

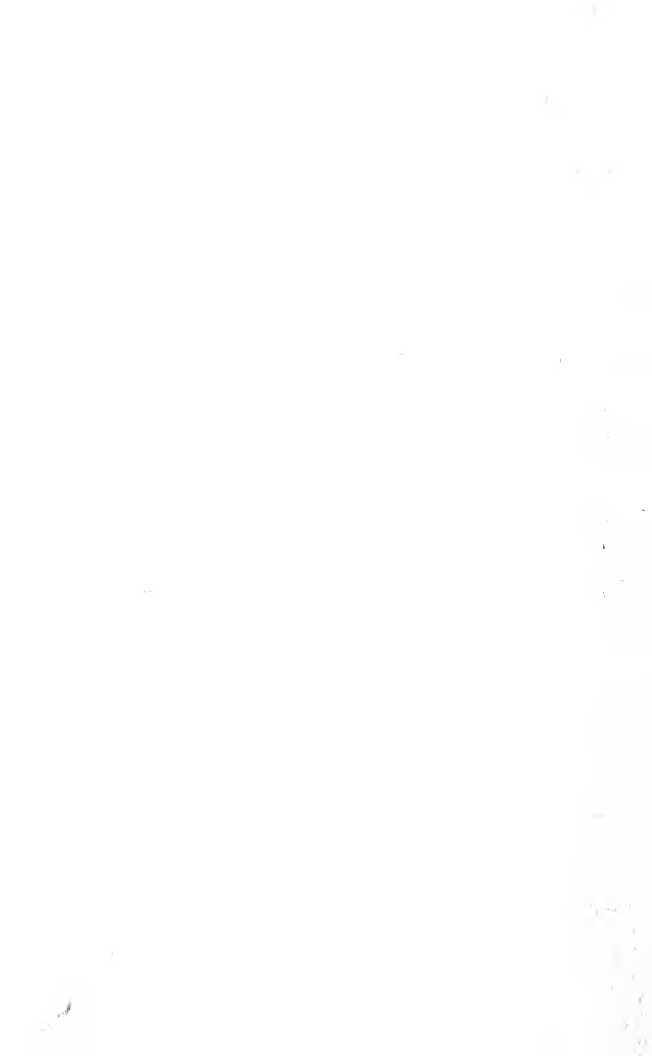
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AND

ON THE USE OF TOBACCO.

By G. F. WITTER, M.D.



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ANTI-TOBACCO.

By ABIEL ABBOT LIVERMORE,

MEADVILLE, PENN.



*THE SUBSTANCE OF AN ADDRESS BEFORE THE
MEADVILLE TEMPERANCE UNION,*

JANUARY 29, 1882.



ANTI-TOBACCO.



IT is a legal proverb that "Possession is nine points in the law." Judging by this standard, he must be a daring innovator who would venture to attack the well-nigh universal habit of using tobacco, by chewing, smoking, or snuffing. We have only to pass through the streets of our cities and villages, and see the numerous shops devoted to the traffic, or witness the smokers of pipes, cigars, or cigarettes in public places, and on the routes of travel, — the uncleanliness of cars and steamers, — to be assured that if universality is a sufficient proof of the merit of any habit or practice, the use of the *weed* is established beyond the possibility of overthrow.

But, on the other hand, in this age, — which tests everything, however settled in the usages or opinions of society, or supported by popular favor, and rejects whatever conflicts with truth and the welfare of mankind, — we are encouraged to submit even this widespread custom to the criterion of science and common-sense, not to say of moral principle.

One of the most marvellous chapters of human history is that which relates how tobacco has been introduced

among the articles of trade and commerce, and has subsidized both savage and civilized nations and tribes to its indulgence, and is still extending its triumphs.

To attack it seems as idle as to assault Gibraltar with a flight of Indian arrows. But we remember that most of the gigantic evils that have afflicted humanity — such as human sacrifices, idolatry, torture of witnesses and criminals, the persecution of witches, intemperance, polygamy, slavery and the slave-trade, or war — could, with equal or greater assurance, claim exemption from criticism or rebuke on the ground of their antiquity and their universality. Yet all these abominations now lie more or less under the condemnation of the enlightened sentiment of Christendom, and their dark shadows are passing away before the rising light of a nobler and purer civilization.

Derivation of the Word.

The origin of the word *tobacco* is doubtful. Some trace it to a Carib term, *tabacos*, signifying a *pipe*; others to *Tabacco*, a province of Yucatan; others to *Tabagos*, an island in the Caribbean Sea, or to *Tabasco*, one in the Gulf of Florida.

Customs of its Use.

The plant, as grown in different countries and climates, has several species or varieties, though it possesses common properties. In Asia it appears to have been used from a remote antiquity, if we may judge by the ancient sculptured pipes, similar to those still employed in China. In America its use is traced back to the mound-builders,

whoever they were, and other prehistoric races, as is demonstrated by their remains and monuments. When Columbus, in 1492, discovered America, or the adjacent islands, he found the natives puffing tobacco-smoke from their mouths and nostrils, and inhaling snuff through hollow canes. The depravity of chewing appears to have been reserved to the refinement of a later age, and a people boasting of its superior intelligence and civilization. Probably the sailors of the great discoverer carried home the habit to Southern Europe. While Sir Walter Raleigh, at a later period, has the questionable honor of introducing it into England.

Commerce in Tobacco.

Thus getting a foothold in Europe, the spread and extent of the growth and employment of tobacco, as a luxury and as an article of trade, have gone on with astonishing rapidity. King Tobacco rivals the other royal powers of cotton, corn, wheat, hemp, and sugar, as one of the leading products of the earth, and one of the main staples of trade and commerce.

Six hundred thousand acres in the United States are devoted to the cultivation of tobacco. The "Pall Mall Gazette," of June 16, 1871, reports the increase of the consumption in the United Kingdom of Great Britain, from 1841 to 1878, to be 25,642,469 pounds weight, or an increase of from thirteen and three fourths ounces to one pound and seven ounces to each person of the population. The "Dublin University Magazine" estimates the tobacco bill of Great Britain at £14,000,000 sterling, or \$70,000,000.

In 1867 a German statistician estimated the production of tobacco to be in

	Kilogrammes.
Asia	155,000,000
Europe	141,000,000
America	124,000,000
Africa	12,000,000
Australia	400,000

M. Barral, who officially reported on the specimens exhibited at the Paris Exhibition in 1866, thus estimates the amount grown : —

	Kilogrammes.
In America	75,000,000
“ Turkey	45,000,000
“ Cuba	32,000,000
“ Austria	29,000,000
“ France	22,802,000
“ Germany	18,000,000
“ Russia	14,000,000
“ Brazil	8,000,000
“ Roumania	2,000,000
“ Algeria	1,600,000
“ Italy	1,500,000
“ Belgium	1,500,000

M. Barral adds : “ The enormous figures, which have passed before the reader’s eye, testify to the facility with which people fall into excessive expense, for the gratification of a pleasure which has for its principal aim to kill time, and stupefy the mind.”

Since 1841 the population of Great Britain has increased 25 per cent, but the consumption of tobacco, 43 per cent. More than a quarter of a million of sovereigns are spent every week on this narcotic, and that principally by one sex.

In the chief tobacco-raising countries—England, Germany, Holland, the United States, and France—more money is devoted to this luxury than pays the bread bill.

According to a calculation made by the American Consul at Havana, and embodied in a report to the Secretary of State, it is computed that in the island of Cuba alone 1,460,000,000 of cigars, or ten a day for each person of the population, are annually consumed by the inhabitants and residents of that island.

Chemical Properties.

There are about forty species or varieties of tobacco, belonging to the genus *Nicotiana*, in the order *Solanacææ*. Chemically analyzed, tobacco contains no less than three distinct and active poisons, nicotine, nicotianine, and empyreumatic oil, besides certain minute portions of alkaloids and acids.

1. *Nicotine*, or *nicotia*, is a colorless, or nearly colorless, fluid, when extracted from tobacco, having an exceedingly acrid, burning taste, even when largely diluted, and very irritating to the nostrils. The "United States Dispensatory," the great authority with physicians and druggists of all schools of practice, says: "Nicotine, in its action on the animal system, is one of the most virulent poisons known. A drop of it, in the state of concentrated solution, was sufficient to destroy a dog, and small birds perished at the approach of a tube containing it. In man it is said to destroy life, in poisonous doses, in from two to five minutes." The "New American Cyclopaedia" says: "Its vapor is so irritating that it is difficult to breathe in a room in which a single drop has been evaporated." Dr. Drysdale, Fellow

of the Royal College of Surgeons of England, and Senior Physician to the Metropolitan Free Hospital, says ("Tobacco, and the Diseases it produces," London, 1880): "The species of tobacco are closely related to henbane (*hyoscyamus*), to atropa belladonna, and to stramonium — poisonous plants used in medicine. Tobacco alone, of all the four, is scarcely ever employed medicinally at the present day, except, perhaps, occasionally, in combination with stramonium, in spasmodic asthma. Its use as an injection has been abandoned, as too dangerous to life. It is largely used by some farmers for destroying vermin infesting sheep, and commonly also by gardeners for killing the insects upon their plants. Indeed, tobacco is one of the most virulent of all vegetable poisons." He further says: "The constituent part of tobacco, which makes it at once so agreeable and so dangerous to health, is nicotine, $C_{10}H_{14}N_2$, a liquid alkaloid discovered, so recently as 1809, by a French chemist. So deadly a poison is nicotine, that one tenth of a grain of it will kill a middle-sized dog in three minutes; and as the percentage of nicotine in dry tobacco varies, from two per cent in Havana to about seven per cent in Virginia tobacco, it has been calculated that in a single cigar there is enough nicotine, if given pure, to kill two men; and in about a quarter of an ounce of tobacco, there may be as much as two grains of this very dangerous poison. A smuggler, mentioned by Namias to the Académie des Sciences, was dangerously poisoned by covering his naked skin with tobacco leaves, in order to escape paying duty. The great danger of chewing tobacco is thus at once evident. Taylor ("On Poisons," p. 749) mentions that the volatile vapor of tobacco, given off in the process of manufacture, has been shown to have an injuri-

ous effect on tobacco operatives. The first results are headache, nausea, languor, loss of appetite, and sleeplessness, followed by a general disturbance of the health. Melsens, the chemist, said that he had collected 30 grammes of nicotine from 4,500 grammes of tobacco smoke, which he conveyed through water.

2. *Nicotianine*, the second poisonous component of tobacco, is a fatty substance, having an aromatic and somewhat bitter taste, and is probably the principle which gives the article its strong odor. The "Dispensatory" says: "It produces sneezing when applied to the nostrils, and a grain of it, swallowed by Hermstadt, occasioned giddiness and nausea." The "New American Cyclopedia" says: "When taken internally, it gives rise to giddiness, nausea, and an inclination to vomit." The "Scientific American" speaks of tobacco-camphor, or nicotianine, as "a substance about which not much is known, — a bitter extractive matter."

3. *Empyreumatic oil* is the third substance which is produced during the burning of the tobacco in the pipe. This is one of the most active poisons known to chemistry. Sir Benjamin Brodie ("London Lancet") says: "The empyreumatic oil of tobacco is produced by distillation of that herb at a temperature above that of boiling water. One or two drops of this oil (according to the size of the animal), placed on the tongue, will kill a cat in the course of a few minutes; A certain quantity of this oil must always be circulating in the blood of an habitual smoker, and we cannot suppose that the effects of it on the system can be merely negative." "A single drop," says the same authority, "injected into the rectum of a cat, occasioned death in about five minutes; and double the quantity,

administered in the same manner to a dog, was followed by the same result."

Dr. Drysdale reports ("Tobacco, and the Diseases it produces,") that "The analyses made by Eulenberg and Vohl ("Ann. d'Hygiène," April, 1873, from "Vierteljahrsch für ger. Med.") seem to controvert the old theory that the injurious effects of tobacco-smoking are due directly to the presence of nicotine in the smoke. They attribute them rather to the alkaloids produced by its decomposition, and which have many similar physiological properties. The smoke from tobacco, in pipes and cigars, was passed first through a solution of potassic hydrate, and then through one of dilute sulphuric acid. The former solution was found to contain a mixture of carbonic, hydrocyanic, sulphuric, acetic, formic, metacetic, butyric, valeric, and carbolic acids, creosote, and several hydrocarbons. The acid solution contained rosolic acid, ammonia, traces of ethylamine and many of the pyridine bases, to the last of which the injurious action is due. The bases found were pyridine, C_5H_5N , which is more abundant in pipe than in cigar smoke; picoline, C_6H_7N ; lutidine, C_7H_9N ; collidine, $C_8H_{11}N$, which is more abundant in cigar than in pipe smoke; parvoline, $C_9H_{13}N$; coridine, $C_{10}H_{15}N$; rubidine, $C_{11}H_{17}N$; and a residue corresponding to viridine, $C_{12}H_{19}N$. As will be seen, the most volatile of the bases, as pyridine, were most abundant in pipe-smoke, while the less volatile, as collidine, were most abundant in cigar-smoke.

"The physiological action of these bases was not tested separately, but only that of a mixture of those which volatilize under 320° F., and of those which volatilize between 320° F. and 482° F. Both of these sets of bases,

like nicotine, produced contraction of the pupil, difficult respiration, general convulsions, and death; and, upon *post mortem* examination, the respiratory passages and lungs were found congested. They do not act as rapidly as nicotine. Those volatile at a low temperature were more active than those which were only volatile at a high temperature, which explains the fact that more tobacco can be smoked in the form of cigars than in a pipe.

“The alkaloids are soluble in the mucus of the mouth and air-passages; and thus smoke condensed and mingled with water is easily taken into the blood. Hence, when cigars or pipes are smoked, even out-of-doors, a notable quantity of poison is taken into the system. But, when smoking takes place in a small room, the air taken into the lungs also adds its poison to the fluids of the air-passages; and persons who remain in smoking-rooms, even if not themselves smoking, cannot escape a certain amount of poisoning. Women who wait in public bar-rooms and smoking-saloons, though not themselves smoking, cannot avoid the poisoning caused by inhaling smoke continually. Surely gallantry, if not common honesty, should suggest the practical inference from this fact.”

General Effects of the use of Tobacco.

The results of the use of the weed, armed as all chemists agree with some of the most powerful and poisonous agents known to the vegetable world, have been set down in all medical literature in fearful array. But in vain has been the warning. The habit of using tobacco, in some form, becomes even stronger in its enslaving power than that of the indulgence in spirituous liquors, to

which it is closely allied. Thick-set, as the path of the victim is, with dangers on the right and on the left, he rushes on regardless of consequences, and gratifies the unnatural and purely artificial appetite, in spite of all the remonstrances of an outraged constitution, and the pangs of distress felt in every vital organ. He sophisticates his reason and common-sense with the deceitful pleas that the use of tobacco is a quietus to the agitated nerves, a relief from fatigue, prevents the waste of tissues, and that many smokers and chewers round out a good old age of eighty or ninety years. It is true that the human system is so wonderfully constituted, by the wisdom and mercy of the Creator, that it can stand a great deal of abuse before it finally succumbs. Ironclad, tobacco-proof, and alcohol-proof—some persons seem to carry a charmed life, that defies sickness and death. But these are the exceptions that confirm the general rule. Let no man, however stalwart, presume too much on the native strength of his constitution. To every one the day of reckoning, though long delayed, comes at last, when all the items that have been registered in the day-book are transferred to the ledger, and summarized in one fatal bill. A lawyer and statesman of New York, just deceased, adds another vivid illustration to this statement. He prided himself on his ability to endure, freely exposed himself on all occasions, never wore an overcoat in the coldest weather, always slept with a window open, but at last dropped off suddenly with Bright's disease of the kidneys.

But, haply, it is not always death which is the result of our numerous and often unconscious violations of the laws of health. It is the abridgment and diminution of life. It is the gradual and almost imperceptible depres-

sion of the vital energies. It is the taking on, one after another, of the ill's flesh is heir to, until a man lives only a half life, or a quarter life, where God intended he should live a whole life. One of the most melancholy of all spectacles is a chronic invalid, — one who can neither live nor die, and whose prayer might well be that of the Apostle who exclaimed, “Who shall deliver me from the body of this death?”

A man in the city, vexed and worried by business, or one worn down in the country by hard manual labor, may feel a temporary quieting of the nerves, or a gentle stimulus to the mental and physical energies, by his pipe or his glass; but all, and more than all, that is gained in one direction is lost in another. Temporary relief is purchased at the fearful cost of a lasting blow to the nervous system. The chief reason why men in the press and wear of society find their nerves so unstrung and shattered, is because they have early resorted to stimulants and narcotics, in place of the appropriate rest and nutrition which nature demands. They have so far perverted the instincts of nature that they cannot get along except by re-enforcing themselves by artificial and injurious stimulants and substitutes, and thus maintaining a kind of counterfeit strength. A victim of daily doses of rum and tobacco often cannot write his name straight, until he has steadied his trembling hand by a glass of liquor or a cigar. He is simply a sick man, and does not know it; but the day is not far distant when he will know it.

Particular Diseases Caused by the Use of Tobacco.

Professor Miller, of Edinburgh, says (“Tobacco, and the Diseases it produces”): “As medical men, we know that

smoking injures the whole organism, puts a man's stomach and whole frame out of order ; but it acts mainly, as all other poisons do, on the nervous system. Not only is the physical effect most debilitating ; it tends, in plain language, to paralysis ; for the cases are not a few in which there is not only an approach to paralysis in the trembling of the hand, but in the lower extremities, from no cause on earth but inveterate smoking. If you get a medical opinion in favor of a pipe, it is the opinion of the man who indulges in it. An unbiased and unprejudiced opinion in favor of tobacco is yet to come. The effects of narcotics, mental and bodily, I can fairly testify are nothing but evil. I stand in a position of giving an experienced, as well as an impartial observation. I am standing on unassailable ground, when I say that every man, woman, and child who uses tobacco unnecessarily, to any appreciable extent, is thereby injuring himself, or herself, morally, mentally, and physically, more or less."

Sir Benjamin Brodie, F. R. S., from the result of experiments upon animals, tells us that the poison acts by destroying the functions of the brain. Many observers on the Continent have noticed the inferior attainments of students who smoke. Thus, Dr. Bertillon—the most eminent writer of the day on medical statistics—found in 1855, that, of the pupils then at the Polytechnic School of Paris, one hundred and eight smoked and fifty-two did not smoke. The non-smokers stood higher, intellectually, than the smokers. He furthermore found that the mean rank of the smokers, as compared with the non-smokers, deteriorated, from their entering to their leaving the school.

