FISKE JOHN

TOBACCO AND ALCOHOL

John Fiske

Tobacco and Alcohol

Fiske J.

Tobacco and Alcohol / J. Fiske — «Public Domain»,

Содержание

John Fiske
Tobacco and Alcohol / I. It Does Pay to Smoke. II. The Coming Man Will Drink Wine

– "Quæres a me lector amabilis quod plerique sciscitantur laudemne an vero damnem tabaci usum? Respondeo tabacum optimum esse. Tu mi lector tabaco utere non abutere." – Magnenus Exercitationes de Tabaco, Ticino, 1658.

PREFACE

Five weeks ago to-day the idea of writing an essay upon the physiological effects of Tobacco and Alcohol had never occurred to us. Nevertheless, the study of physiology and pathology – especially as relating to the action of narcotic-stimulants upon nutrition – has for several years afforded us, from time to time, agreeable recreation. And being called upon, in the discharge of a regularly-recurring duty, to review Mr. Parton's book entitled "Smoking and Drinking," it seemed worth while, in justice to the subject, to go on writing, – until the present volume was the result.

This essay is therefore to be regarded as a review article, rewritten and separately published. It is nothing more, as regards either the time and thought directly bestowed upon it, or the completeness with which it treats the subject. Bearing this in mind, the reader will understand the somewhat fantastic sub-titles of the book, and the presence of a number of citations and comments which would ordinarily be neither essential nor desirable in a serious discussion. Had we been writing a systematic treatise, with the object of stating exhaustively our theory of the action of Tobacco and Alcohol, we should have found it needful to be far more abstruse and technical; and we should certainly have had no occasion whatever to mention Mr. Parton's name. As it is, the ideal requirements of a complete statement have been subordinated – though by no means sacrificed – to the obvious desideratum of making a summary at once generally intelligible and briefly conclusive.

The materials used especially in the preparation of this volume were the following:

Anstie: Stimulants and Narcotics. Philadelphia, 1865.

Lallemand, Duroy, et Perrin: Du Rôle de l'Alcool et des Anesthésiques. Paris, 1860.

Baudot: De la Destruction de l'Alcool dans l'Organisme. Union Médicale, Nov. et Déc., 1863.

Bouchardat et Sandras: De la Digestion des Boissons Alcooliques. Annales de Chimie et de Physique, 1847, tom. XXI.

Duchek: Ueber das Verhalten des Alkohols im thierischen Organismus. Vierteljahrschrift für die praktische Heilkunde. Prague, 1833.

Von Bibra: Die Narkotischen Genussmittel und der Mensch. Nürnberg, 1855.

And the works of Taylor, Orfila, Christison, and Pereira, on Materia Medica and Poisons; of Flint, Dalton, Dunglison, Draper, Carpenter, Liebig, Lehmann, and Moleschott, on general Physiology; several of the special works on Tobacco mentioned in the Appendix; and the current medical journals.

Oxford Street, Cambridge, *November 23, 1868*.

I.
It does Pay to Smoke

Mr. James Parton having abandoned the habit of smoking, has lately entered upon the task of persuading the rest of mankind to abandon it also.[1] His "victory over himself" – to use the favourite expression – would be incomplete unless followed up by a victory over others; and he therefore desists for a season from his congenial labours in panegyrizing Aaron Burr, B. +F. Butler, and other popular heroes, in order that he may briefly descant upon the evil characters of tobacco and its kindred stimulants. Some of the sophisms and exaggerations which he has brought into play while doing so, invite attention before we attempt what he did not attempt at all – to state squarely and honestly the latest conclusions of science on the subject.

According to Mr. Parton, tobacco is responsible for nearly all the ills which in modern times have afflicted humanity. As will be seen, he makes no half-way work of the matter. He must have the whole loaf, or he will not touch a crumb. He scorns all carefully-limited, compromising, philosophical statements of the case. Whatever the verdict of science may turn out to be, he *knows* that no good ever did come, ever does come, or ever will come, from the use of tobacco. All bad things which tobacco can do, as well as all bad things which it cannot do – all probable, possible, improbable, impossible, inconceivable, and nonsensical evil results – are by Mr. Parton indiscriminately lumped together and laid at its door. It is simply a diabolical poison which, since he has happily eschewed the use of it, had better be at once extirpated from the face of the earth. Of all this, Mr. Parton is so very sure that he evidently thinks any reasoning on the subject quite superfluous and out of place.

