

TEA AND COFFEE.

WHY THEIR USE IS UNHEALTHFUL.

SOON after the introduction of tobacco into Europe, in the sixteenth century, tea and coffee were also introduced; the first from China, and the second from the deserts of Arabia. Like tobacco, they rapidly won their way into general favor, although meeting with some opposition at first, and now we find them in almost universal use as beverages. In the few countries where they are not so well known as in this and most European countries, some sort of substitute is employed which possesses similar or identical properties. Thus, in Mexico and Zanzibar, chocolate is employed; in South America, maté, or Paraguay tea, is the native beverage; and in Central Africa, the *kola-nut* furnishes the swarthy native with the means of gratifying what seems to be a taste common to every nation—the desire for stimulation.

Taking their cue from this fact, the advocates of tea-drinking have argued that a habit which is of such universal prevalence, a taste which is common to so large a proportion of the human family, must be founded upon some more substantial basis than mere caprice or fancy. The object of this tract is to examine, carefully and candidly, the arguments for and against the use of tea and coffee as habitual beverages. We invite the reader to consider ~~the matter~~ with as

little bias as possible, and with a willingness to form his conclusion in accordance with the evidence produced, whether it be in opposition to, or in conformity with, his former practices.

We are quite well aware that the truth on any subject which involves interference with human customs, feelings, or appetites, can only be arrived at by a candid appeal to some acknowledged authority, as the exact sciences. It is to this source that we shall appeal for reliable information relative to the subject before us. Of the reliability of knowledge obtained from this source, we need hardly assure our readers, but will merely mention some of the crucial tests which have demonstrated its astonishing accuracy and thorough reliability.

Science enabled the mathematician, Leverrier, to compute the size and period of revolution, describe the orbit, and point out the location of a planet, before unknown and unseen. Science spans the immense gulfs of space, and measures the distance to the fixed stars. Science, too, by its refinements, measures the speed of a golden ray of sunlight as it dashes through space—yes; even more, it compels that swiftest of all travelers, electricity, to record its velocity as accurately as an old-fashioned clock measures off the slow march of time.

But science can do more than this. It can take a handful of earth, and after a careful scrutiny, report to us the precise kind and quantities of its numerous components. And, still more wonderful, it points a spectroscope at the sun, and then tells us the constituents of that wonderful luminary. Even the distant nebulae are forced to yield up the secrets of their constitution.

WHAT SCIENCE SAYS ABOUT TEA AND COFFEE.

This same remarkable arbiter has been investigating the properties of tea and coffee; let us see the result.

A chemist takes a pound of tea, submits it to the process of analysis, and finds that it consists of the following substances:—

Woody fiber, sugar, gum, legumine, fat, mineral matter, water, tannic acid, aromatic oil, and theine. The woody fiber, gum, mineral substances, and water, all quite innutritious, constitute one-half of the whole; caseine, sugar, and fat, together make about three ounces; while the remaining five ounces are made up by three distinct poisons, tannic acid, aromatic oil, and *theine*. Of the constituents of a pound of tea, then, less than one-fifth can possibly be nutritious; one-half is wholly useless, and nearly one-third is actually *poisonous*!

Submitting a pound of coffee to the same examination, the chemist finds four ounces of fat and legumine; eleven ounces of woody fiber, gum, water, and mineral matter, which are of no nutritive value; and one ounce of *poison*, consisting of tannic or caffeic acid and caffeine or theine.

Although quite dissimilar in their physical appearance, one being a leaf and the other a berry, it will be observed that there is a very marked similarity in the composition of tea and coffee, the principal difference being in the different proportions of the constituents.

Another feature is worthy of observation; viz., that the proportion of either article which could

possibly be considered in the least degree nutritious is exceedingly small in proportion to the whole bulk. This would at once justify the conclusion that tea and coffee are articles which are used for some other purpose than that of nutrition. They cannot be considered foods, in the ordinary sense of the term; at least, this is the uniform declaration of all authorities in matters of diet, and all writers upon the subject of food. We are by this fact led immediately to the inquiry,

WHY DO PEOPLE USE TEA AND COFFEE?