The "British and Foreign Medico-Chirurgical Review,"

for January, 1861, says: "We see with satisfaction that the Minister of Public Instruction of France has issued a circular, addressed to the directors of colleges and schools, forbidding the use of tobacco and cigars to students."

Physiological experiments have shown (Ed. Smith, British Association, 1864, &c.) that smoking makes the heart beat more rapidly, from the paralyzing effects of nicotine on minute vessels of the system, which no longer offer their usual resistance to the force-pump of the circulation. Nicotine, as for convenience the poisoning principle of tobacco is called, enters the body by the stomach, the lungs, and by the skin; and its effects are uniform by whatever gate it enters. Dr. Edward Smith found that when his pulse was 74 per minute before smoking, it rose, after smoking eleven minutes, to 112. The effect produced by tobacco on the heart is caused by its paralyzing effect on the minute vessels of the capillaries. These being relaxed can no longer offer effectual resistance; and the heart, freed from this control, increases the rapidity of its strokes. This increase of the heart's action results partly also from the paralyzing effect of the drug upon the pneumogastric nerve, which supplies the stomach and lungs with nerve power.

Dr. Drysdale ("Tobacco, and the Diseases it produces") says: "The influence of tobacco upon the eyesight is well known. One of the symptoms produced in acute poisoning by tobacco is blindness; and chronic poisoning gives rise to similar symptoms. Mackenzie, of Glasgow, first noticed that male patients affected with one species of amaurosis were mostly great lovers of tobacco in some form.

“Sichel, of Paris, found some cases of blindness easily cured by cessation from the use of tobacco. Hutchinson narrated, before the Royal Medical and Chirurgical Society of London, thirty-seven cases of a species of amaurosis, where twenty-three of the patients were great smokers; and Wordsworth has confirmed these views of Mackenzie and Hutchinson. In one week I saw, in 1874, at the Royal London Ophthalmic Hospital, two cases of tobacco amaurosis in young men, neither of whom had attained the age of thirty. The first had chewed continually; and the other smoked the enormous quantity of one ounce of shag tobacco daily. Both were completely and irretrievably blind, from this dangerous habit. But weak sight is also commonly caused by snuffing, as well as by smoking and chewing. Tobacco amaurosis is much commoner now than it used to be.”

Mr. John Couper, of the Royal Ophthalmic Hospital, says that “patients with tobacco amaurosis describe themselves as always living in a dim light even at noonday.” Mr. George Critchett, the great London authority on diseases of the eye, tells me that he is constantly consulted by gentlemen for commencing blindness, caused solely by great smoking. He accordingly condemns smoking in most unqualified terms, as most dangerous to human health.

Dr. Kostral, physician to the Royal Factory of Tobacco at Iglau (“Ann. d’Hygiène,” published in 1871), brought before the Medical Society at Vienna, in 1871, some statistics relating to the workers in that government tobacco-factory. “There were 1,942 of these workers, of ages from thirteen to fifty-six. They are only taken into the factory if they are likely to live there for twenty years. The

workshops are well arranged and ventilated ; but during their ten hours of work the operatives are exposed to an atmosphere charged with the dust of tobacco and the vapor of nicotine. This is found to be especially noxious to young workers recently entering, or to those convalescent from sickness. Thus the majority of deaths among the children and work-girls in the first month is attributed to narcotic poisoning.

“ Of a hundred boys, from twelve to sixteen, who entered the works, seventy-two fell sick in the first six months. Their sickness lasted from two to twenty-eight days, and consisted especially in congestion of the brain, different nervous affections, pains in the region of the heart, palpitation, pallor, inflammation of the stomach, intestines, and lining membrane of the eyelids, with fever, lassitude, cold sweats, want of appetite and sleeplessness.”

Dr. B. W. Richardson, F. R. S., says “ that smoking produces disturbances in the blood, causing undue fluidity and change in the red corpuscles ; in the stomach, giving rise to debility, nausea, and sickness ; on the heart, causing debility of the organ and irregular action ; on the organs of sense, causing confusion of vision, bright lines, luminous specks, and long retention of images on the retina ; with analogous symptoms in the ear, such as inability to sharply define sounds, and the annoyance of a sharp ringing sound, like a whistle or a bell ; on the mucous membrane of the mouth, causing enlargement and soreness of the tonsils, — ‘ smoker’s sore-throat,’ — redness, dryness, and occasional peeling off of the membrane, and either unnatural firmness and contraction, or sponginess of the gums.”

Dr. Jolly (*Association Française contre l’Abus du Tabac*)

mentions the strange coincidence of the increase of paralysis and insanity with the ascending figure of the simultaneous consumption of tobacco and alcohol in France. With regard to insanity, Jolly alleges that French statistics show that tobacco is a great cause of that disease. Thus, in 1830, when the amount of tobacco sold by the French government was about 11,000,000 kilogrammes, there were 8,000 lunatics in France; and in 1862, when 28,000,000 kilogrammes were sold, there were no less than 44,000 lunatics in French asylums. "It is to be remembered," says Dr. Jolly, "that the tobaccos used by the Germans and other northern nations are very poor in nicotine, as is also the case with the tobacco of Turkey. French tobacco, such as that grown in Lot-et-Garonne, contains sometimes eight per cent of nicotine, and its use causes deafness, anosmia (loss of smell), amaurosis, weak sight, and progressive palsy. Virginia tobacco (shag, returns, &c.) is very strong, and contains about seven per cent of nicotine. The English and French working-classes, therefore, consume very dangerous kinds of tobacco."

M. Decaise ("Comptes Rendus," *tome* 58, p. 1017), struck by the large number of boys, aged from nine to fifteen years, who smoked, inquired into the connection of this habit with the impairment of the general health. His observations were made on thirty-eight boys; and in twenty-seven of them there were more or less distinct symptoms. Thus, in twenty-two there were various disorders of the circulation, anemic murmurs in the neck, palpitation, dyspepsia, weakening of intellect, and more or less increased desire for strong drink. In three, the pulse was intermittent. Ten of the boys had disturbed sleep, and four suffered from ulceration of the mouth.

Eight of the boys were of ages from nine to twelve ; nineteen of them from twelve to fifteen.

Professor Kirk ("Nerves and Narcotics") says that "narcotics, such as tobacco, are used because of the delicious sense of relief which, even upon the motor nerves being relaxed, steals over the smoker. You see a man who is restless and yet weary. Though careworn or toilworn, he seems as if he could not be still, but must be moving in one way or another. There is a state of uncomfortable irritation in his muscular system, or in the motor nerves that supply it.

"By means of a narcotic, such as tobacco, this irritation is subdued. The supply of vital force from the organic centres to the motor nerves is so much lessened that the irritating movement in them ceases. This gives a sense of relief to the person affected, and he fancies himself immensely benefited. He is not aware that the benefit is purchased at a very serious cost. He has not only lessened the supply of vital force for the time being, but has done a very considerable amount of injury to his vital system. He has, in fact, poisoned the springs of life within him. These will not afterwards give out their supply of force, as they would have done, had the poisonous influence been withheld.

"As soon as these organic nerves rally from the damping effect of the narcotic, the irritation in the motor system returns, and the narcotic is called for anew. Fresh injury is now inflicted for the sake of the relaxed and easy condition desired. This goes on till the vital centres, if at all delicate, totally fail to give supply to the motor nerves, and the sore experience of paralysis begins. The passing sense of ease and tranquillity produced by

the poisonous substance is, however, so great that, even when a man knows he is bringing slowly upon himself such a calamity as this, he will go on indulging in the so-called luxury of the narcotic."

Indictment One.

The first indictment, therefore, against tobacco is, that it is a *poison*. It is not food, and can furnish no nutriment to build up the tissues of the system, or make amends for its waste, or permanently energize its motive-power. It is not a medicine that is safe to use, except in a few critical cases, and that only under experienced medical skill. As an emetic, a decoction of tobacco might expel some active poisons from the system. I knew of one instance in which it was successfully employed to relax the muscles in lockjaw. Habitual tobacco-users, under whatever form, must, therefore, be classed with opium, hasheesh, absinthe, and alcohol users, as those who, to a greater or less extent, and in proportion to the strength or weakness of their constitution, abridge the duration of life, and diminish its volume and capacity, by the introduction of a potent enemy, an active poison, into the very citadel of life.

Indictment Two.

The next indictment against tobacco is, that it is a *needless expense*. The financial question is always a moral question. Money is a trust to be used or abused. Morals, as well as health and life, are involved in the use of the luxuries and indulgences of society. While the habitual use

of tobacco does no good permanently, either to mind or body,—but, on the contrary, a great amount of evil,—it drains the purse, empties the larder and wardrobe, pauperizes the home of comforts and pleasures and luxuries which are innocent, to feed one monstrous appetite, which is deadly in its effects. The national debt of the United States could be swept away in four years by turning upon it this gulf-stream of criminal self-indulgence and needless luxury. The money expended for tobacco in the United States would discharge all the expenses of the religious and educational institutions. While the latter are engaged in building up the life of man and the national character, the former is sapping both with an unfailling drain. Do we wonder that children go ragged, houses unpainted, windows broken, animals left to shift for themselves in the winter's cold, shops bankrupt, farms and dwellings mortgaged, tramps and paupers swelling the list in this fair and prosperous land of ours? It is due, in no small part, to the tremendous wastes which we tolerate, and even excuse, as if they were the necessities and blessings of life, instead of its cancers—the waste by tobacco, the waste by alcohol, the waste by gambling, the waste by fire, the waste by war, by the social evil, by crime and ignorance.

Indictment Three.

The use of tobacco leads directly to *drinking spirituous liquors*. Tobacco is prime minister to alcohol. The pipe is first-cousin to the mug. To take away the cup which is in a man's right hand, while he still holds his cigar in his left hand, is to leave the work of reform half-done. Chewing or smoking necessitates salivation ; saliva-

vation, thirst ; thirst, drinking ; drinking, the dram,— a logical chain of iron, where every link draws his fellow. A burning cigar or pipe heats the lips, dries the mouth, inflames the mucous membrane, parches the throat, and demands relief by drinking. Not to supply the drain upon the fluids of the system would cause intolerable distress. But for this want and craving, water, tea or coffee, or soda would be but a vapid drink. It must be something more strong and piquant—rum, gin, brandy, or whiskey, or at all events wine, beer, ale, or cider. As a well-nigh universal rule, when a boy begins to smoke or chew, he begins to drink liquors of some kind. Nor is the social habit without its effect here. While one treats his boon-companion to a cigar, his companion returns the compliment by treating him to a glass at the bar. Cigars and liquors are sold and used off the same counter, that where one is used, the other may likewise be used, and probably by the same parties. Such is the adroit foresight of the dram-seller.

Indictment Four.

The use of tobacco is *an indignity to the female sex, and an outrage upon the common laws and usages of politeness.* I shall not discuss here the question whether a man can be a gentleman, and smoke or chew. Suffice it to say that every person conversant in society knows full well that the customs of a truly polite and refined community are often set at defiance ; that the offensive spittoon corrupts the air of the sitting-room and parlor ; that, worse still, the floors of churches, court-houses, cars, and steamers reek with the filthy expectorations of the chewer or smoker ; that the sweet air of heaven, in which all have

a common right and interest, is blighted by the trail of smoke which the cigar or pipe leaves behind it ; that the dinner-tables of college commencements or private festivity are enveloped in clouds of poisonous and acrid smoke, painful to every sense, except to those whose senses have by long usage been dragooned into calling bitter sweet, and sweet bitter. Even the sacred haunts of the Muses, the libraries of the learned, the parlors of elegant life, as well as the exchanges of business, and the offices of trade and finance, are blasted by these fumes of the weed, which are bad enough when fresh from the lighted cigar, but which, grown stale, are the very opposite to airs from Araby the blest.

It is true some women of old smoked their pipes, and some still use the more dangerous cigarette ; but as a general custom women are exempt from the evil. They detest and loathe it in their fathers, husbands, and sons, as a general thing, though some may be so weak when the point-blank question is put to them, whether they like the smoke of a cigar or not, as to say, contrary to their real feeling, that they do, while at heart they hate it. How can pure and refined women endure the presence of men, such as we meet with every day in the streets and cars and stores, whose breath is a stench, whose lips are coated over with the remains of the quid, and whose clothing exhales the stale effluvia of countless dead cigars ! Yet such are the companions which King Tobacco furnishes to the scenes of private life — to the parlor, the table, the bridal-chamber, the sick-room ; and to the public assembly — the church, the sociable, the ball-room, and the concert-hall ! Can we think it strange that some of the most eloquent voices lifted up against this widespread social

abuse should be those of noble women, whose senses have been outraged, whose health has been undermined whose children have been born with a degenerated constitution, because the lords of creation have been pleased to indulge from boyhood in an unhealthful and repulsive habit?

Physicians very generally agree in the opinion that much of the positive illness, and still more of the lingering invalidism of women, are chargeable upon the tobacco pestilence. Their more sensitive frames and delicate constitutions peculiarly expose them to this noxious influence. While the hardships and deprivations of poverty,—immensely enhanced by the waste of means and money thus engendered,—the curse of the dramshop, the fire-water, and the fire-pipe, inflicted on the mothers, the wives, the daughters, and sisters of the land, are offences that cry to heaven.

Indictment Five.

The use of tobacco becomes *an enslaving* habit. Like the deadly boa-constrictor, when it once winds its fatal folds around its victim, it can scarcely ever be shaken off; and even when it is, it always lies in wait to steal back and regain its hold upon its subject at the opportune moment. Drunkenness itself is not more a passion than chewing and smoking. He who has once formed the habit is ever after a slave, and has a master who says, "Come," and he cometh, and "Go," and he goeth. The victim has parted with his manly freedom forever. He has a chain, as much as the Algerine captive, round his body and round his soul. The first cry, so jailers say,

which arrested criminals utter after their imprisonment, is for *tobacco*, and the second is for *employment*. How often and painfully the slaves of this degrading habit desire to break their chains, but — alas, in vain ! It has a fascination and compulsion which they cannot resist. They would give worlds to throw off the hateful bondage, and be as free as when they came from their mothers' arms ; but they have sold their birthright, not even for an honest mess of pottage, but for a smoke, for an unsubstantial puff, for the titillation of a few morbid nerves, that yields no nourishment to the system, no strength, no health — but, on the other hand, entails weakness, morbidness, disease, expense, sickness, and haply, death, and, worse than all, opens the door to a throng of temptations.

Indictment Six.

The tobacco plague is *a perversion of the gifts of God*, and turns his blessings into curses. As a medicine, as a poison, it may have, in rare instances, its place and its use, as alcohol, as arsenic and other potent poisons have, — but as an article of daily and universal indulgence, never. Its cultivation exhausts the soil more than almost any other crop. It subsidizes the commerce of the world as opium does, as liquors do, to enslave and impoverish mankind. It absorbs a vast amount of human labor and capital, to load the shoulders of men with new burdens, grievous to be borne, and to implant in the human frame pains and diseases not native to our race. It cultivates selfishness of character, self-indulgence, absorption in one's own pleasure, and disregard of the feelings and

comfort of others. The finer and nobler qualities of character perish under the predominance of a habit which steadily caters to one's own gratification, regardless of what others think or feel. A civilization given over to tobacco and spirituous liquors, as ours largely is, never can ripen and refine those traits which, when aggregated and multiplied, will constitute the kingdom of God on the earth.

Indictment Seven.

But the evil of evils of this deleterious habit is *the deterioration which it causes to the successive generations of the human race*. If the habit let go its victim at the grave, and that was the end-all of its malign influence, we could look with more complacency on its evil consequences. But that is far from being the fact. The well-nigh unanimous testimony of medical and scientific authorities is, that the children of parents addicted to the use of tobacco inherit a weakened or diseased constitution, and are exposed to physical penalties from which other, more favored children are exempt.

In an article in the "Dublin University Magazine," the authority of Herbert Spencer, Dr. Rumsey, and Dr. Morgan is quoted in support of the position that the stamina of the town populations in England has deteriorated; and among other causes, the present evil is cited. "It would be foolish," says the article, "to attribute this lowering of physical stamina to the sole influence of tobacco. The causes which have produced this result are no doubt manifold and complex; but for the reasons we shall adduce, we think it would be equally foolish to say that the Indian weed had no share in it. . . . Yet fashion is

so strong, that this custom is increasing, and one who walks through the streets of a city may see that it is no longer confined to men, but is daily becoming more common amongst boys." . . . There is not a solitary physician who will contradict the statement, that these young smokers are inflicting irreparable injury upon their constitutions, are poisoning the very springs of life, and will transmit to their descendants weaker bodies and weaker brains.

"Every medical man will testify that this juvenile smoking is an unmixed evil, detrimental alike to body and mind, and pointing inevitably to racial degeneracy."

Sir Benjamin Brodie ("London Lancet") asks: "What will be the result if this habit be continued by future generations? It is but too true that the sins of the fathers are visited upon their children. We may here take warning from the fate of the Red Indians of America. An intelligent American physician gives the following explanation of the gradual extinction of this remarkable people. One generation of them became addicted to the use of the fire-water. They have a degenerate and comparatively imbecile progeny, who indulge in the same vicious habit with their parents. *Their* progeny is still more degenerate; and, after a very few generations, the races cease altogether. We may also take warning from the history of another nation, who, some few centuries ago, while following the banners of Solyman the Magnificent, were the terror of Christendom, but who since then, having become more addicted to tobacco-smoking than any of the European nations, are now the lazy and lethargic Turks, held in contempt by all civilized communities."