The paucity of his arguments is, however, compensated by the multitude and hardihood of his assertions. A sailor, he says, should not smoke; for "why should he go round this beautiful world drugged?" Note the *petitio principii* in the use of the word "drugged." That the smoker is, in the bad sense of the word, drugging himself, is the very point to be determined; but Mr. Parton feels so sure that he substitutes a sly question-begging participle for a conscientious course of investigation. With nine readers out of ten this takes just as well; and then it is so much easier and safer, you know. Neither should soldiers smoke, for the glare of their pipes may enable some hostile picket to take deadly aim at them. Moreover, a "forward car," in which a crowd of smoking veterans are returning from the seat of war, is a disgusting place. And "that two and two make four is not a truth more unquestionably certain than that smoking does diminish a soldier's power of endurance, and does make him more susceptible to imaginary dangers." (p. 17.) This statement, by the way, is an excellent specimen of Mr. Parton's favourite style of assertion. He does not say that his private opinion on this complex question in nervous physiology is well supported by observation, experiment and deduction. He does not say that there is at least a preponderance of evidence in its favour. He does not call it as probable as any opinion on such an intricate matter can ever be. But he says "it is as unquestionably certain as that two and two make four." Nothing less will satisfy him. Let it no longer be said that, in the difficult science of physiology, absolute certainty is not attainable!

Then again, the soldier should not smoke, because he ought always to be in training; and no Harvard oarsman needs to be told "that smoking reduces the tone of the system and diminishes all the forces of the body – he *knows* it." The profound physiological knowledge of the average Harvard under-graduate it would perhaps seem ungracious to question; but upon this point, be it said with due reverence, doctors disagree. We have known athletes who told a different story. Waiving argument for the present, however, we go on presenting Mr. Parton's "certainties." One of these is that every man should be kept all his life in what prizefighters call "condition," which term Mr. Parton supposes

[1] Smoking and Drinking. By James Parton. Boston, Ticknor & Fields, 1868. 12mo, pp. 151.

to mean "the natural state of the body, uncontaminated by poison, and unimpaired by indolence or excess." Awhile ago we had "drugs," now we have "poison," but not a syllable of argument to show that either term is properly applicable to tobacco. But Mr. Parton's romantic idea of the state of the body which accompanies training is one which is likely to amuse, if it does not edify, the physiologist. So far from "condition" being the "natural (i.e. healthy) state of the body," it is an extremely unnatural state. It is a condition which generally exhausts a man by the time he is thirty-five years old, rendering him what prizefighters call "stale." It is not "natural," or normal, for the powers either of the muscular or of the nervous system to be kept constantly at the maximum. What our minds and bodies need is intermittent, rhythmical activity. "In books and work and healthful play," not "in work and work and work alway," should our earlier and later years be passed; and a man who is always training for a boatrace is no more likely to hold out in the plenitude of his powers than a man who is always studying sixteen hours a day. The only reason why our boys at Yale and Harvard are sometimes permanently benefited by their extravagant athleticism is that they usually leave off before it is too late, and begin to live more normally. For the blood to be continually determined toward the muscles, and for the stomach to be continually digesting none but concentrated food, is a state of things by no means favourable to a normal rate and distribution of nutritive action; and it is upon this normal rate and distribution of nutrition that life, health and strength depend. It is as assisting this process that we shall presently show the temperate use of tobacco to be beneficial. Mr. Parton's idea well illustrates the spirit of that species of "radical" philosophy which holds its own opinions as absolutely and universally, not as relatively and partially, true; which, consequently, is incapable of seeing that one man's meat may be another man's poison, and which is unable to steer safely by Scylla without turning the helm so far as to pitch head foremost into Charybdis. Mr. Parton sees that athletic exercise is healthful, and he jumps at once to the conclusion that every man should always and in all circumstances keep himself in training. Such was not the theory of the ancient Athenians: μηδεν ἄγαν was their principle of life, – the principle by virtue of which they made themselves competent to instruct mankind.

Having thus said his say about muscular men, Mr. Parton goes on to declare that smoking is a barbarism. "There is something in the practice that allies a man with barbarians, and constantly tends to make him think and talk like a barbarian." We suppose Mr. Parton must *know* this; for he does not attempt to prove it, unless indeed he considers a rather stupid anecdote to be proof. He tells us how he listened for an hour or so to half a dozen Yale students in one of the public rooms of a New-Haven hotel, talking with a stable-keeper about boat-racing. They swore horribly; and of course Mr. Parton believes that if they had not been smokers they would neither have used profane language nor have condescended to talk with stable-keepers. *Sancta simplicitas!*

"We must admit, too, I think, that smoking dulls a man's sense of the rights of others. Horace Greeley is accustomed to sum up his opinions upon this branch of the subject by saying: 'When a man begins to smoke, he immediately becomes a hog.'" Our keen enjoyment of Mr. Greeley's lightness of touch and refined delicacy of expression should not be allowed to blind us to the possible incompleteness of his generalization. What! Milton a hog? Locke, Addison, Scott, Thackeray, Robert Hall, Christopher North – hogs?

