TOBACCO:

ITS HISTORY, CULTIVATION, MANUFACTURE, AND ADULTERATIONS.

USE CONSIDERED WITH REFERENCE TO ITS INFLUENCE ON THE HUMAN CONSTITUTION.

BY

ANDREW STEINMETZ, Esq.,

OF THE MIDDLE TEMPLE, BARRISTER-AT-LAW.

LONDON:

RICHARD BENTLEY, NEW BURLINGTON STREET.

1857.

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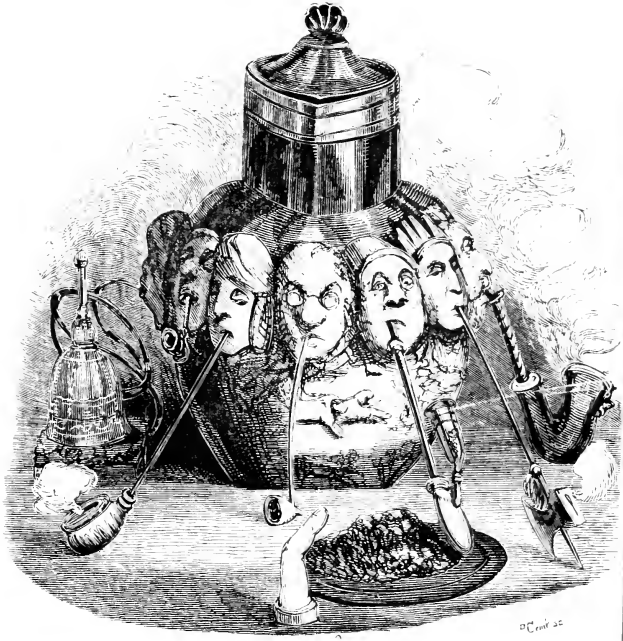

"*Quæ regio in terris nostri non plena* vaporis!"

"*Gods would have revell'd at their feasts of Mirth*
With this pure distillation of the Earth—
The Marrow of the World, Starre of the West,
The Pearle whereby this lower Orbe is blest—
The Joy of Mortals, Umpire of all Strife,
Delight of Nature, Mithridate of Life—
The daintiest dish of a delicious Feast,
By taking which Man differs from a Beast."

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"A custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in the black stinking fume thereof nearest resembling the horrible Stygian smoake of the pit that is bottomlesse."—THE MOST HIGH AND MIGHTIE PRINCE JAMES, BY THE GRACE OF GOD KING OF GREAT BRITAIN. *Anno Domini*, 1616.

"Thy quiet spirit lulls the lab'ring brain,
Lures back to thought the flights of vacant mirth,
Consoles the Mourner, soothes the couch of Pain,
And breathes Contentment round the humble hearth;
While savage Warriors, soften'd by thy breath,
Unbind the Captive hate had doom'd to death."

THE REV. WALTER COTTON.

"Bread or Tobacco may be neglected, but reason at first recommends their trial, and custom makes them pleasant."—LOCKE.

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PREFACE.

" Have you not set mine honour at the stake,
And baited it with all the unmuzzled thoughts
That tyrannous heart can think?"

Twelfth Night, iii. 1.

In the 'Times' paper of Friday, Feb. 9th inst., the following notice appeared in the column of minor facts and memoranda:—

"Is smoking injurious to health?—An interesting discussion is now going on in 'The Lancet' upon the effects of smoking. The use of tobacco has, during the last half-century, greatly increased in England, and has now become an almost universal practice. This question, in which the leading members of the medical profession are taking part, must not only greatly interest the public, but may very materially affect the revenue of this country, when it is known that the income derived from the consumption of tobacco was last year upwards of 32,192,943*l.* —the duty on which was more than 5,220,000*l.* This return is independent of cigars, which was about 150,000*l.* An able article on the tobacco question appears in 'The Lancet' of the present week by Mr. Solly, F.R.S., of St. Thomas's Hospital, which will be read with interest by all inveterate smokers."

Having vigorously and robustly lived in this category—an inveterate smoker—for the last twenty years of my life, the question concerned me nearly. That the tide of this "interesting discussion" was running against "inveterate smokers," indeed against the gentle weed, was but too apparent from the notice. I had lately read a ridiculous pamphlet, by a Mr. Lizars, against tobacco. Could that pamphlet have originated the "discussion"? I thought not; for it had seemed to me, perhaps erroneously, to belong to that class of publications by which credulous men are entrapped into the hands of those who pretend to know infallibly the cause of their secret and other ailments, and ultimately find themselves in a position which few like to disclose for the benefit of the public. But perhaps some "new discovery" had been made by these men of the lancet? Perhaps this Mr. Solly, *populi contemnere voces solitus*, has at last been enabled to establish an overwhelming BEWARE against the universe in the matter of smoking! . . .

I procured the 'Lancet,' read Mr. Solly's

"able article," and found it in substance a mere reproduction of Mr. Lizars in his pamphlet; the same old charges which, two hundred years ago, were found frivolous and unsupported by fact.

"Veterem ranæ cecinêre querelam!"

I know not whether Mr. P. B. St. John be still in the land of the living: if it be not contrary to his wishes I hope he is, were it only to grin sardonically at the fulfilment of a prophecy which he made some thirteen years ago, as the "Old Smoker," *vates sacer*, in 'Bentley's Miscellany.'

"How many times," he exclaimed, "in the swamps of the Far West have I escaped malaria, yellow fever, ague, perhaps death, by the unsparing use of the weed! and yet, doubtless, *ere long some new Father Mathew will open a crusade against the article!* We opine, however, that the *vapourings* of the anti-tobaccoites would turn out a *bottle of smoke*." *

Mr. Solly, F.R.S., has constituted himself the Father Mathew of this crusade, and the field of his operations is—the universe.

