

The tobacco question : physiologically, chemically, botanically, and statistically considered / [William E.A. Axon].

Contributors

Axon, William E. A. 1846-1913.

Publication/Creation

Manchester : John Heywood ; London : Simpkin, Marshall, & Co., 1878.

Persistent URL

<https://wellcomecollection.org/works/ayspdfeb>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.

THE
TOBACCO QUESTION:

PHYSIOLOGICALLY, CHEMICALLY, BOTANICALLY,
AND STATISTICALLY CONSIDERED.

REPRINTED
From the DUBLIN UNIVERSITY MAGAZINE.

(Revised by the Author.)

~~~~~  
SIXTEENTH THOUSAND.  
~~~~~

MANCHESTER : JOHN HEYWOOD :
LONDON : SIMPKIN, MARSHALL, & CO.
1878.

WELLCOME INSTITUTE LIBRARY	
Coll.	welM0mec
Coll.	pam
No.	WM 272
	1878
	A 97t



22500457635

THE TOBACCO QUESTION.

OUR desk is littered with books relating to tobacco.¹ We are evidently about to witness a renewal of the controversy as to the virtues and evils of that Indian weed which exercises such a potent witchery over many minds. Nor can the moment be considered an improper one for such a discussion. The enormous yearly consumption of tobacco makes it a point of national importance that we should have full and accurate information as to the real effects it produces upon the human organisation.

We propose, then, to lay before our readers some facts, statistical, botanical, chemical, and physiological on this much debated question.

STATISTICAL.

The enlightened British nation is said to spend as much money upon tobacco as upon daily bread.² And in Germany, Holland, and the United States, more gold is expended on this luxury than upon the time-honoured "staff of life."

¹ "Smoking and Drinking." By James Parton. Boston, 1868.

"Tobacco: its History, Nature, and Effects on the Body and Mind." By Joel Shew, M.D. Manchester.

"Practical Observations on the Use and Abuse of Tobacco," By Professor John Lizars. Ninth Edition. 1868.

"On the Physical, Moral, and Social Effects of Tobacco." By Thomas Hodgkin, M.D., London.

"Revelations about Tobacco." A Prize Essay, By Hampton Brewer, Esq., L.R.C.P. London, 1870.

"Third Annual Report of the North of England Anti-Tobacco Society." Manchester.

"Physical Effects of Smoking." An Address by R. Martin, M.D. Manchester.

"For and Against Tobacco." By Benjamin Ward Richardson, M.A., M.D. London.

² "Food Journal," ii. 161.

³ Hahn: "Naturgemässe Diät.," 1859, p. 100.

In Britain the consumption of Tobacco has steadily increased, as the following table¹ will show :—

Year.	Total Population of Great Britain, and approximately of Ireland.	Pounds Weight of Tobacco Cleared for Consumption in the United Kingdom.	Weight of Tobacco Cleared for Consumption per Head of the Population.	
			lb.	ozs.
1841	26,700,000	23,096,281	0	13 $\frac{3}{4}$
1851	27,347,000	27,734,786	1	0 $\frac{1}{4}$
1861	28,887,000	35,413,846	1	3 $\frac{1}{2}$
1863	29,195,000	37,636,240	1	4 $\frac{1}{2}$
1864	29,349,000	38,239,521	1	4 $\frac{3}{4}$
1865	29,503,000	38,726,272	1	5
1866	29,935,000	40,995,161	1	5 $\frac{3}{4}$
1867	30,145,000	41,053,612	1	5 $\frac{3}{4}$
1868	30,355,000	41,280,001	1	5 $\frac{3}{4}$
1869	30,565,000	41,719,500	1	5 $\frac{3}{4}$

This table does not represent the amount actually consumed, but merely the weight of the raw material. Thirty-three per cent. of moisture must be added, as the leaf acquires that additional weight in manufacture. Dr. Smiles² has gone carefully into this subject, and thus estimates the amount consumed in one year :—

Tobacco cleared for home Consumption in the year ending 31st March, 1868...	lbs.		
	40,380,033		
Add 33 per cent. for moisture ...	13,325,400	lbs.	£
		53,705,433 (at 4s.)	10,741,086
Manufactured Cigars (duty 5s. per lb.)...	...	904,351 (at 15s.)	678,263
Manufactured Tobacco (Cavendish or Negrohead) and Snuff	54,145 (at 7s.)	18,950
Estimated Total Expenditure (1868) on Tobacco and Snuff	£11,438,299