And then smoking is an expensive habit. If a man smoke ten cigars daily, at twenty cents each, his smoking will cost him from seven to eight hundred dollars a year. This dark view of the case needs to be enlivened by a little contrast. "While at Cambridge the other day, looking about among the ancient barracks in which the students live, I had the curiosity to ask concerning the salaries of the professors in Harvard College." Probably he inquired of a *Goody*, or of one of the *Pocos* who are to be found earning bread by the sweat of their brows in the neighbourhood of these venerable shanties, for it seems they told him that the professors were paid fifteen or eighteen hundred dollars a year. Had he taken the trouble to step into the steward's office, he might have learned that they are

paid three thousand dollars a year. Such is the truly artistic way in which Mr. Parton makes contrasts – $1500 *per annum* for a professor, $800 for cigars! Therefore, it does not pay to smoke.

Smoking, moreover, makes men slaves. The Turks and Persians are great smokers, and they live under a despotic form of government. Q.E.D. The extreme liberality of Oriental institutions *before* the introduction of tobacco Mr. Parton probably thinks so well known as not to require mention. But still worse, the Turks and Persians are great despisers of women; and this is evidently because they smoke. For woman and tobacco are natural enemies. The most perfect of men, the "highly-groomed" Goethe – as Mr. Parton elegantly calls him – loved women and hated tobacco. This aspect of the question is really a serious one. Tobacco, says our reformer, is woman's rival, – and her successful rival; therefore she hates it. For as Mr. Parton, with profound insight into the mysteries of the feminine character, gravely observes, "women do not disapprove their rivals; they hate them." This "ridiculous brown leaf," then, is not only in general the cause of all evil, but in particular it is the foe of woman. "It takes off the edge of virility"!![2] It makes us regard woman from the Black Crook point of view. If it had not been for tobacco, that wretched phantasmagoria would not have had a run of a dozen nights. "Science" justifies this conjecture, and even if it did not, Mr. Parton intimates that he should make it. Doubtless!

One bit of Mr. Parton's philosophy still calls for brief comment. He wishes to speak of the general tendency of the poor man's pipe; and he means to say "that it tends to make him satisfied with a lot which it is his chief and immediate duty to alleviate, – he ought to hate and loathe his tenement-house home." A fine specimen of the dyspeptic philosophy of radicalism! Despise all you have got, because you cannot have something better. We believe it is sometimes described as the philosophy of progress. There can of course be no doubt that Mr. Parton's hod-carrier will work all the better next day, if he only spends the night in fretting and getting peevish over his "tenement-house home."

Such then, in sum and substance, is our reformer's indictment against tobacco. It lowers the tone of our systems, and it makes us contented; it wastes money, it allies us with barbarians, and it transforms us —*mira quadam metamorphosi*– into swine. Goethe, therefore, did not smoke, the Coming Man will not smoke, and General Grant, with tardy repentance, "has reduced his daily allowance of cigars." And as for Mr. Buckle, the author of an able book which Mr. Parton rather too enthusiastically calls "the most valuable work of this century," – if Mr. Buckle had but lived, he would doubtless have inserted a chapter in his "History," in which tobacco would have been ranked with theology, as one of the obstacles to civilization.

Throughout Mr. Parton's rhapsody, the main question, the question chiefly interesting to every one who smokes or wishes to smoke, is uniformly slurred over. Upon the question whether it is unhealthy to smoke, the Encyclopædias which Mr. Parton has consulted do not appear to have helped him to an answer. Yet this is a point which, in making up our minds about the profitableness of smoking, must not be taken for granted, but scientifically tested.

What, then, does physiology say about this notion – rather widespread in countries over which Puritanism has passed – that the use of tobacco is necessarily or usually injurious to health? Simply that it is a popular delusion – a delusion which even a moderate acquaintance with the first principles of modern physiology cannot fail to dissipate. Nay, more; if our interpretation shall prove to be correct, it goes still further. It says that smoking, so far from being detrimental to health, is, in the great majority of cases, where excess is avoided, beneficial to health; in short, that the careful and

[2] When we first read this remark, we took it for a mere burst of impassioned rhetoric; but on second thoughts, it appears to have a meaning. Another knight-errant in physiology charges tobacco with producing "giddiness, sickness, vomiting, vitiated taste of the mouth, loose bowels, diseased liver, congestion of the brain, apoplexy, palsy, mania, loss of memory, amaurosis, deafness, nervousness, *emasculation*, and cowardice." Lizars, *On Tobacco*, p. 29. A goodly array of bugbears, quite aptly illustrating the remark of one of our medical professors, that hygienic reformers, in the length of their lists of imaginary diseases, are excelled only by the itinerant charlatans who vend panaceas. There is, however, no scientific foundation for the statement that tobacco "takes off the edge of virility." The reader who is interested in this question may consult Orfila, *Toxicologie*, tom. II. p. 527; *Annales d'Hygiène*, tom. XXXVIII.; and a Memoir by Laycock in the *London Medical Gazette*, 1846, tom. III.

temperate smoker is, other things equal, likely to be more vigorous, more cheerful, and more capable of prolonged effort than the man who never smokes.