Vain, unprofitable waste of words and nervous

* See 'Bentley's Miscellany,' March, 1844.

energy, if it does not put money in the till of the 'Lancet'! He may reproduce the contents of the hundred volumes which have been written against tobacco; he can add nothing which was not said before; the weed defies him, will bear the brunt of his battle, will conquer him and reign on for ages, until a superior to it shall take its place as a social and moral modificator.

Parliament may fearlessly proceed to cut down the D Schedule of the income-tax without dreading a diminution in the patriotic aid of Nicotiana. And,* if of two countries, with an equal amount of population, the wealthiest and most highly civilised will consume the greatest weight of *soap;* if it be no exaggeration to say that we may fairly judge of the commercial prosperity of a country from the amount of *sulphuric acid* it consumes; we may most assuredly add, that the consumption of tobacco will always advance with the increase of population, in spite of medical or any other humbug.†

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* Liebig, 'Letters on Chemistry,' Letter III.

† It appears that our population-increase of last year was at the rate of a thousand a-day. The doctors in the 'Lancet'

"That most extraordinary plant tobacco," says Dr. Paris, "notwithstanding its powers of fascination, has suffered romantic vicissitudes in its fame and character. It has been successively opposed and condemned by physicians—condemned and eulogised by priests and kings—proscribed and protected by governments; whilst at length this once insignificant production of a little island, or an obscure district, has succeeded in diffusing itself through every climate, and in subjecting the inhabitants of every country to its dominion. The Arab cultivates it in the burning desert—the Laplander and Esquimaux risk their lives to procure a refreshment so delicious in their wintry solitude—the seaman, grant him but this luxury, and he will endure with cheerfulness every other privation, and defy the fury of the raging elements; and in the higher walks of civilised society, at the shrine of fashion, in the palace, and in the cottage, the fascinating influence of this singular plant commands an equal tribute of devotion and attachment." *

Were Dr. Paris alive I opine he would think this movement of Mr. Solly and his confraternity

face this fact with a newspaper report of a great diminution in the normal increase of the population of France, and actually ascribe it to the use of tobacco! But sauce for a goose is sauce for a gander, and our thousand a-day is a tolerably rich one, in spite of tobacco-juice. If the doctors and others would like to get some wholsesome knowledge on the important subject of population-increase, I beg to refer them to Dr. Lévy's 'Traité d'Hygiène Publique et Privée, ii. 736 *et seq.*, just published at Paris. Many a smoker with a large and increasing family would, perhaps, be glad if the fumes of tobacco could diminish his superabundant energies.

* Pharmacologia, p. 81.

a "rash fierce blaze" of honesty indeed! For the time is unfortunate for medical opinion. At the late great trial at the Old Bailey medical opinion cut a very sorry figure. The public was astounded to hear one doctor swear his belief that the death was caused by "epileptic convulsions with tetanic complications;" another, that it was the natural result of "angina pectoris;" a third, yea and a fourth, that they did not know the cause of the death! Is this a way to convince the public mind that medical opinion may be respectfully received and gratefully complied with? . . .

Mr. Solly has flagrantly transgressed the bounds of propriety. I cannot refrain from here quoting, with much disgust, two items of his incomprehensible excitement. He says,—

"I may be told that a certain exalted personage, whose kindness of disposition is only equalled by his moral and physical courage in the discharge of all his duties, smokes habitually without detriment. I can only say, *God grant that it may not shorten his valuable life* and impair his nervous system."

Again, even still more painful to read—

"I once knew a young clergyman who could only write his sermons under the stimulus of tobacco, and there is no

question that these discourses were brilliant, eloquent, and most interesting to listen to; *but the end of that man is not yet come.*"

This may be merely bad taste, senile weakness, blatant imbecility; but it is nevertheless very unkind to try and frighten a man, especially when a doctor is the ogre. I know not who the "certain exalted personage" happens to be, but the mawkish sentimentalism, the twaddle of this insidious prophet, must meet with its merited contempt from the exalted personage, since he can point to the late Duke of Sussex, who was an inveterate smoker to the last, and died comfortably in a good old age. And with regard to the still more Spurgeonite "turn or burn" warning given to the clergyman, the latter may think of the celebrated Dr. Parr—not the doctor of the life-pills—but the liberal-minded clergyman who died in 1825, beyond the scriptural age, namely, in his seventy-eighth year, of whom his medical friend and biographer says, that he "had fallen ripe and in due season;" and this friend, Dr. John Johnston, F.R.S., and Fellow of the Royal College of Physicians of London, re-

marks as follows on Dr. Parr's habit of smoking:—

"Mr. Roderick now laments that he ever introduced the pipe, from the excess in which Parr indulged in tobacco. . . . I am not convinced that this habit was productive of bad consequence to his health, though it was often inconvenient to his friends. Tobacco has been called the anodyne of poverty, and the opium of the Western world. To Parr, whose nerves were extremely irritable, and sensibility immoderate, perhaps it was a necessary anodyne. It calmed his spirits; it assisted his private ruminations; it was his companion in anxiety; it was his helpmate in composition. Have not all seen him darkening the air with its clouds, when his mind was labouring with thought?" *

Now, Dr. Parr must have been rather more than an inveterate smoker. Wolf states that Dr. Parr used frequently to smoke as much as twenty pipes of an evening: "er soll es manchmall an einem Abend, bis zu 20 pfeifen gebracht haben." Dr. Johnston says that five pipes would be nearer the mark; but the worthy old divine is represented in his portrait with an uncommonly big clay-pipe in his hand—one of those pipes yclept *aldermen*, from their ventral capacity; and

* Memoirs of Dr. Parr, p. 815.

every smoker knows how soon a pound of tobacco vanishes into thin air when he tunes his thoughts on such a capacious *avena*, however sweet it may be *ex magno tollere acervo.*

Moreover, Mr. Solly accredits the assumption of his friend Mr. Lizars, in holding forth the dread of impending *mania* to the unfortunate smoker!