We have still not got at the truth as to the amount of money expended by the votaries of the weed. Dr. Smiles' calculation would be tolerably correct if there were no such thing as adulteration. The British Philistine who does not hesitate to drug with abominations the *food* of the people, is not likely to keep his hands off a mere luxury. Nor does he. Rhubarb leaves, dock, burdock, coltsfoot, beech, plantain, oak, elm, peat, fuller's earth, bran, sawdust, malt rootlets, alum, lime, liquorice, treacle, sugar, salt, lamp-black, wheat-starch, rice-starch, catechu, colouring matter, and gum, are amongst the ingredients which are mixed with the genuine article by its honest and conscientious manufacturers. What percentage shall we add for this? Those who are best acquainted with our commercial morality will scarcely think we are extravagant in adding twenty-five per cent. under this head. The annual amount spent by the nation

¹ "Pall Mall Gazette," June 16, 1871.

² "Companion to the Almanac, 1870," p. 30. The figures vary from those given above. In one case they are made up to the end of March; in the other to the end of December. They are both from Parliamentary Blue Books.

on tobacco alone may, then, be estimated at £13,500,000 per annum. If to this we add the cost of pipes, and of the various knick-knacks which make up the smoker's paraphernalia, it will bring the sum to at least £14,000,000.

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

	Kilogrammes.
In Asia	155,000,000
„ Europe	141,000,000
„ America	124,000,000
„ Africa	12,000,000
„ Australia	400,000
	432,400,000 (970,000,000 lbs.) ¹

From another source we give some details as to the extent of tobacco culture in different countries. In many parts of the world it constitutes a state monopoly, and is very jealously guarded. M. Barral, who officially reported on the specimens exhibited at the Paris Exhibition in 1866, thus estimates the amount grown :—

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

Like most Frenchmen, somewhat of a philosopher, he is astonished at the magnitude of these amounts, and 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.”²

BOTANICAL.

All species of tobacco (of which there are about forty) belong to the genus *Nicotiana*, in the natural order *Solanaceæ*. The plant is figured in “Blackwell's Herbal” (pl. 146); in “Loudon's Encyclopædia of Plants,” and in various other botanical works. The more systematic analysis of modern Botany has deprived us of those minute word-paintings on which the earlier votaries of the science had to depend. The stenographic method now in vogue has its advantages, and they are great; yet for our own part we have a liking for the descriptions of

¹ Ausland, 1867, No. 4.

² Exposition de 1867 à Paris : Rapports, t. vi., p. 402. Other national illustrations of this facility meet us on every side. In Italy, the use of tobacco is becoming more and more common. Dr. Maestri tells us that the cost per head of the entire population, which in 1862 averaged 3f. 25c., in 1865 amounted to 4f. 8c. (“L'Italie Economique en 1867.” p. 126.)

plants to be found in our old herbals, and therefore present the reader with a picture of tobacco, drawn by the hand of that skilful limner, Master John Gerard:—

Tabaco, or henbane, of Peru, hath very great stalkes of the bignesse of a chikles arme, growing in fertile and well-dunged ground of seuen or eight foot high, diuiding itself in sundry branches of great length; whereon are placed in most comly order very faire, long leaues, broad, smooth, and sharpe-pointed; soft, and of a light green colour; so fastened about the stalke that they seeme to embrace and compasse it about. The floures grow at the top of the stalkes in shape like a bell-floure, somewhat long and cornered; hollow within, of a light carnation colour, tending to whitenesse towards the brims. The seed is contained in long, sharpe-pointed cods, or seed vessels, like vnto the seed of yellow henbane, but somewhat smaller, and browner of colour. The root is great, thicke, and of a woody substance, with some threddy strings annexed thereunto.¹

The fact that the tobacco plant belongs to a natural order which is noted for producing the most active poisons, is not very reassuring to the lover of the weed. Tobacco may call henbane cousin, and claim kinship with belladonna.

CHEMICAL.

Nicotine, as the essential principle of tobacco is called, is a liquid alkaloid of such deadly properties that less than the tenth of a grain will kill a middle-sized dog in three minutes.² In a single cigar there is sufficient nicotine, if administered pure, to kill two strong men.³ And thus, in smoking a quarter of an ounce of tobacco, the risk must be run of introducing into the system "two grains or more of one of the most subtle of all known poisons."⁴ So active is the volatile alkaloid that mere external contact with tobacco leaf suffices to bring on dangerous symptoms. M. Namias communicated to the Académie des Sciences the case of a smuggler, who covered his naked skin with tobacco-leaves in order to evade the payment of duty. The symptoms exhibited had much analogy with the tobacco-poisoning, named by Decaisne, narcotism of the heart.⁵ M. Gallardin subsequently presented a memoir on this curious subject, in which he named ten cases in which the application of tobacco leaves to the skin caused the common symptoms of poisoning.

