was speaking on the subject of the preservation of health by the use of healthful food. She may think that she is a real temperance reformer; but if she will eat unwholesome food, regardless of consequences, because her appetite craves it, how can she consistently object to one who says he will drink what his appetite craves, let the consequences be what they may? The logic is the same in both cases; yet the latter might be thought a most unreasonable declaration, while the first is not out of the way.

But eating improper food cuts short human life, as well as drinking poisons. The one may do it sooner than the other; but either is sure to bring the result. Is it not the moral duty, then, of every person to select the most healthful diet?

Besides this, it is a fact that the use of stimulating, highly-seasoned food creates an appetite for stimulants, and thus naturally leads to the use of stimulating drinks. But few seem to know that the way to drunkenness and death begins at the table. Yet this is undoubtedly the case. Let the table be spread with the most wholesome food, cooked in the most simple manner, and eaten without condiments; let such be the diet of the young, and no laws will be needed for the suppression of drunkenness. They will have no desire for stimulants till it has been created by their use. But if parents bring up their children on tea and coffee, spices and other condiments, and flesh-meats and what are called rich gravies, they need not wonder if their appetites shall crave something more stimulating, even the inebriating cup.

We form our own appetites. The appetite craves such foods and drinks as we are in the habit of using. Unperverted appetite will be satisfied with the plainest food and water to drink. Those who have perverted their appetites have cravings for that which is an injury to them. Should such appetites be indulged and life cut short as the consequence?

If so, then let the drunkard drink on and find in haste an untimely grave.

But rather let the appetite be educated to relish that which is the most healthful. And when a natural appetite has been attained, we may eat and drink just such things as our appetite craves; for it will be satisfied with the plainest and most wholesome food. I speak from experience when I say that I know this to be the case. I have no craving for stimulating drinks or condiments of any kind; but am perfectly satisfied with the plainest and the best. So I may truly say, "I shall eat what my appetite craves."

## Schools and School Children.

No system of instruction is a sound one which does not consider physical health as well as the mental capacity of school children, and provide for the former by good school-houses, well-ordered school-rooms, abundant means of exercise, plentiful ventilation, and wholesome light and air; and for their minds, after their bodies are cared for, the necessity is to supply a system of training (not merely a mass of facts) to develop the reasoning faculty, not merely to test the memory or to overload it. There ought to be in every school district capable inspectors to supervise both the actual teaching, with its fitness for the pupils, and their physical condition, so that pupils might be watched and classified and cared for from the outset, and not looked on merely as ciphers or figures in the great indefinite mass. The great defect of our primary schools is that children are dealt with as if they were all of one model and that perfect, alike in mind and body; the few who are so stand the strain, but the mass of them either do their mental work at the expense of their physical development, or in a much larger proportion shirk their studies and contrive to grow up strong and idle.

On a former occasion we made mention of the necessity of considering and providing for the health of the body, and especially the risks and dangers inflicted unnecessarily upon the eyes of school children through the lack of proper furniture in the class-rooms and the bad arrangement of desks in relation to the windows. Near-sightedness and weak sight are almost invariably the penalty of ill-arranged school lighting, and in Germany it has been traced out in each separate school-house, so that there was no excuse left for not correcting it. Here a school-house once built and a school once started, there is practically no authority exercised (and sometimes not even employed) to discover and cure faults of construction or errors of instruction. In this respect we want a better and more elastic system of inspection, with power to make every exception that is needed, not as at present, to secure conformity to an arbitrary standard.

The good of the best school books and instruction may all be wasted upon a pupil whose physical condition demands either absolute rest or an entirely different method of motion from that arbitrarily prescribed by our school desks and benches. A fine intellect may be wasted or lost by reason of a physical inability to work to advantage, or to work at all in a bad atmosphere, which to others is a matter of indifference or merely passing inconvenience. The long list of sicknesses peculiar to schools may well be held up as a justification of ignorance, and yet it might be made a useful lesson in physiology, and serve to teach by example alike to parents, pupils and teachers, which of them are preventable and how few are really unavoidable evils. A little instruction of this kind could easily be added to or introduced into existing studies, and if pupils knew a little more of their own physical structure and processes, they would be the better fitted to decide how far they could trust body and mind to carry them on to their various ends in life. The boy or girl who can give the name of every river and the hight of every mountain in Asia, the age of every reigning sovereign in Europe, the date of every battle in America, can hardly be as well off for all this burdensome knowledge as one who knows the elements of human physiology and anatomy, who is taught more of the knowledge useful in after life, and can tell how to help himself or another in case of accident or emergency. The boy who is to go into active life, and the girl who is to become head of a household, will have little occasion and less opportunity to use the greater part of the "crammed" lessons so industriously accumulated during their school years. A fair knowledge of the rules that are at the bottom of all healthful activity, a general acquaintance with anatomy, and a well-grounded taste for natural sciences, will all grow into and become a part of their daily lives, and such things are far less likely to make pretentious men or women than that kind of smattering "memorized" facts and dates and words which is too often the penalty of superficial study. The German name "Real School" might suggest the introduction into our own schools of real studies; of instruction in subjects of absolute knowledge; of matters that have to do with every-day life and actions of each one of us, instead of some of the learn-

ing of the schools, mere abstractions, which are but a poor sort of mental gymnastics, and only serve to train the mind at the expense of its real work in after years for feats of strength and trials of skill that lead to no good and serve for no end in the future.—*Sel.*

## Discussion of the Salt Question.

(*Continued.*)

ELD. BUTLER resumes the argument in favor of salt as follows :—

In considering the salt question from a physiological stand-point, I claim no *special* knowledge of the human system, and shall not attempt to enter into those scientific niceties in which the doctors show such profundity of knowledge. I am very willing to leave them to fight the question out in those particulars which are beyond the depth of ordinary men who have not had the advantage of their medical training. I would simply remark, in this connection, however, that while there is great erudition displayed on both sides of the salt question among the doctors, the far greater proportion of them favor the use of salt. In discussing this subject we want the real question to be clearly before the mind. We are not attempting to show that man, or beast, must use salt in order to live, or that they may not enjoy health without it, or even that the use of it will lengthen our lives. There are very many articles recognized by all as holding a useful place in the dietetic domain of which we might deprive ourselves, and yet not suffer loss of life, or even loss of health. Indian corn and potatoes were not known to Europeans till the discovery of America. Consequently, the mass of the human family never used them till within a few centuries. Their health and longevity were not impaired thereby. Yet we should regard their absence now as a great calamity. The mass of the human family use salt. It would require a great effort and sacrifice of feeling, to say the least, to change this habit. We say, therefore, the real question is whether its use is "*wholly injurious.*" We are willing to admit that many hurt themselves by using too much of it. So also they do by using too much of many useful articles. If its effect is evil, and only evil, then should it be classed with noxious articles like alcohol, opium, tobacco, tea, coffee, and stimulating spices, which, though varying in degree, yet are all useless and injurious. But we want considerable positive evidence on this point before we class salt with these. We want evidence that shall be clear even to those who cannot understand all the intricacies of medical science. Where the use of an agent is so extensive as salt, there certainly ought to be many illustrations of its pernicious character, if it be so hurtful as the REFORMER teaches. If it "poisons the blood; inflames every tissue; disturbes every function, and its work of mischief is universal," then certainly we all ought to be able to see it. We are at no loss for examples of the evils of alcohol, tobacco, opium, or any of those agents I have mentioned, though their use is not nearly so universal as salt. We can point out their victims by observing their unsteady gait, their trembling nerves, their unnatural appearance, and their premature decay in many instances. We can see and appreciate a great change for the better in those who have quit their use. But for one I fail to distinguish any such marked results for the better in those who have quit the use of salt. We are not justly called upon to show some great and important office that salt fills in the system in considering the question before us. But the opponents of salt are justly called upon to give us tangible evidence that it is so destructive in its effects, before they claim that an ancient and almost universal habit of life shall be changed.

REPLY. In a former article we considered the arguments in favor of salt which were drawn from the Bible, and found them to be wholly illogical and devoid of force. It was shown, furthermore, that the Bible, although the best of authority on all those subjects upon which it especially treats, cannot rightfully be regarded as the proper source from which to draw information on scientific subjects. Our opponent now proposes to show from physiology what he has failed to do from the Bible; viz., that salt is a wholesome and useful article of food. Indeed, the evident desire is to make it appear that salt is not only useful and harmless, but "*necessary.*" This was claimed to be *proven* by Job 6 : 6; yet we are now told that the "real question is whether its use is '*wholly injurious.*'" We have no objection to meeting the question on this ground, but can see no reason for so obvious a change of tactics unless it be a conviction on the part of our opponent of the futility of his previous arguments to establish the position first taken.

We have remarked that the Bible is not the proper authority to consult upon a question of the nature of the one before us. We have no such remark to offer with reference to physiology. Its authority is wholly unimpeachable, and we may safely rely upon its verdict. But physiology is a science, and any appeal to it must of necessity be made in a scientific manner. It is, consequently, rather discouraging to one who de-

sires a fair discussion of the subject when our opponent announces at the outset his intention to repudiate as "scientific niceties" all those points in the physiological aspect of the question with which he may not happen to be familiar, from not having devoted sufficient time to the study of physiology to acquire a thorough understanding of it. We submit for the consideration of the reader that it is rather too much to expect of us to require that we shall give a treatise on physiology besides elucidating our position on the salt question in order that our opponents shall be able to comprehend our position. But we will make the best of present circumstances, and hope to be able to satisfy even our most captious opposers. The following points furnish answers to all in the preceding paragraph that has not been considered:—

1. What if the majority of medical men do favor the use of salt? does this argue in its favor? If so, then why discard tea, coffee, tobacco, rum? the majority of medical men favor these, if numbers constitute a true majority. The question of salt-using must stand on its own merits, if at all, and no appeal to prejudice should be mistaken for sound argument.

2. The tacit acknowledgement is made that both man and beast may live as well and as long without salt as with it. With this concession, we might almost end the controversy here; for if salt does not contribute to the maintenance of health or the lengthening of life, as is admitted, it certainly must be superfluous. Being thus useless, it must of necessity be either directly, or at least, indirectly, injurious; for nothing can be absolutely neutral in its dietetic relations. Certainly a person can thrive without either Indian corn or potatoes, as well as salt, provided he is otherwise supplied with the same elements of nutrition which are found in corn and potatoes. These are furnished by all the grains, and by most esculent vegetables. What bearing, then, has this upon the question in hand? None whatever. It matters little under what particular form a person takes his starch, gluten, sugar, etc., provided he obtains an adequate supply. There is no essential alimentary difference between the various grains and vegetables except in the varying proportions of these elements which they contain. One may readily substitute another. Salt has no substitute. This argument is too absurd to deserve further notice, as all must see.