We do not pretend to *know* all this, nor are we "as certain of it as that two and two make four." Such certainty, though desirable, is not to be had in complex physiological questions. But we set down these propositions as being, so far as we can make out, in the present state of science, the verdict of physiology in the matter. Future inquiry may reverse that verdict; but as the physiologic evidence now stands, there is a quite appreciable preponderance in favor of the practice of smoking. Such was our own conclusion long before we had ever known, or cared to know, the taste of a cigar or pipe; and such it remains after eight years' experience in smoking. We shall endeavor concisely to present the *rationale* of the matter, dealing with some general doctrines likely to assist us both now and later, when we come to speak of alcohol.

We do not suppose it necessary to overhaul and quote all that the illustrious Pereira, in his "Materia Medica,"[3] and Messrs. Johnston and Lewes, in their deservedly popular books, have said about the physiologic action of tobacco. Their works may easily be consulted by any one who is interested in the subject; and their verdict is in the main confined to the general proposition that, from the temperate use of tobacco in smoking, no deleterious results have ever been proved to follow. More modern and far more elaborate data for forming an opinion are to be found in the great treatise of Dr. Anstie, on "Stimulants and Narcotics," which we shall make the basis of the following argument.[4]

In the first place, we want some precise definition of the quite vaguely understood word, "narcotic." What is a narcotic? *A narcotic is any poison which, when taken in sufficient quantities into the system, produces death by paralysis.* The tyro in physiology knows that death must start either from the lungs, the heart, or the nervous system. Now a narcotic is anything which, in due quantity, kills by killing the nervous system. When death is caused by too great a proportion of carbonic acid in the air, it begins at the lungs; but when it is caused by a dose of prussic acid, it begins at the medulla oblongata, the death of which causes the heart and lungs to stop acting. Prussic acid is, therefore, a narcotic; and so are strychnine, belladonna, aconite, nicotine, sulphuric ether, chloroform, alcohol, opium, thorn-apple, betel, hop, lettuce, tea, coffee, coca, hemp, chocolate, and many other substances. All these, taken in requisite doses, will kill by paralysis; and all of them, taken in lesser but considerable doses, will induce a state of the nerves known as narcosis, which is nothing more nor less than incipient paralysis. Every man who smokes tobacco, or drinks tea or coffee, until his hands are tremulous and his stomach-nerves slightly depressed, has just started on the road to paralysis: he may never travel farther on it, but he has at least turned the corner. Every man who drinks ale, wine, or spirit until his face is flushed and his forehead moist, has slightly paralyzed himself. Alcoholic drunkenness is paralysis. The mental and emotional excitement, falsely called exaltation, is due, not to stimulation, but to paralysis of the cerebrum. The unsteady gait and groping motion of the hands are due to paralysis of the cerebellum. The feverish pulse and irregular respiration are due to paralysis of the medulla oblongata. The flushed face and tremulous, distressed stomach, are due to paralysis of the sympathetic ganglia. And when a person is "dead-drunk," his inability to perform the ordinary reflex acts of locomotion and grasping is due in part to paralysis of the spinal centres. The coma, or so-called sleep of drunkenness, is perfectly distinct from true reparative sleep, being the result of serious paralysis of the cerebrum, and closely allied to delirium.[5] Now, what we have stated in

[3] "I am not acquainted with any well-ascertained ill effects resulting from the habitual practice of smoking." – Pereira, *Materia Medica*, vol. ii., p. 1431. Tobacco "is used in immense quantities over the whole world as an article of luxury, without any bad effect having ever been clearly traced to it." – Christison on *Poisons*, p. 730. These two short sentences, from such consummate masters of their science as Christison and Pereira, should far more than outweigh all the volumes of ignorant denunciation which have been written by crammers, smatterers, and puritanical reformers, from King James down.

[4] Only a basis, however. The argument as applied to tobacco, though a necessary corollary from Dr. Anstie's doctrines, is in no sense Dr. Anstie's argument. We are ourselves solely responsible for it.