¹ The Herball, gathered by John Gerard, enlarged by Thomrs Johnson, 1636, folio, p. 359.

² Watt's Dictionary of Chemistry, iv. 45.

³ St. Paul's Magazine, iii. 174: Taylor on Poisons, p. 749.

⁴ Johnson's Chemistry of Common Life, ii. 281. Watt's (Dictionary of Chemistry, v. 45) quotes, from the experiments of Schloesing, the following per centages of nicotine in several kinds of tobacco:—

French Kinds.	Nicotine in 100 parts of the dried tobacco.	Other Kinds.	Nicotine in 100 parts of the dried tobacco.
Lot	7.96	Virginia	6.87
Lot-et-Garonne	7.34	Kentucky	6.09
Nord	6.58	Maryland	2.29
Ille et Vilaine	6.29	Havannah	2.00
Pas-de-Calais	4.94		
Alsace... ..	3.21		

⁵ Comptes Rendus, t. lix. p. 90.

Thus in the instance of a woman of fifty, their external application produced nausea, spasmodic vomiting, hiccough, oppression of the breath, and approach of suffocation, extreme prostration and fatigue. coldness of the extremities, cold and viscous perspiration, slow and intermittent pulse.¹

The volatile vapour of the *nicotine*, given off in the process of manufacture, has been shown to have an injurious effect on the health of the makers of tobacco. The first results are headache, nausea, languor, loss of appetite and sleep. These symptoms are followed by a general disturbance of health.²

A recent investigation by Vöhl and Eulenberg seems to indicate that the usual effects of tobacco are largely due to two other poisonous alkaloids, *pyridine* and *picoline*, into which they consider the nicotine is decomposed in the process of smoking.³

But the alkaloids are not the only deleterious bodies present in the smoke. Vogel and Reischner found *prussic acid* and *sulphuretted hydrogen* in all but one of the specimens upon which they experimented. The first was detected by passing the smoke into a strong solution of potash, and then making use of the ordinary iron test. The latter was detected by exposing in the smoke, paper moistened with acetate of lead, with which they obtained the characteristic reaction.

The list is not even yet exhausted, for *carbonic oxide* and *carbontic acid*, two well-known poisonous gases, are detected in large quantity in the smoke.

PHYSIOLOGICAL.

So far there is no controversy. All are agreed as to the deadly nature of the plant. There is no dispute as to the poisonous action of nicotine. When we come to examine into the usual and possible effects upon the human system, there is medical testimony equally precise and unexceptionable as to the results of excessive smoking. To these examples it is usually answered, either that "the argument from excess is an excess in argument," or, "that the massive experience of nations" shows the habit to be one adapted to man's physical and moral wants. Both these replies are fallacious. The first might be used to prove that murder is venial, although massacre is wrong, whilst the "massive experience" of all lands might be cited to show that all the sins in the Decalogue are clear necessities of human nature. Let us see, then, what are the exact physiological results of the use of tobacco upon the wondrous and highly-wrought mechanism of the human body.

Perhaps its most important effect is upon the blood, which it has a tendency to thin and impoverish, acting most directly upon the *protagon* contained in the red corpuscles. Its effects upon the nerves of sensation

¹ Ibid. p. 262.

² Taylor on Poisons, p. 749.

³ Journal of Chemical Society, New Series, ix. 1075.

are equally well marked. The nausea usually attendant upon the first pipe shows how impressible they are, and how repugnant to their normal condition is the nicotine. But (as in cases of arsenic-eating and opium-smoking) continual use blunts this keenness of perception, and the partially paralysed nerves no longer reject the poison. The physical constitution of the nerve is altered :—