As just shown, neither of the articles in question contains sufficient nutriment to make it of any value as food, provided the whole substance was eaten; but when we consider the fact that only the infusion is employed, and that this does not contain the only portions which are at all nutritious, they being insoluble and remaining in the solid residue, we are still more forcibly impressed with the conviction that there must be some peculiar, though innutritious, property of tea and coffee which enables them to wield such a fascinating influence over so many millions of the human race. The element which should most naturally attract attention is the *theine* or *caffeine*, since it is a substance peculiar to the few articles which possess the properties of tea and coffee. Science gives us unmistakable evidence that the peculiar properties of these two articles is wholly due to the presence in them of a substance which is called *theine* in tea and *caffeine* in coffee, although its properties and composition are identical whether derived from one or the other source. By a process of careful

manipulation, known only to the chemist, the tea leaves or coffee berries are made to yield this substance as a white, crystalline solid, which is bitter to the taste, and is possessed of actively poisonous properties. Is it true, then, that people drink tea and coffee because they contain poison? We can come to no other conclusion; but we shall revert to this point again.

The habitual tea-drinker will doubtless be startled at the declaration that the so-called virtues of the beverage are due to a narcotic poison, and will be loth to admit so unpleasant a truth. The elderly matron will declare that she drinks tea to steady her nerves and enable her to bear with fortitude and patience the thousand and one vexations and annoyances of life. The young lady wants it to combat the lassitude which is occasioned by indolence and the indulgence of fashionable and enervating habits. The minister thinks he requires it in order to give him the requisite animation and vivacity to interest his congregation. The student drinks it to enable him to prosecute his studies during the silent hours of the night when nature would otherwise rebuke his short-sighted ambition by closing his eyelids in sleep. The poor needle-woman, toiling laboriously for a pittance, resorts to a cup of tea to stimulate her flagging energies to accomplish that which would otherwise be impossible, from sheer exhaustion. The weary laborer sips his evening cup to soothe his tired muscles, and make him forget his poverty and toil. But a large number of those who use the beverage do so from mere force of habit, or simply because they think they "feel better" when using it than when abstaining.

A writer in the *Atlantic Monthly* remarks, "Next to tobacco and alcohol, tea and coffee have supplied more of the needed [?] excitement to mankind than any other stimulants." "Many sober minds make tea the *vis a tergo* [propelling force from behind] of their daily intellectual labor; just as a few, of greater imagination or genius, seek in opium the spur of their ephemeral efforts."

TEA AND COFFEE MEDICINES OR POISONS.

It has already been remarked that the active property of both tea and coffee is *theine* or *caffeine*, a narcotic poison. But is it possible that the effects of its use, which have been noticed, are the result of poisoning? Is it not also very improbable that the whole world should be so foolish as to daily indulge in a poisonous drink? In answer to the last objection, we need only remind the reader that such is the strange inconsistency existing between the capabilities of human reason and human actions that men have long since ceased to make the absurdity of any habit or notion any criterion of its popularity. But now in reference to the effects of tea and coffee when used as beverages.

Why does the harrassed matron feel better able to endure the perplexities incident to the management of her household when fortified by a cup of tea or coffee? For the same reason that the accountant finds himself able to balance his accounts with accuracy when his trembling nerves and enervated brain are stimulated with tobacco or liquor. Why does the tired seamstress forget her weariness and exhaustion under the influence of a cup of tea? She is stimulated, just as the man who has toiled until completely

overcome by weariness feels refreshed and ready for another task after swallowing a gill of rum. Why does the minister find himself better fitted to interest his congregation, under the influence of an infusion of tea leaves or coffee berries? Because he is stimulated by the poison which the beverage contains, just as is the minister who exhorts his brethren to the cultivation of piety and the practice of good works, under the inspiration of the "spirit" contained in a bottle of "Bourbon" or gin.

So in every case in which tea or coffee appears to produce a beneficial effect upon the individual drinking it; it is always stimulating in moderate doses. We see, then, that tea and coffee are, in reality, *medicines*. Is testimony called for? We can produce abundance of the very best; hear what Dr. Edward Smith, M. D., F. R. S., says on this subject:—

"We must not, therefore, regard tea as a nutrient in the sense of supplying material to maintain structure or generate heat by its own decomposition."

Speaking in another place of the innutritious character of Liebig's extract of meat, the same author remarks, "It should be classed with such nervous stimulants as tea and coffee, which supply little or no nutriment."