3. Our friend also admits that tea, coffee, and stimulating spices are unwholesome and hurtful; yet he very strangely objects to classing salt with these articles. The evidence upon which the use of salt is condemned is of the same character as that which denounces the use of the articles mentioned. The extensive use of salt by mankind is not an argument in its favor, for the same method of reasoning would tolerate the dietetic use of stimulants; since every nation has its peculiar drink, the use of some form of stimulant being even more universal than the use of salt, as can be readily proven, our friend's assertion to the contrary notwithstanding. If the deleterious effects of salt are not so apparent as are those of opium, alcohol, or tobacco, it is because its action is more insidious. We must differ entirely with our opponent in the opinion that those who abandon salt are not appreciably benefited by the change. Our own experience and that of scores of others enables us to speak with confidence on this point.

4. We will not dispute, of course, that the excessive use of salt is more harmful than its more moderate use; but we shall prove, to the satisfaction of all, we hope, that salt is intrinsically bad in all proportions and combinations.

Our opponent continues: —

What are some of the evidences which they bring? We are asked, "If salt is a useful agent, why does nature make such a fuss to get rid of it?" Our nature never made any such fuss that we are aware of. And of the thousands around us, we never heard any complaint on this score. But we have heard of nature's making a fuss if the salt was lacking. But it is said because salt is found in the blood, in the sweat, and in the excretions, and is not changed by digestion, therefore it subserves no useful purpose in the system, and hence is an enemy. How does this follow? How does any one know what effect it has, as it passes through the various parts of the body? The writer admits it goes through every part of the system in the blood. He also admits that its chief property is "preventing vital changes." We are also told that there is a constant change going on in all our tissues in life, so that in a few years a man's system has entirely changed, by the breaking down of the old particles, and their ejection, and by the addition of the new. Thus a process of decay is constantly going on in the vital domain. We know that the province of salt is to hinder decay where we can *see* it applied to things liable to that process. It is universally admitted to have that effect. How do we know but it has the same effect in the system, thus preserving the particles from decaying as soon as they otherwise would? The more rapidly this decaying process goes on in the tissues, the more emaciated a person becomes. From considerable observation, we judge that this process goes on too rapidly with some extreme health reformers. Who knows but

a little salt would enable them to present a more creditable appearance? We merely throw out the suggestion for their consideration. If we admit that the properties of salt have an influence to actually preserve from decay, why may they not subserve a useful purpose in the system where the decaying process is constantly going on? But it will be replied that alcohol, tobacco, opium, &c., have a similar preserving effect, so that if this consideration would favor the use of salt, it would these agents. This does not follow, for the good reason that these agents produce certain other very deadly effects, which no one pretends will apply to salt. Salt does not intoxicate, break down the nervous system, or destroy the mind like these. Therefore, this objection loses its force. We do not pretend, however, to know just what effect this agent has in traveling through the system. And we very much question whether any of the doctors do. There are so many influences and agencies at work within us, that we confess ourselves to be somewhat incredulous about any one telling just how the stomach, the liver, the kidneys, and all the internal organs, are affected by the minute particles of salt in the food. We have never known of any body who has made the voyage through all these channels and observed the various effects produced. Certainly, a post-mortem examination cannot tell just what influence salt had upon the *living* organism. There has never been but one man whose stomach even has been open for inspection, while the vital processes were going on. Alexis St. Martin was the man, I believe, who was wounded so in the stomach that the process of digestion could be observed; but I never learned that anything against the use of salt was discovered.

How do our friends know how the stomach acts, the liver acts, the kidneys act, and all the depurating organs act, upon the presence of a little salt, when no mortal has yet been able to see them act since the world was created? We confess ourselves a little incredulous. We know it is very easy to theorize, and fix things up very plausibly. But we think the same writer states a very sensible thought in another article of the REFORMER, when he says, speaking of oxalic acid, and the pie plant: "Theoretical grounds are not wholly sufficient for the establishment of dietetic principles. Actual experiment must determine the salutary or pernicious properties of various articles of food." We think so. We want to see some of these actual experiments before we change a habit so ancient, and which is supported by Scripture, and by the almost uniform example of the race.

We do not believe it is possible to show that all the salt taken into the system is cast out by any or all the depurating processes as is claimed by some. We are not yet prepared to accept the conclusion of the writer of the articles in question, when he says, "We see then, by tracing the particle of salt from its entrance to its exit, that it is utterly incapable of serving any useful end in the living system." It is utterly beyond the power of any man to thus trace a particle of salt through the system and tell all its effects. It is simply theorizing. We have not the statistics to show just the effect of experiment, or how a large number of persons would be affected by the disuse of salt, changing this habit alone and not others. And it would be impossible to tell just what their condition would have been had they continued its use. This thing is in such a shape that it cannot be demonstrated like a theorem in geometry. It must ever be a question more or less of mere theory.

REPLY. 1. Ask the tobacco-user, whose whole body is saturated with the filthy poison, if his nature makes any remonstrance to his daily abuse. He will tell you, No. Put the same question to the confirmed inebriate, and although his blood may contain so much alcohol as to be inflammable, he will tell you that it does him no harm. The user of tea will declare that the beverage is absolutely indispensable for the maintenance of his life; and the opium-eater will insist that his daily dose of morphia "does him good." What wonder, then, that the person who uses salt habitually should not be able to see that it creates any great amount of disturbance? Will it be argued that the system of the tobacco-user recognizes the deadly *nicotine* as a friendly substance simply because he is himself unconscious of any special effort to resist its pernicious influence or expel it from the vital domain? Although the user of tobacco, tea, or salt may be unconscious of the fact, the physiologist knows perfectly well that the very property for which each of these substances is so much admired, is but the result of a defensive effort on the part of the system. Thus, stimulation is simply the result of a general effort of the system to expel from its domain some noxious substance.

2. How do we know what effect salt has as it passes through the various parts of the body? We know from the general principles of physiology, and from observation of its effects upon those portions of the body where they can be observed. It is true that the human system is a most intricate and complicated mechanism; notwithstanding this, however, by the aid of the dissecting knife and the microscope, the scientist

has been able to unravel most of its mysteries, and to explain most of its phenomena. Nothing is easier than to study the effect of salt upon the blood, the most delicate of all the organic constituents of the body, a good microscope which is capable of magnifying from 250,000 to 1,000,000 times being all that is requisite. We have often studied the subject in this way, and with a good microscope on our writing desk we will try the experiment once more, and describe the result. Having our instrument properly adjusted, and everything in readiness, we plunge a needle into our forefinger to obtain a drop of blood. The desired quantity instantly gushes out, and we transfer it quickly to an examining slide, cover it with a delicate film of glass to protect it, and place it at once in position for microscopic examination. A glance through the eyepiece gives us a view of hundreds of minute bodies, the blood corpuscles. Although they are really so small that 3500 of them in a row would only extend a single inch, they now appear so large that four of them would more than cover the same space. They are disc-shaped bodies, somewhat depressed in the center, and so perfect and regular in outline that each appears to be an exact counterpart of all the rest. Now we have added a small crystal of salt to the specimen which we are examining, making no other change whatever. Mark the result. Our salt-eating friend, with much complacent sarcasm, defies us to tell him what effect salt has upon the delicate tissues of the body. Let him take a peep into our microscope and see. We should be most happy to afford him an opportunity to do so whenever he finds leisure to step into our office for an hour. But what would he see? The particle of salt is quickly dissolved, and thus comes in contact with each delicate corpuscle. Now watch it carefully. Does it appear as though it had met a friendly, or even a neutral substance? No. It appears agitated —frightened we would say if it possessed intelligence—it trembles, quivers, oscillates. Presently it begins to shrink; and, very soon its beautifully rounded edge loses its regularity and becomes notched and broken. A little later, small protuberances appear upon its surface, and in a brief space of time it becomes so completely changed that it looks more like a bruised raspberry than like a human blood corpuscle. The effect of a small crystal of salt has been, then, to transform several hundred living, red blood corpuscles—the chief and most important constituents of the blood—into shriveled, shrunken, shapeless masses. Is this the effect of a friendly substance, or one possessed of no injurious properties? No "sane man" would attempt to sustain so monstrous an absurdity. Had we space, we could demonstrate, with equal clearness, the injurious properties of salt upon other delicate tissues of the body.

3. We have never said that because salt is found in the blood and in the excretions, it is useless, and an enemy. What we have said, and what we still say, is that salt is *found in the excretions because it is a useless substance and an enemy to the interests of the body.* This we will maintain; but we shall give this point no further notice since our opponent is simply employed in controverting an absurdity which he has himself constructed by inaccurately stating our position, although, doubtless, without unjust intentions.

4. Our reviewer deserves full credit for undisputed originality in developing the idea that the antiseptic properties of salt may be of service in preventing the metamorphosis of tissue in the body which results in a complete change of the constituents of the human frame every few months. It would be a very fine thing indeed if human life could thus be lengthened, for it is a very unpleasant fact that the dissolution of the body is actually more rapid during life than after death. What a very convenient thing it would be if a man could pickle himself in brine and so live a thousand years. A person thus preserved could be very correctly called an "old salt." Plausible as such a theory may seem to our much-esteemed opponent, there are a few insuperable difficulties to which we beg leave to call his careful attention before he really sets about a practical application of his new theory.

*a.* The development and manifestation of force is always dependent upon and accompanied by the breaking down of living tissue. This breaking down of structure is not simple decay, or putrefaction, as our friend's theory would imply, but it is a metamorphosis of tissue which results in its disorganization, and causes the force which lies latent and dormant in it to appear as mental force, nerve force, muscular force, and vital force. Without this change, everything would be at a standstill in the vital domain; and there is no quicker way of producing death than by putting a sudden stop to these necessary transformations.

*b.* But not only is it most undesirable that the change of which we have spoken should be in some way prevented, since death would be the result, but it is absolutely impossible to prevent the change without subjecting the individual to such conditions that his life could not be longer maintained. Cold is an excellent antiseptic. Now, suppose that our good friend, wishing to test by "actual experiment" the truth of his ingenious theory—not being content with mere theorizing—should place himself in an

ice-house, exposing himself to a constant temperature of 32°, without other protection than nature affords him. All the *vital changes* in his system would be effectually prevented, most unquestionably; but it is quite doubtful whether his life would be greatly prolonged by such a refrigeratory process. Again, suppose he should determine to test the preservative qualities of heat, another very excellent agent for the prevention of decay, and should subject himself to the genial influence of a prolonged full-bath at a temperature of 212°—boiling heat—which would be necessary to secure entire safety; he would certainly be in no danger of putrefaction under such circumstances, but we have very grave fears that he would find his surroundings rather unfavorable to longevity. Again, he would be equally safe from decomposition if hermetically sealed in a huge jar of carbonic acid, or immersed in a hogshead of treacle or a tank of oil, or generously smeared with lard. Indeed, he might rest in perfect security, so far as danger of organic changes is concerned, if he were deposited in a reservoir of brine, or a saturated solution of nitre, or corrosive sublimate. However, we too would like "to see some of these actual experiments" before endorsing this novel method of prolonging human life. We still adhere to the position that theoretical grounds are not wholly sufficient for the establishment of principles for the government of the practical affairs of life.