Hence one reason why we find now so many individuals suffering from *locomotortaxy*, a form of disease which was unknown some years ago. Forty years since, general paralysis of the nerves supplying the muscles was unknown ; it is a disease only recently recognised, and it has become now only too common. Those who have paid attention to these matters, tell us, for instance, that in the spinal cord, portions of the delicate vesicular matter forming the batteries of the nervous system become destroyed, and we have mere connective tissue taking the place of the highly sensitive tissue ; and when that predominates you have then loss of muscular power, irregular movements ; and this attaches not merely to the nerves supplying the voluntary muscles, but to many of the nerves supplying the involuntary muscles. Hence, it comes that we find in the case of the heart, irregular action, and palpitation, common among persons who are much addicted to smoking. Hence also the nervous tremors which often follow a night's smoking. But the same deteriorating action which affects the nerves supplying the muscles, affects the nerves supplying the blood-vessels ; and hence the various glands become irregularly supplied with blood, and their action assumes a morbid character. Thus you find that in the case of smokers, there is a dryness of the mouth from a paralysation of the vessels which supply the glands that keep the mouth moist. So it is with the tissues which pass into the lungs ; the delicate air tubes and air vessels become irritated, and hence there is a tendency to disease of the lungs—chronic bronchitis in one man, actual consumption in another. We know, also, that the nerves which preside over the stomach are specially irritated. Hence the youth who begins to smoke for the first time suffers from a most severe form of nausea ; and, although he may overcome this, although partial paralysation may have rid him of a certain amount of discomfort, nevertheless a deteriorating action comes on, so that after a time he suffers from loss of appetite, there is debility, the function of digestion is not as vigorous as it was, and we have in the end confirmed dyspepsia.¹

After this quotation from a non-smoker, let us add the words of a lover of the weed, Dr. Richardson, who has summarised the usual effects of tobacco in the following terms :—

Smoking produces disturbances—(a) in the blood, causing undue fluidity, and change in the red corpuscles ; (b) in the stomach, giving rise to debility, nausea, and, in extreme cases, sickness ; (c) on the the heart, producing debility of that organ and irregular action ; (d) on the organs of sense, causing, in the extreme degree, dilatation of the pupils of the eye, confusion of vision, bright lines, luminous or cobweb specks, and long retention of images on the retina ; with other and analogous symptoms affecting the ear, viz., inability clearly to define sounds, and the annoyance of a sharp, ringing sound like a whistle or a bell ; (e) on the brain, suspending the waste of that organ, and oppressing it if it be duly nourished, but soothing it if it be exhausted ; (f) on the nervous filaments and sympathetic or organic nerves, leading to deficient power in them, and to over-secretion in those surfaces—glands—over which the nerves exert a controlling force ; (g) 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 ; (h) on the bronchial surface of the lungs when that is already irritable, sustaining the irritation and increasing the cough.²

¹ Richardson, p. 72.

² Martin, p. 3.

Here is truly a sad catalogue, not of "ills that flesh is heir to," but of those wilfully or ignorantly acquired. The habitual user of tobacco cannot be said to enjoy a day's health. Of his own free will and motion he places his body in an abnormal condition. He throws down fair Hygeia from her throne, and places in her honoured seat the foul hag Sensuality. To the eye undimmed by smoke, this aspect of the great Tobacco question is at once ludicrous, and yet inexpressibly sad.

Dr. Richardson offers a gleam of consolation to the lover of tobacco, by an assertion that its effects are purely functional, and that it does not produce "organic and specific disease."

This last statement of Dr. Richardson's has often been quoted in defence of the weed. It is an expression of opinion which we are inclined to think its author would be willing to withdraw as dogmatic, and sweeping, on a more mature weighing of his own premises. Dr. Richardson is a great physiologist, and we have the highest respect for his character and abilities; but truth is greater still.

It is certain (says another medical writer)

That devoted smokers are liable to both constitutional and local disorders of very serious characters. Among the former we notice giddiness, sickness, vomiting, dyspepsia, diarrhoea, angina pectoris, diseases of the liver, pancreas, and heart; nervousness, amaurosis, paralysis, apoplexy, atrophy, deafness, and mania. Amongst the latter, ulceration of the lips (not unfrequently of a syphilitic character, from the morbid matter introduced into the healthy subject by smoking cigars or pipes which have been used by diseased persons), ulceration of the gums, cheeks, mucous membrane of the mouth, tonsils, throat, &c.¹

That tobacco may produce and has produced the above diseases, must be accepted on the testimony of some of the most eminent writers on the healing art.