Dunglison's Medical Dictionary describes coffee as a tonic, which of course ascribes to it the properties of a medicine.

Headland, in his "Action of Medicines," says that tea and coffee are "sedative to the nervous system generally."

An abundance of similar testimony might be adduced, but this is sufficient to convince any

one that the articles we are considering are medicines. But are not medicines useful? We have nothing to say here concerning the utility or *non-utility* of medicines, as such; but we can say without the slightest hesitation that a thing which is a good *medicine* is entirely unfit for *food*. People usually recognize this truth in their practice, taking medicines only when sick, as they well know that the same articles to which they resort when ill will make them sick if taken when well.

But we have a little further testimony on this point. Says Dr. Martyn Payne, LL. D., in his "Medical Institutes," "All our medicines are essentially morbidic." Says Prof. St. John, M. D., "All medicines are poisonous."

Are not these testimonies suggestive? If tea and coffee are medicines and poisons, should we not be led to mistrust that they are anything but suitable articles for daily consumption? But to still further confirm the position just suggested, we will give the following, which is a summary of the results of a series of experiments conducted by Dr. Bennet in the Physiological Laboratory of the University of Edinburg, and reported in the *Edinburg Medical Journal*, for October, 1873, more than one hundred experiments being performed on various animals:—

1. The effects of tea, coffee, cocoa, and chocolate, are due to the presence in them of *theine* or *caffeine* in tea and coffee, and of *theobromine* in cocoa and chocolate.

2. They are all *powerful poisons*.

3. They are identical in physiological action.

4. In small doses they produce, *first*, Cerebral excitement; *secondly*, Loss of sensibility.

5. In large doses, they produce, *a.* Cerebral excitement; *b.* Complete paralysis of sensibility; *c.* Tetanic spasms and convulsions; *d.* Death.

6. They first increase, then impede, and finally *stop*, respiration.

7. They first increase, and then diminish, the heart's action.

As further evidence of the poisonous character of these articles, we will cite the fact that Dr. Smith, already quoted, in company with his assistant, once took an infusion of coffee made from two ounces of the berries, as an experiment. As the result, they both fell to the floor insensible, in which condition they remained for some time, so powerful are the poisonous properties of the article.

Dr. Dunglison says that *caffeine* or *theine*, in "doses of from two to ten grains, induces violent nervous and vascular excitement."

The reason why these violent results do not always follow the use of tea or coffee is that the quantity of poison is not sufficient to produce them; but the only difference is that a less degree of poisoning is experienced, the poisoning being proportionate to the dose. How near to fatal poisoning many people sometimes come may be determined by comparing the fact that, while every ounce of tea contains from nine to twenty-six grains of *theine*, it is not an infrequent occurrence among the wealthy for a cup of tea to be made from a half ounce of the leaves.

HOW TEA AND COFFEE ARE INJURIOUS.

The evils which result from the use of tea and coffee are attributable to three distinct causes, each of which we will briefly consider.

1. The most prominent and characteristic effects of the use of tea and coffee are those which are occasioned by the peculiar poison which they contain, together with *tannic acid*, an irritating drug. Acting as poisonous, or medicinal, agents (as the terms are really synonymous), they produce a great variety of morbid effects, which will be more fully noticed further on.

2. In drinking tea and coffee, or any other beverage, with the meal, the processes of digestion are greatly interfered with in at least three different ways.

a. The food is rinsed down the throat without proper mastication, so that it is introduced into the stomach in a condition quite unfit to be acted upon by the gastric juice, as it is quite essential that the digestive fluid should come in immediate contact with the most minute particles of the food in order to fully perform its function. As the stomach cannot perform the work of comminution which the teeth are especially fitted to do, a large proportion of the food either passes on at once as waste material, or lies in the stomach souring, and thus preventing the digestion of the remainder of the food, and irritating the delicate membranes of the organ. Drinking tea, coffee, or any other beverage with meals, is the great cause of hasty eating, and imperfect digestion. One other result of hasty mastication is the imperfect insalivation of the food, which is a very serious deficiency, as the saliva is a very important digestive fluid, and its absence imposes an extra task upon the other juices employed in digestion.

b. By the introduction into the stomach of a large quantity of fluid, the gastric juice is so di-

luted that it is rendered utterly incapable of digesting the food with which it comes in contact.

c. In order to remedy the evil last mentioned, the absorbent vessels of the stomach are set vigorously at work to absorb and carry away the surplus liquid, so that the work of digestion may be carried on. This is a task which involves both a serious delay, and the imposition of a large amount of unnecessary work upon the stomach, the natural result of which is exhaustion, enervation, and ultimate permanent weakening of that important digestive organ.