We will consider further next month some points which we have merely touched upon in this number, and will then consider in how much this subject is a matter of "mere theory," as our opponent concludes in the closing line of his last paragraph.

## A Two Minutes' Sermon to Young Ladies.

THE San Francisco *News Letter* makes the following stirring exhortation to the young ladies of the period:—

"Ladies—caged birds of beautiful plumage, but sickly looks—pale pets of the parlor, who vegetate in unhealthy atmosphere, like the potato germinating in a dark cellar, why don't you go into the open air and warm sunshine, and add luster to your eyes, bloom to your cheeks, elasticity to your steps, and vigor to your frames? Take exercise; run up the hill on a wager, and down again for fun; roam the fields, climb the fences, leap the ditches, wade the brooks, and, after a day of exhilarating exercise and unrestrained liberty, go home with an appetite acquired by healthy enjoyment. The beautiful and blooming young lady—rosy-cheeked and bright-eyed—who can darn a stocking, mend her own frock, command a regiment of pots and kettles, milk the cows, and be a lady when required, is a girl that young men are in quest of for a wife. But you pining, screwed-up, wasp-waisted, doll-dressed, consumption-mortgaged, music-murdering, novel-devouring daughters of fashion and idleness, you are no more fit for matrimony than a pullet is to look after a brood of fourteen chickens. The truth is, my dear girls, you want less fashionable restraint, and more liberty of action; more kitchen and less parlor; more leg exercise and less sofa; more pudding and less piano; more frankness and less mock modesty. Loosen your waist-strings, and breathe pure atmosphere, and become something as good and beautiful as nature designed."

VERBAL VICES.—Indulgence in verbal vice soon encourages corresponding vices in conduct. Let any one of you come to talk about any mean or vile practice with a familiar tone, and do you suppose, when the opportunity occurs for committing the mean or vile act, he will be as strong against it as before? It is by no means an unknown thing that men of correct lives talk themselves into sensuality, crime, and perdition. Bad language easily runs into bad deeds. Select any iniquity you please; suffer yourself to converse in its dialect, to use its slang, to speak in the character of one who relishes it, and I need not tell how soon your moral sense will lower down to its level. Becoming intimate with it, you lose your horror of it. To be too much with bad men and in bad places, is not only unwholesome to a man's morality, but unfavorable to his faith and trust in God. It is not every man who could live as Lot did in Sodom, and then be fit to go out of it under God's convoy. This obvious principle, of itself, furnishes a reason, not only for watching the tongue, but for keeping ourselves as much as possible out of the company of bad associates.—*Indian Arcana.*

IT looks bad to see a dog preceding his master down street, and calmly turn down the stairs to the first saloon he approaches. It shows there is something wrong, something lacking, a deplorable tendency on the part of the dog.

A CANADIAN paper lately recorded the death of a young woman in Tilsonburg, caused by the habit of sleeping with her tightly-laced corsets on.

## The Story of Caspar Hauser.

[DURING the last fifty years much interest has been manifested in the case of the remarkable youth whose history is in part narrated in the accompanying extract from "Graham's Lectures." He died while still young from the effects of a stab wound in the chest inflicted by an unknown person after several unsuccessful attempts to assassinate him. The reflection of Mr. Graham upon the physiological aspects of the case are very interesting, especially as they furnish so powerful an argument against the use of animal food.—ED.]

"He was, we are informed, for some cause or other, confined in a narrow, dark dungeon from early childhood till he was about seventeen years old, when he was released, and on the 26th of May, 1828, was found at one of the gates of the city of Nuremberg, in Bavaria, Germany, and was soon taken under the care of the city authorities. During the whole time of his confinement he was kept in a sitting posture with no other clothing than a shirt, and made to subsist on coarse, brown bread and water exclusively. Considering the position in which he was kept during the greater part of the period of his growth, his total want of exercise, and the confined air which he breathed, and the entire absence of light, his body was developed with remarkable symmetry and beauty. When he first came out of his dark dungeon, and for some considerable time afterward, the acuteness and power of his sight, hearing, smell, taste, and touch, far exceeded any thing of the kind ever before known in a human being.

"Being accustomed during the whole confinement to what is ordinarily called total darkness, his eyes acquired the power of perceiving things by the aid of so extremely small a quantity of light, that he was able to see distinctly where ordinary human eyes could see nothing. 'It has been proved, by experiments carefully made,' says his learned biographer, 'that in a perfectly dark night he could distinguish different dark colors, such as blue and green, from each other. He could walk anywhere as well in the dark as in the light, and was astonished to see others groping and stumbling along in the dark. When at the commencement of twilight, a common eye could not yet distinguish more than three or four stars in the sky, he could already discern the different groups of stars, and could distinguish the different single stars of which they were composed from each other, according to their magnitude and the peculiarities of their colored light.'

"But all this will perhaps be said to be wholly the effect of his having been long accustomed to darkness, and had nothing to do with his diet. We shall see, however, in the sequel, that this conclusion is erroneous. His being long confined to what we call total darkness certainly caused his eyes to acquire the power of seeing by the aid of an exceedingly small quantity of light, and also unfitted them to bear full daylight with comfort; and, consequently, when he first left his dark prison, the full light of day was distressing to him, and rather served to dazzle and blind him than to increase the distinctness of his vision; hence, for some time after he was set at liberty, he could see more distinctly and much farther after sunset than at noonday. Now if all this had been exclusively the effect of his having been so long confined in darkness, then as his eyes became more and more accustomed to the full light of day, his extraordinary power of vision would gradually have diminished, till it became nothing more than ordinary. But this was not the case. As he became more and more accustomed to the full light of day, his distinctness and power of vision in the night gradually decreased, and at the same time commensurately increased in the day, till he became as remarkable for his visual power by day as he had been by night, and could distinctly see small objects far beyond the reach of ordinary vision; and 'his sight,' says his learned biographer, 'was as sharp in distinguishing objects near, as it was penetrating in discerning them at a distance. In dissecting plants, he noticed subtile distinctions and delicate particles which had entirely escaped the observation of others.'

"Moreover, if long confinement in darkness had been the sole or even the principal cause of the astonishing visual powers of Caspar Hauser, it certainly could not account for the fact that he was equally remarkable for the discriminating acuteness and power of his other special senses.

"'His hearing,' says his biographer, 'was scarcely less acute than his sight. When walking in the fields he once heard, at a distance comparatively great, the footsteps of several persons, and he could distinguish these persons from each other by their walk.'

"His acute sense of smell was most troublesome and painful to him, exposed as he constantly was to those concentrated and offensive odors that almost everywhere abound in that artificial state of things peculiar to civic life; while it fitted him the more perfectly for that pure and uncontaminated state of

nature in which the special senses are the true sentinels of organic life, and with the most perfect discrimination and integrity act determinately for the security of the vital interests of the body. By so much the more, therefore, as he was fitted for such a simple and natural state, he was in a condition to be offended and distressed by an artificial and unnatural state of things. The odors of the rose and other fragrant flowers and shrubs, which, in a state of nature, thinly scattered over the earth, and breathing their sweetness to the pure and diluting air, would have been exquisitely delightful to his keenly discriminating sense, when greatly concentrated and densely freighting the atmosphere from the flower gardens of artificial cultivation, were extremely oppressive and even painful to him.

"'He was able to scent things a very great distance. He could distinguish apple, pear, and plum trees from each other, at a considerable distance, by the smell of their leaves. Different coloring materials, pencils, etc., imparted a painful odor to his keen sense. He smelled tobacco when in the blossom in the fields, at the distance of fifty paces; and at more than one hundred paces when it was hung up in bundles to dry, causing him headaches, cold sweat, and fever. The smell of old cheese made him feel unwell and vomit. The smell of strong vinegar, though full a yard from him, operated so powerfully upon his nose and eyes as to bring tears into his eyes. When a glass of wine was filled at the table, at considerable distance from him, he complained of its disagreeable smell, and of a sensation of heat in his head. The opening of a bottle of champagne was sure to drive him from the table or to make him sick. The odor of flesh was to him the most horrible of all smells. When walking by a graveyard, the smell of the dead bodies, of which others had not the slightest perception, affected him so powerfully as almost immediately to bring on an ague and cause him to shudder. The ague was soon succeeded by a feverish heat, which at length resulted in a violent perspiration, by which his linen was thoroughly wet. He afterwards said he never experienced so great a heat, and complained, on his return to the city gate, that his sight had been affected thereby. Similar effects were once after experienced by him, when he had been for a considerable time walking by the side of a tobacco field.'

"His sense of taste and sense of touch were equally acute and astonishing. Indeed, the power of all his senses seemed miraculous. He would instantly detect the nicest qualities, and the slightest difference in qualities of things of taste and of touch, and he could not be deceived in these respects by any devices or means. Nothing was more loathsome to his taste than flesh. Even enveloped in bread, it caused great disgust and distress as soon as he took it into his mouth. With equal discrimination and power would he detect the nicest difference in the tangible properties of things.

"'One of the most difficult undertakings was to accustom him to the use of ordinary food; and this could be accomplished only by slow degrees, much trouble, and great caution. The different preparations of farinaceous food most readily agreed with him and became agreeable. At length he was gradually accustomed to eat flesh, by mixing at first only a few drops of gravy with his gruel, and a few threads of the muscular fiber of the flesh with his bread after the juices had been boiled out, and by gradually increasing the quantity.'

"But it will be said that it is far from being desirable to possess such an exquisite keenness and discriminating power of the senses, for it would only serve to unfit one for society, for usefulness, and for all the enjoyments of civilized life, and render human existence a curse rather than a blessing. So, if I were accurately to describe the pain which every sin, and the slightest departure from spiritual truth and righteousness, would cause a perfectly holy human being, were such a one on earth, most of mankind, even in Christian lands, would make the same objection to such a state of the soul, and on precisely the same grounds; and the analogy between the two cases is perfect.