The Abbé Moigno has detailed the injurious effects of tobacco upon himself. His nervous system was seriously affected, and his memory impaired. On removing the cause, by renouncing cigars and snuff, he regained his former health.²

Some very remarkable cases came under the notice of Mr. Shipman, an American surgeon. Two of them we quote from his graphic and circumstantial narrative.—

In the year 1837, my attention was called to two cases of disease in the same family. The symptoms and phenomena attending them were so similar, that it struck me at once that they had a common origin. The first was that of a young gentleman, D— W—, a student-at-law, of a nervo-sanguine temperament. He had been a martyr to dyspepsia for two or three years. He had spent a year in the Western States, and had attended the law lectures at Cincinnati. While at the west, he had acute ophthalmia, which was treated by active depletion with little benefit, as his eyes, when I first saw him, were highly injected, cornea vascular, and semi-opaque, and the lids granular. He applied to me for the treatment of his eyes; but what most afflicted him constitutionally, was low spirits, want of resolution, and general hypochondriasis. His stomach would receive food with a good relish; but the moment he had finished his meal, a train of nervous symptoms came on, which harassed him for two hours,

¹ Mr. D. Johnson, in "Lancet," January 31, 1857. ² "Scientific Review," ii. 324.

until the stomach was empty,—acidity, cardialgia, gastrodynia, palpitation of the heart, giddiness, vertigo, and fulness of the head, with the most profound gloom. Keenly alive to every feeling, he was in constant fear of death, yet tempted to commit suicide to escape from a life more intolerable than death itself. These symptoms harassed him for months, with varying degrees of intensity, when a new symptom arose, which terrified him more than all the rest. His sleep had been broken by the most horrid imagery, in the shape of frightful dreams, for more than a year; but now, when the first hour of sleep came over him, he was suddenly awoke by a shock in the epigastrium, which started him in great alarm from his sleep. These shocks and startlings were repeated several times in the course of the night, and as often as he fell into a slumber. They were at first confined to the epigastrium; but, after a few weeks, the sensation was transmitted to the head, which he described as more unendurable than when confined to the epigastrium. It was followed by a sensation as if a rush of blood took place to the head, and a firm conviction in his mind that he should die of apoplexy. This impression preyed upon his mind incessantly.

I was often summoned in the night, in great haste, and found him agitated, with cold sweats and palpitation, and terrible apprehensions of immediate death. A little soothing encouragement, a dose of morphine and carbonate of ammonia, would dispel his fears, and quiet his agitation, and enable him to rest the remainder of the night with tolerable composure. This state of things lasted several months, during which time he was not in a condition to pursue any kind of business; and finding that medicines only gave him temporary relief, I suggested to him that tobacco might have some agency in his complaints (as he used it freely, by smoking, chewing, and snuffing), and advised him to abandon the habit. In this I was successful, so far as chewing and snuffing were concerned; but he was so much attached to his cigar, that it was a long time before he could be induced to leave that. I will here add, that from the time he left the habit of chewing and snuffing, his health in some measure improved, particularly the shocks and epigastric sinking. He now became satisfied that this partial abandonment of the habit had been productive of good, and renounced the habit entirely; and the nocturnal shocks and epigastric sinking, with the whole train of nervous affections, vanished as if by magic. His digestive powers gradually improved; the chronic inflammation of his eyes yielded readily to appropriate treatment; the gloom and despondency, which had oppressed him as an incubus, cleared away; the nervous palpitations and rushings of blood to the head subsided, and he was able to prosecute his studies with energy, was admitted to the practice of the law, and is now an able and talented member of the Bar, in the possession of good health, spirits, and prosperity. The foregoing history I copy from my notes, taken at the time. There are many other symptoms which are common in dyspeptic cases, and many of those described are found in every-day practice in nervous, dyspeptic, and hysterical habits. The sudden and complete cure of all the symptoms, on leaving off the use of tobacco, was too obvious to escape the observation either of patient or physician.

I will now briefly allude to the case of a sister of the gentleman whose case I have been describing, although not occurring in the order of my notes. She was married, and the mother of two children; her age thirty-nine; dyspeptic for the last ten years; of a nervo-sanguine temperament; her youngest child ten years of age. Suffered, since her last accouchement, from leucorrhœa, partial prolapsus uteri, and hypochondriasis. Has smoked and snuffed tobacco for the last fifteen years; eight years ago began to have shocks at the epigastrium, with a sinking sensation at the pit of the stomach, cardialgia, acid eructations, a sense of rushing of blood to the head, palpitations, sleeplessness, and startings when first falling into slumber. These kept increasing upon her, when there came on tenderness of the spine along its whole length, but more especially in the cervical and lumbar regions, rigidity of the limbs, costiveness, derangement of the catamenia, &c. She had been under treatment for a long time, with little or no benefit. To soothe her feelings, she had taken more freely of snuff, and had smoked more often, as she fancied that it gave her temporary relief. Seeing the good effect from abandoning the use of tobacco in her brother, she made the same experiment, in part, herself, and with the same marked relief from many of the symptoms. The shocks at the epigastrium left her, sleep became quiet, her mind

more cheerful, and the epigastric sinking, cardialgia, acidity, and eructations, were greatly relieved. The spine, however, required cupping and counter-irritation; and, with the use of anodynes and tonics, she recovered a comfortable state of health. This patient has frequently ventured upon a moderate use of tobacco since; but after using it awhile she experiences, though in a slight degree, her old feelings, and then quickly abandons it.¹