[5] Sleep is caused by a diminution of blood in the cerebrum; stupor and delirium, as well as *insomnia*, or nocturnal wakefulness, are probably caused by excess of blood in the cerebrum. We feel sleepy after a heavy meal, because the stomach, intestines and liver

detail concerning alcohol is also true of tobacco. A fatal dose of nicotine kills, just like prussic acid, by paralyzing the medulla, and thus stopping the heart's beating. The ordinary narcotic dose does not produce such notable effects as the dose of alcohol, because it is hardly possible to take enough of it. Excessive smoking does not make a man maudlin, but it causes restless wakefulness, which is a symptom of cerebral paralysis, and is liable, in rare cases, to end in coma. Its action on the cerebellum and spinal cord cannot be readily stated; but its effect on the medulla and sympathetic is most notable, being seen in depression or feeble acceleration of the pulse, trembling, nausea of the stomach, and torpidity of the liver and intestines. Nearly or quite all of these effects producible by tobacco, are producible also, in even a heightened degree, by narcotic doses of tea and coffee. A concentrated dose of tea will produce a paralytic shock; and a single cup of very strong coffee is sometimes enough to cause alarming disorder in the heart's action. All these narcotic effects, we repeat, are instances of paralytic depression. *In no case are they instances of stimulus followed by reaction; but whenever a narcotic dose is taken, the depressive paralytic action begins as soon as the dose is absorbed by the blood-vessels*. The cheerful and maudlin drunkard is not under the action of stimulus. His rapid, irregular, excited mental action is no more entitled to be called "exaltation" than is the delirium of typhoid fever. In the one case and in the other, we have not stimulation but depression of the vitality of the cerebrum; in both cases, the nutrition is seriously impaired; in both cases, molecular disorganization of the nerve-material is predominant.

So much concerning narcotics has been established, with vast and profound learning, by Dr. Anstie. No doubt, by this time, the reader is beginning to rub his eyes and ask, Is this the way in which you are going to show that smoking is beneficial? You define tobacco as a poison which causes paralysis, and then assure us that it pays to smoke! It is true, this has at first sight a paradoxical look; but as the reader proceeds further, he will see that we are not indulging either in paradoxes or in sophisms. We wish him to take nothing for granted, but merely to follow attentively our exposition of the case. We have indeed called tobacco a poison, – and so it is, if taken in narcotic doses. We have accused it of producing paralysis, – and so it does, when taken in adequate narcotic doses. We would now call attention to a property of narcotics, which is well enough known to all physiologists, but is usually quite misapprehended or ignored by popular writers on alcohol and tobacco.[6] We allude to the fact that narcotics, when taken in certain small quantities, do not behave as narcotics, but as *stimulants*; and that they will in such cases produce the exact reverse of a narcotic effect. Instead of lowering nutrition, they will raise it; instead of paralyzing, they will invigorate. Taken in a stimulant dose, tobacco is not only not a producer, it is an averter, of paralysis. It is not only not a poison, but it is a healthful, reparatory stimulus.

It is desirable that this point should be thoroughly understood before we advance a step farther. Here is the *pons asinorum* in the study of narcotics, but it must be crossed if we would get at the truth concerning alcohol and tobacco. Alcohol is a poison, says the teetotaler, who means well, but has not studied the human organism; alcohol is a poison, and once a poison always a poison. Nothing can seem more logical or reasonable, so long as one knows nothing about the subject. A quart of

---

appropriate blood which would ordinarily be sent to the brain. But after a drunken debauch, a man sinks in stupor because the brain is partially congested. The blood rushes to the paralyzed part, just as it rushes to an inflamed part; and in the paralysis, as in the inflammation, nutrition and the products of nutrition are lowered. The habitual drunkard lowers the quality of his nervous system, and impairs its sensitiveness, – hence the necessity of increasing the dose. It will be seen, therefore, that it is not the function of a narcotic, as such, to induce sleep, though in a vast number of cases it may induce stupor. The headache felt on awaking from stupor, is the index of impaired nutrition, quite the reverse of the vigor felt on arising from sleep.

[6] Mr. Lizars (On *Tobacco*, p. 54) has the impudence to cite Pereira (vol. ii. p. 1426) as an opponent of smoking, because he calls nicotine a deadly poison! And on p. 58 he similarly misrepresents Johnston. This is the way in which popular writers contrive to marshal an array of scientific authorities on their side. In the case of tobacco, however, it is difficult to find physiologists who will justify the popular clamour. They have a way of taking the opposite view; and when Mr. Lizars cannot get rid of them in any other way, he insinuates that all writings in favour of tobacco "have been *got up* from more than questionable motives." (p. 137.) This is in the richest vein of what, for want of a better word, we have called radicalism; and may be compared with Mr. Parton's belief that physicians recommend alcoholic drinks because they like to fatten on human suffering! (*Smoking and Drinking*, p. 56.)

brandy is admitted to be poison; is not, therefore, a spoonful of brandy also poison? We reply, by no means. Physiological questions are not to be settled by formal logic. Here the quantity is the all-essential element to be taken into the account. Common salt, in large doses, is a virulent poison; in lesser doses it is a powerful emetic; in small doses it is a gentle stimulant, and an article of food absolutely essential to the maintenance of life. In the spirit of the teetotaler's logic, then, it may be asked, If a pound of salt is a poison, is not a grain of salt also a poison? We reply, call it what you please, you cannot support life without it. So from the poisonous character of the quart of brandy, the poisonous character of the spoonful is by no means a legitimate inference. The evil effects of the small dose are to be ascertained by experiment, not to be taken for granted. Logic is useful in the hands of those who understand the subject they reason about; but in other hands it sometimes leads to queer results. It was logic that used up the one-hoss shay.