3. The unnatural temperature at which tea, coffee, and all similar beverages are usually drank, is very injurious to health. By the great heat, the teeth are injured, and the delicate nerves of taste are rendered insensible. But the greatest injury is done the stomach, the delicate walls of which are relaxed and weakened, so that they cannot act upon the food in their naturally prompt and vigorous manner. In this way, permanent and almost irreparable injury is often done.

MORBID EFFECTS OF TEA AND COFFEE.

The morbid effects of tea and coffee are manifested upon both the physical constitution and the mental organization of the person addicted to their use. First we will consider the

Physical Effects.

When a person drinks a cup of tea or coffee, he takes into his system from one-half of a grain to three or four grains of *theine*, the poison to which we have already frequently referred. Now what does this poison do? Does it nourish the

body? No respectable authority makes any such claim. On the contrary, there is the best of reasons for believing that it does nothing at all. There is something done however; but the vital organism is the actor, not the poison.

How does the system behave toward the active element of the tea or the coffee? Instead of attempting to assimilate it, or utilize it in any manner, it recognizes its true character as a dangerous poison, an article unfit to remain within its domain, and immediately sets its servants, the various depurating organs, at work to get it out of the body as soon as possible. If the resulting commotion is only slight, there is merely a gentle increase of the activity of all the various organs of the body consequent upon the accelerated motion of the blood. In this case, the individual feels exhilarated. He is stimulated, and feels cheerful and contented; and although he may have been, previously, quite weary, he now feels refreshed and strengthened.

If the dose taken had been a little larger, the person would have been more excited, and would probably have been very loquacious. Increase the dose somewhat, and a state of complete insensibility results. The last result is not often seen; but the first and second are very common.

In addition to these effects of the *theine*, the *tannic acid* irritates the membranes of the stomach and intestines, inducing constipation, and the long train of ills which are attributable to this morbid condition.

These are the immediate effects; now what do we see as the more remote results? The various organs which have been at work in eliminating the poison have been excited to unnatural,

unusual exertion in view of impending danger from the presence of something abnormal and unusable. After the work of expulsion is accomplished, they are no longer goaded on by the foreign substance, and so they quickly relapse into a condition as much below their normal standard of healthful activity as they have been stimulated above it by the tea or coffee. Then the feeling of comfort and exhilaration gives place to one of exhaustion, faintness, and restlessness. This is the reason why every tea-drinker becomes so dependent upon his cup for the maintenance of his ordinary good feelings.

But let us look a little deeper into the condition of the system after the use of tea or coffee. The organs which have been engaged in the work of casting out of the body the poison sipped from the steaming cup, are the liver, lungs, kidneys, perspiratory glands of the skin, and mucous membrane of the intestines. In doing this work, they have been obliged to perform an extra amount of labor, while they have been not only unfurnished with a commensurate amount of additional nutriment, but have been, by overwork, deprived of the opportunity of obtaining even their ordinary supply. Under these circumstances, it is very evident that a greater or lesser amount of injury must be done the vital organs, the amount of actual damage being proportionate to the amount of poison received. If this injury were wrought only in a single instance, nature would soon repair the damage, and restore the organs to their wonted health and tone; but, when it is inflicted every day, and perhaps several times a day, the vital powers are unable to restore the wasted, overworked organs, and grad-

ually, but surely, they are weakened and deteriorated until they become wholly diseased and unfitted for the performance of their proper functions. Then every tissue in the body becomes affected.

Let us trace this work of destruction and desolation in the vital domain a little more minutely.

1. The savory beverage containing the poison is taken into the mouth hot. The great heat injures the teeth by so suddenly increasing their temperature, and thus induces early decay. It also works almost irreparable mischief with the delicate nerve of taste. Then it washes down the food, thus preventing proper mastication and the admixture of the saliva with the food, by this means creating two very serious impediments to digestion. By preventing sufficient mastication, the teeth are deprived of the requisite amount of exercise to maintain their healthy integrity, and decay soon begins, just as an unused arm withers.