It will not be necessary to detail the remaining cases, especially as Mr. Shipman adds:—

I might multiply cases that have fallen under my observation, to demonstrate the fact that tobacco is capable, in certain constitutions and under certain circumstances, of producing a specific set of phenomena, which are peculiar and pathognomonic. All the symptoms are more or less attendant on dyspepsia, hysteria, and hypochondriasis. But the shocks at the epigastrium are so prominent a symptom, and so uniformly left when tobacco was abandoned as to constitute a striking peculiarity.²

M. Decaisne, in the course of three years, met with twenty-one cases of intermittent pulse occurring among eighty-eight incorrigible smokers, and independent of any organic disease of the heart. He calls the affection thus induced by the abuse of tobacco, “Narcotism of the Heart.”³

He was struck with the large number of boys, aged from nine to fifteen years, who smoked, and inquired into the connexion of this habit with the impairment of the general health. He observed thirty-eight boys who smoked more or less. Of these, distinct symptoms were present in twenty-seven. In twenty-two, there were various disorders of the circulation—*bruit de souffle* in the neck, palpitation, disorders of digestion, slowness of intellect, and a more or less marked taste for strong drinks. In three, the pulse was intermittent. In five, there was found, on examination, more or less marked diminution of the red corpuscles; in twelve, there were rather frequent epistaxis; ten, had disturbed sleep, and four had slight ulcerations of the mucous membrane of the mouth, which disappeared on ceasing from the use of tobacco for some days. In children who were very well nourished the disorder was, in general, less marked. As to the ages, eight of the boys were nine to twelve years old; nineteen from twelve to fifteen. The duration of the habit of smoking was, in eleven, from six months to a year, and in sixteen, more than two years. The ordinary treatment of anæmia in general produced no effect as long as the smoking was continued; but, when this was desisted from, health was soon perfectly restored, if there was no organic disease.⁴

M. Beau, in a memoir read at the Académie des Sciences, has shown that angina pectoris is sometimes caused by addiction to tobacco. He specifies eight instances which had come under his own notice, and, indeed, had been the means of calling his attention to the fact. A physician of fifty, feeble and dyspeptic, notwithstanding an appearance of ruddy health, smoked as many cigarettes as his occupation would allow. After some time he began to have attacks of palpitation, with pain and constriction of the chest, which attacked him without warning,

¹ Ranking's Half-yearly Abstract of the Medical Science, vol. i. p. 73.

² Ibid. p. 77. ³ Comptes Rendus, t. lviii. p. 1017. ⁴ British Medical Journal.

sometimes by day, sometimes by night. He abandoned tobacco, and the attacks ceased. Having been by chance amongst a company of smokers (although not smoking himself), he experienced another attack. The atmosphere impregnated with tobacco-smoke had affected him.¹

Dr. Corson narrates a striking case of a man subject to periodical attacks of angina pectoris, and who was considered to have organic disease of the heart, yet on abandoning the use of the weed the attacks ceased.² It is believed that the attack of angina pectoris, which carried off M. Fould, was heightened, if not induced, by cigar smoking.

It appears to be a well-established fact that syphilis may be, and has been, caught from using the pipe or cigar of a diseased person, and it is by no means certain whether cigars made by a syphilitic workman might not carry contagion with them.³

But of all the dangers undergone by those in search of the delights of tobacco, perhaps none is more appalling than cancer. Several cases are recorded by Prof. Lizars; their details are extremely painful. We shall therefore content ourselves with abridging one of these:—

Mr. A—, gentleman of about fifty-eight years of age, of a strong, wiry frame and healthy constitution, none of whose relations had ever had a cancerous affection, was observed, in 1831, to articulate with difficulty, his tongue being too large for his mouth. On being interrogated by a medical friend, a relation of his own, he acknowledged that he was a devoted victim to the weed. His tongue, at this time, was enlarged, firm, and coated with a white crust, somewhat resembling the confectionary named *kisses*. There was a sulcus in the centre of the tongue, with a bright red line at the base.