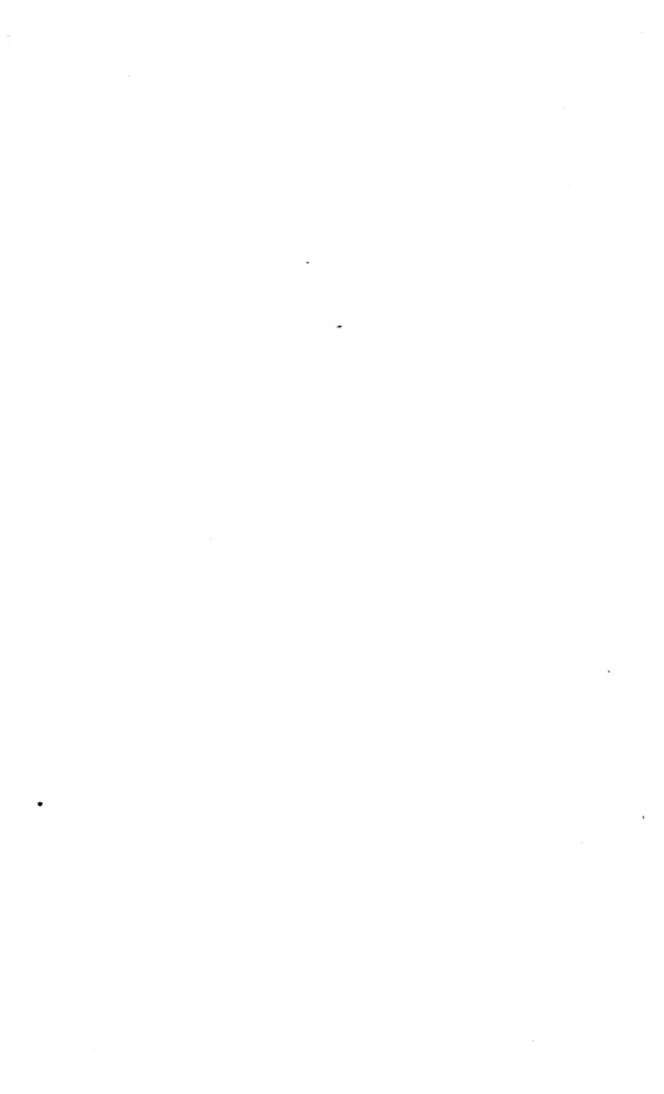
The "Dublin University Magazine," on the *Tobacco*

Question, further says: "All medical men agree that all smoking by the young is *excess*, and is the sure forerunner of dyspeptic horrors. It is probably the greatest source of physical evil that the next generation will have to lament; for its witcheries are so seductive that the victim is willing to attribute to any cause, rather than the true one, the mischief which it is working on his constitution. The common *sequelæ* — the shaking hand and palpitating heart, the impaired digestion, the intermittent pulse — are complacently ascribed to overwork, to the railway speed at which we live, to the incessant demands made upon our powers by a world which is 'too much with us for resistance to importunities that never cease.' Like father like son. The fathers have eaten sour grapes, and the children's teeth are set on edge. The indulgence in tobacco by our youth and young men will affect not only themselves, but the future race of England. Fortunately for us, it is a vice almost entirely masculine. If the daughters of England were to commence weakening their vital forces by the use of nicotine, we should find the children of another generation with a hereditary taste for poison, and a diminished power of resisting its inroads; they would be unhealthy, dyspeptic, and nervous."

Dr. Richardson says: "I do not hesitate to say that if a community of both sexes, whose progenitors were finely formed and powerful, were to be trained to the early practice of smoking, and if marriage were confined to the smokers, an apparently new and a physically inferior race of men and women would be bred up."

Conclusion.

We thus see that the dangers to health and life, to character and prosperity, to happiness and the purposes of human existence, are such that no man can with safety abandon himself to the weed in any of its fashionable forms of use. The testimony of the scientist, the physician, the moralist, and the patriot, is nearly unanimous against smoking and chewing. The tobacco pest has acquired such enormous proportions in all civilized communities that it has awakened the anxiety of every disinterested lover of his race. Societies are organized in Great Britain and America to stem the growing evil. The medical profession are alarmed at the inroads made by this insidious narcotic upon the stamina of the rising generation. Numerous publications are issued in behalf of reform. And as every other gigantic evil which has threatened the stability and peace of modern civilization has gone down before the rising intelligence and moral sentiment of the age, we may rationally hope that this cancer upon the health of the body politic and social will be exterminated. Meantime it becomes the duty of every one, conscious of the truth upon this subject, to bring first his own conduct into harmony with his convictions; and in the next place to seek to establish the same convictions, and promote the same conduct, in society at large. It is the noble sentiment of Dr. Willard Parker: "I do not place my individual self in opposition to tobacco; but science, in the form of physiology and hygiene, is opposed to it — and science is the expression of God's will in the government of his work in the universe."



A LECTURE ON TOBACCO.

BY

RUSSELL LANT CARPENTER, B.A.

*DELIVERED BEFORE THE MAYOR AND PEOPLE
OF BRIDPORT, ENGLAND.*

A LECTURE ON TOBACCO.



MR. MAYOR AND FRIENDS :

IT might seem a trivial subject on which to lecture — a weed. But tobacco claims to be *the* weed, just as the trade in intoxicants claims to be *the* trade ; and the *weed*, like the *trade*, is of great importance to the public revenue and affects the national character. The customs paid on tobacco, in the year ending March 31, 1881, amounted to £8,658,947 ; so that, if this luxury is an innocent one, it may be viewed with complacency. The sale of it gave some employment to 303,816 dealers, who paid £79,893 for the privilege, — to say nothing of the thousands engaged in 597 manufactories. If, then, it is attacked, there is a great host to defend it. Much has been written respecting it ; but I am not aware that either its merits or demerits have met with any systematic examination in Bridport. Like alcohol it is an intoxicant, or poison ; but while Temperance organizations have been active in assailing liquid intoxicants, they have left intoxicating fumes pretty much to themselves. In this country, at least, far more poverty and crime are chargeable on drink than on smoke ; and those who think it too much

to ask that a man should give up two bad habits at once have let the reformed drunkard smoke his pipe in peace. Many even suppose that smokers are less likely to drink, and therefore the habit is often encouraged in Temperance coffee-houses. On this point we may express an opinion by-and-by.

If there is truth in a quarter of what has been said of the bad effects of tobacco, it seems strange that those whose calling it is to be "watchmen" and to "warn the people," have been so silent respecting it in the pulpit. This reticence may partly arise from our conventional notions. *Wine, strong drink, drunkenness, &c.*, are "Scripture words." We read denunciations of them in our devotional services; but those who think more of the letter than of the spirit of the Bible deem it unscriptural and undignified, if not rather profane, to preach about tobacco! Its triviality is its safeguard; there is levity in smoke. How can you fight with a cloud or a puff? And if it is treated seriously, what refined language can fully deal with a habit which, in itself or its results, is often so filthy? Many, therefore, avoid the subject because they do not know how to speak upon it without causing more displeasure than benefit; while others are already slaves to the habit, and have no desire to question its propriety or expose its abuses.

Meanwhile *the weed* keeps on growing. While less tobacco is taken in the form of snuff, there has been a great increase of smoking. For this, three reasons may be given. (1) We have had far more intercourse than formerly with smoking nations, especially the Germans. (2) The facilities for outdoor smoking are greatly increased by the invention of lucifers; in my early days

those who wanted to strike a light had to use a piece of steel, a piece of flint, and a piece of tinder, besides a brimstone match. And (3) The more prosperous condition of the country has been accompanied by greater indulgence in luxuries. Our liquor bill, as well as our tobacco bill, has about doubled within the last forty years. But while the consumption of intoxicating drinks has increased, there is also an increasing conviction of the evils resulting from them, which has led, in thousands of instances, to their disuse; and those who can expose the injurious effects of narcotics ought not to be silent in despair. It is my intention to say a little on the nature of tobacco, and to consider its influence on *health*, on *property*, on *freedom*, and on *morality*. Viewing it thus seriously, I should regard my theme as quite suitable for the pulpit—as much so as the opium-question; but, on many accounts, I prefer to address my fellow-townsmen from this public platform. It will be my duty to speak without respect of persons—and without disrespect to persons. It would be an ill compliment to those who use tobacco if I took for granted that they would wish me to express myself timidly or obscurely. I invite the criticism of those who are not ashamed to give their names, and am desirous to correct any mistake. Having to speak on so many branches of the subject, I can do full justice to none; but it is my wish to waken inquiry, and to lead you to read and to think on the subject, and then to express your convictions, and act up to them.

The tobacco-plant belongs to the botanical order of *Solaneæ*, or the deadly-nightshade tribe, some species of which are to be found in almost every region of the globe: it comprises henbane and other plants noted for

narcotic qualities. Tobacco was used in Persia long before the discovery of America ; it is supposed to have been introduced into England by Sir Walter Raleigh and the settlers who returned from Virginia, about the year 1586.¹ They also imported a plant of the same order, which has been of immense importance to Europe — the potato — of which the leaves, stem, and fruit contain the narcotic principle ; though the tubers of the roots, when cooked, are so useful as food. What a contrast between a steaming dish of potatoes and a cloud of tobacco-smoke !

Whether or not smoking is a poisonous habit, tobacco is unquestionably a poison. It is not every poison that kills rapidly. There are noted poisons to which persons gradually accustom themselves, and live on, sometimes to old age. Mr. Solly, F. R. S., remarks : “The opium-eater can take an ounce of laudanum for his morning’s dram, and feel it not ; when the eighth part of it would be fatal to the uninitiated.” In Upper Styria, it is a custom to take arsenic, which in small doses has certain pleasant effects ; and some Styrians may say that they should die if deprived of their arsenic. While many have been killed by raw spirits, others get to drink them habitually, as though *eau de vie* was really the “water of life.” But this does not prove that these poisons are not poisons, nor even that the system which is gradually used to them, and

¹ The earliest detailed account of tobacco in England is said to be in “Joyfull newes oute of the newe founde worlde. Englished by John Frampton, London, 1577,” which contains a translation of a Spanish work, and also of a French treatise, relating the introduction of it into France by Nicot (whence *nicotine*, &c.), who met with it in Portugal about 1560. Marvellous cures, especially of wounds, ulcers, and sores, were attributed to it.

is so enslaved by them that abstinence is a terrible privation, is none the worse for them.

“The constituent part of tobacco which makes it at once so agreeable and so dangerous to health is nicotine. . . . One tenth of a grain of it will kill a middle-sized dog in three minutes; and . . . it has been calculated that in a single cigar there is enough nicotine, if given pure, to kill two men.”¹ Persons have died in a few hours after accidentally swallowing tobacco or a little snuff.² The oil formed in burning it is used by savages to poison their arrows. “A little brother and his sister amused themselves by making soap-bubbles with their father’s old pipe; the boy died from imbibing the essential oil that was in it, and the girl was dangerously ill.”³ In 1879 an inquest was held on a boy of fourteen, who had been smoking a much-used tobacco-pipe, and died the next morning.⁴ A man in Paris had been cleaning his pipe with a knife with which he accidentally cut one of his fingers; in a few hours his hand and arm became inflamed, and amputation afforded the only chance of saving his life.⁵ Many cases are recorded in which the votaries of tobacco have put the scrapings of their pipes on children’s sores as a remedy, and have caused their death. All poisons have certain medicinal qualities, and infusions of tobacco are used in some skin diseases;

¹ “Tobacco, and the Diseases it Produces,” by C. R. Drysdale, M. D., &c., 1880, p. 5.

² “Monthly Letters of the Anti-Tobacco Society,” &c., October, 1879, and April, 1880. Dr. C. Clay’s “Two Lectures on Tobacco,” 1842, p. 12.

³ “The Workman’s Pipe.” A Lecture by the Rev. Dr. Ritchie. Third edition, 1878, pp. 49, 50.

⁴ “Monthly Letters,” p. 168.

⁵ *Ibid.* p. 159.

but, unless applied with judgment, dreadful consequences have ensued. Dr. Clay says (p. 12): "I have been called to children writhing in horrid convulsions from having had the decoction of tobacco applied for the itch and scald-head, and I have always experienced great difficulty in restoring them; three instances in my own recollection were attended with fatal results." Soldiers, wanting to disable themselves from duty, have applied a moistened tobacco-leaf to the armpit, inducing extreme prostration and sickness. The physician of a government tobacco-factory at Iglau, in Moravia, reported that "of a hundred boys who entered the works, seventy-two fell sick in the first six months;" and deaths are not infrequent there from narcotic poisoning.

The ill effects of a poison are not to be measured by the number of deaths of which it is the obvious cause. It is not easy to estimate the amount of sickness and injury resulting from tobacco; but medical men warn us of its tendencies. All smoke is injurious to the eyes; but tobacco, which acts on the optic nerve, frequently causes blindness, and color-blindness, so dangerous in railway signalmen. The eminent London oculist, Mr. Critchett, says that he is constantly consulted by gentlemen for commencing blindness, caused solely by great smoking. Others bear a similar testimony.¹ If not too far advanced, the malady has been removed by total abstinence from tobacco. The smoker's sore throat and diseases of the tongue and gums are also notorious. "Nicotine enters the body by the stomach, the lungs, and the skin; and its effects are uniform by whatever gate it enters." "The

¹ See Dr. Drysdale, p. 9; and "Narcotism," No. 31, p. 3, No. 55, &c., published by the Anti-Tobacco Society.

heart beats more rapidly from the paralyzing effects of the nicotine on the minute vessels of the system, which no longer offer their usual resistance to the force-pumps of the circulation." Dr. E. Smith found his pulse rise from 74 to 112, after smoking eleven minutes. Another physician took count of his pulse every five minutes during an hour's smoking, and computed that it had beat 1,000 times in excess.¹ Dr. Townson, a physician to insurance companies, stated that nearly every one of those whom he had rejected, after examining them for life policies, had brought on an affection of the heart through excessive smoking.² Brain diseases, and those that result from impaired digestion, are frequently produced by tobacco. It is no proof of its harmlessness that many who use it are as healthy as, or even more healthy than others who abstain. Many soldiers live longer than others who have never endangered their lives in war. No one now doubts that foul air is noxious; yet in ill-drained towns, where hundreds every year fall its victims, others are to be found enjoying better health, and reaching a greater age, than many who have wholesome abodes. Thousands die every year from alcoholic poisoning, and the probabilities of life are, on the whole, far better for abstainers than for drinkers; and yet there are drinkers who are more healthful than many abstainers. There is a great difference in the susceptibility to poisonous influences in different persons; and those who offend against the laws of nature in one respect may be observant in others; yet any habit that is unwholesome must be more or less hurtful. The first time

¹ "Narcotism," No. 20.

² "Monthly Letters," p. 267. See also p. 259, "The Tobacco Heart."

that any one uses tobacco (except, perhaps, those who have been brought up in its atmosphere) its noxious properties are evident enough ; and if these seem to pass away — if “ Nature withdraws her monitor when the warning is unheeded ” — the evil is not removed because it is stored up secretly.

It is pleaded that were wholesomeness our rule, other things in continual use should be abandoned — that tea and coffee, *e. g.*, are as injurious to some as tobacco is to others. But “ two wrongs ” — or even twenty — “ do not make a right.” There may be excess, no doubt, in “ the cup which cheers but not inebriates,” and many weaken their digestions and impair their nerves by tea or coffee drinking ; yet I never heard of any one being killed by swallowing a few leaves of tea or grains of coffee. There is nothing but what is good for something, and we have not denied that tobacco has medicinal uses ; but those who take medicines when they are not ill may become so ill as to get beyond the help of medicine ; those who play with a poison may find that the poison makes them its sport and its victim. Tobacco has been commended as a disinfectant, destroying the germs of disease, and as a prophylactic, rendering the smoker insensible to infection ; but though it kills the blight on plants, it may not destroy that which blights mankind ; and insensibility to danger is by no means safety. Indeed, it is said that smokers, from their impaired vitality, are the more liable to take a disease ; while it has often happened that cures have been checked, when the atmosphere of the room has been tainted with smoke. The oblivion of pain and discomfort resulting from tobacco is often a doubtful benefit. If a poor man smokes to allay his hunger, he forgets that hunger should

stimulate him to procure food. It is a mockery, if a man needs bread, to give him a *weed*. Tobacco does not feed him ; and because he is not well fed, tobacco is more injurious to him than to his well-nurtured neighbor ; he becomes emaciated. The smoker may feel warmed, because his sense of cold is numbed ; while the thermometer would show that he has really lowered his temperature. If any one smokes to overcome an unwholesome smell, he only adds to the nuisance ; the ashes and smoke are two dirt the more. The carbonic oxide from the imperfectly kindled tobacco is an additional element of danger. Smoke blinds in more senses than one.

Tobacco is taken in different forms. At one time *snuff* was in fashion. Some great men have been great snuffers, — among them Napoleon I., who kept it loose in his pocket ; his life was shortened by it. Lunatics are usually very fond of snuff. It is the dried leaf and part of the stalk of tobacco, ground down ; but it is also adulterated with other irritating substances. Carlyle told Mr. W. Maccall that he had been cured of snuff-taking when he was four years old. Some old ladies offered him a pinch from their box. “A succession of explosions followed, and,” said he, “I thought my head was blown off.” At the age of eleven he unfortunately became a smoker. It is no compliment to call a person “snuffy.” The snuff he drops hurts our noses, his nose offends our eyes, and the habit is not only unpleasant, but injurious ; it often results in apoplexy.

Another use, or abuse, of tobacco, is *chewing*. This is not a custom in England, except among sailors, but Americans are notorious for it. In the prison at Blackwell's Island, New York, a few years ago, there were not a

dozen out of 936 males who did not chew tobacco, and about 162 pounds were consumed every fortnight. When the allowance was stopped they refused to work, till solitary confinement and a bread-and-water diet brought them to terms.¹ Chewing, of course, involves spitting; and saliva impregnated with tobacco is not a pleasant sight. All travellers in the United States are struck with the spitting. Mr. White, of New York, in his recent work on "England," noticed with pleasure the absence of spittoons; for across the Atlantic one sees them everywhere — in steamers, in homes, in churches, in the capitol — but also very obvious tokens that they are not always used when they should be. The dyspepsia, which is so prevalent in America, is no doubt aggravated by this nasty practice, which no one justifies.

Smoking is the usual mode of treating the weed in this country. Its *distinctive* evil is the injury that it inflicts on others. The smoker has neither the power nor the wish to consume his own smoke; all in his company must share it — will they, nill they. There is, however, a special harm to himself. The saliva must absorb some of the smoke. He either spits it out or swallows it. If he swallows it he takes an infusion of tobacco; mild it may be, but the repeated dose is not harmless. If he spits, he practises a nauseous habit, and wastes the saliva which nature gave him for important uses. Smoking dries the mouth and throat, and causes thirst. Those who like the narcotic intoxicant do not necessarily desire alcoholic in-

¹ "Monthly Letters," p. 104. On the other hand, after the late terrible fires in Michigan, the convicts in the Ohio State prison sent a gift to the sufferers of a hundred dollars — the result partly of their relinquishment of tobacco.

toxicants ; the effects are different. The Mohammedans, who are great smokers, are prohibited from taking wine, and may prefer the dreamy influence of the weed. On the other hand, publicans always sell tobacco ; which, if they thought that smoking hindered drinking, they would not care to do. The pipe and pot go together. I wish that the Three Cups¹ would stand on their own merits and discard the pipe.