"But it should be remembered that whatever may be our power to reconcile our special senses to the deleterious and the offensive properties of things, we have no power to reconcile those properties to the vital interests of our bodies; and therefore though we may succeeed in so far depraving the sentinels of life, and so completely destroying their natural instinctive integrity as even to cause them to delight in the poisonous properties of tobacco and other pernicious substances, yet those properties always remain equally unfriendly to the physiological interests of our bodies, always necessarily retain their *anti-vital* character. It would, therefore, be quite as rational and as wise for a traveler who, finding his journey lay continually among pitfalls and precipices, and feeling himself constantly alarmed and tormented by the perception of the dangers that surrounded him, should put out his eyes, and in his blindness congratulate himself on his deliverance from all his perils and annoyances, as it is for human beings to desire to escape from the per-

ception of the dangers that surround them in the deleterious properties of things, by an entire depravity of their senses of smell and taste. The truth is, that the case of Caspar Hauser affords many of the most important physiological facts and demonstrations that have ever been presented to the scientific world; and happy will it be for mankind if they will learn wisdom from such extraordinary instruction.

"The want of physiological knowledge in those who had the care of Caspar Hauser led them to many erroneous practices and no little confusion of statements concerning him; still, however, an accurate physiologist is able to reduce the facts in the case to their true order, and to derive from the extraordinary experiment the most complete physiological demonstrations. As in the case of the olfactory sense, so with that of taste, many substances naturally innocent, and perhaps in a measure salutary, were, by artificial concentration and other insalutary preparations, rendered oppressive and offensive to him; and substances which were naturally more stimulating than those to which he had been accustomed, at first produced somewhat unpleasant effects on his organs. But in regard to the smell and taste of flesh, there was a deep, instinctive loathing and abhorrence, which, as we have seen, could only be overcome by the smallest degrees and in the slowest and most cautious manner. 'When the first morsel of flesh was offered to him, scarcely had it touched his lips before he shuddered; the muscles of his face were seized with convulsive spasms, and with visible horror he spat it out.' 'Some flesh was subsequently concealed in his bread; he smelled it immediately, and expressed a great aversion to it, but was nevertheless prevailed upon to eat it, and he felt afterward extremely ill in consequence of having done so.' 'Even milk, whether boiled or fresh, possessed so much of the animal odor and flavor, and was so much more exciting than his bread and water, to his stomach and alimentary tubes as to be unpleasant to him.' Beer, wine, brandy, tobacco, coffee, and all other alcoholic and narcotic substances, were most powerfully offensive to his senses of smell and taste, and distressing to his body, producing even more violent effects on his system than flesh.

"As he became more and more confirmed and free in his habits of flesh-eating, the extraordinary acuteness and energy of his special senses continued to diminish, till in a short time they wholly disappeared, and he retained nothing but the most ordinary powers.

"While he continued to subsist entirely on his simple diet of bread and water, as he had done in his dungeon, 'the activity of his mind,' says his learned biographer, 'his fervent zeal to lay hold of everything that was new to him, his vivid, his youthfully powerful and faithfully retentive memory, were such as to astonish all who witnessed them.' 'The curiosity, the thirst for knowledge, and the inflexible perseverance with which he fixed his attention on anything which he was determined to learn or comprehend, surpassed everything that can be conceived of them.'

"About two months after he entered the city of Nuremberg, he was taken to the house of Professor Daumer, with whom he afterward resided, and from whom he received regular and systematic instruction, and where he was also carefully and regularly educated to the use of animal food in the manner I have described. 'In Professor Daumer's notes respecting Caspar,' says his biographer, 'he has made the following observations: After he had learned regularly to eat flesh, his mental activity was diminished, his eyes lost their brilliancy and expression, his vivid propensity to constant activity was diminished, and the intense application of his mind gave away to absence and indifference, and the quickness of his apprehension was also considerably diminished.'

"'Caspar's present mode of living,' says his biographer, in the conclusion of his narrative, 'is that which is common to most men. With the exception of pork, he eats all kinds of flesh-meats that are not seasoned with hot spices. His drink continues to be water; and, only in the morning, he takes a cup of unspiced chocolate instead of it. All fermented liquors, beer, and wine, as also tea and coffee, are still an abomination to him. If a few drops of them were forced upon him, they would infallibly make him sick.' 'The extraordinary and almost supernatural elevation of his senses has also been diminished, and almost sunk to the common level. He can, indeed, still see in the dark, but not to read nor perceive small objects as he once could. Of the gigantic powers of his memory, and of his other astonishing qualities, not a trace remains! He no longer retains any thing that is extraordinary.'"

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"By planting several Limburger cheeses about his potato patch a farmer in Linn County, Iowa, drove off all the potato bugs while his neighbors suffered severely from their ravages." This is that kind of cheese which is said to be ripe when a bit as big as a pea will drive a dog out of a tan-yard.

The Health Reformer.

BATTLE CREEK, MICH., JUNE, 1875.

J. H. KELLOGG, M. D., : : : EDITOR.

## Herb Medicines.

WE are often asked, "What about herb medicines? you do not object to them, do you? They can do no harm, certainly, since they are vegetable productions, and are wholly unlike those poisonous minerals like calomel and arsenic which the doctors often prescribe." This is a fallacy so commonly held that we deem it worthy of exposure. Nothing could be more incorrect than to suppose that drugs are harmless simply because they are of vegetable origin. The *effect* of a drug must determine its nature, rather than any question of origin. All vegetables were not made to be eaten, as some seem to suppose. The most deadly of all known poisons, and the most powerful of all the drugs of the *materia medica* are obtained from plants. Aconite, belladonna, stramonium, hashish, morphia, calabar bean, together with ergot and quinine, are vegetable productions. Those deadly drugs, strychnia and prussic acid, have the same origin. Are these harmless because they are not minerals? Certainly not.

Oh! yes; but we do n't mean such strange drugs as those; we simply refer to those simple remedies which our grandmothers employ, and which are to be procured without the aid of chemical processes, says our interrogator. Let us examine a few of these "simple and harmless remedies," and see if they are really so innocent as people generally suppose. Take, for example, that common household remedy, wormwood tea. What does it contain? Its active property, that which gives to it its medicinal value, is a volatile oil which is possessed of narcotic properties, and is capable of producing epileptiform convulsions. It is this oil which constitutes the intoxicant element of the popular French *liquer* called *absinthe*. When habitually used, it soon produces the most direful results. If mothers will insist in dosing their families with wormwood tea, they should bear in mind that they are as certainly poisoning them as though they were administering small doses of corrosive sublimate.

Hops are often employed in domestic medicine, and, probably without the suspicion that there is anything unwholesome about them; yet their medicinal properties are due to a peculiar substance called *lupulin*, which they contain, and which is a narcotic.

Camphor, another favorite domestic remedy, is also a rank poison in any but very small doses. It irritates the stomach, depresses the cerebro-spinal system, and may produce maniacal delirium.

Arnica is also considered to be a very useful addition to the family medicine chest. Every bruise, or sprain, or cut, or burn, must be duly saturated with this drug, which is supposed to exercise a wonderful influence in promoting the healing process. Not only is it wholly useless in such cases, but it is positively injurious, and even dangerous, as the following paragraph from the *Medical Record* abundantly proves:—

"TINCTURE OF ARNICA A DANGEROUS APPLICATION.—Dr. James C. White has an article in the *Boston Med. and Surg. Journal*, for Jan. 21, 1875, on the poisonous action of tincture of arnica on the skin. He relates three cases where its use as a lotion for bruises occasioned severe attacks of acute eczema. Dr. White is inclined to believe that such results are more common than is generally known. The use of arnica as a household remedy is exceedingly extensive, and the reason that the poisonous effects often produced upon the skin do not lead to its disuse is, that the true nature of these effects is seldom recognized, but they are attributed to the original injury for which the arnica is applied. Hebra has long ago entered a protest against the use of this supposed remedy, and its irritant properties are described by Tilbury Fox. Dr. White thinks the profession should cease to accord to so useless and dangerous a drug a confidence to which it is in no way entitled."

Willow and cherry bark are also very commonly employed by those who rely on remedies of this class to aid their digestion and "tone up" their debilitated energies. The first contains an element which very much resembles quinine both in its physical properties and its medicinal effects. Consequently those who employ it should know that they might as well take a daily dose of quinine as

to indulge in potations of infusion of willow bark. Cherry bark owes its virtues (?) to the presence in its infusion of prussic acid. The effect of using it, then, would be the same as would result from using prussic acid in similar doses in any other way.

Mullen tea is another popular remedy very highly recommended for the cure of consumption. Whatever virtues it has are due to the noxious properties which it contains.

Thus we might continue through the whole list of "roots and herbs," and we should find that every one contains some poison which gives it its medicinal properties. A very few may be nearly inert; but they are in no way superior to no drugs.

In view of these facts, how strange it is that many people, some even who profess to be reformers, still cling to the notion that bitters purify the blood! We should be much interested to learn how the blood will be purified by pouring into it any amount of poison-laden liquid. Perhaps some of our bitter-loving friends will give us an explanation.

The only difference between "simple herbs" and other drugs is one of degree, and not of kind. A weak poison is less harmful than a more powerful one; but the damage is always proportionate to the dose.

## Does Alcohol Make Men Work Easier?

THE majority of candid, thoughtful men have long since decided that stimulation is not strength. Consequently, although alcohol stimulates, it does not strengthen. It merely *excites*, just as the lash excites a tired horse. It is barely possible that, under certain rare circumstances, the employment of an excitant may be necessary; but this by no means proves that alcohol, or any other excitant, is anything better than the rank poison which we have claimed it to be.

The use of alcohol makes a man *feel* stronger,—makes him believe that he can do more work, endure more fatigue and hardship, and withstand a greater degree of cold than he could otherwise do; but when an actual trial is made, it soon becomes apparent that the ability is lacking. Feeling and doing are two wholly different things; and here is where alcohol is so deceptive. It is a narcotic, as well as a stimulant, and paralyzes the nerves, so that they lose their normal sensibility. The weary man takes a glass of brandy and continues his toil—not because he has been strengthened, not because his vital forces have been reinforced, but because he no longer *knows* that he is tired. Weariness is simply an appeal for rest on the part of the tissues. They require time to repair themselves. Alcohol has the same effect upon the nerves which control the building up of the body that chloroform has upon the nerves of general sensibility, and it allays the sense of weariness in the same way that chloroform or any other anesthetic allays the sense of pain during a surgical operation. A person whose hand has been rendered insensible to pain by exposure to intense cold may place his fingers in the fire without suffering at the time, but he is not thereby prevented from being burned any more than though his sensibility was wholly unimpaired. Just so it is with alcohol. When a man has labored until his tissues are so broken down that they demand time for restoration, alcohol will so blunt a man's sensibilities that he may be able to continue laboring for a time, but it is at a terrible cost, for he is only enabled to persist in continuing the breaking-down process beyond the point at which nature warned him to desist. Not infrequently this interference is carried so far that the life-forces become so exhausted that they never begin the work of renovation, and the poor victim dies.