2. The scalding potion passes down into the stomach, and there begins its work of mischief. At first it irritates and excites the delicate tissues of this organ by the excessive heat. This excitement is soon replaced by as great a debility and relaxation. It also renders the gastric juice inefficient by diluting it, and still further exhausts the stomach by rendering necessary the energetic action of its thousands of absorbents to remove the great mass of fluid which is interfering with the work of digestion which is to be performed.

3. Being thus received into the circulation, by the last process, the infusion of tea or coffee with

its contained poison is hurried off to the liver, the kidneys, the lungs, the mucous membrane of the intestines, and, finally, to the skin. Each of these willing servants of the body sets energetically to work in its own way to get the intruder out as quickly as possible. But while so doing, the ordinary work of the body is necessarily neglected to a greater or less extent. The gross, acrid, irritating, biliary matters which the liver should remove are left to accumulate in the blood. The kidneys find it impossible to perform all the work laid upon them, and they fail to remove as much of the products of decomposition as is necessary to keep the blood pure. The mucous membrane also neglects its ordinary work to some extent; and, in trying to wash out the unwelcome and destructive *theine*, it pours out from the blood a large amount of its watery portion, thus still further thickening the already turbid current. The lungs are also doing extra work, while the skin, like the mucous membrane, is draining the blood of its fluid to purge it from the narcotic poison which it bears.

Now, mark the result of all this morbid activity and disarrangement of the vital functions. The liver gets behind in its work, becomes congested, and finally torpid, inactive. The kidneys are overworked, and are liable to take on almost any form of disease to which they are subject. Diarrhea or obstinate constipation affects the bowels. The lungs lose their accustomed activity, and gradually decrease in efficiency. The skin becomes clogged with the carbonaceous and biliary matters which abound in the blood, and which it finds itself unable to eliminate. This beautiful and flexible covering

of the human body assumes a yellow, sickly, unwholesome appearance, and becomes of a leathery texture, so well known to physicians as the tea complexion, and which is one of the chief sources of revenue to the venders of patent lotions, "balms," and cosmetics.

But while all these devastations have been in progress, it must not be forgotten that the most delicate and sensitive tissues of the body, the nerves, have not been allowed to escape, but have suffered even more severely than the less delicately organized depurating organs. As soon as the tea or coffee was taken into the stomach, it was recognized by the nerves of that organ as a poison. These faithful sentinels immediately communicated this fact to one of the great nervous centers, whence the intelligence was generally distributed throughout the body, rousing every part of the nervous system, which in turn excited the various depurating or excreting organs to a great increase of action. This nervous irritation or excitement is followed by its inevitable consequence, depression. And, as the process is frequently repeated, the nerves become shattered, weakened, and uncertain in their action. Then come sick headache, nervousness, and every form of nervous disease.

Furthermore, the blood being filled with gross, irritating impurities, every tissue of the body is bathed in a poisoned life-current, and is consequently contaminated, diseased. The blood is also impoverished, as well as poisoned; for the stomach has suffered with the rest, and has lost its power to properly digest the food, and suitably prepare it for assimilation.

The physical condition of the body becomes

that of universal disease. Such is the pernicious influence of tea and coffee upon the physical frame. Let us now observe how the mental faculties are affected by these insidious agents.

Mental Effects.

By mental effects we mean the changes that are occasioned in the mental or intellectual organism by the use of tea or coffee.

Whatever may be the nature of the mind, whether the mere result of molecular action, as claimed by the materialist, or the product of the operation of a distinct entity upon the brain, as is more generally believed, it is a well-attested fact that the manifestations of mind can only be perfectly harmonious and healthful when exhibited by a healthy brain, or physical organization.

We have already shown the effect of the use of tea and coffee upon the physical organism—the various vital organs, the different tissues, and especially upon the nerves. Now, the brain itself is nerve tissue, and hence must suffer in common with other similar tissues. Furthermore, it cannot receive or impart any kind of intelligence except through nerves, all of which have been blunted and paralyzed by the constant baneful influence of a daily-administered poison. Hence it is readily seen that the mind of a tea-drinker or coffee-user cannot escape its due share of damage in the general demoralization of the system which these fascinating beverages effect. And how well does experience support this statement! Facts almost without number could be adduced to show that the influence of tea- and coffee-drinking is invariably antagonistic to mental strength and endurance. It was long ago decided by eminent physicians that excitement is not

strength. It has quite as long been recognized that every unnatural increase of physical or mental action *must* be followed by a corresponding descent below the average standard of activity.