Drinkers are often ignorant as to what they drink, so are smokers as to what they smoke. There is a remarkable difference in the properties of different kinds of tobacco, as has been proved by analysts. The dried leaves from various districts in France yielded from 4.64 to 7.96 per cent of nicotine ; while in the Havana leaf there was only 2 per cent ; the Virginia weed contains three times as much as that of Maryland.² But of course those who ask for a *Havana* cannot be sure of what they may get. It has been lately stated that an immense quantity of cheap European tobacco is shipped to Cuba, to be made up and exported as Havana cigars. The Act of Parliament against the adulteration of tobacco informs us of various noxious articles used by unscrupulous manufacturers. Some, however, are comparatively innocent, such as sawdust, peat, and seaweed ; so that the workman's bad tobacco may not be as poisonous as his neighbor's best Virginia. When I was in Baltimore I went into the great tobacco-warehouses. A pig was wandering about — she seemed quite at home there ; the leaves were being pulled

¹ A Temperance coffee-house for the sale of tea, coffee, and cocoa (three cups), &c.

² See Watt's "Dictionary of Chemistry," v. 45, quoted in "The Tobacco Question," p. 6.

by unwashed negroes — without pocket handkerchiefs. But those who do not object to poison cannot be expected to mind dirt.¹

“Strong drink” used to be thought essential to bodily strength. Masters insisted on their servants drinking it, lest they should be inefficiently served. Even scientists shared the delusion, till working-men put the matter to the proof, and taught their teachers that more work, in the long run, could be done without it. Tobacco, being a modern innovation, has not got this prescriptive praise. Few, whose opinion is worth anything, will maintain that it is essential to health or active duty; on the contrary, those who are training for various manly exercises declare it to be detrimental. It is said, however, to “minister to a mind diseased,” to soothe the troubled nerves, and to enable a man to do a larger amount of intellectual work. Many literary men smoke, it is true, and the smoke-loving Germans have been famous for their industry as scholars; but it does not follow that they might not have been stronger in mind without it. We have been told by some, who profess scarcely to smoke at all, that when they are exhausted by study or composition, a few whiffs will quite revive them, and enable them to pursue their work. Moderate drinkers tell us the same about wine. But we

¹ A writer in the “New York Tribune” states that five eighths of the cigars sold in New York as imported articles are made in squalid abodes in that city. The tobacco is wetted down and is spread on the floor over night in the rooms where the families eat and sleep; and they tread on it in their domestic operations. In the morning, while it is yet damp and soiled, it is stripped from the stems by the children. This is not pleasant information for the smokers, but our pity is due to the children who have to live and work in the poisoned atmosphere.

fear our foes when they bring us gifts ; one is suspicious of the benefits said to be conferred by alcoholic or narcotic poisons. They silence the warnings of exhausted nature. Even if the person under their influence seems to be highly exalted or delightfully composed, we want to know what the reaction will be. Those who rely on smoke find in time that they cannot do without smoke ; and they may perhaps experience the truth of what was said by the famous Abernethy, that it stupefies all the “senses and all the faculties, by slow but enduring intoxication, into dull obliviousness.”

Its bad effects are most obvious in the young. In 1855, 102 of the pupils in the Polytechnic School in Paris smoked, and 58 did not ; yet of the 20 who stood highest in the examinations, there were only six smokers and fourteen non-smokers. Similar experiences led the Minister of Public Instruction, in 1860, to issue “a circular addressed to the directors of the colleges and schools throughout the empire, forbidding the use of tobacco and cigars to students ; giving as a reason that ‘the physical as well as the intellectual development of many youths has been checked by the immoderate use of tobacco.’”¹ It has been lately reported² that “the experiment of permitting the naval cadets to smoke at the Naval Educational Establishment of the United States, at Annapolis, having been fairly tried for three years, has been found injurious to their health, discipline, and power of study. The medical officers of the Academy and the Academic Board therefore urge, in the strongest terms, that this permission be revoked.” These are important testimonies ; but *men* who

¹ “May Young England Smoke ?” p. 19.

² “Monthly Letters,” p. 265.

indulge in the weed must not expect *boys* to abstain from it.

Let us now inquire whether the *wealth* of the country is increased by the use of tobacco; because we do not regard *health* as everything. In this town, as in most others, there are occupations which shorten life, but which seem to be necessary. Men must get a living—though it is sad if they get a *dying* instead. In these cases we advise delicate persons to take to other employments, even at lower wages; and we urge manufacturers to adopt plans to make the work more healthful, but we do not wish it stopped. Now is the *nation* the richer for tobacco? The *government* seems to be—it gets more than eight millions a year by it; but the gain to the exchequer may be a far greater loss to the people. Its income from beer, wine, and spirits is more than three times as much; but no one now doubts that the nation would be far richer if it spent its money more wisely. Government is to secure good order, and it cannot really benefit by that which promotes disorder or idleness; though as long as these practices continue, it is fair that they should be restrained by taxation. As to the growth of tobacco, since it is not permitted at home,¹ whatever profit comes from it goes to the foreigner. The tobacco consumed in the United Kingdom in 1880 was 49,323,769 lbs. or 1 lb. 6½ oz. a head²—men, women, and children, smokers and non-smokers. The duty on a pound

¹ It is prohibited by statutes. Quantities not exceeding half a pole in extent may, however, be grown in gardens, for scientific use.—“Monthly Letters,” p. 204

² See the “Twenty-fourth Report of the Commissioners of Her Majesty’s Inland Revenue, for the year ending 31st March, 1881,” Appendix, p. xxv. In 1841 the consumption was 23,096,281 lbs.,

of common tobacco is 3s. 6d. The original cost when imported is about 6d., making four shillings, — but this is the retail price of the common sort, apparently leaving no profit to the manufacturers and venders; but the weight is greatly increased in the process of manufacture.¹ Taking this into account, and also the great quantity smuggled, it is supposed that 75,000,000 lbs. are sold, making 2 lbs. 2 oz. on an average; and reckoning the cost of cigars and the more expensive tobaccos, pipes, meerchaums, &c., 10s. a head will be under the mark. This would make for Bridport about £3,400 a year. Even if we said £1,000, it would be a very large sum for a town which is complaining of its poverty, and where there is such a difficulty in raising £300 a year for education. Smoking is by no means so expensive a habit as drinking, but it wastes a great deal of money as well as

or 13 $\frac{3}{4}$ oz. per head. The maximum was in 1877, before the increase of the duty, viz., 50,775,032 lbs., or 1 lb. 8 oz. per head. From the Customs' Returns in 1880-81 it appears that there were imported 47,968,448 lbs. of unmanufactured tobacco at 3s. 6d. a pound duty; manufactured tobacco (including "home" in bond), at 4s. 4d. to 4s. 10d. duty, 156,951 lbs.; cigars, at 5s. 6d., 1,122,325 lbs.; snuff, at 4s. 1d. to 4s. 10d., 310 lbs.; free for agricultural purposes, 75,154 lbs.; total, 49,323,188 lbs. 426,856 lbs. were admitted free for manufacture in bond; while 375,767 lbs. of snuff and 103,785 lbs. of manufactured tobacco were exported on drawback.

¹ The "Journal of the Statistical Society" (September, 1872) reckoned the increase at 58 per cent. ("Narcotism," No. 36.) If 33 per cent. is reckoned for moistening, 25 per cent. is added for adulteration ("Narcotism," No. 26). The Inland Revenue Report (Appendix, p. xxiv.) states that in 1879, out of 276 samples examined, 136 were adulterated; in 1880, out of 148 examined, only 53 were adulterated; these were mostly smuggled. In only one manufactory was there any evidence of adulteration. The leaf is twopence or threepence below its normal price.

of time. Those who smoke tenpenny or even sixpenny cigars, would soon dispose of 10s. 6d. a week, or £27 6s. a year; but the few pence weekly spent by very moderate smokers among working-men, is often more than they can afford. As for that, many spend on food more than they know how to afford; but food brings them a return. A well-fed man can do more work than an ill-fed one; while a smoking man does not do more work than a non-smoker. On the contrary, the smoker is apt to lose time; the narcotic makes him take things too easily; and the *tendency* of smoking is, more or less, to paralyze his faculties, and to shorten his working life.

It may be said that the money is not lost; the seventeen millions are not flung into the sea. About half goes to the government; the rest is divided among the growers, the importers, the adulteraters, and the venders. As to the workmen, the employment is unwholesome, and a much larger share would go to them if the money was spent on other manufactured articles. If the sale ceased, the tobacco-buyers would either buy something else, or pay their debts, or save for bad times; so that the country would be as prosperous—more so; as much money would circulate, and more would be produced; because nothing comes of tobacco but smoke and ashes and noxious gases.

Tobacco not only hinders a great deal of productive labor, but it is indirectly destructive of property. It is impossible to compute the fires caused by smoking—fires in bedrooms, workshops, warehouses, stables, barns, ricks, churches, ships, and mines—from the hot ashes of the pipe or cigar, or from the matches used for lighting them. Dr. Ritchie, after stating that in 1860 53 fires

occurred in London alone from smoking, adds: "I have more than once seen a carpenter, under a London station, stop his work, light his pipe, and cast the half-burnt match among the shavings." In 1869 pipes and lucifers were taken from the pockets of 58 workmen in one day, as they were entering powder-works at Hounslow. Many explosions of gunpowder have this cause. Last July the government powder-magazine at Mazatlan, Mexico, was blown up, with many houses round it, and over seventy lives were lost through the carelessness of a soldier who dropped his lighted cigar.¹ Cases have frequently been brought before the magistrates, of miners who have incurred fines or imprisonment through taking their pipes and matches with them into dangerous coalpits. At the Blantyre explosion (July, 1879), which resulted in the death of 28 persons, the Inspector of Mines reported that, near the bodies, pipes had been found, with tobacco partly smoked, and lucifer matches.² This is but one instance among many. Those who work in constant peril are too apt to become reckless; but the indolent carelessness, which is considered one of the charms of smoking, greatly enhances the danger. Offenders have sometimes pleaded that they were not even aware that they were smoking, so unconscious were they of what is habitual.

We shall next consider whether the use of tobacco promotes or hinders *freedom*. Freedom is very dear to Britons, who not only boast that they "never will be slaves," but also that —

"Slaves cannot breathe in England; if their lungs
Receive our air, that moment they are free."

But this free air is something different from smoke. For

¹ "Monthly Letters," p. 272. ² "Monthly Letters," pp. 162, 193.

every man to do as he likes is not freedom,—nor anything else, for it is an impossibility: Lawlessness and anarchy are not freedom; and for the strong to oppress the weak is tyranny. Freedom co-exists with the observance of laws, written or unwritten, which do wrong to none, and which promote “the greatest good of the greatest number.” If any one compels another to do that which he is not lawfully bound to do, he so far robs him of his freedom. When, in the old drinking days, a host would lock the door, and tell his guests that no one should leave the room till all his wine was drunk, that was a tyrannical as well as a disgusting usage. When bullying workmen have forced their comrades to drink, *that* was tyrannical. Is it a less tyranny when we are compelled to smoke? The Temperance movement has secured liberty for those who have moral courage to assert it, when they do not choose to drink intoxicants. If an abstainer is in a room with drinkers, he may disapprove of what they are doing, and if they drink to excess, he may be in danger from them; but what is in their cups does not go down his throat. If he is in the company of tobacco-chewers, their spitting habits may disgust him, and perhaps imperil his clothes; but he is not forced to chew. But if he is among smokers, he is compelled to be smoked, if not to smoke; and even when pipes and cigars have gone out of sight, they may not be out of smell. The nuisance which smokers cause does not pass away with them. Railway carriages, in which they had no right, retain the stale smell which they have left. If an ill-mannered passenger puts his dirty feet on a cushion, the dirt may rub off when it is dry; but who can brush out the ill odor of tobacco? It clings to cloth, as those know who employ a smoking tailor, or whose clothes are narcotized by smoking companions.

Now if the qualities of tobacco were innocent, it might be questioned how far the dislike of those who think it *disagreeable* ought to be regarded. We must not forbid the doctors to prescribe assafætida because of its nauseous smell; gourmands would not like to be deprived of their *high game* and mouldy cheese; nor would the lovers of onions consent that their ill odor should condemn them. It is not wise to be too squeamish. If a little sickness or faintness was an insuperable evil, we should never cross the sea or get seamen for our ships; nor would medical students pass the dissecting-room. But if you have gone with me thus far, you will agree that those who object to get accustomed to tobacco-fumes have the right on their side; since smoking is not such a beneficial custom that those who dislike it are bound to become parties to it. When a well-bred gentleman smokes, he aims to do it where it will not cause annoyance (though this will not be always as easy as he hopes), and is careful not to sacrifice the health and comfort of others to his own pleasure. No doubt there are gentlemen of high breeding who are *not* thus particular. It is said that *good breeding* considers what is due to others, — *high breeding*, what is due to one's self. Each has its uses; both should be combined; for high breeding, when it is not good, is apt — like *high game* — to be offensive; and the high-bred nobleman, who is the slave of tobacco, is, in that respect, not above the smoker who blacks his boots.

My opinion of the tobacco-tyranny is confirmed by a leading article in "The Times" of Sept. 13, 1879: —

"There is a reason against public smoking — perhaps, in effect, against all smoking — which has scarcely received sufficient recognition. It is the absolute indifference to

the comfort and convenience of society at large that it is certain to produce. In this country there is still a majority who do not like smoking or its atmospheric products. They do not like the smell of tobacco, especially if it be bad, which it generally is. They do not like having to breathe the smoke ejected from the mouth of the smoker who has walked past them, or perhaps is standing by. They do not like to enter a room and find that habitual smokers have been there. . . . Smokers monopolize far more than their share of our railway accommodation. Their exigency knows no limits. A smoker must have a compartment in which he enjoys the free exercise of his privilege, even if he have it all to himself, and a dozen people are rushing about the platform looking in vain for room, the guard's whistle already sounding. What is worse, he often ignores the carriage provided for his accommodation, and looks aggrieved if, after asking whether you object to smoking, you answer — however mildly — that you do. Tobacco is a powerful drug, administered through the respiratory organs — that is, through the atmosphere; and as we breathe one another's atmosphere, as it were, in common stock, the smoker administers his drug to all about him, whether they wish it or not. Indifference or apathy with regard to the comfort of others is one of the most remarkable effects of tobacco. No other drug will produce anything like it. Neither opium nor intoxicating drink produces such an insensibility. They make a man insensible to his own true interest and his own dignity; they make him foolish or violent; but they do not put him into such actual antagonism to the human race generally as to make him do constantly, openly, and with

pleasure, what they very much dislike and believe to be hurtful. The opium-eater does not compel you to eat opium with him; the drunkard does not compel you to drink. The smoker compels you to smoke — nay, more — to breathe the smoke he has just discharged from his own mouth. It is true there is no malice in it. The tobacco-smoker does not wish you harm when he blows a cloud of nicotine into your face. . . . He does not care whether you are happy or miserable.”

So far “The Times.” The smoker may bear “no malice” if he has his own way; but if you remind him that he is in a carriage where smoking is prohibited, he is too apt to show his rough side, as the records of police-courts prove, when those who have been insulted by him have had the public spirit to bring him before the magistrate. You may remember the old story of a traveller in a stage-coach, who brought home to his fellow-passenger the annoyance he was causing. The smoker was asked to refrain, but he answered that he had a right to do as he chose. At the next inn the Quaker (for the Friends are generally the heroes in such transactions) provided himself with two tallow-candles; one of these he took with him lighted into the coach; then he lit the other, and blew out the first. After it had cooled, he relit No. 1, and blew out No. 2, — and so on, till the coach was pretty well filled with their fumes. At last the smoker could bear it no longer, and asked the Friend what he meant by it. He was coolly met with his own reply, “I have a right to do as I choose!” (After all, candle-smoke is not so poisonous as tobacco-smoke, and it had not passed through the Friend’s mouth!) He had the good sense to take the hint and put out his pipe, and they travelled

happily ever after, as the story-book would say. Some who recognize that smoking *inside* a coach or omnibus is a nuisance, suppose that it cannot be so regarded in the open air outside. The Manchester Corporation are not of this opinion, for they fine a cabman if he smokes while conveying a passenger.¹ The movement of the air often blows the smoke and ashes on those who feel anything but grateful for them, and the pleasure of travelling through beautiful scenery is completely destroyed, in the case of those who are made to suffer distressing nausea.

The smoke-nuisance is worse on the Continent. A few years ago the Statistical Society of Paris reckoned the annual consumption of tobacco in different countries, for every hundred inhabitants, as follows: England, 136¾ lbs. (the present amount is 142¾ lbs.); France, 178½ lbs.; Germany, 330 lbs.; Holland, 441 lbs.; Belgium, 551¼ lbs.; &c.²

Abroad, they are the non-smokers who have special compartments in the railway carriages; and often it is a great worry to secure one, as they are "few and far between." If you attend an open-air concert, or dine at a restaurant, you are liable to be smoked out. If you go on the verandah of a hotel to enjoy the sweet air and the beauty of the prospect, those who care more for the

¹ "Monthly Letters," p. 235.

² "Monthly Letters," p. 103; compare p. 195. "Whittaker's Almanac," p. 384, gives the consumption in England for 35 years. In the United States, during the year ending Midsummer, 1878, 1,905,063,000 cigars and 25,312,433 lbs. of tobacco were consumed. ("Monthly Letters," p. 144.) The recent census states that the culture of tobacco is largely on the increase; 638,841 acres (nearly 1,000 square miles) are devoted to it.

weed than for flowers may begin to *fume*, and you begin to *fret!* Sometimes one is half tempted to accustom one's self to smoke, so as to get indifferent to it; but it is not wise to be indifferent to an evil, and if the non-smoker suffers from nausea at the habits of others, he at all events retains his power of enjoying fresh and pure air. If a smoker could only appreciate the injury to the health and comfort of others which his habit causes, he would ask himself whether he has any more right to foul or poison the air they must breathe than to foul or poison the water they must drink. We are, in this town, taxing ourselves heavily for drainage—to remove, as far as possible, ill odors and bad gases from our houses and streets; yet hundreds are taxing themselves still more heavily to supply our streets and houses with nicotine and carbonic acid.