The following paragraph, which we clip from the *National Temperance Advocate*, is a complete refutation of the oft-repeated assertion that men can accomplish more by the use of alcohol than without it:—

"Dr. Parkes, in some experiments on a soldier to establish the use of alcohol as food, gave a strong, healthy man only water for three days, and kept him digging in earth as hard as he could. The mean number of heart beats per minute was sixty-six. The soldier then worked three days with the addition, daily, of twelve ounces of brandy. During this period the pulse beat seventy-one times a minute. The amount of work done was about the same in each instance, and the excretions did not differ much. To find out whether the man worked on brandy with more ease than on water, he was asked to note his own feelings. He commenced with the belief that he could work better

with the brandy, and ended with an entirely opposite conviction. During the first two days, he said, the brandy, he thought, gave him spirit to think he could do more; but when he came to do it, he was less capable than he thought. On the third day he was hot and thirsty, had palpitation, and was obliged to stop frequently because his 'breathing was not good.' He could hardly refrain from throwing down his spade and stopping work."

## Our Religious Creed.

THE *Church Advocate*, of Harrisburg, Pa., one of the most excellent of our exchanges, has the following words of appreciation of the REFORMER :—

"We are much pleased with it, and commend it to the favorable notice of our patrons. It is sound on the physical and mental culture of man; and as to the moral, all that we have thus far seen we can heartily indorse. We do not know what its religious creed is, if it has any, and so do not like to vouch for it in advance."

For the benefit of our estimable contemporary, and all others who may be in a like quandary, we will say that the principles of our religious creed are essentially as follows :—

1. We believe the Bible to be the word of God and the only safe rule of life.

2. We believe that the same God who dictated the moral law has implanted in our physical natures certain immutable principles for their government.

3. We believe that every violation of physical, mental, or moral law is visited with commensurate punishment.

4. We believe that the relation of our physical, mental, and moral natures is so intimate that neither can attain the most perfect development without a proportionate development of each of the others.

5. We believe that the only worthy principle of action is a love of that which is right and true for its own sake, and without reference to any less worthy consideration.

## Narcotizing Horses.

WE have often remarked that many people display a much greater amount of common sense in the care of the health of their animals than in caring for themselves. The following paragraph well illustrates this in the use of narcotics. Hundreds of thousands of human beings are living in a state of chronic narcotism through the influence of tobacco, alcohol, opium, and hashish; yet very few think it a matter worthy of serious remark, and the great majority of medical practitioners are daily adding to the number of victims by their reckless use of narcotic drugs and unnatural stimulants. If chloral has such a pernicious influence upon the coarse and hardy organizations of horses, what must be its effects upon the highly sensitive human frame? The paragraph is given on the authority of a medical journal of Bordeaux as follows :—

"An eminent veterinary surgeon has informed the Medical and Surgical Society of that city, that the coachmen of certain families had been for some time in the habit of administering chloral to the horses in their charge so as to make them easier to ride or drive. It appears that the drug acted like a charm; for horses which had previously been so spirited as to give much trouble to their driver, became as quiet as lambs after a few days of this hyposthenic treatment. The change naturally attracted the attention of the owners of the animals, and they sent for the veterinary surgeon to ascertain the cause of the sudden gentleness. That functionary noticed a certain tendency to sleep in the animals; but scarcely knew to what to refer this unusual condition, when, in one of his visits, he chanced to find a bottle half full of chloral. When the coachman was questioned regarding the use he made of the drug, he confessed, after much hesitation, that, following the advice of a brother 'whip,' he gave the horses a dose of chloral every morning to make them go quietly, and further, that many of the fraternity in Bordeaux followed the same plan."

## Testimony in Favor of Vegetarianism.

THOSE who are just investigating the views advocated by the HEALTH REFORMER and other health publications are sometimes very anxious to know whether they are merely the new-fangled notions of some chimerical genius, or whether they have been duly tested by practical experience during a term of years sufficiently long to establish something with reference to them. To such, the following

paragraphs from the *Vegetarian Messenger*, an English journal, will afford very valuable testimony on the subject of meat-eating :—

From Captain W. Finch : "I have tried the vegetarian principle while subject to the alternations of heat and cold in Denmark and Sweden, and can testify to its advantages over a mixed diet. Having discarded salt provisions, I have had no occasion for medicine. In Denmark I lived principally upon rice and rye-bread, which is usually, by the enlightened English, derided as 'black bread.' Very few of us think it good enough for swine ; yet it has proved itself an excellent human food. I wish that all seamen would become vegetarians ; they would less need the medicine chest, and be more alert to go aloft."

"The Rev. G. B. Watson referred to the case of Dr. Twitchell (see *Medico-Chirurgical Review* for Oct., 1850, p. 553), who, by the abandonment of flesh-meat, was cured of long-standing dyspepsia and asthma. After nine years of vegetarianism, he gradually re-resumed flesh diet again, which was followed by the formation of a malignant tumor at the inner angle of the eye, deemed very serious by the best medical men of Philadelphia. Dr. Twitchell himself thought it wiser to take no animal product but milk or cream, and gained from this change a cessation of pain and lessening of discharge from the ulcer, which at length altogether disappeared. Thus, with no known cause but this simpler diet, at the age of 68, he was cured perfectly of what had been thought a chronic and malignant tumor."

"At the Soirée in Freemasons' Hall, London, August 1, 1851, Rev. W. Metcalfe said he had practiced vegetarianism 42 years. Eight of those years he had lived in the land of his nativity, and 34 years he had resided in the U. S. of America. His health in both countries had been uniformly good, and considerably better than that of his associates who had different habits. During the 42 years, he had never had a particle of butcher's meat within his dwelling. He had raised a family of five children, none of whom had ever tasted animal food, and they had enjoyed life much better for it. They had passed through infancy and childhood, almost without the usual diseases of children. The five were all married to vegetarian partners, and he had then living (to the best of his recollection) 21 grandchildren, of whom not one had ever tasted, or could be induced to taste, animal food. In 1818 the yellow fever broke out in Philadelphia, near to his residence. All who possessed the means of leaving the vicinity, did so, not excluding ministers of the gospel. He and his family remained in proximity to this contagious disease, yet none of them suffered. Yet, whenever he was called upon, he went to pray at the bedside of loathsome suffering, and frequently attended the funerals. In 1832 cholera appeared in the same city. He did not hesitate to visit the cholera hospitals in performance of his duty as a minister of the gospel, yet both he and his family—indeed, every family known to him which lived as he did—passed through that scene without being affected by cholera. The like occurred in 1849, and again no vegetarians were attacked."

## Homeopathy Outdone.

UNDER the heading, "Infinitesimal Dosing," a medical journal gives the paragraphs which we quote below. The degree of success with which the Tartar physicians meet is not stated ; but if we may judge from our observations of the usual effects of drugs, we may fairly conclude that their practice is an exceedingly favorable one for the patients. It certainly ought to be somewhat suggestive to those who advocate the efficacy of either big or little doses.

"Dr. John C. Peters in his address on 'Sects in Medicine,' delivered before the New York Medico-Legal Society, says : 'The Tartar physicians, or Llama doctors, have long superseded infinitesimal doses, as, if they do not happen to have any medicine with them, they are by no means disconcerted, for they merely write the name of the remedy they wish to give on a little scrap of paper, moisten this with the saliva, roll it up into a pill, which the patient tosses down his throat with the same perfect confidence as he would aloes, asafœtida, or any other remedy. To swallow the name of the remedy, or to take the medicine itself, say the Tartar physicians, by any patient, comes to precisely the same thing. If paper is not at hand, the name of the drug is written with clay or chalk upon a board, which is then washed off, and the patient swallows the liquid.'

"Some of our physicians even dispense with this formality, and do not give any medicine at all. They certainly have the advantage over the Tartar doctors, as they save themselves some trouble and do not run the frightful risk of misspelling the name of the drug and perchance killing the patient.'"

☞ NATURE is never cheated.

# People's Department.

## Medical Science.

THANKS to the REFORMER for criticisms; but I would not be understood to undervalue science. I only wish to see how science justifies the use of poisons in the cure of disease.

I admire the skill of the surgeon, as he cuts away the diseased limb of a neighbor, and leaves the man free who has been carrying a dead limb about for years; but if he had bound up the wound with a steel band, and sewed it with a gold thread, and should dress it with a salve, composed of jalap, calomel, and corrosive sublimate, I should then want to study surgery: but thanks to God, surgeons seem to *exercise their common sense.*

Now, I ask why physicians cannot be as careful of the intestinal canal, as surgeons are of a wound? and if poisons are good for the stomach, why not also good for the flesh, when it needs to be healed?

I speak of the applications of science when I mention these things. As to the science of medicine, we outsiders must judge of that by its fruits; and if a medical course of study authorizes a man to poison people, and then charge them for it, what is the inference?

I am aware that medical science, properly understood and applied, will make men good as well as wise. JOS. CLARKE.

## Swedish Movement Cure.

PERHAPS many readers of the REFORMER know as little of what is meant by Swedish Movement Cure as I did when I saw the operation first performed. This mode of treating the sick first originated in Sweden. There are four institutions in that country devoted to this method of treatment; and so extensively has the fact become known that movements are a powerful hygienic and remedial agent, that large cures have been established in several countries, where invalids are successfully treated and cured by this agency alone. Many may, by this means, be restored to health when suffering from severe pain, or when the powers of the body have become inactive because the circulation of the blood has become sluggish, and the system ceases to throw off impurities, thus cleansing itself from disease by natural agencies. The warm water bath may be used accompanied by this treatment, and restoration in a short time be permanent. Therefore, I attempt to give as near as I can a correct description of this treatment.

In our case a rude table was made as long as the patient. Quilts and comfortables were laid upon it with pillows at the head. The windows and doors were closed and the room sufficiently warmed to prevent taking cold. Then the patient, with the sheet over him, was gently lifted from his bed and laid upon the table having his feet toward the stove. Quilts were then thrown over him, and he was given time to rest. The bottom sheet and other things that needed airing were hung by the stove, the heat taking the impurities from them. Then the patient was partly uncovered. Commencing with the chest, a gentle but active movement is performed with the palms of the hands downward, one hand resting upon the other, thus rubbing the surface something in the manner that you would move a plane while using it. Then follows a percussion with the fingers, first with one hand and then the other, over the lungs as you would strike the keys of a piano, gently at first, but as the patient recovers he will soon endure the treatment administered more thoroughly. Now cover warm again and allow five or ten minutes for rest. If the room is too warm, the door may be thrown open a short time. Closing the door we again uncover the patient, leaving the sheet over him. Now the operator gently kneads the bowels, rolling the flesh under the hands with a downward movement around and then reversing. He now commences a gentle percussion with either the flat or edge of the hands, then placing both hands upon the bowels he gives such a vigorous shaking that it starts the sweat from every pore in the operator's body. It is wonderful how much of this treatment the patient will soon endure. At the Institute this treatment is given with machinery. There cannot long be an inactive state of the liver when this movement is properly performed.