This is a solemn matter. Let these men, and the whole confraternity now scribbling in the 'Lancet,' beware of the terrible responsibilities they incur in thus suddenly and with set purpose doing their utmost to *frighten* the nation—to involve it in terrors like that of a "nocturnal fear" and "a noon-day devil"—from which no man can flee in his utter bewilderment! It is sometimes a fearful thing to impart even an idea to certain minds—nay, any unusual exhibition may often involve serious mental results to a spectator. Esquirol assures us that "a lady, being present at a phantasmagoria, instantly imagined herself surrounded with goblins; a young man, assisting at an experiment, believes himself in subjection to the electric action which causes his imaginary

tortures; a lady hears people talk of magnetism, and she attributes her restless nights, her sufferings, to the mesmerists!" * I refer these doctors to the same author for a summary respecting these "dominant ideas"—*idées dominantes*—flung suddenly upon the minds of nations, and again I tell them to beware lest they actually produce psychologically what has never been produced physically by the sole and proper use of tobacco.

One word more on this tobacco-phobia of the doctors. Do they really expect to persuade the public to believe that they, the *doctors*, feel interested in the continued *health* of nations? If we paid them, like the Chinese, for keeping us *well*, the case would be altered: but our health would be their starvation! And, if the immense majority of our habitual ailments originate in corroding cares and anxiety, the use of the soothing weed is clearly the very arch-enemy of the doctors:—

"The *passions of the mind*," says Dr. Elliotson, "are a frightful source of disease,—much more so than is commonly imagined. An immense number of cases of disease

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* Esquirol, 'Des Maladies Mentales,' i. 43.

of the heart, and disease within the abdomen, as well as of the brain itself, arise, I am certain, from *unpleasant* passions of the mind."*

To meet this state of life's necessary evils Mr. Solly favours us with a question. He asks—

"Would it not be far more manly, far nobler, far more in accordance with the precepts of Christianity, if, instead of smoking away our griefs, and stifling in the pipe our angry passions, we met our difficulties with a manly front, and conquered our evil tempers by the force of our better nature? Are not all troubles sent," &c.

Unquestionably, Mr. Solly! But remember the words of Job:—

"Should a wise man utter vain knowledge and fill his belly with the east wind? Should he reason with unprofitable talk? or with speeches wherewith he can do no good?"—*Job* xv. 2.

It took you *ten years*, as you say in your first letter, before *you* gave up smoking, and found yourself "more manly, nobler, and more in accordance with the precepts of Christianity." Perhaps all of us will thus, in time, rise to your

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* Practice of Medicine, p. 36.

grand eminence, aided by those wise reflections suggested by Nicotiana in our griefs and troubles —a consummation most devoutly to be wished; and we congratulate you, Mr. Solly, on the thought of having already attained it.

I am quite sure that Dean Swift or Hamlet would "smell a rat" on this occasion in the dark chamber of the medical mind.

"I declare my conscientious opinion," says Dr. James Johnson, "founded on long observation and reflection, that, if there were not a single physician, surgeon, apothecary, man-midwife, chemist, druggist, or drug on the face of the earth, there would be less sickness and less mortality than now prevail." *

Perhaps this opinion may be shared by others in and out of the profession; whilst, if I frankly admit my misgivings of the medical body in general, I cannot but feel and express high esteem of many amongst them, who in all times have deserved well of mankind by their labours. Instructed at an early age for the healing art, I learnt to venerate the function—as high as any

* Quoted from 'Medical Confessions of Medical Murder,' published by the "British College of Health," the dissenting branch of the Faculty.

allotted to man. Since then I have been always familiar with the leading authors on their time-honoured shelves; but I cannot, for that very reason, close my eyes and obscure my understanding to the rampant fact of medical fallacies, medical mistakes, medical obtuseness, and, I may add, medical *special pleading*, and worse, with which we have all become painfully acquainted.

In this matter of tobacco I behold a frivolous discussion arising from a very trivial cause—the expression of an opinion against smoking by Mr. Solly, in one of his lectures delivered to his pupils. This was sharply noticed and commented on by some anonymous writer—then others replied, as usual—swelling *crescendo* the subject upon the public ear with "*Is smoking injurious?*"—then "*The tobacco question*"—and at last "*The* GREAT *tobacco question*"—with 'Lancet'-editions ravenously exhausted, out of print, at a premium, &c. &c. &c.

Should the following pages tend to impart sound knowledge of the subject, my pleasant labour, though severely hurried to meet the case, is freely tendered; and it will be some "returns"

of consolation to the weed of the world's admiration, that she has been defended by one whom she has befriended—that the doctors have been detected by one whom she has disinfected—and, finally, that it is no dishonour to dote upon her—

> "For 'tis a cause that hath no mean dependence
> Upon our joint and several dignities."

ANDREW STEINMETZ.

London, Feb. 16, 1857.

TOBACCO:

ITS HISTORY, CULTIVATION, MANUFACTURE, AND ADULTERATIONS.

INTRODUCTION.

The late Mr. Johnston, in his admirable work 'The Chemistry of Life,' traced the instinctive advances of man through three successive stages in ministering to his natural wants and cravings: First, his provision of bread and beef; secondly, fermented or alcoholic liquors, "to assuage the cares of his mind, and to banish uneasy reflections;" thirdly, "he strives to multiply his enjoyments, intellectual and animal, and, for the time, to exalt them" by the use of narcotics.