The general principle to guide us here is that of Claude Bernard, that whatever substance or action, in due amount, tends to improve nutrition, may, in excessive amount, tend to damage nutrition. In the vast majority of cases the difference between food and poison, between beneficent and malignant action, is only a difference of quantity. Oxygen is the all-important stimulus, without which nutrition could not be carried on for a moment. It constitutes about one-fifth of our atmospheric air. Let us now step into an atmosphere of pure oxygen, and we shall speedily rue such a radical proceeding. We shall live so fast that waste will soon get ahead of repair, and our strength will be utterly exhausted. The effect of sunlight on the optic nerve is to stimulate the medulla, and increase thereby the vigor of the circulation. But too intense a glare produces blindness and dizziness. The carpenter's thumb, by friction against the tools he uses, becomes over-nourished and tough; but if the friction be too continuous, there is lowered nutrition and inflammation. Moderate exercise enlarges the muscles; exercise carried beyond the point of fatigue wastes them. The stale prize-fighter and the overworked farmer are, from a physical point of view, pitiable specimens of manhood. A due amount of rich food strengthens the system and renders it superior to disease; an excessive amount of rich food weakens the system, and opens the door for all manner of aches and ailments. A pinch of mustard, eaten with meat, stimulates the lining of the stomach, and probably aids digestion; but a mustard poultice lowers the vitality of any part to which it is applied. Moderate emotional excitement is a healthful stimulus, both to mind and body; but intense and prolonged excitement is liable to produce delirium, mania, or paralysis. *Ne quid nimis*, therefore, the maxim of the wise epicurean, is also the golden rule of hygiene. If you would keep a sound mind in a sound body, do not rush to extremes. Steer cautiously between Scylla and Charybdis, and do not get wrecked upon the one or swallowed up in the other.

Few persons who have not been specially educated in science have ever learned this great lesson of Materia Medica, "that everything depends on the size of the dose." It is not merely that a small dose will often produce effects differing in degree from those produced by a large dose; nor is it merely that the small dose will often produce an effect differing in kind from that of the large dose; but it is that the small dose will often produce effects diametrically opposite and antagonistic to those of the large dose. The small dose may even serve as a partial antidote to the large dose. The adage concerning the hair of the dog that has bitten us, embodies the empirical wisdom of our ancestors on this subject. Especially is this true of all the substances classed as narcotics. In doses of a certain size, they, one and all, produce effects exactly the reverse of narcotic. If anything is entitled to be called a deadly narcotic poison, it is strychnia, which, by paralyzing the spinal cord, induces tetanic convulsions: yet minute doses of strychnia have been used with signal success in the cure of hemiplegic paralysis. In teething children, the pressure upon the dental branches of the trigeminal nerve sometimes causes an irritation so great as partly to paralyze the medulla, inducing clonic convulsions, and perhaps death by interference with the heart's action.[7] In these cases, alcohol has been frequently used with

[7] Clendon, *On the Causes of the Evils of Infant Dentition*.

notable efficacy, averting as it does the paralysis of the medulla. Epileptic fits, choreic convulsions, and muscular spasms – such as colic, and spasmodic asthma – are also often relieved by the tonic or anti-paralytic action of alcohol. And how often has the temperate smoker, after some occasion of distressing excitement, his limbs and viscera trembling, his nerves "all unstrung," or incipiently paralyzed, – how often has the temperate smoker found his whole system soothed and quieted, and the steadiness of his nerves restored, by a single pipe of tobacco! That this is due to its action as a counteracter of paralysis is shown by the fact that tobacco has been successfully used in tetanus,[8] in spasm of *rima glottidis*,[9] in spasmodic asthma,[10] and in epilepsy.[11] For these phenomena physiology has but one explanation. They are due to the fact that narcotics, in small doses, either nourish, or facilitate the normal nutrition of the nervous system. They restore its equilibrium, enabling it, with diminished effort, to discharge its natural functions. And anything which performs this office is, in modern physiology, called a *stimulant*.