Then every minister who drinks a strong cup of tea to increase the animation of his discourse, borrows a certain amount of vivacity and energy from some future effort. So every student who goads up his weary brain with a cup of tea to enable him to steal time from sleep, is making a double draft upon his capital of mental force and ability. So, too, the young lady who stimulates with tea to enable her to entertain her visitors, is laying the foundation for future intellectual poverty and mental inefficiency.

ALLEGED BENEFITS OF TEA AND COFFEE CONSIDERED.

These have been slightly touched upon already, but we will now consider them more fully. Perhaps the first thing we hear in favor of the use of tea and coffee is from some sallow, weak, nervous lady who, when questioned on the subject, declares that she cannot possibly live without her daily tea and coffee, for

They Soothe the Nerves.

How do they soothe the nerves? Do they furnish the requisite material for repairing the worn and exhausted organs? No. They only temporarily *excite* them, so that their real condition is for a time obscured; but when their evanescent effect has vanished, the nerves are in greater need than before of being soothed, and each application of the remedy makes the evil worse. This is the reason why we seldom find a con-

firmed tea-drinker who is not troubled with nervousness. It is also equally true that the great majority of sufferers from this disease are tea-drinkers. In hundreds of instances these nervous tea-drinkers have fully and speedily recovered their health by abandoning their use of the article. This is a sure and simple remedy.

Tea and Coffee Assist Digestion.

"My stomach is so weak," says a tea-drinking dyspeptic, "that a cup of good strong tea is necessary to enable me to digest my meal." Yes; this is doubtless the case; and if you continue the practice you will find after a time that *two* or *three* cups will be necessary to enable you to dispose of your dinner satisfactorily. Then if you persevere in the habit, in spite of the admonitions of your best medical adviser, nature, you will shortly find it quite impossible to swallow a sufficient quantity of the beverage to make your stomach perform its work. Then you will begin to realize the fact that goading an organ into action is quite a different thing from encouraging and promoting its healthy activity by supplying it with healthful, nourishing food.

Do not be deceived by momentary sensations. Consider the ultimate effects, and you cannot fail to be convinced that instead of promoting digestion, tea and coffee are most effective disturbers of that function. How they interfere with digestion has already been explained.

Tea and Coffee Relieve Headache.

How invariably the unsuspecting lady resorts to a cup of tea to relieve the distress occasioned by that common malady, sick headache! Yes; and how invariably that same sick headache re-

turns! Who ever heard of a person who was permanently cured of sick-headache by tea-drinking? Such a thing would be impossible. Tea and coffee are among the prime causes of sick headache, although they afford temporary relief, just as tobacco and alcohol are prolific causes of tremors, but yet appear to steady the trembling nerves for a short time.

Tea and Coffee Supply the Place of Food.

Many people who are largely addicted to the use of the articles will prefer a cup of strong tea or coffee to a hearty meal of nourishing food. Indeed, it is a general custom with the English peasant to reduce his bread fare one-half that he may be able to procure a cup of tea to accompany the remainder. Dr. Arlidge, of England, has recently called attention to the fact that the women of the working-classes in that country have carried this practice of substituting tea for food to such an extent that they are beginning to manifest the most unmistakable evidence of narcotic poisoning.

Tea silences the demand of the system for food, but it does not in any respect replace it, as may be seen by the weakened energies and the attenuated forms of those who use it largely.

Tea and Coffee Are Stimulating.

Nothing is truer than this claim; but so far from being an argument in favor of their use, it is one of the first arguments we should offer against employing them for dietetic purposes. What is stimulation? Is it increased strength, or vigor, or vitality? Oh! no; stimulation from the use of any substance as a food, a medicine, or a condiment, is simply poisoning, and is only

produced by some poisonous agent. Here is what an able writer in the *Quarterly Journal of Science* says about it: "Stimulation means *abstracted*, not added, force. It involves the narcotic *paralysis* of a portion of the functions, the healthful activity of which is essential to healthy life."