It is evident that this is merely the popular view of the subject with regard to alcoholic liquors and narcotics. As enlightened science has demonstrated a much more important func-

tion in the use of alcoholic liquors in the animal system, perhaps the time will come when the use of narcotics also will be rationally explained. The substances which are adapted to the formation of blood renew the organised tissues of the body; whilst another class of substances, in the normal state of health, serve to support the process of respiration. "The former may be called the *plastic elements of nutrition;* the latter, *elements of respiration.*" Amongst the latter Liebig classes *wine, beer, and spirits.* "In all chronic diseases death is produced by the chemical action of the atmosphere. When those substances are wanting whose function in the organism is to support the process of respiration—namely, fat, starch, gum, sugar of all kinds, wine, beer, spirits;—when the diseased organs are incapable of performing their proper function of *producing* these substances;—when they have lost the power of transforming the food into that shape in which it may, by entering into combination with the *oxygen of the air, protect the system from its influence*—then the substance of the organs themselves, the fat of the body, the substance of the

muscles, the nerves, and the brain, are unavoidably consumed. The true cause of death in these cases is the respiratory process, that is, the action of the atmosphere. . . . The flame is extinguished because the oil is consumed; and it is the oxygen of the air which has consumed it." * In effect, life is but the battle of the animal organism with oxygen: death is the victory of the latter; and it now appears that the forces with which nature enables us to fight this everlasting enemy are merely fat, starch, gum, the various kinds of sugar, wine, beer, and spirits! Respiration is but the natural broad-sword encounter of animality with oxygen—stroke for stroke it gives and takes, and every respiration proclaims a victory in the well-appointed system.

If it be then conclusively proved that alcoholic liquors are amongst the necessaries of life, after having been so long considered merely adaptations to assuage the cares of the mind and banish uneasy reflections, may we not confidently expect

* See Liebig's admirable 'Letters on Chemistry,' first series, Letters x. and vii. If the reader has not read the work he had better do so without delay.

that the appointed function of tobacco, as familiarly used by universal man, will some day be as rationally explained and established? Every country or tribe of human beings has had from time immemorial its own peculiar narcotic, either aboriginal or imported. The universal instinct of the human race has led, somehow or other, to the universal supply of this want or craving. Tobacco in North America and the islands; the thorn-apple, coca, tobacco, and hemp in South America; hops and tobacco in Europe; hemp in Africa; amanita, betel-nut, and tobacco in Asia—nay, Mr. Johnston has mapped out the universe, according to its latitude and longitude, exhibiting the various narcotics in vogue amongst its civilised or savage inhabitants.* 'A Map of the Distribution of Narcotics over the Globe!' Such is the title; and we may ask how it came to pass that the human instincts discovered the uses to which those products of the earth might be applied—tried them, and, finding them good, have ever classed them effectually amongst the

* Johnston's 'Chemistry of Life,' No. vii.

necessaries of life? Shall we seek and ultimately find an explanation in the undoubted existence of countless millions of *microscopic animalculæ* which surround and penetrate us on all sides—agents of disease, whose more visible congeners we so easily exterminate for a time by the aid of fuming narcotics, especially tobacco? * And shall we not be able ultimately to prove that such narcotism is a prophylactic against numberless miasmata perpetually coming into existence in the universal economy of nature,

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* No insect except the house-fly survives the fumes of tobacco; and the exemption of the fly is a very striking fact, worthy of consideration as to the subject of the text. The fly itself is a *prophylactic* to man; an aërial scavenger, incessantly urging through his delicate organs (which he fills with copious draughts of water) every vestige of decomposing matter, and, by the incessant rapidity of his beautiful gyrations, agitating and thus renewing the stagnant atmosphere of ill-ventilated apartments. Kill him by thousands, and thousands take his place; for nature is more provident of your welfare than you are yourself; nay, the very annoyance he gives you provokes circulation in the blood, rendered languid by the impure air which you breathe. He tells you, on the part of nature, by his increased multitudes, that pestilence is around you, or upon you. His importunity is unquestionably the best "medical advice" you can take as to putting your house within the rules of health. And it was destined that tobacco-smoke should not interfere with his important function!

whose mighty advance takes but a small, though adequate, cognizance of mere animal suffering in her great inscrutable developments? For my own part, I cannot believe that so universal a habit—tending, as is proved, to increase with the increase of populations—has been and is a mere whim or fancy of self-indulging man; but rather is one of those mysterious means by which we are compelled, in spite of ourselves, or with free-will and pleasure, to subserve the great behests of Providence. Possibly indeed the detractors of tobacco may have been saved from many a malady by the conjoint indulgence of a world of smokers. The very strength of the propensity assumes, it seems, considerable importance in the solution of the problem. Where nature gives a strong tendency, there must be a strong reason in the cause—and still more when she superadds a pleasure, like all other pleasures of which we are conscious, but can give no account, after enjoyment, which is the peculiarity of the smoker's pleasure—a point worthy of philosophic consideration.

PART I.

HISTORICAL.

Doubts have been advanced, and plausibly supported, as to the alleged fact that the smoking of tobacco was peculiar to the aborigines of America. The plant, in its numerous varieties, is known in every region of the globe, from the equator to the sixtieth degree of latitude. It is certain, however, that its use in Europe was borrowed from the savage of America; and the history of tobacco, in its adoption by civilised man as a luxury, is as interesting to philosophical contemplation as is the history of any of his religious or social extravagances. It has triumphantly resisted the ridicule of the mob, the excommunicating anathemas of the popedom, and the penalties of kings—mutilation and death. Never was there a more striking illustration of the poet's text, *Gens humana ruit per vetitum nefas.* It seemed as though certain privileged

thinkers, concluding that it was the "fire stolen from the ethereal mansion," ascribed to its furtive introduction all manner of ills that flesh is heir to—*macies et nova febrium cohors;* nay, the very image of death by premature decay loomed in the quivering smoke of the pipe, and horribly grinned in its ashes — *leti corripuit gradum!* Considering the dreadful evils which civilised man inflicted upon the man of nature all over America, perhaps it was by a sort of retribution that this "perilous stuff" was permitted to be sent by Hernandez de Toledo into Spain and Portugal in 1559—if persecution, pains, and penalties be the instruments of Providence in the hands of man; but if millions after millions of the human race then for the first time quaffed a pleasure unfelt before—a passing solace to the mind's unrest—a thrill of comfort, contentment, and submission, whilst calmly inhaling its mysterious cloud amidst the stern realities of life—and meanwhile a prophylactic against the formidable distempers so often decimating Europe —then certainly was good returned to us for evil wantonly inflicted.