Here then we have obtained an important amendment of our notion of a narcotic. A narcotic is a substance which, taken in the requisite dose, causes paralysis. But we have seen that by diminishing the dose we at last reach a point where the narcotic entirely ceases to act as a narcotic and becomes a stimulant. What then is a stimulant? There is a prejudice afloat which interferes with the proper apprehension of this word. People call alcohol, indiscriminately, a stimulant; and when a man gets drunk, he is incorrectly said to be stimulating himself; stimulants are therefore looked at askance, as things which demoralize. The reader is already in a position to know better than this. He sees already that it is not stimulus but narcosis which is ruining the drunkard. Nevertheless, that he may understand thoroughly what a stimulant is, we must give further explanation and illustration.

Food and stimulus are the two great, equally essential factors or co-efficients in the process of nutrition. We mean by this, that in order to nourish your system and make good its daily waste, you need both food and stimulus. You must have both, or you cannot support life. Day by day, in every act of life, be it in the acts of working and thinking which go on consciously, or be it in the acts of digestion and respiration which go on unconsciously, in the mere keeping ourselves alive, we are continually using up and rendering worthless the materials of which our bodies are composed. We use up tissue as an engine uses up fuel; and we therefore need constant coaling. Tissue once used is no better than ashes; it must be excreted, and food must be taken to form new tissue. Now the wonderful process by which digested food is taken up from the blood by the tissues – each tissue taking just what will serve it and no more, muscle-making stuff to muscle, bone-making stuff to bone, nerve-making stuff to nerve – is called assimilation, nutrition, or repair. It is according as waste or repair predominates that we are feeble or strong, useless or efficient. When repair is greatly in excess, as it usually is in childhood and youth, we grow. When waste is greatly in excess, we die of consumption, gangrene, or starvation. When the daily repair slightly outweighs the daily waste, we are healthy and vigorous. When the daily repair is not quite enough to replace the daily waste, we are feeble, easily wearied, and liable to be assailed by some illness.

Now, in order to carry on this great process of nutrition, we have said that food and stimulus are equally indispensable. We must have food or we can have nothing to assimilate; but we must also have stimulus, or no assimilation will take place. *The unstimulated tissue will not assimilate food.* The nutritive material rushes by it, unsought for and unappropriated, and no repair takes place. There are some people whom no amount of eating will build up: what they need is not more food, but more nerve stimulus; they doubtless eat already more than their tissues are able to assimilate. In pulmonary consumption, the chief monster which we have to fight against is impaired nutrition,

[8] Curling, *On Tetanus*, p. 168; Earle, in *Med. Chir. Trans.*, vol. vi., p. 92; and O'Beirne, in *Dublin Hospital Reports*, vols. i. and ii.

[9] Wood, *U. S. Dispensatory*.

[10] Sigmond, in *Lancet*, vol. ii., p. 253.

[11] Currie, *Med. Rep.*, vol. i., p. 163.

the tubercles being only a secondary and derivative symptom.[12] The problem before us, in dealing with consumption, is to improve nutrition, to make the tissues assimilate food. And to this end we prescribe, for example, whisky and milk – a food which easily reaches the tissues, and a stimulant which urges them to take up the food sent to them. We define, therefore, a stimulant as *any substance which, brought to bear in proper quantities upon the nervous system, facilitates nutrition*.

At the head of all stimulants stands oxygen, concerning which, for further illustration, we shall quote the following passage from Dr. Anstie:

"It needs but a glance at the vital condition of different populations in any country to arrive at a tolerably correct idea of the virtues of oxygen as a promoter of health and a curer of disease. If we compare the physical condition of the inhabitants of a London alley, an agricultural village, and a breezy sea-side hamlet, we shall recognize the truth of the description which assigns to it the same therapeutic action as is exercised by drugs, to which the name of stimulant seems more naturally applicable than to such a familiar agent as one which we are constantly breathing in the common air. A child that has been bred in a London cellar may be taken to possess a constitution which is a type of all the evil tendencies which our stimulants are intended to obviate… It is highly suggestive to find that that very same quiet and perfect action of the vital functions, without undue waste, without pain, and without excessive material growth, is precisely what we produce, when we produce any useful effect, by the administration of stimulants, though, as might be expected, our artificial means are weak and uncertain in their operation, compared with the great natural stimulus of life."[13]

Stimulus implies no undue exaltation of the activity of any part of the organism. In complete health all parts of the body should work together in unhindered co-operation. Any undue exaltation of a particular function – excessive brain-action, excessive muscular-nutrition, excessive deposit of fat – is a symptom of lowered life, in which the co-ordinating control of the whole system over its several parts is diminished. Stimulus, on the other hand, implies an increase of the co-ordinating and controlling power. Dr. Anstie therefore recommends that the word "overstimulation" be disused, as unphilosophical and self-contradictory.