The patient is again covered, and after sufficient time for rest has been given, the covering is all taken off except the sheet. While one at the head holds it in place, the operator gives the rubbing movement to both limbs, percussing with both hands. Being well covered, the patient again rests. He is now turned carefully upon his breast and the treatment administered to his back and limbs in the same manner, commencing with the lungs. This time the feet take the severe shaking. Taking hold just above the ankle, thorough percussions are given to the bottom of the feet. The operator places the fingers of his right hand each side of the spine at the neck, and with a sudden short movement downward, rubs the back. Then he administers the soothing medicine. Placing the tips of his fingers upon the crown of the head, he

gently passes down to the feet and off, a number of times, and soon the patient begins to feel sleepy. After resting a short time he is again turned over and a movement of the arms is made like turning a grindstone, also raising the hands gently above the head. About one hour has passed away. The bed is arranged and the patient is again laid upon it. The pulse of the patient having been counted before the treatment was again counted, and was found to be two beats less.

Now if any one doubts the efficacy of this mode of treatment to arouse the dormant faculties of the human system, let him have the same operation performed upon himself, and he will not long be an unbeliever. But with the weak and feeble, caution must be exercised not to carry the treatment too far; and a skillful hand must be the operator or great harm may be done.

ANGELIA J. EDMONDS.

## Good, if Lived Out.

THERE are many to be found who will say, in respect to our health publications, that they are doubtless good, and would be beneficial, if their teachings were only lived out. But the difficulties and obstacles in the way of making the requsite changes in their customs and habits of life are so great that they conclude at once that it is useless to try, and so pass by the whole matter, and decline to read and make themselves better informed in regard to the laws of life and health. The matter is decided in their minds that they are not to undertake a change, therefore more light would do them no good.

It is true that light not heeded will do no good. But are not life and health of sufficient value to induce great efforts and sacrifices to secure them? Is it possible that people can be indifferent in such a matter, esteeming the blessings of life and health of too little value to make an arduous effort to secure? But so it is. Customs are established. Fashions, though life-destroying, must be followed. It is too much to undertake to correct them, though life and health are at stake. And so it is decided to shut the eyes against further light, and go on in darkness and stumble down to death!

Is this the course of rational and intelligent creatures? No, indeed. Life is worth preserving, and health is worth securing at the cost of mighty efforts and a persevering struggle. It will pay to abandon hurtful customs and to deny false and perverted appetites, in order to escape the pains and penalties that surely must follow a wrong course, and so prolong life and make it a blessing to ourselves and others. R. F. COTTRELL.

## Death in the "Spare Bed."

ON one occasion, having need to see a minister early in the morning after Conference adjourned, I went to his boarding place, one of the choicest in the city. He and his room-mate were making their toilet, and revealed their presence by hoarse and almost incessant coughing. Their entertainment had been most hospitable; but they had been assigned to the "spare room," in that case an elegant apartment, reserved for favored guests. The spacious and yielding bed had an inviting look, but a damp and moldy smell. Indeed, the whole apartment revealed an alarming unfamiliarity with sunshine. But it was the "best room," and any intimation from them that both room and bed were damp had seemed rude and ungrateful. So they occupied the room and bed, and contracted colds, from the effects of which one has since died, and the other still suffers. Said a pale and haggard sufferer not long since, "I think I should be able to visit my appointments at least a few times more, if the friends would not persist in putting me away in their chilly spare rooms and damp beds." When such cases have run their course, doctors may say, "Died of hepatized lungs;" but more will understand them if they say, "Died of sleeping in spare beds."

The motives of the good people cannot be questioned; but unwittingly they literally "kill with kindness." In the name of the brotherhood, I protest, if we are to occupy the "spare room," and sleep in the "spare bed," they should be dry and well aired. We certainly do not elect to be suicides for courtesy, and you would not give us death for a bed-fellow.—*Western Advocate.*

A GOOD deal of laughter was occasioned in the French Chamber the other day, when Dr. Testelin, in demanding a school of medicine for Lille, in addition to those proposed for Lyons, etc., declared that the number of doctors had decreased in the town that he represents, while the population had increased. The doctor appeared astonished at the amusement caused by this statement.

APOTHECARY.—A man who mixes drugs of which he knows little, to pour into a body of which he knows less, to cure a disease of which he knows nothing.—*Voltaire.*

# Questions and Answers.

POISON IN FOOD.—E. E. T., O., says: "Will you please answer through the REFORMER whether the various grains, fruits, and vegetables contain poison.

*Ans.* Our arguments against the use of tea, coffee, and condiments, on account of their poisonous properties, have often been met by the expression, "Pooh! there is poison in everything—in potatoes, in wheat, in every article of food. If there were no poison in things we could not live." This, or an equivalent argument is the most common objection which ignorance advances against our positions on the diet question. The statement that there is poison in all fruits, vegetables, and grains is false. It is true that many vegetable productions are very poisonous. There are poisonous fruits and poisonous grains; but edible fruits and grains are not poisonous. Ordinary vegetables, and those which are commonly used as food and are perfectly wholesome when mature and in proper condition for eating, are sometimes poisonous at other seasons and times. For instance, it is well known that people have frequently been poisoned by eating young parsnips in the fall. Again, the young shoots of the common potato contain a poison which is also found in other plants of the same class. This is the reason why potatoes which have begun to sprout are sometimes poisonous.

All vegetable products contain substances from which poisonous compounds may be made by chemical decomposition; but this is no evidence of the poisonous character of the substances as they are found in the natural state. Thus, wheat, oats, barley, rye, potatoes, peas, etc., contain various phosphates. These phosphates are formed by a union of phosphoric acid with a mineral base, as lime, soda, or potash; while the acid is thus combined, it possesses no noxious properties; but so soon as it is released from its combination by chemical agencies, it becomes one of the most active poisons. It thus appears that although poisons can be *made* from various articles of food, there is really no poison *in* the food until after it has been subjected to the action of chemical agents.

CHEWING GUM.—J. C. M., N. Y., wishes to know whether the chewing of gum is or is not hurtful to the stomach.

*Ans.* The chewing of gum, although practiced by many really refined and cultivated people, is generally regarded as a practice which ought to be discountenanced; first, because it is something of a breach of true politeness, and secondly, because it is unphysiological, and thus hurtful. The chewing of gum has no direct or immediate hurtful effects upon the stomach; but it impoverishes the whole system in some degree. The saliva is a very precious digestive juice. The chewing of gum occasions waste of this valuable agent and thus contributes to the impairment of the digestive function, and, consequently has an indirectly injurious effect upon the stomach. We do not favor the practice of chewing gum, by any means.

TEMPERATURE.—O. A. L., asks: Will you please inform me through the HEALTH REFORMER at what temperature a room is properly ventilated?

*Ans.* Proper heating is not proper ventilating. The atmosphere of a room may be of exactly the proper temperature for health, and yet be so laden with impurities that its inhalation will be absolutely dangerous. Some time since an incident occurred which well illustrates this point. A large church was crowded with people during the Sunday morning service. When the congregation was dismissed, the windows and doors of the church were tightly closed, and the house was not again opened until used for a prayer-meeting in the middle of the week. As there was no fire in the room, and the weather was quite cold, it was thought unnecessary to provide any means for ventilation. Soon after the commencement of the exercises, a feeling of stupor began to overspread the worshipers. In a short time, several became insensible, and were carried out by their half-unconscious companions. The explanation of the matter was that the impure air with which the house had been filled on Sunday, being shut in, became condensed by cooling and so accumulated at the bottom of the room. It was thus inhaled by the occupants, and so produced the poisonous effects which we have related.

From 60° to 70° is the proper temperature at which a room should be preserved.

POISONING AND WHISKY.—A. P. M. says: Four years ago I got poisoned by going into the woods and handling poison oak; and every spring since that time it breaks out. The remedy our doctors prescribe is to drink plenty of good whisky and anoint the affected part with a salve made of hog's lard and sugar of lead. What is your remedy?

*Ans.* The irruption is doubtless of an eczematous character, though it may at first have originated in the manner described. Our remedy would be to let "good" (bad) whisky alone, as well as the lead wash, purify the blood by hygienic living, dripping-sheet baths, packs, etc. We would need to know more of the appearance of the irruption before prescribing local treatment.

# *DIETETICS.*

## Trichinæ.

CONSIDERABLE has been said about the ravages of this parasite during the last few years. Many have regarded the matter as being more the result of excitement than of anything more substantial, and have paid but little serious attention to it. But, in spite of incredulity and skepticism, the terrible facts exist, and it is daily becoming more and more apparent that the *trichina spiralis* is a most dangerous foe to human life, and a cause of mortality which it is wholly unsafe to ignore.

A correspondent of one of our daily papers writes from Kankakee, Ill., as follows :—

"We have sixteen cases of trichinal disease incident to eating diseased pork, portions of which were subjected to a critical microscopic test, and found to contain great numbers of trichinæ. There have been two deaths, and several others are in a very critical condition. A part of the muscle was taken from the leg of the diseased man, and, upon examination, was found to contain hundreds of trichinæ. The sickness of the several families has been traced to eating the meat from one hog."

It should be borne in mind that it is only now and then that cases of infection with trichinæ are discovered, the great majority of the cases of this disease being treated under some other name, as typhoid fever, rheumatism, intermittent fever, cholera, and other diseases which it strongly resembles.

A recent report informs us that an epidemic of trichinosis has appeared in a neighborhood in Germany. Four hundred persons have been attacked, and of these twenty-one are already dead.

## Adulteration of Sirups and Sugars.

Two years ago we took the pains to collect and examine a considerable number of specimens of the best sirups to be found in the market. They were offered for sale under the alluring names of "Golden Drip," "Silver Drip," "Sugar-house Drip," etc. Upon making a chemical examination of them, only one was found to be pure. All the rest were seriously adulterated, containing considerable quantities of sulphuric acid, or oil of vitriol, iron, and other impurities. The prices of these bogus sirups ranged all the way from ninety cents to $2.00, and some of them were, to all appearance, of the very finest quality ; yet a qualitative analysis showed that they were dangerously sophisticated, and were made by a chemical process from refuse starch, old rags, and saw dust, treated with sulphuric acid. We have examined several other specimens of sirup quite recently, with the same results.