King James I., "the Most High and Mightie Prince"—the British Solomon, as his courtiers called him—*Maistre Jacques*, as he was dubbed by Henry IV.—was amongst the first to denounce the use of tobacco. A characteristic quotation from his '*Counterblaste, or Misocapnus*,' has been given on the back of the title-page. This royal philippic, *lusus regius*, has been and is the favourite theme for reproduction by those amongst the moderns who feel a sort of vocation to denounce the "weed;" but if they do not seek merely to advertise their professional avocations, they should remember that the *moral* opinions of James I. can have no weight with any man who is acquainted with the history of that royal phenomenon, who was himself "a slave to vices which could not fail to make him an object of disgust" equal to that which *he* felt at the "stinking fume" of tobacco;* and that better evidence than mere assertion must be produced in a court where the majority of mankind may or will be defendants.

We may gather, however, from the king's tes-

* Raumer, ii. p. 200 *et seq.*, giving contemporary vouchers; also Winwood's 'Memorials,' ii.

timony, the eagerness with which the herb was adopted on all sides. He asks—

"Is it not a great vanity that a man cannot heartily welcome his friend now, but straight they must be in hand with tobacco? no, it is become in place of a cure [remedy] a point of good fellowship; and he that will refuse to take a pipe of tobacco amongst his fellowes (though by his own election he would rather feel the savour of a sinke) is accounted peevish, and no good company, even as they do with tippling in the cold eastern countries. Yea, the mistress cannot in a more mannerly kind entertain her servant than by giving him out of her fair hand a pipe of tobacco.

"Moreover, which is a great iniquity, and against all humanity, the husband shall not be ashamed to reduce thereby his delicate, wholesome, and clean-complexioned wife to that extremity, that either she must also corrupt her sweet breath therewith, or else resolve to live in a perpetual stinking torment."

Certainly this description of the prevalence of the custom, if true, proves that the practice was more general at that time—thirty years after its introduction—than it is at the present day, though far more costly, for the king states that "some of the gentry bestow three and some four hundred pounds a yeere upon this precious stinke"—representing a much greater value of the present money.

According to Aubrey, the pipe was handed from man to man round the table: tobacco "was sold then for its wayte in silver. I have heard some of our old yeomen neighbours say that, when they went to Malmesbury or Chippenham, they culled their biggest shillings to lay in the scales against the tobacco."

In Mr. Solly's letter, published in the *Lancet*, he repeats an absurd opinion put forth by a Mr. Lizars, in his very slovenly and ill-written philippic against tobacco. "I believe," says the doctor, "if the habit of smoking in England advances as it has done during the last ten or twelve years, that the English character will lose that combination of energy and solidity which has hitherto distinguished it, and that England will sink in the scale of nations." Now, since it is quite evident from the doctor's letter that he knows nothing respecting the physiology of smoking—all his long tirade being merely a tissue of opinions without facts to support them—the announcement is simply ridiculous, instead of being worthy of deep consideration, as it would have been had his whole letter not forcibly suggested the con-

viction that it was the product of effete senility. Still the striking fact to which the historian can appeal would have fronted him at once; for, when we call to mind what was achieved by the men of England, at that time general smokers, by the king's testimony, so soon after the latter went to his long account, we may reasonably suppose that the men of England were not deficient in "energy and solidity." Again, the habit has been ever since constantly increasing, especially in the Navy, amongst the regular defenders of England; and whatever was grandly done in the last war was not prevented by the practice of smoking and chewing; and our latest defenders abroad may be safely pronounced to have, if possible, surpassed their predecessors in "energy and solidity." Alma, Inkermann, Balaklava, the Redan, and the endurance of that never-to-be-forgotten Crimean winter and the infernal trenches, should shame any man out of the very thought that the solidity and energy of England are departing.

At all events, according to the homely saying, "what's sauce for the goose is sauce for the

gander," as all other nations *surpass* us in the habit of smoking, the doctor must admit that others are "sinking" also by means of smoking, and we must necessarily remain *in statu quo* proportionally—equals being added or subtracted from given quantities, the latter must remain relatively the same. If we have been giants "in the scale of nations," and all nations be made to "sink" together, we may still remain as General Tom Thumb to an infant of three months; and that will be some consolation at all events.

The nimble-witted Jesuits replied to James's *Misocapnus* in their *Anti-Misocapnus*—perhaps through theological spite, but most assuredly with infinitely more sense and decency. Other writers of note joined in the defence of the proscribed and persecuted weed—Neandri, Thorius, Lesus, Braum, in prose and verse; but all to no purpose against the prejudice of the "high and mighty" who undertake to make a providence for man. In 1624 Pope Urban VIII. published a decree of excommunication against all who took snuff in the church. Ten years after this, smoking tobacco was forbidden in Russia, under the pain of having

the nose cut off. In Transylvania the penalty for growing tobacco was a total confiscation of property, and for using the weed a fine varying from three to 200 florins. In 1653 the Council of the Canton of Appenzel cited smokers before them, whom they punished, and they ordered all innkeepers to inform against such as were found smoking in their houses. The police regulations of Berne, made in 1661, were divided according to the Ten Commandments, the various prohibitions being classed with reference to each commandment, and the prohibition against smoking stood immediately beneath the command against *adultery*—for what reason it is impossible to say, unless it arose from the fact that the tobacco-plant is, like many others, a sort of vegetable Mormon, belonging to the order styled *Pentandria monogynia*—as it were, a female polygamist. This prohibition was renewed in 1675, and the tribunal instituted to put it into execution, the *Chambre au Tabac*, continued down to the middle of the last century. Pope Innocent XII., in 1590, excommunicated all those who were found taking snuff, or using tobacco in any way, in the church

of St. Peter at Rome. Even so late as 1719 the Senate of Strasburg prohibited the cultivation of tobacco, from an apprehension that it would diminish the growth of corn. Amurath IV., king of Persia, published an edict which made the smoking of tobacco a capital offence: this was founded on an opinion that it rendered the people infertile! The reader will agree with Dr. Paris that tobacco "furnishes, in its most romantic history, a striking illustration of the triumph of popular opinion over a series of legislative enactments, which had no other origin than that of ignorance and prejudice." *