The steadfast resistance to the drink-tyranny won important concessions to abstainers. The value of pure water has been recognized, and colossal enterprises have been undertaken to provide it. Many social meetings, at which intoxicants used to appear as a matter of course, are now enjoyed without them. It is the reverse as regards smoking; it has claimed, first toleration, and then dominion, where, till of late years, it never ventured to intrude; it drives away many from places and companies where they have a right, and where they used to find a welcome; or if they sacrifice their disgust for the sake of social intercourse, they may have good reason to rue their complaisance.¹

¹ No doubt many non-smokers, including ladies, are comparatively indifferent to inhaling a moderate amount of smoke; it is no less the case that others are made more or less ill by it.

Those who feel indignant at being robbed of their right to enjoy the fresh air, and to meet their friends without being *drugged*, ought in charity to remember that these spoilers of their liberty have often lost their own. Smokers who have been enslaved in childhood, and learnt to smoke before they were of an age to reason, are objects of pity. Great is the power of habit — of this we are glad when reason approves a habit; but, unhappily, unreasonable habits are the most difficult to change. It is no longer thought impossible to reform a drunkard. But we are assured that it is easier to give up alcoholics than tobacco or opium; the slavery is more incessant and complete. No one can be constantly drinking; but persistent smokers inhale their nicotine all day long, and its enervating influence takes away the desire, and almost the power, to be free. It is pitiable, the degradation to which the slave of tobacco is reduced; he declares that he is not half himself unless under its influence. Except in the case of the drunkard who reels along the streets, the slave to drink may not be publicly exposed; but the smoker, who can go nowhere without his pipe or cigar, bears about him the outward and visible sign of his bondage.

As regards our last topic — the influence of tobacco on *morality* — we have shown that no inveterate smokers observe the Golden Rule, “Whatsoever ye would that men should do unto you, do ye even so to them.” They not only ignore the laws of courtesy, but defy the regulations of public companies. In spite of notices at railway stations and elsewhere, they disgust you with their pipes; and, as we have stated, they are reckless of human life, breaking the laws which forbid these practices in mines

and other dangerous places. This lawlessness does not stop here. Those who fancy that tobacco is necessary to them—even boys who have got to like it—have not hesitated to sneak and tell falsehoods, if they cannot else indulge in it; to swindle, peculate, and steal, that they may obtain it. There may be cases in which a smoker may suppose that he has gained valuable introductions by his habit, but the rule is the reverse. Horace Greeley remarked: “I do not say that every smoker or chewer is necessarily a blackguard, however steep the proclivity that way; but show me a genuine blackguard who is not a lover of tobacco in some way, and I will show you two white blackbirds.” Ruffians, wife-beaters, and murderers have soothed themselves after their crimes, with the pipe, and when imprisoned have raved—not at the ignominy, but at being deprived of tobacco.²

Some smokers among my audience may think this very

¹ “The Daily News” (November 12) reported that some boys from a Ramsgate boarding-school came over to Canterbury to play football with the King’s School: several of them visited tobacconists’ shops, and two boys of sixteen were noticed to have in their pockets pipes and cigarettes, which they had not paid for. They were brought before the police-court, when they pleaded guilty, and were let off with fines of £5 each and costs. We wonder what had been the influence of parents and tutors on these poor degraded lads. The superintendent of the Reform School at Westboro’, Mass. (the first established in America), states that all the boys committed there have been users of tobacco; and it is the one thing that gives him most trouble—that he is working hardest to extirpate.

² In a recent article in “The Daily Telegraph” on “Life at Portland Convict Prison,” the writer gives some striking illustrations of the fascination which tobacco has for convicts of every degree, who will risk “eighteen lashes with the cat” to obtain a bit of it.

exaggerated and unreal. I am glad if they feel it so, should this prove that they are not yet in bondage.

As with intoxicating liquors, only a minority of those who use them exemplify their worst evils. Perhaps there are other effects of which they may not be unconscious. Ruskin says:¹ "It is not easy to estimate the demoralizing effect on the youth of Europe of the cigar, in enabling them to pass their time happily in idleness. Tobacco is the worst natural curse of modern civilization." Englishmen are not naturally Lazzaroni; they like either to do something, or to seem to do something. When ladies spend their leisure hours together, they have their fancy-work — or what they fancy is work. Men have not this resource, and feel it awkward to sit and do nothing; unless they have some exciting theme they may not be ready to talk; when they smoke they feel at their ease, for they are doing that which gives them no trouble. But indolence, when it takes the guise of occupation, is doubly ensnaring. No one, however, will accuse Carlyle of indolence, and after his wife's death "he lauded tobacco" (to Mr. W. Maccall, a writer in "The Tobacco Plant") "as one of the divinest benefits that had ever come to the human race, . . . when social, political, religious anarchy, and every imaginable plague, made the earth unspeakably miserable." But those of healthful mind do not find "the earth unspeakably miserable," and in his soberer mood he thus describes the influences of tobacco: "Generally bad; pacificatory, but bad; engaging you in idle cloudy dreams; still worse, . . . soothing all things into lazy peace, that all things may be left to themselves

¹ "The Queen of the Air," p. 91. See "Monthly Letters," pp. 190, 235.

very much, and to the laws of gravity and decomposition.”¹ It is dangerous, as well as lazy, to say, “‘Peace, peace,’ when there is no peace.” It is this which has helped the downfall of those Mohammedan countries which have escaped the crimes resulting from strong drink. The use of narcotics has increased their indolence, irresolution, and tendency to leave “all things to themselves, very much.” “What can’t be cured must be endured ;” but tobacco helps men to endure that which demands a cure, till at length the cure is out of reach, and endurance fails. Certainly the smoker puts the endurance of others to the test. We have often not only to imbibe his smoke, but to bear his burdens. Rate-payers may well complain of those who are paupers through their own fault. Men are not ashamed to keep their children from school, on the plea that they cannot afford twopence or fourpence a week, while they spend sixpence on tobacco ; they care more for their pipe than for their children ; and if some good-natured person pays for their schooling, he has the pleasure of reflecting that in reality he is paying for their father’s pipe. We may well pity a hard-working man, with a load of cares which he longs to forget, if he seeks some oblivion in his pipe (only we know that the cloud of smoke, like the sand in which the terrified ostrich hides her head, gives no escape from the dangers it conceals) ; but one’s pity is mingled with another feeling when we see young fellows wasting in smoke the money they ought to save for their start in life, wasting the time in which they might store their minds with useful knowledge, becoming idle dreamers

¹ “Monthly Letters,” p. 186.

instead of robust thinkers.¹ They form indolent and expensive habits, and then expect their purses to be filled by those who have shown more self-denial and more self-respect.

Moderate smoking, like moderate drinking, too often leads on to what is obviously hurtful. Temperance consists in keeping to the rule which reason approves; where reason demands abstinence, any indulgence is intemperate. As wine or beer is to spirits, so is tobacco to opium. The use of the one may prepare the way for the other.² Those who seem to have exhausted the relief to be gained from smoking, often addict themselves to morphine or to chloral. These anæsthetics are becoming dangerously common; we are continually hearing of their fatal effects; and when *women* resort to them, whom the customs of society debar from tobacco, they can often plead that their husbands and brothers justify the use of narcotics by their example.

And now what is to be done? Some may say: "Do nothing; what is the use? The more foolish you show a practice to be, the more attractive will it be to fools. There have been laws against tobacco; a royal 'Counterblast' against it; the remonstrances of divines, physicians, and shrewd men of the world against it; and yet the habit is increasing!" But many have formed it without

¹ Sir David Brewster, in his "Life of Sir Isaac Newton" (vol. ii. p. 410), records that the great philosopher, "when he was asked to take snuff or tobacco, declined, remarking that he would make no necessities to himself."

² In 1843, 47,000 lbs. of opium were used in England; the annual import is said to have now reached about 400,000 lbs. In the United States the Custom House returns were about 250,000 lbs. in 1877; and, in 1880, 516,600 lbs.

having been warned against it ; and something may be done to induce men of courage and principle to give it up, if they are convinced that it is injurious, and to check its inroads among the young. In doing so we shall have the sympathy of many smokers ; for as publicans dislike disreputable, impoverished drunkards, so the patrons of tobacco are disgusted with its victims. The journal of that trade — “Cope’s Tobacco Plant” — says : “ Few things could be more pernicious to boys, growing youths, and persons of unformed constitution, than the use of tobacco in any of its forms.” Sir Benjamin Brodie, after detailing in “The Lancet” some of the ill effects of tobacco, adds : “ Boys get the habit of smoking, because they think it manly and fashionable to do so,—not unfrequently because they have the example set them by their tutors, and partly because there is no friendly voice to warn them, as to the special ill consequences to which it may give rise, when the process of growth is not yet completed.” Teachers, who would prepare the young to be manly men, must warn them, both by precept and example, against this enfeebling and enslaving practice. In this matter parents should themselves be teachers. In the choice of companions for their sons, and in the selection of a school, they should not only consider social and intellectual advantages, but whether those habits are countenanced which may be very injurious to their physical and moral well-being.

But if from carelessness or despair, or from a dislike to attack habits to which valued friends may be addicted, we make no protest, and become like the smokers, “soothed into lazy peace,” what may happen? Women are now asserting their claims to do what men do. We are told

that, owing to the facilities afforded by some grocers and confectioners, they *drink* much more than they did. Do we wish them to *smoke*? Those who are living in an atmosphere narcotized by their male relatives will not find it difficult. In the North you often see poor women with a pipe. If it is so very soothing, their nerves need composing as much as those of men; and a careworn wife, whose work is never done, may want the comfort as much as a working-man. Then if the boys smoke, why not the girls¹ and little children, just as they are taught by the drinkers to drink? Women smoke opium in China, and tobacco in Russia, Spanish America, and elsewhere. In New Zealand the Maori woman clings to her pipe and weed. Among savages in Siberia "tobacco is their first and greatest luxury; women and children all smoke, the latter learning the accomplishment as soon as they are able to toddle."² In Burmah they smoke in their mother's arms.³ Is *this* what we want, or are content to drift to? This is what we may come to if we make no opposing effort. Much will depend on women themselves; many have been accustomed to tolerate smoking, and even profess to like it, when it gives pleasure to those whom they like. A poor woman would be blamed if, by her objection to the pipe, she drove her husband to the public-house; but this should not be the alternative. Smokers are yet to be found who find more delight in a cheerful, kindly

¹ "The Daily News," of January 11, describes the abandoned girls, many of them very young, who frequent the Rogues' Walk after midnight, each with a "manly cigar" in her mouth; "the last drain of ardent spirits and the fumes of tobacco seem to have completely taken away from them the last vestige of shame."

² "Monthly Letters," p. 191.

³ "Narcotism," No. 46.

home than in a pipe. If it is a mere question of *pleasure*, he or she is most to be commended who gives up to the other. But when the serious results of smoking are better understood, true affection will do its utmost to avert them. We all recognize the influence of women on social customs; when they heartily believe that *this* is hurtful, and even dangerous, as well as of ill-odor, their influence will be strong to discountenance it.

The deliberate opinion of the medical profession will sustain our efforts, whatever may be the habits of some of its members. It is said that, as regards intoxicants, they have been too apt to consider the pleasure of their patients, and to prescribe that which may lessen a passing evil without regard to subsequent dangers; but of tobacco, they will usually say that it is *safest* to abstain from it.

In my youth there was no scruple as to moderate drinking, and a pipe was considered a suitable appendage to a minister's study. Now there are many who protest against both, and some American Conferences refuse to license, as preachers, those who take the license of the weed.¹ Religious men, who have been taught to flee from idolatry, have been conscience-stricken when it was brought home to them that the pipe was their idol, asserting its claims over those of social duty and Divine service. If those who are not conscious of this idolatry, but who own the obligations of religion and morality, would look on smoking-customs, not on their playful or social side, but with due regard to their unsocial tyranny, and the serious evils attending them, they would more frequently make it a matter of conscience to abstain from them, and to induce others to do the same. If they feel that this would in-

¹ "Narcotism," No. 25; "Monthly Letters," p. 190.

volve much self-sacrifice on their part, they may learn that they are themselves under bondage.

The Temperance movement in England has not been strong enough to counteract the effect of increased means of indulgence ; more is drunk now than when it commenced ; yet it has saved hundreds of thousands, and has done much to enlighten public opinion, to weaken bad customs, and to influence the conduct of those who wish to live reasonably. To be consistent, it should resist that which intoxicates,¹ whether it be chewed or drunk, whether smoked or snuffed. That smoking checks drinking is a delusion. It has been found, in districts where investigations have been made as to those who have broken their Temperance pledges, that most of them were smokers.² Since all wise persons wish to keep the young from the habit, it has become not unusual to forbid tobacco to members of Bands of Hope ;³ it is also prohibited in Juvenile Temples. So far, so good ; but if a boy is told that he must not smoke till he is sixteen, is it not in boy-nature that he should look forward to it as a manly privilege — unless he remembers the babies in Burmah ?

It is satisfactory to find that shopkeepers are questioning whether they ought to deal in what they regard as unwholesome and demoralizing. A tract, entitled “ Con-

¹ Tobacco-smoking was in old times called tobacco-drinking. Persons are sometimes “ smoke-drunk.” See “ Monthly Letters,” p. 264.

² “ May Young England smoke ? ” p. 21, second edition.

³ “ The Band of Hope Chronicle ” for 1880 and 1881, has contained a quarterly “ Outline Address ” for Bands of Hope, on “ Tobacco, and its Effects ; ” a similar series will appear this year. It is very important to give the young good reasons for not forming bad habits.

science in Business" gives many such instances. Some were wakened to the evil after selling to little boys. One reports that, though he has turned hundreds of tobacco-customers away, his business has improved; another, whose returns from tobacco were £100 a week, sent a circular to his customers that he could sell it no longer. There is an abstainer in Bridport who has given up the sale. David would not offer to God of that which cost him nothing,¹ and our religious convictions demand *sacrifices* as well as *offerings*!

We must not underrate the difficulties attending this reform. It is no easy thing for those who are enthralled by tobacco to give up its use. When this is compulsory, as in gaols, or when they have been almost compelled to do it by their doctors, after the first weeks of misery are over they have generally found their health improved. But the conflict with habit is always hard. Let them remember the penalties of defeat and the glory of victory. He that ruleth himself is "better than the mighty;" and though tobacco is but a *weed*, he who can trample on it may prove a hero. Never despair! "We are saved by hope." In the midst of craving and suffering, he who has resolved to maintain his manhood may look forward to the time when his health and spirits will improve; when he will not be a nuisance to others, nor waste his best substance in a folly. We who have never been brought under this bondage have, on our part, to encourage those who would be free, to be patient with the irritability and ill-temper which sometimes attends the effort; and to show that good-fellowship and good-nature and cheerful enjoyment are most natural to those who do not allow them-

¹ 2 Samuel xxiv. 24.

selves in that which they condemn. May those who root out the *weed* enjoy the flowers and gather the fruit! They shall "have beauty for ashes," the sweet breath of day and the pure light, instead of poisonous vapor and clouds of smoke.

TOBACCO AND ITS EFFECTS.

By G. F. WITTER, M. D.

*A REPORT TO THE WISCONSIN BOARD OF HEALTH,
FOR THE YEAR 1881.*

TOBACCO AND ITS EFFECTS.



IN this age it becomes more and more the aim of the sanitarian to search out the avoidable causes of sickness, and to admonish the people to order their lives in accordance with Nature's laws, and thus avoid many evils that otherwise they must endure. The medical profession has had much to do in relieving the suffering in the world that has been due to accident or indiscretion ; but it has not hitherto taken that interest in discovering and endeavoring to remove the causes of ill-health which will be the foundation of a large part of the medical science of the immediate future.

It is not difficult to see that there are at present many vast and wholly unexplored fields in the province of preventive medicine. Public hygiene is yet in its infancy. Certain forces are at work producing illness, and a huge amount of drugs is used to counteract the evil tendencies thus engendered ; while no sufficient attention is given to the causes that have occasioned the sickness, the removal of which would restore health, with little or no medicine. We study fully the symptoms and effects of disease, but we have not as yet investigated its sources with anything like

the same thoroughness. The communicable diseases, as scarlet-fever, measles, diphtheria, yellow-fever, &c., we know by their manifestations; but no one has yet made us fully acquainted with the methods by which they invade the human system. Some may have undertaken to explain their mysteries, but nothing more has been accomplished than to show how the body may at times be prepared for the invasions of disease, as the ground is prepared by ploughing and harrowing for the reception of the seed. We do not yet know whether a given disease is developed from germs, from invisible and indefinable miasma, or through tendencies inherent in the individual, or whether it is partly or wholly due to long-continued habits of abuse.

Impressed with the ideas that a very large proportion of the suffering in the world has been brought about by ignorance, not only among the wholly uneducated, but also among those possessing—or at any rate claiming the possession of—a higher degree of cultivation, a larger amount of knowledge, and that many diseases, the origin of which is regarded as obscure and mysterious, are really often due to the bad habits of the individual, we propose in the following pages to discuss the effects of one habit which we consider a bad one, *i. e.* the use of tobacco and its influence on health.

It is well known that tobacco is used in every conceivable dose, from the most heroic to the infinitesimal; in every nation and in all ranks of society its sway is established; the gray-haired patriarch is not too old, nor is the boy of ten too young to be its willing subject; alike in the filthiest slums and byways, and in the promenades and avenues where the highest fashion and the most polite

society are found, it is present. It sits in our legislative halls, both State and National; it travels by every conveyance, on land and water. The offices of the lawyer and physician and the sanctum of the clergyman are alike under its cloud. The coarse and blustering, and the elegant, refined, and scholarly are equally its victims. Tobacco's insidious spell has fallen upon the world, and the pipe, the cigar, and the snuff-box are a common solace among all ranks and conditions of men.