From this time the disease progressively got worse. In May, 1833, the patient, accompanied by his medical relation, visited London, and consulted Sir Astley Cooper, when the patient put the following question to Sir Astley: "Had I come early enough, could I have been cured?" To which Sir Astley replied,—“Sir, there never was a time early enough to have warranted an operation; every fibre, every papilla of your tongue is diseased; and it would have been merciful to have clapped a pistol to your head the instant the disease began.”

By the middle of August the tongue had *mouldered* away—the stump presenting an irregular lumpy surface, covered with a flocculent dirty greenish-white deposit, and the ulceration extending on the left side to the os hyoides, accompanied with a most offensive discharge. There was a spasmodic difficulty in swallowing, a troublesome cough, with difficult expectoration, great mental depression, and hallucination of mind.

By the 25th of September the whole of the uvula, velum, and tonsils were destroyed by the ulceration, the glands at the angle of the lower jaw larger and more painful. He was then unable to swallow, and hence could take no nourishment.

From this to the 2nd of October all his symptoms became aggravated, the salivation more profuse, the perspirations more abundant, and the difficulty of breathing insupportable; and after three hours of intense suffering he expired. “All the death-bed scenes and death-bed sufferings I had ever witnessed,” says his medical friend, “were comparatively easy, to the individual agonies and gaspings for breath this kind and amiable man was destined to endure.”⁴

It has been objected that many women have cancers, and that the fair sex, as a rule, avoid tobacco. There is a curious commentary on the assumption involved in this objection, in the fact that in some instances mentioned by Mr. Brewer, the females suffering from that awful disease were, on inquiry, found to be smokers.⁵

¹ Compes Rendus, t.liv. p 1180.

² Lizars, p. 12.

³ Ib. p. 10.

⁴ Lizars, p. 30.

⁵ Brewer, p. 46.

After going through the catalogue of the tremendous evils that tobacco sometimes entails upon its consumers, one is inclined to exclaim with Alibert:—"Unfortunate man! who inconsiderately takes hold of all that flatters his sensuality. His soul is closed to true pleasure. The Turk loves to lose himself in the narcotic vapours of opium. Tobacco-smoking is the delight of colder climes; everywhere man seeks to excite his organs, as if in haste to consume those few days which nature has allotted to him."

The question is sometimes put, if tobacco is so virulent a poison, how is it that men can use it daily with (apparent) impunity? Of its poisonous nature there can be no question, for, as has been already remarked, a single cigar contains enough alkaloid to kill two strong men. That so subtle a poison can be brought into contact with the membrane of the mouth and throat without injury is incredible. The fact is, that the consumer, as Dr. Taylor has pointed out, is often willing to attribute the derangement he experiences to any other cause than the real one.³ The immunity from poisoning outright is simply owing to the extraordinary efforts which nature makes to expel the alkaloid from the system.⁴ But there are not wanting cases which tend to prove that tobacco is an exceptionally dangerous poison, possessing the property when inhaled in an overdose, of effecting some subtle change in the organisation, probably in the spinal cord, which renders even the minutest dose, dangerous ever after. The experiments made by Dr. Druhen tend to prove this curious circumstance:—

Mr. T—, an advocate, aged thirty, of athletic frame, began in 1840 to manifest symptoms of a spinal affection, which continued till the summer of 1845. These symptoms fluctuated considerably; but they resisted all treatment. At last Dr. Druhen, suspecting that the disturbing cause was excessive smoking, persuaded his patient to give up this bad habit. All the symptoms disappeared as if by enchantment, and at the end of one month the cure was complete. Mr. T— enjoyed excellent health for some time; but one day, dining with the doctor, he entreated to be allowed to indulge in a cigar. The permission was refused; but he insisted, and smoked. No sooner had he finished his second cigar than I saw him hastily quit the table. I rose also in some anxiety, and he confessed that all his old sensations had returned. This indication was decisive. Mr. T—henceforth entirely gave up his cigar, took steel tonics for a month, and has ever since enjoyed robust health.⁵

This raises the question—are there any criteria by which one may determine the limit beyond which nature will at once resent the daily injection of poison into the organisation? The only answer is, that no such criteria are known. Nature is a skilful scavenger, and so long as she can perform the function of expelling the nicotine from the body, the smoker may escape with only functional disturbances, bad enough as these are, and certain ultimately to tell upon the length of life. But when from any cause—from depression of spirits, for instance—this

¹ Taylor on Poisons, p. 748.