Sterne's proverbial dictum—"they manage things better in France"—was certainly exemplified in the matter of tobacco. The king of France, or rather the shrewd Richelieu, took a different view of the growing propensity. No law was passed against tobacco, but a duty was imposed upon it, extremely small at first, and this lasted to the year 1673; but in 1674, the habit of snuffing and smoking becoming more

* Medical Jurisprudence, ii. 415.

and more popular, the government of Louis XIV. increased the duty, and then converted the cultivation into a monopoly. This was conceded to a speculator for six years, in consideration of the payment of 700,000 francs in three instalments, the enormous sum of more than 29,000*l.* sterling. In 1720 the consideration for the monopoly was more than doubled; in 1771 it was nearly quadrupled, amounting to about 1,100,000*l. per annum.* As the consumption of tobacco continued to increase, the government took upon itself the entire monopoly, under the name of *Regie:* and some idea may be formed of the enormous increase in the consumption of tobacco, when it is stated that in 1844 the revenue rose to the sum of 102,000,000 francs, more than 4,000,000*l.* sterling; since which date it has been constantly and steadily *increasing*, at the average rate of from 2,000,000 to 5,000,000 francs per annum. The list before me is from 1829 to 1844. It is very probable that the revenue for last year exceeded that of England, which is set down at 5,220,388*l.* We must certainly pay the French kings and their ministers

the compliment of pronouncing them much more rational than their neighbours on all sides, who fined, ruined, mutilated, or decapitated their miserable subjects in the vain effort to resist a propensity as strong and imperative as any that Gall or Spurzheim discovered, or fancied they discovered, in the human brain. The Frenchman whose statistics have just been quoted boldly puts forth the following question and answer:—

"Can we now set a term to an increase of consumption so enormous? We think not . . . .; for we believe that there exist two causes which must cause a manifest increase in the consumption of tobacco. The first is the increase of population; and the second is the improved condition of the poorer classes; for how many peasants are there in France who do not smoke simply because they are in want of bread?" *

Nor is the career of tobacco less striking in England and her colonies. In 1615, the year before King James's 'Counterblast,' the fields, the gardens, the public squares, and even the streets of Jamestown, Virginia, were planted with tobacco—nay, it became not only the staple,

* Joubert, 'Tabac,' p. 9.

but the currency of the colony.* Fifty years after, Virginia exported to England 60,000 lbs.; during the next thirty years it increased to 120,000lbs.; and during the last 160 years, since 1689, the produce of Virginia has risen to nearly twice as many millions of pounds!

As to the consumption of tobacco in England, it is certain that the above 120,000 lbs. were all the imported supplies for home consumption and exportation; but for the last year the imported leaf which paid the duty of 3*s.* per lb. exceeded 33,802,500 lbs., besides upwards of 333,000 lbs. of cigars, which, paying a duty of 9*s.* 6*d.* per lb., gave to the Customs 150,000*l.* The progressive increase will appear by the following table:—

1851	..	..	28,062,841 lbs.
1852	..	..	28,558,733
1853	..	..	29,737,561
1856	..	..	33,802,500

And to this must be added the large quantity of contraband tobacco which the duty of 3*s.* a lb. tempts the smuggler to introduce.

That the consumption among us is still rapidly

* Bancroft, 'United States,' i. 114.

on the increase, appears from the above numbers; but it is more clearly shown by the following table, exhibiting the quantities consumed at each of the last four decennial periods:—

Years.	Total Consumption.	Population.	Consumption per Head.
	lbs.		oz.
1821	15,598,152	21,282,960	12
1831	19,533,841	24,410,439	13
1841	22,309,360	27,019,672	13½
1851	28,062,841	27,452,692	17

In the column showing the consumption per head, I have rejected the decimal, so as not to confuse the reader; thus for 11·71 oz. I have given 12 oz., and so of the rest. I give the table on the authority of Mr. Johnston, quoting the 'Journal of the Statistical Society,' xvi. 50.

These numbers, continues the same authority, show that, during the last of these periods of ten years, the consumption of the United Kingdom increased one-fourth, or from 13½ to 17 oz. per head. But these last numbers do not truly represent the consumption in either of our two islands. Great Britain, as in the case of tea

and ardent spirits, consumes a much larger proportional quantity than Ireland. Thus, in 1853, the home consumption in the two countries was—

	Great Britain.	Ireland.
Total consumption	24,940,555 lbs.	4,624,141 lbs.
Consumption per head,	19 ounces.	12 ounces;

being one-half greater in Britain than in Ireland.

The duty at 3*s.* per lb., and its produce in the United Kingdom, stand thus:—

	Total duty.	Duty per head.
1852	£4,560,742	3*s.* 2*d.*
1853	4,751,760	3*s.* 4*d.*
1856	5,070,388	3*s.* 7*d.*

Some idea of the subject will be formed by inspecting the following document, published by Messrs. Grant, Hodgson, and Co., sworn brokers, dated 2nd Feb. 1857. Particular attention may be directed to the summary of *Home Trade;* it will enable the smoker to discover the various kinds of tobacco and the proportions of the compounds which the Trade supplies to his pipe or lips.

Imports in January, 1857.