All other eminent physicians concur in this statement, and admit that the best stimulants are the most violent poisons.

Tea and Coffee Increase Mental Vigor.

Those who make this claim mistake mental *activity* for mental strength. A greater error could not be made; and yet, this fallacious notion is very popular. See the poor victim of delirium tremens trembling with fright at the fantastic and threatening shapes which his excited fancy portrays. His imagination was never so active in health. Now it makes him see forked tongues darting at him from every corner, and converts every shadow into a monster. Who will venture the assertion that his mind is stronger now than when in health? Listen to the ravings of the patient during the delirium of fever; the mind is certainly active, but it cannot be said to be strong; for strength is only consonant with health.

When the brain is stimulated to unnatural activity by tea, coffee, tobacco, alcohol or any other stimulant, it makes violent attempts to accomplish whatever task may be imposed upon it. But the calm, deliberate action of the mind is impossible. The highest efforts of genius can never be exhibited under such circumstances. Is it argued that some of our greatest mental workers, as Voltaire and Jonson, were users of tea or

coffee, we would, in answer, call attention to the nervousness, irritability, and irascibility which notably characterized the last years of the life of each of these men. Here we see the legitimate results of the use of tea and coffee, and it is very probable that had these men been more nearly correct in their habits of life they would have achieved even greater success than they did.

Tea and Coffee Correct the Injurious Effects of Poor Water.

When no other reason can be offered for the continuance of a bad habit, this one is frequently presented. Its absurdity makes it almost insusceptible of candid consideration. How strange that the addition of a poison to water already bad enough should improve it! The assertion is wholly without foundation in fact, and never would have been advanced as an argument by tea-drinkers except for the lack of any better. Two poisons are always worse than one unless they neutralize each other; but no such chemical properties are claimed for tea or coffee.

Tea and Coffee Are Necessary Condiments.

One writer upon dietetics tells us that the utility of tea and coffee does not depend upon their peculiar principle, *theine*, but that it is wholly the product of a certain aromatic oil which they contain, and which he denominates "osmazome." This gentleman argues that food cannot be digested unless it is relished; and that since tea and coffee, in company with other condiments, make the food more palatable to the taste, they must be essential to nutrition.

While it is certainly true that the value of any article as a food depends very largely on its gus-

tatory properties, it cannot be for a moment supposed that the mere question of taste is *sufficient* to settle the nutrient quality of any aliment. In other words, an article may be exceedingly pleasing to the taste, and yet be equally injurious to the health and quite unfit for food. If this were not the case, how would the epicure and the glutton rejoice; for then they might gratify their appetites without restraint!

Again, an article may be possessed of little or no gustatory properties, and yet be a most valuable and indispensable aliment. Such is the case with pure water. We do not hesitate, then, to declare this argument for the use of tea and coffee to be without weight. It is, indeed, a fact now coming to be recognized more and more fully, that all condiments are not only useless, but injurious, tea and coffee with the rest.

Tea "Cheers and not Inebriates."

Philosophers have speculated, theologians have moralized, and poets have waxed eloquent, about "the cup that cheers and not inebriates." Doubtless we shall startle such when we say that, although this is very pretty poetry, it is false in fact. Tea and coffee, as well as tobacco, are as truly capable of producing a condition of intoxication as is alcohol. Intoxication is a condition in which the sensibilities are paralyzed and the mind delirious. In more than one instance has this identical condition been induced by the use of tea and coffee.

We have already referred to the fact that Dr. Edward Smith, of England, when conducting some experiments on the "physiological action" of coffee, was thrown to the floor, insensible, in

company with his assistant, as the effect of drinking strong coffee.

Dr. Cole, of England, describes the cases of several individuals who were frequently found lying insensible as the result of tea-drinking. One case he mentions was an author who was thus found two or three times a week.

Indeed, the man who is so far bereft of his reason that he is wholly insensible is not the only person who is drunk. Every man who takes into his system any kind of stimulant, be it tea, coffee, tobacco, opium, arsenic, or alcohol, is drunk just in proportion to the dose, and all his actions will be more or less unnatural.

Tea and Coffee Prevent the Change of Tissue.