“One of the most remarkable circumstances connected with the history of tobacco is the rapidity with which its growth has spread and its consumption increased.” The enormous extent to which its use has attained in Great Britain and other countries is briefly shown in the following figures:—

In Great Britain the total consumption has been:—

“ 1857	32,856,913 lbs.
“ 1867	40,720,767 “
“ 1875	49,951,830 “
“ 1880	50,000,000 “
“ France the amount entered for consumption in 1880 was	45,000,000 “
“ Austria, during the same year	81,000,000 “
“ Russia, “ “ “ “	25,000,000 “

The extent to which its use has increased in our own country may be judged with tolerable accuracy by a comparison of the census-returns, given herewith, which show the tobacco-production of the States and Territories for the census years 1870 and 1880, the increase being 210,372,232 lbs. during the decade, or rather more than eighty per cent. These figures become more significant when it is known that the crop of 1880 was only a medium

crop, and not at all in excess of the present requirements for home-consumption and exportation.

“Fifteen States produce now, as in 1870, more than ninety per cent of the tobacco of the United States; of these fifteen, only Missouri, Illinois, Indiana and Massachusetts produce less than in 1870. Kentucky occupies the first position, producing thirty-six per cent of the total amount; Virginia holds the second place, raising 80,099,838 lbs. against 60,000 lbs. in 1862; Pennsylvania has advanced from the twelfth place to the third, Wisconsin from the fifteenth to the tenth, and North Carolina, Connecticut, and New York have each gained one point, making North Carolina sixth, Connecticut eighth, and New York twelfth in the rank of tobacco States. The changes of the decade may appear more clearly in the following statement:—

A COMPARATIVE STATEMENT, SHOWING THE TOBACCO PRODUCT OF THE STATES AND TERRITORIES FOR THE CENSUS-YEARS 1880 AND 1870, WITH THE ACREAGE OF 1880.

STATES AND TERRITORIES.	1880.		1870.
	Acreage.	Pounds.	Pounds.
Total	637,659	473,107,573	262,735,341
Alabama	2,198	452,556	152,742
Arizona	1	600	100
Arkansas	2,064	970,220	594,886
California	84	73,317	63,809
Colorado . . . . .	.	.	890
Connecticut	8,666	14,044,652	8,328,798
Dakota	7	2,107	.
Delaware	5	1,353	250
District of Columbia	2	1,400	.
Florida	102	22,197	157,405

COMPARATIVE STATEMENT, *Continued.*

STATES AND TERRITORIES.	1880.		1870.
	Acreage.	Pounds.	Pounds.
Georgia	1,057	231,198	288,596
Idaho	2	400	.
Illinois	5,625	3,936,700	5,249,274
Indiana	11,955	8,872,842	9,325,392
Iowa	694	420,722	71,792
Kansas	334	191,749	33,241
Kentucky	226,127	171,121,134	105,305,869
Louisiana	264	56,564	15,541
Maine	3	350	15
Maryland	38,174	26,082,147	15,785,339
Massachusetts	3,353	5,369,436	7,312,885
Michigan	173	84,333	5,385
Minnesota	167	70,389	8,247
Mississippi	1,475	415,248	61,012
Missouri	15,500	11,994,077	12,320,483
Montana . . . . .	.	.	600
Nebraska	106	58,589	5,988
Nevada	2	1,500	25
New Hampshire	88	170,843	155,334
New Jersey	154	171,405	40,871
New Mexico	10	1,249	8,587
New York	4,938	6,553,351	2,349,798
North Carolina	57,215	26,986,448	11,150,087
Ohio	34,679	34,725,405	18,741,973
Oregon	46	17,860	3,847
Pennsylvania	27,567	36,957,772	3,467,539
Rhode Island	3	925	796
South Carolina	183	46,144	34,805
Tennessee	41,532	29,365,052	21,465,452
Texas	702	222,398	59,706
Utah . . . . .	.	.	.
Vermont	83	131,422	72,671
Virginia	139,423	80,099,838	37,086,364
Washington Territory	9	7,072	1,682
West Virginia	4,071	2,296,146	2,046,452
Wisconsin	8,811	10,878,463	960,813
Wyoming . . . . .	.	.	.

Thus it will be seen that the amount of money expended and changing hands for tobacco, in this country alone, is enormous ; allowing ten cents per pound for the raw material in 1880, it reached the sum of \$47,310,757.30, and this only on the first change from the producer's into the manufacturer's hands, to say nothing of the added value given to it in the factory, and the added cost due to the revenue tax. What more effectual argument can be made by the economist than the simple presentation of these figures? The official returns show that in Germany, Spain, Holland, Great Britain and the United States *tobacco costs more than bread*. "A single firm in New York paid to the government *in one month* in 1880, a revenue tax of \$120,000 ! The average monthly tax paid by this house for Internal Revenue is over \$100,000. The shipment of snuff by this concern to one city in North Carolina amounts to one hundred pounds per month." We learn from the Internal Revenue Reports that more than ninety-five million pounds of manufactured tobacco, and one billion, three hundred millions of cigars are used in the United States every year, at an expense of two hundred and fifty millions of dollars, while the revenue tax amounts to one hundred and fifty millions of dollars. In the city of New York alone, about seventy-five millions of cigars are annually consumed at a cost of more than nine millions of dollars.

Now we do not assume that this outlay is wrong because it is so enormous. There is said to be no better use for money, as a general thing, than to "spend it as one goes along." This, however, is a question of spending money to the best advantage ; there ought to be no doubt in regard to the character of any personal indulgence which

draws so largely upon the resources, usually moderate in American homes, on which the whole family depends, from which must come whatever its members have of education, recreation, &c., — in short all that gives form and tone to character ; and more than this, “No man is so rich that he has a right to spend money to his own or his fellow’s undoing.”

If, moreover, it shall become apparent on analysis that there is an actual food-value to tobacco, or if it prove a health-producing agency, or even a valuable luxury, the enormous tax above referred to will not appear so appalling. And this suggests a reference to the chemical constitution of tobacco.

The constituents which chiefly give tobacco its peculiar characteristics are : an alkaloid called Nicotina ; a substance called Nicotianin or Tobacco-camphor, of which little is known (but concerning which it has been noted that upon the greater or less proportion of it depends the estimation in which a given sample of tobacco is held, the choicest tobaccos containing the largest percentage) ; and an empyreumatic oil of complex constitution. The alkaloid, nicotina, has the odor of tobacco, and possesses very poisonous qualities ; in this respect it is equal to prussic acid, a single drop being sufficient to kill a dog. “Its vapor is so irritating that it is difficult to breathe in a room where a single drop has been vaporized.” Nicotina taken internally in very minute quantity produces great muscular depression, occasionally convulsions, and at last paralysis and death. The proportion of this substance contained in the dry leaf of tobacco varies from two to seven per cent. Besides these two volatile substances existing in the leaf, ready formed, there is another of an

oily nature, produced when the tobacco is distilled alone in a retort, and to a certain extent also when it is burned in a pipe; it is acrid and disagreeable in taste, and has narcotic and poisonous properties. One drop applied to the tongue of a cat caused convulsions, followed by death in ten minutes.

There are various adulterations of tobacco, especially in countries where high duties hold out a temptation to fraud. The leaves of other plants, dried and flavored with tobacco-extract, are frequently found in manufactured tobacco; paper and hay are sometimes used, but the more common adulterants are said to be the leaves of rhubarb, dock, burdock, cabbage, &c. "It is not surprising, therefore, to meet with manufactured tobaccos possessing a thousand different flavors, for which the chemistry of the leaf can in no way account."

"Extensively as tobacco is used, it is remarkable how very few persons can state distinctly the effects which it produces upon them,—why they began and for what reason they continue the indulgence. If the reader be a user of tobacco, let him ask himself these questions, and he will probably be surprised to note how unsatisfactory the answers he receives will be. Indeed, few have cared to analyze their sensations while under its influence,—or, if they have analyzed them, have cared to tell truly what kind of enjoyment it is which they seek in its use."

Turning to another branch of the subject, and examining more fully the physiological effects of tobacco, we find that physiologists are not agreed in regard to the peculiar mode of its action. The nerves are considered by some as being probably the principal medium, but the cases on record where death has been produced by the

application of small quantities to wounds, would indicate that the process is more complex. The whole subject of the physiological action of tobacco is so complicated that but little is really known concerning it; there is, it is said, a remarkable difference between the action of the alkaloid and the essential oil, the one of which possesses the power of paralyzing the heart's action, while the other has no such property. Given to a person in ordinarily good health but unaccustomed to its use, tobacco, either chewed or smoked, causes distressing sickness at the stomach, fulness at the head, and frequently ringing in the ears and giddiness, relaxation of the bowels, partial paralysis of the sphincter muscles, especially those of the large intestine, and other equally serious effects. These conditions are not all met with in each case, but a sufficient number is always present to startle any one who sees them for the first time.

Persons of a nervous temperament have found it impossible, for a long time after beginning the use of tobacco, to indulge in it without experiencing decidedly unpleasant sensations. Dr. Pereira says that "in small doses tobacco causes a sensation of heat in the throat, and sometimes a feeling of warmth in the stomach. These effects are less obvious when the agent is taken in liquid form and largely diluted. By repetition it usually acts as a diuretic, and less frequently as a laxative. Accompanying these effects are often nausea, and a peculiar feeling usually described as giddiness,—scarcely according, however, with the ordinary acceptance of that term. In larger doses it produces nausea, vomiting, and purging; though it seldom gives rise to abdominal pain, it produces a most distressing sensation of uneasiness at the pit of the stomach. It

occasionally acts as an anodyne, or more rarely promotes sleep. But its most remarkable effects are languor, fullness, relaxation of the muscles, trembling of the limbs, great anxiety, and tendency to faint. Vision is frequently obscured; the ideas are confused, and the pulse is small and weak; respiration is somewhat laborious; the surface is cold and clammy, or covered with a cold sweat, and in extreme cases, convulsive movements are observed. In excessive doses the effects are of the same kind, but more violent in degree. The more prominent symptoms, in addition to those already noted, are extreme weakness and relaxation, depression of the vascular system (manifested by feeble pulse, pallor, cold sweat, and tendency to faint), convulsive movements followed by paralysis, and a kind of torpor, sometimes terminating in death."

One would suppose that a substance producing such effects as those just described at the beginning of its use would be very soon abandoned. "Nothing, however, with mankind appears so attractive as a habit surrounded by all the attributes which lift it into the dignity of a fashion."

The enormous consumption of tobacco in our country, heretofore mentioned, has been ascertained from the yearly returns of the revenue officers; but the physical, mental, and moral deterioration resulting therefrom admit of no such tangible analysis. These, although sure, are slow and imperceptible in their development, and it is therefore impossible to estimate the amount of the injury which tobacco thus inflicts upon the public welfare. We cannot do better in this connection than quote the remarks of Dr. B. W. Richardson, an eminent practitioner, whose researches are taken by Chambers as the

basis of his treatise on tobacco. Richardson declares "that in the confirmed smoker there is a constant functional disturbance which extends to the blood, the stomach, the heart, the lungs, the brain, and the nerves." That does not leave much of the man except his hair and his bones. He says further that "the use of tobacco gives a doubtful pleasure for a certain penalty,—that so long as the practice is continued the smoker is out of health; his stomach only partially digests; his heart labors unnaturally; his blood is not fully oxygenized."

Dr. Hassall says: "Tobacco owes its chief properties to the presence of two principles, both of which produce the worst possible effects upon the human system, when taken pure." Both of these active principles have been shown by Zeise and Milsens to be present in the smoke of tobacco; they are therefore not destroyed by the combustion of tobacco, whether in the form of cigars or when used in a pipe. They are inhaled in the act of smoking, and thus are taken into the lungs and stomach; especially is this the case when the saliva, impregnated with smoke, is swallowed. That these active constituents are actually absorbed, and make their way into the system, is further proved by the sickness, giddiness and death-like faintness experienced by those unaccustomed to smoking; the difference in the effects in the case of habitual smokers being caused by the fact that the system becomes inured to the use of tobacco, and therefore grows less susceptible to its influence.

Dr. Prout says: "Tobacco disorders the assimilative functions in general, but particularly, as I believe, the assimilation of the saccharine principles. I have never been able, indeed, to trace the development of oxalic

acid to the use of tobacco ; but that some analogous and equally poisonous principle is generated in certain individuals by its abuse, is evident from their cachectic looks, and from the dark, and often greenish-yellow tint of the blood. That severe and peculiar dyspeptic symptoms are sometimes produced by inveterate snuff-taking is known, and I have more than once seen such cases terminate fatally with malignant disease of the stomach and liver. Great smokers, also, especially those who use short pipes and cigars, are said to be liable to cancerous affections of the lips. But it happens with tobacco, as with deleterious articles of diet,—the strong and healthy suffer comparatively little, while the weak and predisposed to disease fall victims to its poisonous operation. Surely, if the dictates of reason were allowed to prevail, an article so injurious to health, and so offensive in all its forms and modes of employment, must speedily be banished from common use.”

Sir Benjamin Brodie, in his “*Physiological Researches*,” published in 1854, says : “We may conclude that the empyreumatic oil of tobacco occasions death by destroying the functions of the brain, without directly acting on the circulation. In other words, its effects are similar to those of alcohol, the juice of aconite, and the essential oil of almonds.” This testimony might be greatly increased, were it necessary or desirable to add to it.

On the other hand, the advocates and friends of tobacco consider it a harmless luxury, and hold that “it soothes irritated nerves, clears and sharpens the exhausted intellect, fills an indefinable vacancy, produces a satisfied and calm condition of the mind, dispels loneliness, relieves weariness, and induces repose.” They assert that its bad

effects are only transient, that no organic lesions are ever to be observed which can be certainly traced to its use. In answer to all of which Dr. T. F. Rumbold says: "It is seen that the system must be in a more or less vigorous condition to allow of the use of tobacco, plainly proving that it is a depressor of the nervous system; it as plainly follows that it is while the depression process is going on, that the pleasurable feeling is experienced." It does not soothe the nerves, until by its primary effects it has first irritated them; it would of course be absurd to say that it soothes un-irritated nerves. It cannot clear and sharpen the exhausted intellect until it has first beclouded and dulled the intellect. It cannot fill an indefinable vacancy, until it has caused this vacancy. It cannot induce a calm and satisfied condition of the mind, except it has first induced a restless and unsatisfied condition, nor can it induce repose until it has caused sleeplessness. Will the lad who has just smoked his first pipe or cigar say that it has soothed his nerves, cleared and sharpened his intellect, satisfied and calmed his mind, or induced repose? Even though his nerves were irritated, his intellect dull and exhausted, his mind restless, and his eyes sleepless, has his cigar given him the least relief? What evidence have we, beyond the assertions of the users of tobacco whose nerves are already perverted, that the exhilaration of which they tell us causes any greater enjoyment of life than would have been experienced had tobacco never been known? Is the consumer of a narcotic, who is fully under its influence, in a fit condition to judge whether or not he enjoys life better in consequence of his indulgence? If his sensibilities are perverted, is not his judgment also perverted with respect to those sensibilities?

There seems to be little room for doubt that tobacco perpetrates a most successful deception upon its users, by inducing them to believe that its effects are exhilarating, when the so-called exhilaration is in fact only the sensation of relief from its primary effects, and a hallucination brought on by the narcotic and perverting action of tobacco on the sympathetic nerves. Had I not used tobacco myself to excess during fifteen years, I should not be able to speak so definitely with regard to its effects.

The dangers and the injuries already discussed, as resulting from the use of tobacco, are manifest; but there is an effect not yet mentioned, which threatens ultimately to produce a great national calamity — nothing less than a tendency to gradual enfeeblement of mind, progressive loss of intellectual power and vigor. That this is no chimera, known and well-proven facts will testify.

In 1862 Napoleon III. of France had his attention called to the facts that there were more than five times as many paralytics and lunatics in the hospitals of France as there were in proportion to the population thirty years before, and that the government revenue from the tobacco monopoly had increased during that time in about an equal ratio. He appointed a commission of scientific men, to examine whether this were a case of cause and effect or only a coincidence. This commission devoted much time and attention to the young men in the government training-schools, dividing the students into two classes — the smokers and the non-smokers. The latter were found so much superior physically, mentally, and morally, that the Emperor at once prohibited the use of tobacco by students in all the schools under governmental supervision throughout the country.

But we are not compelled to consult the statistics of Europe in order to present examples of this kind.

Probably as conclusive evidence as the most exacting can demand, in regard to the effects of smoking upon the constitution of the young, and even the most vigorous among the young, is to be found in the testimony given by the action of the authorities of the United States Naval School at Annapolis, and those of the Military Academy at West Point. It is well known that only lads who are close approximations to physical perfection can pass the rigorous examination to which all candidates for admission are subjected at these institutions ; if such boys as are there to be seen cannot endure the strain which tobacco puts upon them, it is fair to ask, who can? Yet, after a full trial of the experiment, extending over the period of three years, we find Dr. Gihon, Medical Director of the United States Navy, using the following language in regard to the use of tobacco at the Naval School : —

“ I have urged upon the superintendent, as my last official utterance before leaving this institution, the fact — of the truth of which five years’ experience as health-officer of this station has satisfied me — that, beyond all other things, the future health and usefulness of the lads educated at this school require the actual interdiction of tobacco. In this opinion I have been sustained, not only by all my colleagues, but by all other sanitarians, in military and civil life, whose views I have been able to learn, while I know it to be the belief of the officer who is to succeed me in the charge of this department, and who was one of the board of medical officers which in 1875 reported ‘ that the regulations against the use of tobacco in any form cannot be made too stringent.’ Since three successive annual boards of visitors have indorsed the prohibition of tobacco as a ‘ wise sanitary provision,’ and the last of these boards, on being informed that the regulation against its use was not then in operation (June 10, 1879), emphatically recommended that ‘ its strict

enforcement be at once restored.' . . . An agent . . . that is actually capable of such potent evil, . . . which determines functional disease of the heart, which impairs vision, blunts the memory, and interferes with mental effort and application, ought, in my opinion as a sanitary officer, at whatever cost of vigilance, to be rigorously interdicted. . . . The difficulty of restraining smoking should be no more valid excuse for its tolerance, in the face of sanitary objections of such magnitude, than for the toleration of 'frenching or gouging or hazing.' The use of stimulating liquors is forbidden, but that the regulation prohibiting it is evaded is shown by the empty whiskey bottles which are picked up outside the cadets' quarters; but it is not proposed to allow drinking on this account, although, as a sanitary fact, a half-pint of table claret or of beer would be a wiser indulgence than a cigar, or the innumerable cigarettes, — which latter, there is good reason to believe, cause injury to the health from other agents than the mere tobacco which they may contain.

"I have dwelt at such length on this topic, feeling assured that I shall have done no act of greater good to this school, in the success of which I have so profound an interest, than if I can succeed in saving its pupils from the impairment of health which is sure to result from the unrestrained premature use of tobacco."