Virginia, Kentucky	Hhds. and tierces	468
Maryland do.	Hhds.	156

Negro-head and Cavendish	Kegs, tierces, and boxes	55
Havannah and Principe Cigars	Cases	222
Columbian Cigars	Cases	—
Hambro', Brazil, &c., Cigars	Cases	10
Manilla Cheroots, East India Cigars or Cheroots	Cases	14
Havannah, Cuba, and Yara Leaf	Bales	1553
Porto Rico Leaf	Bales	—
St. Domingo	Serons	—
Columbian	Serons and boxes	3728
Brazil Leaf	Bales	—
Varinas Roll, and Leaf	Cases	—
South American, Palmyra, and Paraguay	Bales	63
Manilla Leaf	Bales and cases	329
China Leaf	Bales	—
East India and Java Leaf	Bales and cases	198
Latakia	Bales and cases	—
Turkey and Greek Leaf	Cases and bales	419
Amersfoort and German	Boxes, bales, cases, and hhds.	432
Seed Leaf	Cases	—
Snuff	Casks	—

Deliveries in January, 1857, *for Exportation.*

Virginia, Kentucky, &c.	Hhds.	332
Maryland	,,	2
Negro-head and Cavendish	Kegs, tierces, and boxes	151
Havannah Cigars	Cases	65
Hambro' Cigars	Cases	
East India Cheroots (all sorts) and Cigars	Cases	
Havannah and Cuba Leaf	Bales	60
Porto Rico Leaf	Bales	—
St. Domingo Leaf	Serons	—
Columbian	Serons	262
Brazil	Bales	

Varinas	Bales	—
South American and Paraguay	Serons	—
East India, Java, and Manilla Leaf	Bales and cases	225
Turkey and Greek Leaf	Bales and cases	10
Amersfoort and German	Boxes, bales, cases, and hhds.	1
Seed Leaf	Cases	—
Snuff	Casks	—

For Home Trade.

Virginia, Kentucky, &c.	Hhds. and tierces	507
Maryland	Hhds.	139
Havannah Cigars	Cases	160
Hambro' Cigars	Cases	
East India Cheroots (all sorts) and Cigars	Cases	
Havannah and Cuba Leaf	Bales	367
Porto Rico Leaf	Bales	60
St. Domingo	Serons	14
Columbian	Serons	137
Brazil Leaf	Bales	111
Varinas Roll	Serons	102
South American and Paraguay	Bales	
Manilla Leaf	Bales and cases	350
East India and Java Leaf	Bales and cases	
Turkey and Greek Leaf	Bales and cases	741
Amersfoort and German	Boxes, cases, bales, and hhds.	421
Seed Leaf	Cases	12
Snuff	Cask	—

For Use of the Navy.

Virginia and Kentucky	Hhds.	—
Negro-head	Kegs and tierces	—

Under Bond.

Virginia and Kentucky	Hhds.	176
Maryland	Hhds.	2
Negro-head and Cavendish	Kegs, tierces, and boxes	30

Havannah Cigars	Cases	8
Hambro' Cigars	Cases	
East India Cheroots (all sorts) and Cigars	Cases	
Havannah and Cuba Leaf	Bales	11
Porto Rico	Bales	—
St. Domingo Leaf	Serons	—
Columbian	Serons	10
Brazil Leaf	Bales	2
South American and Paraguay ..	Bales	43
Turkey Leaf	Bales and cases	37
Manilla Leaf	Bales and cases	4
Latakia Leaf	Bales and cases	—
East India and Java Leaf	Bales and cases	72
Amersfoort and German Leaf	Boxes, bales, cases, and hhds. ..	38
Seed Leaf	Cases	—
Snuff	Casks	—

In Europe, generally, with the exception of Russia and Prussia, the consumption of tobacco is perhaps restricted by heavy duties; yet the consumption of the United Kingdom is, as I before stated, less than that of most other European nations.

In Hamburg 40,000 cigars are smoked *daily* in a population whose adult males scarcely amount to 45,000 individuals.

In France it is about 18½ oz. per head, three-eighths of this quantity being used in the form of snuff. In Denmark it amounted in 1848 to

about 70 oz. or $4\frac{1}{2}$ lbs. per head; and in Belgium it averages at present $73\frac{1}{2}$ oz. or $4\frac{3}{5}$ lbs. per head.* These quantities are, Mr. Johnston thinks, to some extent beyond the European average; but no one who has had much intercourse with the Continent would, I think, feel disposed to think them beyond the mark. In some of the North American States the proportion greatly exceeds these quantities, whilst amongst Eastern nations it is believed to be greater still.

The average consumption of tobacco by the whole human race of 1000 millions is 70 oz. a head, the total quantity consumed being two millions of tons, or 4480 millions of pounds.

The largest growers of tobacco at present are the United States of America. Their annual production at the last two decennial periods of their census-returns was estimated in

1840 .. .. at 219,163,319 lbs.
1850 .. .. at 199,752,646

The Dutch are extensive growers, and so are the Belgians and the various "nationalities"

* Annuaire Statist. Belge, 1854, quoted by Johnston.

comprehended under the name of Germans; indeed, German tobacco insinuates itself into every possible compound of the shops, being as cheap (but in the end as dear) as anything else that we import from the land which Tacitus bepraised for the same reason that makes Guizot such an indefatigable expounder of English history.

In the valley of Guelderland about two millions of pounds of tobacco are raised. Of this nearly one-half is bought by the French government for the supply of France. The rest of the Guelderland tobacco is shipped to North America, nay, even to the island of Cuba—the home of the far-famed Havannah;—and, as our Scotch and Irish whiskies are largely imported by the French to deodorise, colour, and flavour, and send back to us as prime Cognac of some fabulous age—so, doubtless, the manufacturers of Havannah "work up" the Dutch and German commodity with a dash of their own *herba divina*, and send it back to expire "in Fatherland," enriched by its transmigration.