² Mr. Solly, F.R.S., as quoted by Professor Lizars says,—“Look at the pale faces, imperfect development, and deficient muscular power of the inhabitants of unhealthy malarious districts. They live on, but with only half the proper attributes of life. So it is with the habitual smoker. His system is accustomed to the poison; and so 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.” ³ St. Paul's Magazine, iii. 176.

excretory function is carried on with less celerity than usual, then is the time when the poison fixes its unrelenting fangs upon the vital principle. The amount which constitutes 'excess' cannot be ascertained. The quantity which nature is able to expel one day, she may be powerless to contend with on another.

The counsel to smoke "only in moderation" is merely an exhortation to try how much poison your constitution will bear, and as soon as ever you find that irreparable mischief has been done, then abandon the cause of it. Don't upon any consideration shut the stable-door until the horse is stolen.

And here we are suddenly brought face to face with the query—how many devotees of the weed are morally capable of breaking the iron fetters first woven round them in silk by the Siren habit? Alcoholism may be more immediately disastrous than nicotism; but if we may credit the confessions of smokers in every man's circle, no known narcotism is more enthralling. The man who finds himself bound hand and foot by the boy of ten or twenty years before, has something more serious to grapple with than the lack of moral courage which prompted the boy's first cigar. *Obsta principiis*, is, in these things, ever the trumpet-toned cry of the wise.

The manliness of a nation must surely be in peril when the habits of her sons are fastened upon them by the heedless, reckless unwisdom of her youth, and when her men cry out for a solace to care and labour which is denied on all hands to the hardworked, harassed, constantly tried matron of the household—*the weaker vessel!*

Going back to the question of juvenile smoking—if the adult constitution is unable to resist many of the worst effects of tobacco, the unformed frames of our youth are certain to suffer from it. It points directly to physical degeneration. There can be no hesitation about this matter.

All medical men agree that all smoking by the young is 'excess,' and is the sure forerunner of dyspeptic horrors.¹ 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 other cause 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

¹ Even the pro-tobacco journal admits that few things could be more pernicious for boys, growing youths, and persons of unformed constitution, than the use of tobacco in any of its forms.

forces by the use of nicotine, we should find the children in another generation with a hereditary taste for poison, and a diminished power of resisting its inroads; they would be unhealthy, dyspeptic, and nervous.¹

There is no physiological excuse for the use of tobacco in any form. Science teaches this in unmistakable terms. Nature attests the fact. The votary of the weed always suffers functional derangement, and runs a danger of inducing some of the most awful physical evils which afflict mankind. So much for the dangers of tobacco. What, then, are the delights which counterbalance them in the estimation of smokers and chewers? They are potent, yet difficult to define. On most constitutions it produces (after the first repugnance has been conquered) a soothing effect, by which the nerves are wrapt in slumber, and cease to feel the toils and cares of the day. The idler of course uses tobacco for the same reason that the savage used it in the forests of America centuries gone by—to dose away that time which he has not soul enough to turn to better uses. And the worker, thinker, litterateur, poet, uses it to soothe or deaden, for the moment, the outcries of nature protesting against over-work. As a nation, it is said, we are living too fast. Our expenditure of vital energy is foolishly extravagant. Nature cries for rest. Our souls weary of the ceaseless struggle, and, like the “mild-eyed, melancholy lotus-eaters,” we ask,

Why are we weighed upon with heaviness
And utterly consumed with sharp distress,
While all things else have rest from weariness?

But there is “balm in Gilead.” For the exhausted frame, physiology prescribes rest, change of occupation, music, sleep—

Tired nature’s sweet restorer—balmy sleep!

to repair its expenditure of force. So an infant must have sleep or it will die. But who, from this premise, will infer that we should feed a babe on laudanum? Yet this is precisely what the hard-worked man is doing who answers the plea for rest and holiday by drugging into unhealthy repose the seat of feeling and of thought.

In the long-run, it will be found that, on physical considerations alone, it does not “pay to smoke.” As one who smoked for several years, the writer can add his individual testimony to that fact. If any one who is arguing out the question for himself will have the courage to break the chains of *Nicotia* the enslaver, he will find, in quicker perceptive powers, in firmer pulse, in steadier heart-beat, in greater power of work, a reward for the abandonment of a drug which is neither food nor force, but a waster of both. And if he finds the money formerly spent upon pipes and cigars is burning a hole in his pocket, we can suggest an expenditure of it which will yield him more pleasure than the best Virginia. Let him use it in aiding the poor, “who are always with us,” and who live and die in rat-holes in a so-called Christian nation, which spends fourteen millions yearly upon tobacco!

¹ Dr. Richardson’s testimony (p. 73), as to the danger of physical deterioration, is striking. He 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.