We doubt not that many a parent in this broad land thanked Dr. Gihon, from his inmost heart, for the exhibit of the evils following on the use of tobacco by growing boys, however robust, made in the paper from which the above extracts are quoted. And Rear-Admiral Rodgers deserved their gratitude no less when he issued the following order, which explains itself: —

"U. S. NAVAL ACADEMY, *Annapolis, Md., June 14, 1881.*

"*Order No. 1.*

"The experiment of permitting the Naval Cadets to smoke at the Naval Academy, having been fairly tried for nearly three years, has been found injurious to their health, discipline, and powers of study.

"The Medical Officers of the Academy, and the Academic Board,

urge in the strongest terms that this permission to smoke be revoked.

“Therefore, with the consent of the Honorable, the Secretary of the Navy, I have to forbid the further use of tobacco by the Naval Cadets, and to declare that the prohibition in relation to tobacco, contained in paragraph 169 of the Naval Academy Regulations, will be strictly enforced.

(Signed) “C. R. P. RODGERS, *Rear-Admiral, Sup't.*”

And not only at the Naval School has this salutary action been taken. “The recommendation of the Academic Board that paragraph 129, Regulations of the United States Military Academy of 1877, be expunged, and that the following be substituted for it: *The use of tobacco in any form by Cadets is prohibited*; has been approved by the Secretary of War. General Order No. 6. June 11, 1881, Headquarters U. S. Military Academy.”

If youth be the flower of a nation, and if it be in the flower that we are to look for the promise of the future fruit, surely no wiser steps could have been taken than those indicated in the two orders just quoted — orders which, being enforced, will certainly increase the vigor even of the elect of our youth who constitute the membership of these two great national schools, and can hardly fail at the same time to confer on them the graces of an added refinement.

Another point connected with the use of tobacco, the consideration of which no physician *can*, and no parent *ought* to overlook, is that of heredity — the question of the transmission of various traits, not only to the immediate descendants, but to those more remote. This question is so extensive, and involves such important considerations of family entailments and social and race deterioration or elevation, that we trust we shall be par-

doned for dwelling upon it a little, the more especially as the records of our insane asylums point clearly to some cause for the rapid increase of brain and neurotic troubles. Should this cause prove to be the abuse, to say nothing of the use of tobacco, we may yet find that the germs of premature decay, thus widely spread over the land, are more dangerous than those other germs of whose deadly powers we have of late years heard not a little.

It is a fact within the experience of every one, that a scar upon the body remains practically indelible through life ; that it can neither be washed out nor worn out ; that in spite of all the changes incident to growth and waste and repair, notwithstanding the continual flux of particles, it is constantly and accurately reproduced. A child is born, and meets, it may be in years of infancy, with some accidental injury which causes destruction of tissue and a consequent scar ; that scar remains to mark the site of the injury through the whole existence of the individual, goes with him into his coffin, and remains to prove his physical identity until the body decays. But not one single particle, of all the many particles that went to make up the body of the child at the time the injury was received, was buried with the body of the man when at last he died. *Something* reproduced that scar, however, as the body grew, and as the system threw off particle after particle, day by day and hour by hour, until the renewal was completed, then only to be recommenced ; and that something which constituted the identity of the man was injured by the accident which produced the scarring. Here is a mysterious fact, but none the less incontrovertible, right before every one of us each day ; and what is true of the comparatively coarse outer

integuments of skin and muscle, is also true of the marvellously delicate tissues that go to make up brain and nervous system. Our great psychologists seem tending toward the conclusion, which some at least among them have fully adopted, that the characteristics, mental and physical, which distinguish whole families, in some cases whole tribes and nations, are attributable to alterations of tissue, which partake very much of the nature of the alteration produced by an injury which we call a scar, and which, when affecting the delicate nervous and cerebral tissues, may be transmitted from one generation to another. "The fathers have eaten sour grapes and the children's teeth are set on edge."

Men cannot live without acquiring habits; and these habits, which react on bodily conformation to a greater or less extent, do the same thing, it is highly probable, on the mind. Who can doubt, that has ever listened to an old man telling for the hundredth time some story of his younger days, that the habit of telling has induced some permanent effect on his brain-tissue — that the mind is moving, as it were, in a groove? And who can doubt that habit, whether good or bad, acts upon every one much in the same way, producing grooves which are made deep and yet deeper by every repetition of the habitual action; which, in its turn, is thus rendered more and more easy, until it at last becomes automatic, instinctive, practically a part of the organization of the individual, ready to be transmitted to his offspring, and through them, it may be in an intensified form, to distant generations?

Thus when the appetite for tobacco is fully established — as it has been, in instances almost innumerable, when an individual has come so fully under its influence that to

forego its indulgence is an impossibility—there can be little room for doubt that some change has been brought about in his organization, that may be, and very possibly often is, transmitted to his children. It would, perhaps, be too much to say that a child of the second generation will come into the world with an appetite for tobacco fully formed ; but it seems exceedingly probable that, with this or any similar habit firmly fixed in the father, a modification of the system has been brought about, which may be transmitted in a less decided degree to the child, for whom the formation of the habit or the acquisition of the appetite is thus rendered easier—in whom perhaps its development, at a comparatively early age, may be looked for with great confidence ; and it is evident that but a few repetitions of this process, in successive generations, are needed to produce a family or a tribe, or even a whole race, in whom the habit shall be innate, and shall appear among the earliest manifestations of liking or disliking. That this is not a mere theory—that, so far from such being the case, it is an established fact—is proven by the testimony of travellers in East India, and among those races of Central and South America, with whose ancestors the use of tobacco probably first originated ; and where we are told that children, yet unable to walk, are to be seen carried at the mother's back, papoose-fashion, or astride of her hip, puffing at a cigarette, identical in kind with that which the mother herself is enjoying, and seemingly finding it more of a necessity than many things which our own children reckon among the essentials of existence ! Do we desire to see any such state of things in our own country ? It is not enough to say that such instances are to be met with only among barbarians ; we

have only to keep our eyes open, as we walk the streets of any of our cities, to see that the tendency is toward that consummation ; if further evidence than that thus obtainable is wanted, we have only to consult the records of the United States Navy, to learn that "the most prominent cause of rejection of candidates for apprenticeship is irritable heart, caused in most cases primarily by tobacco." Do such things look as though there were absolutely no danger? Do they not rather point to the conclusion that the tobacco-habit is making seriously rapid headway among us by means of heredity as at least one of, it may be, many causes.

We are well aware that other views are taken than those that we have thus far expressed. We know that medical journals have lately claimed that the use of tobacco is upon the whole rather beneficial than otherwise ; that it is pleaded, in extenuation of the many heavy indictments drawn against it, that it produces no organic lesions which the scalpel of the *post mortem* examiner can detect ; that the damage produced is rather functional than structural ; that it works badly with only a minority of the many who use it ; and that, if it be once given up, all bad effects disappear, — if not immediately, certainly very soon after its discontinuance. We know, moreover, all that is claimed for it on the score of its wide-spread use, and on the ground of the testimony in its favor by the many who employ it ; but we note that all physiologists — with, so far as we know not a single exception — condemn its use by those who have not yet attained their growth.

The late Professor Parke — himself, if we mistake not, a smoker — says : "I think we must decidedly admit injury from excess ; from moderate use I can see no harm,

except it may be in youth." And this is the most favorable utterance we have found ; for even in the periodical from which we take the above extract, we find, in close connection with Dr. Parke's utterance, the following : " If we are willing to accept the opinions which sanitarians in other nations have formed, we have a very decided one ready to our hand in Switzerland. That intelligent republic enacted a law last year (1880) prohibiting the sale of tobacco to minors under fifteen years of age, and making it an offence against the law for such to smoke. Hence a boy of twelve or fourteen, who parades the streets of Geneva or Berne with a cigar in his mouth, is liable to be arrested and committed to the police-station ; and, as they have a disagreeable habit in that republic of enforcing the laws they enact, such would pretty certainly be the juvenile smoker's fate. We recommend to our fellow-countrymen their manner of dealing with the habit, which, whether harmless or not to most adults, *is unquestionably of great injury to young boys.*" And another periodical, of equal prominence in medical science, says : " It is the duty of our public-school instructors to make the facts in regard to tobacco known and impressively felt by their scholars, and we hope that this field of sanitary mission-work will be actively occupied. Sewer-gas is bad enough, but a boy had better learn his Latin over a trap than get the habit of smoking cigarettes ; for we may lay it down as certain that *tobacco is a bane to youth*, though it may be the proper indulgence of manhood and a solace to old age." To both of which we think it may be added, that if the habit be not acquired in youth, there is no very great probability that it will be taken up by many in later life. If no tobacco is used except such as may prove " a

proper indulgence to manhood and a solace to old age," the present enormous consumption will very soon be diminished greatly, and will in all probability never again be reached.

As illustrating the effect of tobacco, even upon an individual habituated to its use, the following experiment, which may easily be repeated by any physician at almost any time, has interest. A young man aged twenty-four, of full habit and accustomed to smoking, was selected and kept perfectly quiet in a sitting position until his pulse was entirely regular at 75.5 per minute, a rate which it maintained steadily, thus indicating the freedom of the subject from all excitement. When this condition was reached he was given a pipe to smoke, all else remaining as before; during the first five minutes of smoking, the only perceptible effect was an increased fulness and firmness of the pulse, the rate remaining as above; in the course of the succeeding sixteen minutes the rate increased, being when noted, 87, 89, 95, 98, 103, 104, 105, 105, 107, 108, 111; an increase of temperature was also noted, ending in perceptible perspiration. Smoking was now stopped, the individual still remaining quiescent; the pulse continued to increase in frequency slightly for one minute longer, rising to 112, when it began to decline; at the end of thirty minutes it was 89, and had not reached its normal rate of 75.5 at the end of two hours. It is hoped that others will repeat this simple experiment and record the results obtained; it may be varied, moreover, in ways that will readily suggest themselves to any intelligent observer; and, being thus repeated and varied, an amount of information now wholly lacking can hardly fail to be obtained and rendered available for future use.

An important point in connection with the tobacco-habit yet remains to be discussed, important as having a bearing upon immense pecuniary interests, *i. e.*, its effect upon life-assurance. Every one who has ever made application for a policy of this kind must have observed that considerable stress is laid upon the physical condition and general health of parents and other relations. The reason for this is obvious: the applicant may not at the time of insurance have exhibited any failure of power; but the examiner by his survey of the family-history, especially that of the immediate progenitors, obtains the means of judging with tolerable accuracy his power of resisting strains, of combating with success any morbid influences to which he may be subjected. By means of auscultation, and other methods of examination, many points of the physical health can be determined with absolute certainty, but there are as yet no special tests by which the condition of the brain and nervous system can be ascertained; hence the inquiries into parental conditions have an importance in this direction also. If now there be any truth in the ideas put forth in a previous portion of this paper, in regard to the possible inheritance of the tobacco-habit, the importance of the whole matter in relation to assurance will be readily apparent. Space does not admit of any further discussion on this subject; it must suffice us if we have called the attention of insurers and insured to a point which we believe may yet assume vast importance in the consideration of their relations to each other.

In conclusion, I have to call attention to the information contained in the pages which follow these — information worthy of the closest attention, whatever may be the

opinion formed of my own work and views. The series of questions given was sent to nearly all the prominent medical men of Wisconsin, a very large majority of whom responded at considerable length; some who did not, being prevented, not by any lack of interest in the subject, or by any failure to recognize its great importance, but by the want of time to answer as fully as seemed desirable. To all I offer sincere and hearty thanks, as now I bring my own personal work to a close.

Mr. Sally, of St. Thomas Hospital, uses the following language: "It is my business to point out all the various and insidious causes of general paralysis, and smoking is one of them; I know of no single vice which does so much harm as smoking; it is a snare and a delusion. I believe that cases of general paralysis are more frequent in England than they used to be, and I suspect that smoking tobacco is one of the causes of that increase; of this being the case in America, there is no doubt."

Dr. Williams Henderson, in his "Plain Law for Improved Health," speaking of insanity from the use of tobacco, refers to a gentleman who, from having been one of the most fearless and healthy of men, became one of the most timid. He became unable even to present a petition; much less could he say a word concerning it, although he was a practised lawyer. He was afraid to be left alone at night. Though perfectly temperate in other respects he had used tobacco to excess.

In the "Lancet" (January, 1857) Mr. Fenn thus describes the result of his investigations: "On account of its softening and relaxing effect upon the mucous membrane of the bowels, tobacco is greatly resorted to in habitual constipation, but the susceptibility of the nervous system

is greatly depressed, and the vital force diminished by its use."

In the preparation of this paper and its appendix, I have made use of material from the writings of Pereira, Prout, Bright, Radcliff, Orfield, Trousseau, Johnson, Brodie, Sizars, Jackson, Wells, Smith, Taylor, Budget, Rumbold, Richardson, Landon, Parker, — and it may be of others whose names are not given, though such omission is wholly unintentional.

I have also to make acknowledgment of my indebtedness to the following gentlemen for personal communications and other effective assistance in various ways: Drs. W. Kempster, B. M. Gill, A. W. Bickford, H. H. Parrott, H. B. Cole, G. R. Taylor, L. G. Armstrong, E. L. Beverly, B. C. Brett, O. N. Murdock, E. Ellis, I. W. DeVoe, J. D. W. Heath, C. A. Rood, L. J. Smith, H. P. Wenzel, G. W. Jenkins, G. Seiler, L. Wade, R. Broughton, D. B. Wylie, G. W. Jones, J. T. Reeve, Clark, Day, Fenn, Goodwin, Jones, Vincent, Whitman, Prof. T. W. Chittenden, and many others.

CORRESPONDENCE ON TOBACCO AND ITS EFFECTS.

IN order to obtain the freshest and most direct testimony with reference to the effects of tobacco, the questions which follow were addressed to about one hundred and fifty correspondents, the most of whom are prominent physicians of our own State. My space admits of the presentation of a condensation only of the information received in answer, and this condensation is

compressed into the smallest possible limits. Were it possible, however, to print at full length all the communications received, I doubt that any additional strength would be given to the case I have presented; although the matter is full of interest and would be read with profit by very many, the general drift of the testimony given is all in one direction.

Taking each question in its order, I have classified the answers received, giving at full length only such as have special interest, whether they are in accordance with the majority or not. From the nature of the case a simple yes or no in answer to many of the inquiries was not practicable or desirable. One reply often contained several distinct points, each having an importance of its own.

Question 1. "What good effects from the continued use of tobacco have come under your observation?"

Answered substantially as follows: Eighty-five per cent reply that no good results have been observed from such use. One correspondent has observed a few cases of pyrosis which had been relieved by the use of tobacco, and has also seen the relief of constipation. One considers that it has given relief in certain dyspeptic troubles, producing, however, other disabilities equally bad. One says that tobacco has appeared to produce free expectoration in some instances. One knew of no good effects from the use of tobacco, except what he had heard others speak of. One claims to have been cured of chronic laryngitis by the use of tobacco. One has heard of a gentlemen who thought that smoking had relieved asthma.

Question 2. "What, if any, adulterations of tobacco

have come under your observation, and what have been the effects of such adulterations?"

Answered substantially as follows: Ninety-four per cent answer that they have not met with any adulteration. One has met with tobacco adulterated with copperas, to which attention was called by the effect produced on the mucous membrane of the mouth, and ulcers which it caused upon the tongue.

Question 3. "In your opinion, is the use of intoxicating liquors in any way fostered or affected by the habitual use of tobacco? If so, please state how and why."

Seventy-six per cent answer this question by an unqualified affirmative. Six per cent say no. Five per cent do not know, and the remainder give no answer.

One correspondent makes answer that it depends upon the individual. Another says: "I have seen many cases where the use of tobacco in youth has led to the use of intoxicating liquors also." A third says: "In my opinion the use of tobacco fosters that of intoxicating drinks by reducing the powers of the nervous system; liquor is then used as a restorative, and is about as active a one as I have found." A fourth replies: "I have considered the use of liquor as a necessary result of the use of tobacco, and have found no boys who use the first who did not begin with the second."

"Experience demonstrates that those nations which are most addicted to the use of tobacco are also the most prone to drunkenness. This follows first, physiologically, by the fact that tobacco produces an atonic condition from which nature seeks relief; and second, psychologically, because tobacco vitiates the mind and begets drunkenness, as one vice begets another."

“My observation strengthens my belief that the constant use of tobacco creates and fosters a perverted taste for intoxicating liquors; the social ties of a chronic tobacco-consumer exert a peculiar influence over him, so as more easily to dispose him to the use of intoxicants.”

“The narcotic properties of tobacco undermine the nervous system, and create what are called tobacco diseases; and the almost universal testimony is that all toppers, both young and old, first used tobacco freely.”

“The effect of tobacco in many cases is to produce a depression of the heart’s action, to overcome which a strong desire for stimulants is established. This can hardly be otherwise from the very nature of the case; since the nicotine of tobacco has a direct tendency to the heart, affecting its action at once, and more or less in proportion to the extent to which tobacco is used.”

“I will not make the charge, sometimes made, that tobacco is a common stepping-stone to drinking, but all our inebriate asylums consider it useless to try to reform a patient so long as he is allowed to continue the use of tobacco.”

Question 4. “In the treatment of any particular class of disease, or of wounds and injuries, have you met with any serious difficulty due to the habitual use of tobacco by the patient? If so, give details.”

The answers to this question may be classified as follows: Seventy per cent answer yes. Twenty-five per cent say no, and the remainder make no reply.

“Inasmuch as the excessive use of tobacco interferes with nutrition and absorption, should we not expect a depressing effect upon the growth and repair of tissues? And since tobacco is universally acknowledged as a debil-

itating agent, we should not be likely to look for a rapid building up of injured tissues under its use. I have never had good results, and never expect to have them, in cases where tobacco has been applied directly to wounds, as is the foolish practice with many working-men; in not a few cases in which extensive injuries have been done up with tobacco, and kept in that condition for a length of time, the process of repair has been much retarded."

"In one instance I had a case in which a person had bitten his tongue while smoking a cigar; the wound seemed to be poisoned, and extensive inflammation and ulceration followed, with serious results."

"I have seen instances where death has followed severe injuries, the patients having been habitual users of tobacco, in which I could attribute the fatal result to no other cause than the depression of the vital powers resulting from long use of the weed."