Tea and coffee, as well as alcohol and tobacco, have been called by some physiologists "accessory foods," because, as was alleged, they prevent the rapid disorganization of tissues, which always accompanies organic activity. It might be easily shown that this would be most undesirable, if it were really true; for vital action is not only accompanied *by* organic change, but is inseparably connected *with* it. Some even say that it is dependent upon it. But we need not enlarge upon this; for it is claimed by our best authorities that careful experiments demonstrate the fact that change is *accelerated* instead of impeded by the use of tea and coffee. While we have little confidence in the reliability of any of these experiments, there being many chances for error, they are very interesting on some accounts.

A popular writer says, "Science almost always finds some foundation in fact for popular prejudices." In this case, we have a very excellent illustration of this fact. Quite a number of illus-

trious individuals have been for some time recommending the use of tea and coffee, because, as they claimed, they prevented the ordinary rapidity of tissue change, and so lengthened life and economized food. But now we find Dr. Smith, the author of the latest and most popular and reliable work on foods, telling the people that they should use tea and coffee because they *increase* the rapidity of tissue change, and so increase the available force of the individual. The only conclusion to be drawn from this is that even scientific men are sometimes so blinded by the fogs of appetite that they lose sight of true principles and allow themselves to be guided by their prejudices. Reason and common sense must decide from the facts in the case, independent of all such contradictory, and hence unreliable, testimony.

MORAL BEARING OF TEA AND COFFEE-USING.

Every question which concerns mental and physical health necessarily has a more or less direct bearing upon morality and religion, from the fact that man's moral nature is so intimately interwoven with his mental and physical organization that it is necessarily affected by the varying conditions of the latter. The use of tea and coffee has not only the ordinary deleterious influence upon the moral nature which is common to all unhygienic agents, but it is *directly* antagonistic to piety. It is in this light that we shall view it; and we have to bring against it two grave charges.

1. Tea and coffee are largely responsible for a great proportion of the shameful gossip and scan-

dal which works so much mischief in communities, churches, and sometimes whole villages. Every lady who has attended a tea-party knows how this is. Before tea is served, a certain amount of reserve is maintained by even the most garrulous; and character and reputation are in a measure respected. But when the steaming cup is passed around, the unruly member is unloosed. Then individual character and feelings become the common prey of malice, envy, calumny, and innuendo. The cruel tongue of slander is unrestrained; while insinuations, the basest of all injuries, are recklessly and maliciously hurled against the fairest reputation. Sly hints and implications of wrong somewhere are freely indulged in, no matter who or what may be the character assailed. Tea-parties once became, in this way, the source of so much mischief to the government in England that they were strictly interdicted by a royal decree.

2. The use of tea and coffee is one of the chief causes of intemperance.

It has been urged in favor of the use of these beverages that they prevent intemperance by furnishing a means of *mild* stimulation. It is indeed amazing what loose logic, what fallacious reasoning, men will employ on subjects in which the gratification of their perverted appetites and tastes are involved. What would be thought of a ruler who should abolish all laws relative to petty larceny so that thieves and robbers would have an opportunity to gratify their propensity for crime without resorting to burglary and highway robbery? Does not every one know that it is by degrees that the bank robber is made? and that little abstractions, petty thefts,

are the stepping-stones to the criminal eminence of the highwayman?

Just so it is in the present case. Tea and coffee with *mild* stimulation are at one end of the drunkard's course, while rum, gin, and brandy, with delirium tremens, are at the other end. The great crime of drunkenness is not in the *act* of drinking the fiery draught; it is in the *gratification of the desire for artificial stimulation*. The sin is the same in *kind*, whatever may be the agent employed, although it may differ in degree as the individual indulges in tea, coffee, tobacco, alcohol, hasheesh, or opium.

At first, the mild stimulation of coffee or tea is satisfactory. After a little time, this is found insufficient, even when made as strong as practicable, to excite to the desired degree the exhausted nerves. Something stronger is called for, and tobacco and alcohol gradually obtain a foothold where once they would have been spurned with disgust.

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, turmeric, indigo, starch, gypsum, catechu, gum, the leaves of the camellia, savangua, *Chloranthus officinalis*, elm, oak, willow, poplar, elder, beech, hawthorn, 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 authorities, 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 encourage 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.

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