In yet one further particular, current notions need to be rectified before we can proceed. *In no case is the action of a stimulant followed by a depressive reaction.* This seems at first like a paradox. Physiologists have in times past maintained the contrary; and some have even ventured to apply to the phænomena of stimulation the dynamic law that "action and reaction are equal and opposite." But in physiology we shall not be helped much by the theorems of mechanics. In no case is the stimulus followed by any other "recoil" than that which is implied in the mere gradual cessation of its action, just as in the case of food which has been eaten, assimilated, and used up. We quote the following from Dr. Anstie: – "We often hear the effects of strong irritation of the skin, or the mucous surfaces, quoted as an example of the way in which action and reaction follow each other. The immediate effect of such treatment (it is said) is to quicken the circulation and improve the vital condition of the part, but its *ultimate* result is a complete stagnation of the vital activities in the irritated tissues. The real explanation of the matter is, however, very different. Mild stimulation of the skin (as by friction, warm liniments, &c.) has no tendency to produce subsequent depression; nor has mild stimulation of the mucous membranes (as by the mustard we eat with our roast beef). But the application of an irritant strong enough to produce a morbid depression at all, produces it *from the first*. Thus the cantharidine of a blister has no sooner become absorbed through the epidermis than it *at once* deprives a certain area of tissue of its vitality to a considerable extent, as is explained by the researches of Mr. Lister… Here is no stimulation first and depressive recoil afterward, but unmitigated depression from the first."[14] "What has been commonly spoken of as the *recoil* from the stimulant action of a

[12] Indeed, there are many fatal cases in which tubercles never appear. See Niemeyer on *Pulmonary Phthïsis*.

[13] *Stimulants and Narcotics*, p. 144.

[14] *Stimulants and Narcotics*, p. 148.

true narcotic is, in fact, simply the advent of narcosis owing to a large impregnation of the blood with the agent after the occurrence of stimulation, owing to a small one. Thus a man drinking four ounces or six ounces of brandy gradually, has not in reality taken a truly narcotic dose till perhaps half the evening has worn away; previously to that he has not been 'indulging in narcotism' at all; nor, had he stopped then, would any after depression have followed, for he might have taken no more than two ounces of brandy, equal perhaps to one ounce of alcohol. But he chose to swallow the extra two ounces or four ounces, thus impregnating his blood with a narcotic mixture capable of acting upon nervous tissue so as to render it incapable of performing its proper functions. *The narcosis has no relation to the stimulation but one of accidental sequence. This is proved by the fact that in cases where a narcotic dose is absorbed with great rapidity, no signs of preliminary stimulation occur.*"[15]

This disposes of the popular objection to stimulants – based upon the long-exploded theories of vitalistic physiology[16] – that every stimulus is followed by a reaction. It is seen that when a man feels ill and depressed after the use of alcohol or tobacco, it is because he has not stimulated but narcotized himself. We challenge any person, not hopelessly dyspeptic, to produce from his own experience any genuine instance of physical or mental depression as the result of a half-pint of pure wine taken with his dinner,[17] or of one or two pipes of mild tobacco smoked after it.

Let us not, however, indulge in sweeping statements. We have expressed ourselves with caution, but a still further limitation needs to be made. There are a few persons who are never stimulated, but always poisonously depressed, by certain particular narcotics. There are a few persons – ourselves among the number – in whom a very temperate dose of coffee will often give rise to well-defined symptoms of narcosis. There are others in whom even the smallest quantity of alcoholic liquor will produce giddiness and flushing of the face. And there are still others upon whom tobacco, no matter how minute the dose, acts as a narcotic poison. But such cases are extremely rare; and it is needless to urge that such persons should conscientiously refrain, once and always, from the use of the narcotic which thus injuriously affects them. Our friendly challenge, above given, is addressed to the vast majority of people; and thus limited, it may be allowed to stand.

[15] Id. p. 224.

[16] "The origin of the belief that stimulation is necessarily followed by a depressive recoil is obviously to be found in the old vitalistic ideas. It is our old acquaintance, the Archæus, whose exhaustion, after his violent efforts in resentment of the goadings which he has endured, is represented in modern phraseology by the term 'depressive reaction.' This idea once being firmly established in the medical mind, the change from professed vitalism to dynamical explanations of physiology has not materially shaken its hold." Id. p. 146. An interesting example of the way in which quite obsolete and forgotten theories will continue clandestinely to influence men's conclusions. The subject is well treated by Lemoine, *Le Vitalisme et l'Animisme de Stahl*. Paris, 1864.

[17] "From good wine, in moderate quantities, there is no reaction whatever." – Brinton, *Treatise on Food and Digestion*.

Конец ознакомительного фрагмента.