"It is scarcely possible to comprehend the amount of harm the use of tobacco produces in some cases of venereal disease. I think it may safely be said that severe syphilitic or gonorrhœal cases more frequently pass uncured than cured, if the patient continues the excessive use of tobacco."

Question 5. "Have you observed any local effects of tobacco upon the mucous membrane of the nose, the throat, or the ear, which leads you to suspect that it acts as a predisposing cause of catarrh or other disease? If so, give details."

Sixty-eight per cent of the replies to this question are in the affirmative, thirty per cent in the negative. One "has cured several cases of catarrh by withdrawing the

use of tobacco." Another regards "the constant use of tobacco as the source of a chronic inflammation of the throat and fauces, that can never be misunderstood by an experienced eye."

"I have seen ulceration of the lips in those addicted to constant use of tobacco, which was traceable directly thereto; in not a few cases catarrh was present, manifested by a nasal sound in talking, due to the thickening of the lining membrane of the nose and its appendages."

"I have met with many cases of congestion of the pharyngeal mucous membrane, sometimes extending to the ear and sometimes to the larynx, producing hoarseness. It would seem that the pungent oil of the tobacco, volatilized by the heat, constitutes the exciting cause — at least I have always found such diseased condition difficult to reach except by requiring the unconditional surrender of its use; usually thereafter treatment has been easy and successful."

"I have observed that in some cases smoking has produced eczema of the nasal mucous membrane, and chronic conjunctivitis. I have also seen irritable cough, and, in a few instances, violent heart-disturbance and gastric irritation, all of which have disappeared upon stopping the use of tobacco."

Question 6. "Have any cases of the following diseases come under your observation, which you believe to have been caused by the use of tobacco: (a) Ulceration of the lips; (b) epithelial cancer of the lips or mouth; (c) any local disease of the tongue, gums, tonsils, pharynx, &c.? If so, give particulars."

The replies to this question may be arranged as follows: (a) eighty-one per cent answer yes; (b) fifty-nine per

cent answer yes, twenty-five per cent say no, sixteen per cent give no answer ; (c) ninety-five per cent say yes.

“ I have seen two cases of epithelial cancer of the lips, one case of ulceration of the lips, one of ulceration of the tongue, and two cases of glossitis from the use of tobacco. I know that it was the direct cause, for when its use was discontinued, all the cases improved rapidly.”

“ In one case, that of a lady who smoked a short pipe for a long time, the tongue became swollen to an alarming extent ; it was found that the pipe was the cause. I have also seen cancer of the lower lip in one long accustomed to the use of a pipe, the tumor requiring excision.”

“ Mr. ——— smoked freely from the age of twelve. At the age of sixty-five he was obliged to have a cancer removed from the lower lip, due, in my judgment, to the use of tobacco.”

“ I have had a fair opportunity to notice these diseases as they have from time to time appeared in one form or another. I have treated several epithelial cancers which I have no doubt were the direct results of the long continued use of tobacco, combined with the irritating effects of the pipe or cigar.”

“ I have had two cases of epithelial cancer, supposed to have been the result of smoking, but I cannot give details.”

“ I have had two cases of cancer of the lip, one caused by using a pipe which had been used for many years, and was saturated with the empyreumatic oil.”

“ I have seen one case of epithelioma of lip, from the use of an old pipe ; also a case of cancer of posterior portion of tongue in an incessant chewer ; it proved fatal.”

“ I have seen several cases of ulceration of the lips, and

two of cancer of the lip, undoubtedly caused by use of the pipe."

"I have operated upon three cases of cancer of the lips, directly traceable to the use of a pipe."

"A young man aged thirty had smoked almost incessantly for ten years; at the expiration of the first year of this practice an ulcer developed upon the tongue near the center, which greatly annoyed him, but not suspecting that tobacco had anything to do with it, he continued to smoke to excess. At last he was compelled to stop because he could not put a pipe in his mouth without exquisite pain, and then he began to improve. I have no doubt that tobacco was the original cause of the whole difficulty; since abandoning it he has grown better steadily."

Question 7. "Do your observation and experience enable you to enumerate any constitutional derangements resulting from the use of tobacco — *e. g.* dyspepsia, disease of the stomach, heart, &c.?"

Ninety per cent of those questioned say yes; two per cent say no; and the rest make no reply.

"I frequently meet with and treat cases of dyspepsia, nervous irritation, palpitation of the heart, nervous depression, and the like, which are traceable directly to the excessive use of tobacco. In all such cases, if the trouble be not too far advanced, recovery is quite probable on the entire discontinuance of the habit."

"I am fully persuaded that many cases of dyspepsia are produced by the use of tobacco. I have prescribed for such cases frequently, and find improvement only when the tobacco is discontinued."

"I have treated a multitude of cases of disease of the

heart and stomach, where I had the best of reason to suppose that tobacco was the main cause of the trouble, all bad effects disappearing when its use was discontinued. Dyspepsia in young men is caused, in many instances, and greatly aggravated in many more, simply by smoking to excess."

"I feel certain that abuse of tobacco, however employed, may be classed among the causes of chronic disease — *e. g.* severe forms of irritable dyspepsia, disturbed action of the heart, and the like. Young gentlemen who are in the habit of putting this enemy into their mouths do not become aware of the danger sometimes until too late."

Question 8. "What is your opinion, founded on your own experience, as to the effects of tobacco in producing diseases of the brain and nervous system — *e. g.* congestion, apoplexy, epilepsy, paralysis, nervousness, impotence, &c.?"

Of the replies to this question, ninety per cent say that the writers believe tobacco to be the cause of such diseases in many instances. Six per cent give no answer.

One thinks that he has met a few cases where such diseases could be traced to the effects of tobacco.

"During thirty-six years of medical practice I have had unusual opportunity of seeing various forms of brain disease; have treated epilepsy, paralysis, congestion, apoplexy, nervousness and impotence, which I knew were traceable to the use of tobacco, from the fact that when the habit was given up the patients recovered. I have frequently met with persons suffering under one or another of these forms of disease, whom I knew to be smokers and chewers, and in whom I believed the result to be due to the tobacco-habit."

“I have treated two epileptic cases, and numerous cases of nervousness directly due to tobacco.”

“Under certain circumstances tobacco will help to produce all the troubles enumerated, and will help to make them worse when they arise from other causes.”

“I have no doubt that the use of tobacco is worthy of the special attention of practitioners of medicine, as a very frequent but unconsidered cause of disease. I am very certain that if the doctor directs his attention to the subject, he will find in the tobacco-habit an explanation of many obstinate and difficult cases. I do not doubt that the excessive use of tobacco aggravates phthisis; I have seen cases of amaurosis that were unquestionably due to its use.”

“Amaurosis is a very common result of smoking to excess, but I have never seen it produced by snuffing or chewing. So far as I have been successful in treating it at all, it has been by securing unconditional surrender of the use of tobacco.”

“Loss of memory takes place in an extraordinary degree in smokers.”

Question 9. “What is your opinion as to the possibility of a diseased condition of any kind being caused by tobacco and being transmitted by inheritance?”

The answers to this question were very diverse. Fifteen per cent of our correspondents, however, think that a weakened and nervous state of the system caused by the excessive use of tobacco is frequently transmitted and manifested in the offspring. Twenty-five per cent reply that diseased conditions from the use of tobacco may be and doubtless often are transmitted from parents to children. Ten per cent admit the possibility of such trans-

mission, but deny that it is probable. Twenty per cent think that nothing of the sort is possible, while the remainder either answer very indefinitely or not at all.

“I am acquainted with two brothers, both of whom have been inordinate lovers of tobacco from childhood, doubtless owing to transmission of the habit from both grandparents.”

“As the child is, as a rule, the reflex of the parents, both mentally and physically, he will partake more or less of the defects of their constitutions; in other words, his constitution will contain the seeds, which in time will surely develop, of faults mental and physical.”

“I am firmly of opinion that tobacco, as well as alcoholic stimulants, creates diseased conditions, which will manifest themselves in the second generation.”

“I have noticed what I thought a transmitted tendency in the children of a few families, some of whom were lovers of tobacco from a very early age. These children, in one instance, were born after the father became an habitual user of tobacco, while their brothers and sisters, born before that time, had a perfect loathing for it. Such a fact seems to me very significant.”

Question 10. “Have you observed whether or not the rapidly extending use of tobacco during recent years has been efficient in producing disease of any specific kind, especially in the nervous, respiratory, or digestive systems?”

Forty-five per cent of the replies to this question were in the affirmative, twenty-five per cent in the negative, and the remainder, thirty per cent, of the correspondents made no response.

“Tobacco is undoubtedly one chief cause of the rapid

increase of dyspepsia, nervous debility, and all the long train of symptoms of nervous trouble so common among our business and professional men, and those who lead sedentary lives."

"I do not think that there is an article in use in this country whose legitimate effect upon the nervous system tends to induce deterioration more decidedly than does the effect of tobacco."

"As our studies of the causes of disease acquire the definiteness of science, and convictions of the laws and requirements of bodily health are forcing themselves upon us, the evils to the physical life of society, that result from whiskey and tobacco, become more and more apparent. I have little hesitation in attributing a very large proportion of some of the most painful maladies that come under my notice to the ordinary and daily use of tobacco in the quantity usually deemed moderate."

"While there are differences in the medical estimate of tobacco, and differences, to some extent, in opinions as to the toleration of its use which can be established or endured by individuals, there is yet great uniformity of the opinion as to unadvisability of its use under any pretext whatever. No person or community need make the effort to use tobacco extensively in any form, without the expectation and assurance that the result will be continued injury to the individual, and enfeeblement to the race. I do not mean to say by this that one cigar or one pipe of tobacco will leave the partaker permanently impaired, any more than I would assert that the loss of one night's sleep is a permanent injury to a person in fair average health; but it should be understood that the general line of direction is toward the impairment of

vital force, and hence toward prostration and serious nervous disease.”

“I think the majority of my office-patients are those whose systems have been shattered by the excessive use of tobacco; the effects of this drug and its entailments are not sufficiently taught by the medical profession.”

“Experience and observation alike show that the use of tobacco is producing a rapid increase in the amount of nervous and pulmonary diseases. Hence comes also a demand for whiskey to counteract the depression caused by tobacco, and from both we have broken-down constitutions and premature exhaustion in the offspring of their consumers.”

“I answer your questions generally, by saying that I believe that the use of tobacco tends to promote intemperance, by causing profuse expectoration, and consequent exhaustion, which calls for stimulating liquors. During thirty years in which I used tobacco I laid the foundation for dyspepsia, diseased throat, catarrh, and general derangement of the nervous system, which now, after twenty years’ abstinence, still maintain a hold upon my bodily, mental, and moral powers; and though the effect is far less injurious than it would have been had I not reformed, I must regard the formation of the evil habit as one of the gravest sins of my life.”

“We are told that Nature never forgives sins committed against her by individuals; that the record of offences against her is never effaced; that the penalty is always exacted to the uttermost; and I have never been more firmly convinced of these facts than when attempting to treat the long train of nervous and digestive troubles — traceable, directly or indirectly, to the use of tobacco in

one form or another — that are continually coming before the physician for his attention. I do not suppose that a practising physician can be found who will not admit that if no tobacco in any form were used during ten years within the sphere of his observation and practice, a most noticeable change would take place in the character of the diseases presenting themselves for treatment."

Question 11. "What effects have you observed resulting from the constant use of tobacco among professional men and students generally?"

Of those answering this question, twenty-five per cent said that they had noticed none; fifty-five per cent made a great diversity of replies, some of which are given below, the tendency of all being in the same direction; and from the rest no answer was received.

"I believe that the habit of using tobacco, in various forms, is not only laying the foundation for many diseases of serious character, and not easily removed, but that it is damaging the moral fibre of many of our students."

"It is a rigorous rule of athletic regimen that the oarsman must put away his cigar and the pugilist his plug when they go into training. This is the smoker's frank confession that tobacco robs him of strength, that he is in better condition without it; he cannot smoke when he would be at his best, when he would have every nerve and muscle at its steadiest. But is there ever a time when it is not worth while for a man to be at his best? Success in the supreme endeavor of life would seem to be worth as much as success in a prize-ring or regatta, and by the same system of analogy it is evident that if the student would be at his best he must put away his cigar."

"All our professional men should know that the ill

effects of tobacco upon the system are less easily observed and more insidious than is usually supposed. I am sure that the habit is incompatible with great and long continued intellectual activity; and since we physicians as a class know its harm physiologically, it appears to me that it is our duty to discourage a habit that is not conducive to health, and that we are criminal if we give countenance to a habit which is known to engender nervous troubles of a very serious kind. Professional men and students should be made more fully aware than they sometimes are of the tendency of the habit and its results."

"During the last ten or fifteen years the consumption of tobacco has so increased, especially among young people, that we can hardly hope to comprehend its influence. It is my belief that its use among the young cannot be too strongly condemned; very few students who make a free use of tobacco stand at the head of their classes."

"It is not often that one great catastrophe overthrows the mental health of the student; it is the constant recurrence of unfavorable circumstances or acts, the gradual accumulation of adverse surroundings, the steady disregard of healthful conditions, which heap misfortune upon the individual; the often repeated disregard of the common laws of hygiene, deviations from established principles, the thousand and one little things which tend to depress vitality and produce disease, — all these are the operating causes; and prominent among them stands the increasing use of tobacco among the younger students at the present time."

"Nervous prostration, and a strong tendency to the use of stimulants and narcotics, as alcohol and opium, are

among the evils likely to overtake the student of tobacco-using habits."

"An unsound mind is ever the outcome of an unsound body, caused by a violation of law committed through ignorance, which was not accepted, however, as a reason for exemption from the penalty. What seems needful for the medical profession to teach at the present time is how best to maintain the mental faculties in a state of health. The insidious effects of the tobacco-habit should be pointed out and kept in mind if we would look to the welfare of the professional man and student, and to the welfare of society at large. The youth of our land should be taught that the use of tobacco arrests the growth and development of the body, producing low, dwarfish stature, pallid and sallow hue of the surface, insufficient and unhealthy supply of blood, and diminution of both bodily and mental power. Children should under no circumstances be allowed to use tobacco in any form."

Here I close my extracts from the abundant testimony given by our numerous correspondents. The following conclusions appear to be established as the judgment of the representative, thinking portion of the medical men of Wisconsin, a class including by far the larger part of the profession :

1st. That smoking, even in what is usually considered moderation, is, to say the least, injurious indirectly, most especially to the young ; inasmuch as it is notorious that the habits of drinking and smoking are very intimately associated, and that the practice of the latter may easily lead to the former — that the use of tobacco may become an inducement to the excessive use of intoxicating liquors, with all its accompanying evil results.

2d. That beginning the use of tobacco in early life cannot be too strongly condemned, as producing most pernicious effects upon the constitution of the young, and as impairing greatly, if not wholly destroying, the chances of success as students and scholars.

3d. That whatever may be said in favor of the use of tobacco in moderation, its employment in excess, especially if long persisted in, is injurious to any one, physically, mentally, and morally.

APPENDIX.



I.

TOBACCO IN THE PUBLIC SCHOOLS.

THE "Boston Journal" of November 18, 1882, stated that seventy-five per cent of the school boys, over 12 or 13 years of age, were habitual smokers of cigarettes. This called out replies and provoked investigation, which resulted in developing the following :

Mr. Billings, of Cambridgeport, placed the age at from 8 to 15. He had induced more than 300 out of 350 in his school, to sign a simple pledge to abstain during 1882. About fifty per cent had proved faithful. In the upper classes of the Latin School, one-half the pupils use tobacco. In the English High School there is comparatively little smoking. East Boston placed the per cent of tobacco users at from 10 to 30.

Roxbury had been fighting the evil since 1866, but the number of smokers had doubled. All these schools "prohibit" the use of tobacco, but indifference, and bad example on the part of the parents, render it impossible to control the boys.

In New York and Brooklyn the evil has become so great that petitions are being circulated, asking for a law by the State to prohibit the sale of tobacco to minors. Such a law ought to exist and be enforced in every State.

II.

TOBACCO *vs.* RELIGION.

MR. SAMUEL SMILES estimates that the sum expended every twelve months in the United Kingdom on cigars and tobacco exceeds eleven millions of pounds sterling. This sum is more than ten times as much as all the Missionary and Bible societies raise in the same period.

III.

TESTIMONIES OF PHYSICIANS, SCIENTISTS, AND OTHERS.

DR. BOERHAAVE, of Germany, says that since the use of tobacco has been so general in Europe, the number of hypochondriacal and consumptive complaints has increased by its use.

Liebig, the celebrated German chemist, says that "smoking cigars is prejudicial to health, as much gaseous carbon is injuriously inhaled, that robs the system of its oxygen."

Dr. Rush, of Philadelphia, says of tobacco, "It impairs appetite, produces dyspepsia, tremors, vertigo, headache, and epilepsy. It injures the voice, destroys the teeth, and imparts to the complexion a disagreeable dusky brown."

Dr. Darwin, of England, says of tobacco, that "it produces diseases of the salivary glands and the pancreas, and injures the power of digestion by occasioning the person to spit off the saliva, which he ought to swallow."

Dr. Franklin said that he never used tobacco, and that he never met with a man who did use it, that advised him to follow his example.

John Quincy Adams, former President of the United States, after using tobacco in early life, and giving up the habit, remarked: "I have often wished that every individual of the

human race, affected with this artificial passion, would prevail upon himself to try, but for three months, the experiment which I have made, and am sure it would turn every acre of tobacco land into a wheat-field, and add five years to the average of human life."

Dr. Woodward, former superintendent of the State Lunatic Asylum at Worcester, says : " Tobacco is a powerful narcotic agent, and its use is very deleterious to the nervous system, producing tremors, vertigo, faintness, palpitation of the heart, and other serious diseases. That tobacco certainly produces insanity, I am not able positively to observe ; but that it produces a predisposition to it, I am fully confident."

Dr. Amos Twitchell, of Keene, says, in a lecture on the habitual use of tobacco, that it produces its most pernicious effects by paralyzing the action of the nerves of involuntary motion, — those whose function it is to carry on the action of the lungs, heart, and stomach. The habitual use of tobacco is a most fruitful source of disease. Among the diseases caused by tobacco the doctor enumerated palsy, — which he thought was produced by tobacco more frequently than by all other causes, — inveterate nervous headache, palpitation of the heart, disease of the liver, indigestion, ulceration of the stomach, piles, and many others.

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