A very convenient test for sirups of this kind is found in ordinary tea. A teaspoonful of it will turn a cup of pure tea as black as ink, when placed in it. This test is practically reliable, although not strictly accurate. A more scientific test is found in chloride of barium, which gives a white precipitate when added to a solution of spurious sirup. We do not recommend the use of sirup as an article of diet ; but those who think they cannot get along without it should subject it to a careful chemical examination before using it. The following article by Prof. Bailey, from the *Nebraska Patron*, is well worthy of careful perusal :—

"There are simple methods of determining the presence of grape sugar, after which the only safe way is to let it alone ; for unless the acid used is completely neutralized by the chalk, it remains free to produce sore throat, indigestion, and inflammation of the stomach.

"A delicate test for grape sugar is to dissolve a teaspoonful of the sugar or sirup in an equal amount of water. To this solution add four or five drops of solution of sulphate of copper (blue vitriol) and a sufficient quantity of solution of potassa to turn the liquid dark blue, then heat to boiling. With cane sugar or sirup, no obvious change takes place ; but when grape sugar is present, a yellowish-red or copper-colored precipitate of 'oxide of copper' is obtained.

"A second test is to add to a solution of sirup or sugar, a considerable quantity of solution of caustic potassa, and warm the mixture. If grape sugar is there, the liquid is darkened to an amber or brown color, according to the amount present. A piece of white merino or other woolen cloth, which has been dipped in a solution of chloride of tin, and dried, turns brown or black when dipped in a solution of grape sugar and heated before a fire.

"The sirups made by the sulphuric acid

process have often the finest appearance of any in the market. White, dry and well crystalized sugars are always the safest and best to buy, although they are sometimes doctored with marble dust, flour, or kaolin.

"There are very few brown or raw sugars that are free from impurities, of which sand is probably the principal one. However good an edge it may have set to our teeth, it is not very desirable in our cake, and may readily be detected by dissolving the sugar in water and examining the sediment.

"The most unpleasant thing we meet in sugars is the sugar mite (*Acarus sacchari*), which are frequently found in vast numbers. Beal has calculated that there were 125,000 in a single pound which he examined. They burrow under the skin of the hands of those who handle the sugars much, producing grocers' itch.

"Nitrogenous matter exists in excess in the lower grades of sugar, and that it is which supports the *Acari* and also fungus germs. Nitrogenous matter is very unstable and prone to decay; hence, if brown sugars are used to preserve fruits, the preserve is apt to ferment and spoil. Sirup of pure cane sugar is, however, one of the best protective media for either animal or vegetable substances. Large quantities of grape sugar are often mixed with cane sugars.

"Of late years, moist sugar has been adulterated with the sweet waste liquor (solution of glycerine) of the stearine manufactories; but this adulteration may be detected by its moist, dirty appearance, and its inferior sweetness."

## Tea and Coffee.

NUMBER FOUR.

### CHOCOLATE AND OTHER BEVERAGES RESEMBLING TEA AND COFFEE.

SOME writers who have condemned the use of tea and coffee in no stinted terms, have recommended chocolate as a harmless beverage. Doubtless this was owing to their ignorance of the true character of the article. It is usually found in this country in the form of dark brown cakes. These cakes are prepared from the seeds of the cocoa palm, which are ground to a powder, then mixed to a paste with sugar and some flavoring material, afterward being formed into their destined shape in molds. But the important fact with reference to chocolate is that it contains a peculiar organic poison called *theobromine*, which is essentially the same as *theine*, its effect upon the system being identically the same as the latter. Hence there is no reason why chocolate should not be as strongly condemned as tea or coffee.

"Cocoa nibs" is the same article prepared in a different form, the seeds being merely broken instead of ground.

The leaves and seeds of about thirty other plants are used for the same purpose as the articles already mentioned. They are, of course, all equally objectionable for the same or similar reasons as those which have been presented against tea and coffee.

### USE AND ADULTERATIONS.

Three hundred years ago, the same tea which is now bought for a few shillings was sold at the rate of $50.00 per pound. Of course, none but princes could then afford to indulge in it, and we doubt not that it would have been a blessing to the world had the price remained as extravagant as when the East India Company presented the queen of England with two pounds and one ounce of the article as a very rare gift.

At the present time there are consumed in the United States, each year, an average of seven pounds of coffee and one of tea for each individual. In England, the average consumption is one pound of coffee and three of tea; while in Holland and Germany, every person consumes, either personally or by proxy, fourteen pounds of coffee alone. Immense quantities of cocoa, chocolate, and similar beverages are used in addition.

With such an enormous demand for the articles as this great consumption necessarily creates, it would be singular if there were not some attempts at adulteration. Such, indeed, is the case; for the amount of adulteration practiced is fully proportionate to the sale. Many of the substances employed in this sophistication are of a very poisonous nature, and are the fruitful source of many ills to unsuspecting victims. The following result of an analysis of adulterated tea which is given by Dr. Smith in his work on "Foods," is a fair illustration:—

"Iron, plumbago, chalk, China clay, sand, Prussian blue, tumeric, indigo, starch, gypsum, catechu, gum, the leaves of the camellia, savangua, *Chloranthus officinalis*, elm, oak, willow, poplar, elder, beech, hawthorne, and sloe."

It will be observed that in this sample there was not a single leaf of genuine tea, while there were two or three poisonous substances. Prussian blue contains a large proportion of *prussic acid*, one of the most deadly poisons known. Green and black tea are both made from the same plant, the only difference being in the mode of preparation. In general, the only difference is that green tea is colored with *Prussian blue*. According to reliable author-

ities, the proportion of the poison employed is *one grain* to every ounce of tea! How many thousands may have been the unsuspected victims of this wholesale poisoning. This mode of adulteration is exceedingly common with the Chinese in their preparation of tea for foreign markets. It is well known that they never use green tea themselves, on this account.

During the single month of July, 1872, 183,000,000 lbs. of tea passed through the English custom house, of which 10,000,000 lbs. were found so badly adulterated as to be entirely unsafe for use. One specimen was nearly half iron, which was separated by means of a magnet.

GENERAL SUMMARY OF EVIDENCE AGAINST TEA AND COFFEE.

1. *Their employment as beverages is a useless habit.*

2. *They are poisonous.* Every pound of tea contains *one-fourth* of a pound of a poison called *tannic acid.* It contains in addition, from half an ounce to an ounce of a poison that is fatal in any but very small doses, a few grains causing speedy death.

3. *They are medicines.* All medicines are poisons, according to medical authority, and are always productive of disease. When coffee was first introduced, it was first of all sold by a tobacco merchant as a "panacea for all diseases."

4. *They produce many painful, chronic, and sometimes incurable diseases.*

Here are a few of the diseases resulting from the use of tea, coffee, chocolate, and similar beverages. Nervousness, sleeplessness, hypochondriasis, sick-headache, *insanity*, tremens, convulsions, paralysis, insensibility, torpidity and congestion of the liver, vertigo, palpitation of the heart, tawny and torpid skin, consumption and other lung diseases, all sorts of nervous diseases, decay of the teeth, loss of sense of taste, constipation, diarrhea, hemorrhoids, dyspepsia, general muscular and nervous debility, epilepsy, cancer, and defective circulation.

5. *The use of these articles encourages gossip and scandal* by exciting the mind to an unnatural degree, and so leading to unguarded and thoughtless assertions and remarks.

6. They are among the chief causes of intemperance, for they foster and encourage the desire for stimulation, which always increases with gratification.

7. A large proportion of all the tea and coffee is dangerously poisoned by adulteration with numerous injurious articles. *Prussic acid* is common in tea, and *Venetian red* and other coloring matters in coffee!

8. *Especially injurious is the influence of tea and coffee upon children.* When the habit of using these articles is not contracted until adult age, their baneful influence is soon and painfully apparent. But when children are allowed to indulge it, its injurious influence is increased many fold. The physical development is dwarfed. The mind is stunted and stupefied. Healthful beauty and youthful freshness and elasticity are obliterated; and if the poor victim survives adolescence, it is only as a mental and physical dwarf, a chronic dyspeptic, a nervous, irritable, suffering invalid.

Fond mother, pause before you place to the lips of your child a cup fraught with so much misery and suffering.

HOW TO STOP DRINKING TEA AND COFFEE.

Shall the habit be discontinued at once? or shall a gradual change be made? This question is certainly worthy of serious attention, as it is much discussed. It would seem to be self-evident that when a person finds himself indulging a habit which saps his vitality, undermines his constitution, shatters his nerves, and exposes him to the influence of every malady to which humanity is subject, the best thing he can do is to abandon so dangerous a practice as quickly as possible. A person who is not completely saturated with tea or coffee, or who has not entirely shattered his nervous organism by their use, can abandon them at once, and with little difficulty except the strong cravings of appetite and taste. But these he can readily conquer with firm resolution and determination.

Even the most inveterate user of either tea or coffee can cease its use at once without any fears of shortening his life by so doing, although he may feel as though death would certainly result. All his bad feelings are simply evidences of the injury which the tea and coffee have *already* done, and not of the necessity for their use, or of any injury resulting from abstaining from them. But when so sudden a change is made, the individual should make an exclusive business of the matter. Lay aside all cares and responsibilities. Do not attempt to pursue your usual avocations, at least, let only a very small proportion of the ordinary amount of work be done. Avoid anything taxing or unpleasant. Secure rest and quiet. If the head aches severely, and the nerves seem to be all unstrung, apply hot cloths to the head for a few minutes, take a tepid bath, and go to bed. A few days of persevering effort will end the struggle and give you the victory.

A less satisfactory plan is to gradually decrease the strength of the beverage and the frequency of its use until it can be relinquished unnoticed.—*Health Tract, No. 6.*

## Interesting Notes.

We are indebted for the following items of interest to Mr. C. B. Barber, of London, Eng. Our readers will be pleased to hear quite frequently from him. The paragraph relating to tea is well worthy of consideration, since it shows that tea is a dangerous article, not only on account of the poison which it naturally contains, but on account of the poisonous minerals which it is liable to contain.

LONDON TEA.

"A sample of tea has been forwarded to us by a gentleman who states that he understands it to be of home manufacture, with a request to 'see to it.' On examination, this tea, which was sold as 'gunpowder,' was found to be nothing but common 'caper' so ingeniously 'faced' and manipulated as to be an excellent imitation of fine green 'gunpowder' tea. The imitation is so good that it is calculated to deceive even an experienced person. This tea is the more dangerous, as we have found Prussian blue in the coloring material."—*Food Journal.*

EXHAUSTED TEA LEAVES.

"Edward South and Louisa, his wife, of Cler Remuelt, were charged with manufacturing spurious tea. The officers had been to their house, where they found them in the operation. There was an extensive furnace, before which was suspended an iron pan containing sloe leaves, and exhausted tea leaves, which they were in the habit of buying from coffee-shop keepers. On searching the place they found an immense quantity of used tea, bay leaves, etc., for the purpose of manufacturing illicit tea, and these were mixed with a solution of gum and a quantity of copperas. In a back room were found nearly one hundred pounds of redried tea leaves, bay leaves, and sloe leaves, spread on the floor, drying. The prisoners had pursued their nefarious traffic extensively, and were in the habit of dealing largely with grocers store-keepers, and others, all over the country."—*London Times.*

CHINESE DISHES.

The Chinese are very fond of eggs and have more than one method of preserving them, the most common being to place them in a mixture of clay and water, and then allow them to dry in the sun, so that the clay forms a hard crust around them. But the following is the mode of preparing for Chinese *gormands.* The eggs are each covered separately with a paste composed of tea, quicklime, sea salt, and oak ashes, then rolled in rice straw ashes and packed in boxes with masses of rice to keep them from touching each other. They remain there packed for three months, when they sell for two cents each. But they have undergone a curious transformation; the yolk has turned green, the white is coagulated, and it smells like the essence of all the sulphurs. Who will laugh who eat raw oysters, snails, high game, or decayed cheese?

The following is a bill of fare at Hong Kong, for Europeans, in 1867 :—

"Preserved fruits; fish roe in sweet caramel sauce; almonds and raisins; sharks' fins in gelatinous sauce; cakes of coagulated blood; hashed dog with lotus sauce; birds' nest soup; lily-seed soup; whale nerves with sweet sauce; Kwai-poh-Hing ducks; sturgeons' gills in compote; croquettes of fish and rat; sharks' fat soup; stewed sea snails with tadpoles; sweet dish, composed of fish fins, fruit, ham, almonds, and essences; lotus and almond soup as desert, with medicated wine and wine and warm arrack." The mixtures sound odd and nasty, but they are great epicures.

## A New Delicacy for Gormands.

Those who cater to depraved appetites are untiring in their constant efforts to discover some new culinary preparation with which to tickle the obtuse palates of their gluttonous patrons. No expense nor pains in obtaining is too great, and no source of production is too loathsome, to prevent men from devising novel and ingenious means to tempt the appetites of fashionable epicures. Here is a description of the latest thing of the kind from the *Poultry World*:—

"The combs of Spanish and Leghorn fowls are sold in some part of Europe as choice delicacies for the palates of those who sigh for fresh appetizers. Under the name of 'Cretes de Coq,' a supply of these morsels has been recently imported hither from Paris. The combs are of a large size, both single and rose, and are put up in white vinegar, in long, tubular, white bottles, holding about a pint, sealed with black wax. When we say that these small bottles cost at wholesale in Paris more than $1 in gold each, the reflection is forced that many a large-combed rooster may in future be sacrificed to mammon, as many were offered up to Æsculapius."

# SCIENTIFIC.

**How Water Is Injured by Organic Matter.**—In a recent work entitled "Scientific Conversations," by M. Porville, of Paris, the reason why organic matter becomes a dangerous constituent of water is thus set forth: "How does organic matter become dangerous? We must not believe that it constitutes, as is superficially said, a toxic element. The phenomenon is more complex. The organic matter in suspension or in solution creates in the water a peculiar medium, suitable for the development of exceedingly small beings of the genus *Vibrio*. It is no longer mere water—it is a world of microscopic animals and plants which are born, live, and increase with bewildering rapidity. The infusoria find in the water calcareous, magnesian, and ammoniacal salts, and their maintenance is thus secure. Drink a drop of this liquid, and you swallow millions of minute beings. But there are vibrios and vibrios. There are those which are capable of setting up putrefaction in our tissues. These are our enemies, often our mortal enemies. Let water be placed in contact with organic remains capable of nourishing these malignant vibrios, and it at once becomes more dangerous than any poison."—*Popular Science Monthly.*

**Arsenical Colors.**—A Swedish chemist, Dr. Hamberg, has made some important researches on the arsenical coloring-matters of wall paper. The paper of the room in which the experiments were conducted had a light green ground, with an ornamental pattern of brownish-yellow color; this yellow was probably derived from an ochre, but the green resembled Schweinfurt green, and was strongly arsenical. An arrangement was made for drawing a current of air through a series of U-shaped and bulbed tubes, suspended on the wall. The passage of air was continued from July 16 to August 16, and it was calculated that during this time about 2,160,000 cubic centimetres of air had traversed the system of tubes. Some of the tubes had been plugged with cotton-wool, while others contained a solution of nitrate of silver, and at the termination of the experiment the contents of the tubes were separately examined. The results showed that there had been an arsenical exhalation. The family living in the house had never suffered any marked injury from breathing this poisoned air; but Dr. Hamberg, after sleeping in a room by the side of the apartment in which his experiments were made, and with the door open, frequently experienced, on the following morning, a sense of heaviness in the head, and a general feeling of weariness.—*Popular Science Monthly.*

**Rabies Mephitica.**—In a recent paper Rev. H. C. Hervey refers to a large number of well-authenticated instances where the bite of the common skunk or polecat (Mephitis mephitica) has been followed, after the usual period of incubation, by symptoms of rabies (hydrophobia). Of the forty-one cases mentioned, every instance but one (a farmer who knew of the danger, and had taken the precaution of using prompt preventive treatment) ended in death. This is more fatal than the bite of the rabid dog.

The wide distribution of this animal, the common skunk, over the United States, and the readiness with which people might be exposed to its bite, should lead persons so injured by it to at once resort to the peculiar measures advised for the treatment of bites of suspected dogs.—*Accidents, Emergencies, Poisons.*

**Cements.**—1. PLASTER of Paris mixed with water and a cold solution of alum is an excellent cement for stoneware. It sets slowly, but becomes as hard as stone.

2. For mending glass, take an ounce of pure white lead in oil, add ten grains of acetate of lead finely powdered, and thoroughly mix. Apply immediately, and let the mended article dry for two weeks before using.

3. An excellent cement for wood and metals can be made by adding powdered chalk to a solution of common glue.

THE isolated study of anything in natural history is a fruitful source of error. . . . No single experiment in physiology is worth anything. —*Dr. Jeffries Wyman.*

# Literary Notices.

THE BROOK AND THE TIDE TURNING.—This is the latest publication of the National Temperance Society and Publication House, New York. It is a story book designed for children, and inculcates many very important principles. Great good might be accomplished if books like this could be placed in the hands of young people who for want of better literature waste their time and ruin their minds in reading worthless and pernicious works of fiction.

SECOND ANNUAL REPORT of the Secretary of the State Board of Health of the State of Michigan.

This excellent report contains a vast amount of most useful information on various subjects pertaining to public health. The following is a list of the articles contained in it: Entailments of Alcohol; Draining for Health; Poisonous Wall Paper; Relation of Schools to Health; Resuscitation of the Drowned; Sanitary Inspection of State Institutions; Cerebro-Spinal Meningitis. Many of the facts elicited by the authors of these articles are invaluable as hints toward sanitary reform. Our State may well be proud of the efforts of our Board of Health; and especial credit is due to the indefatigable energy and industry of its Secretary, Dr. Baker, for what has been, and now bids fair to be, accomplished in the direction of improvement in the public health.

# Items for the Month.

☞ A BLUE cross by this paragraph signifies that the subscription has expired, and that this number is the last that will be sent till the subscription is renewed. A renewal is earnestly solicited.

## The Health Institute.

WE are happy to inform the friends of reform, and all those who are anxiously seeking health, that the Health Reform Institute, located at Battle Creek, Mich., is in a most flourishing condition, and never gave promise of such extended usefulness as at the present moment. Many improvements are being made about the grounds and buildings, and still others are in contemplation. With increased facilities for treating all classes of diseases, we are prepared to extend to the afflicted inducements such as few institutions of the kind can offer.

It should be remembered that the Health Institute is not a Water Cure. Neither is it a Rest Cure, a Movement Cure, or a Diet Cure; but all known remedial agents are employed in a scientific manner in the treatment of disease. Surgical cases receive special attention.

☞ Contrary to our expectations, we are unable to devote sufficient space to the discussion of the salt question to complete it this month. To those who have recently become acquainted with the REFORMER and its teachings, we would explain that our reason for thus devoting so much attention to this subject is the fact that several thousands of our readers have become greatly interested in it on account of its frequent agitation in the columns of this and other health journals. Considered by itself alone, the subject is hardly of sufficient importance to demand so much attention as we grant to it; but there are involved in it certain fundamental principles which seriously affect other subjects of far greater importance; and this it is that gives to this question much of the importance which it possesses.

DRESS PATTERNS.—We have for some time been constantly in the receipt of numerous letters of inquiry respecting patterns for hygienic dresses. We have been at considerable expense to obtain just such patterns as would exactly meet the demands of health, while at the same time answering all reasonable requirements respecting taste and beauty. We can now furnish at reasonable rates patterns for all kinds of ladies' undergarments, and very neat and elegant patterns for outside skirts. We shall soon be able to publish a price list with descriptions of patterns and directions for taking the proper measurements so as to insure a good fit.

All of these patterns have been most thoroughly tested by competent judges, and they have received the highest encomiums from all who have examined them. The importance of a reform in dress cannot well be overestimated; and it is well impressed in the article upon the subject published in this number. We expect that hundreds of our readers will appreciate the importance of the subject, and will quickly supply themselves with patterns and secure the advantages of a dress which is both beautiful, comfortable, and physiological.

WEBSTER'S DICTIONARY.—This invaluable work still stands in the front rank of lexicons in spite of the bitter opposition of the partisans of rival dictionaries. For persevering and indefatigable energy its publishers are unexcelled by any others in the country; and this immense volume stands as a marvel of literary, scientific, and mechanical skill.

LORD STANHOPE ON SNUFF-TAKING.—Every professed, inveterate, and incurable snuff-taker, at a moderate computation, takes one pinch in ten minutes. Every pinch, with the agreeable ceremony of blowing and wiping the nose, and other incidental circumstances, consumes a minute and a half. One minute and a half out of every ten, allowing sixteen hours to a snuff-taking day, amounts to two hours and twenty-four minutes out of every natural day, or one day out of every ten. One day out of every ten amounts to thirty-six days and a half in a year. Hence, if we suppose the habit to be persisted in for forty years, two entire years of the snuff-taker's life will be dedicated to tickling his nose, and two more to blowing it.

No other persons possess one-half the power to affect the health of a community that is held by the matrons of its various households. Notwithstanding all the dread of railroad accidents, steamboat explosions, and similar catastrophies, the number of deaths from these causes is insignificant, compared with those whose beginnings may be traced to some influence very close to the domestic hearth.