The total yearly produce of tobacco all over

the world weighs as much as the wheat consumed by ten millions of Englishmen. Reckoning it at only double the market value of wheat, 2*d.* and a fraction per pound (immensely below the mark), it is worth in money as much as all the wheat eaten in Great Britain.* Such computations are more objects of curiosity than worthy of serious consideration; since the earth and the fulness thereof are adapted to support a thousand times more inhabitants than exist, and the arithmetic of the matter applies equally to another "article" of daily and universal consumption — more effectually injurious to the health of man than tobacco, a powerful nervous medicine daily imbibed — tea and coffee — the united duties on which paid, last year, 6,389,722*l.*; thus giving a much larger *head-consumption*, and a positively correct one—for the two drinks enter into the blood-circulation of every man, woman, and child in the kingdom.

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* Johnston, 'Chemistry of Life,' *ubi suprà*.

PART II.

CULTIVATION.

If the absolute abundance of any of the products of nature be any criterion by which we may infer some commensurately extensive purpose to be subserved thereby, the immense varieties of tobacco, the rapidity and vigour of its growth, the prodigious quantity of its seed in each plant, and the great difference of climate in which it will thrive and reward cultivation, must exalt it highly amongst the agents of the terrestrial economy. Forty species have been named, but only eight or ten are cultivated, in different varieties. The most abundantly grown is the Nicotiana tabacum—so named after *Nicot*, the Frenchman, who introduced it into France. This species may be taken as the type of the most beautiful symmetry of all the family. I have seen the plant full six feet in height—the growth of

four summer moons—rising from the soil with a pyramidal stem, the base of which nearly equalled the wrist of man in thickness. Stout tendons fix it to the soil; but it is constantly observed that the plant tends, as it were, to emerge entirely from the ground, which must be repeatedly heaped up round about the salient root. Its cylindrical stem is divided by numerous branches, adorned with magnificent leaves, oval, lanceolate, alternate, and 24 inches in length by 18 in diameter. The tips of the leaves are acute, their borders wavy, the surface velvety and strongly marked with a mimic nervous system, dividing the leaf in spaces at right angles nearly from the central spine, and of a yellowish-green colour, glutinous to the touch, and bitter to the taste. The flower is purplish; the fruit-pod is oblong, membranous, with two lobes containing an immense number of exceedingly fine seeds: Linnæus counted 40,320. So vigorous is the reproductive energy of the plant, that I have seen it blooming a beautiful flower after having been cut down and hung up to dry for three weeks—the flower-bud having been developed from the juices of the hanging stem. The seeds have

been known to retain their vitality for fifteen years.

Between the 40th and 47th degree of latitude is the climate which seems best adapted for the cultivation of tobacco of the strongest kinds, but the warmer latitudes have hitherto produced the mildest and wholesomest varieties. The finest tobacco of America—if not the finest in the world, certainly the dearest—is that produced at the Havannah, in the island of Cuba. It is said that Cuba is the very jewel of the Spanish crown because of its Nicotiana—the cigar being absolutely necessary to propel the blue blood (*sangre azul*) of Spain's gentility.

The Manilla tobacco is produced in the island of Luzon, one of the Philippines. A common notion prevails that Manilla cigars are made up with opium. I have tested them chemically with the greatest exactitude, and could not detect a trace of opium in any of its forms.

In Western Asia the most prized tobaccos are those of Latakia, the ancient Laodicea, in Syria, and those of Shiraz in Persia. These are also consumed amongst ourselves by way of "mixture" for the pipe.

The principal commercial centres of the globe for the cultivation and exportation of tobacco are as follows:—

In America—Virginia, Maryland, Louisiana, Havannah (Cuba), Macouba, Tobaco, and St. Vincent.

In India—the Philippines and Borneo.

In Europe—Spain, France, Italy, Amersfoort, Holland, Belgium, the Levant, Silesia, and the Ucraine.

This list shows where the weed is "raised," but the whole atlas must be repeated to state where it is absorbed.

The climate, the soil, the mode of culture, the kind of manure applied, the period at which the leaves are gathered, the way in which they are dried and cured, the time they are kept in store, the distance to which they are carried to market, and the process by which they are prepared for use—all these circumstances exercise a well-known influence upon the leaf; it is, like wine, improved by careful keeping and mellowed by age, if artificial heat has never been applied to drive off the manufacturer's moisture. These

conditions being so varied, there can be only few places in which they all conspire to the production of the most valuable crop. Hence, as in the case of the vine and with tea and coffee, the localities which yield tobacco in the greatest perfection are not only few in number, but generally very limited in extent; and in the temperate climates of its cultivation a single night's frost is sufficient to damage and utterly destroy the entire crop, either at its first planting out or at its maturity—as was the case last autumn in America.

Tobacco was once extensively grown in Ireland and Yorkshire; and were it not forbidden by law, its cultivation, with the aid of science in the matter of manure, would amply reward the speculation. It requires a light loamy soil, and the kind of manure used must be adapted to the quality of the tobacco as to its strength or mildness.

In America, and all temperate climates, the seed is first sown about the beginning of March, on a hot-bed. In a week the plant appears not larger than a pin's head, and continues to grow

rapidly in its artificial climate, until, in the first week in May, it is ready for transplanting. It is then pricked out singly, each plant being allowed three square feet of superficial surface. Thus, an acre will receive 1613 plants, and not more, if broad and vigorous leaves are required, such as will yield half a pound of prepared tobacco from each plant, or 800 lbs. to the acre. This transplantation requires care, so as not to injure the delicate fibres of the embryo-giant, giving as yet no conceivable idea of the "development" which it will attain, if you only give "ample room and verge enough" for its superabundant energies.

The first week in May is the usual time; but still a frosty night may utterly undo your toilsome labour; if so, you must renew the transplanting from a stock reserved for the purpose; nay, you may have to do so a third time, in a very "unlucky" season. After the third failure the French "give it up," and plant hemp, so as to lessen their loss for the season. It must be remembered, however, that one crop out of three will amply remunerate the culture.

Your plants have struck and show well, and begin to rejoice in the genial warmth of the vernal sun: but your labour is not done. All manner of grubs, earthworms, and insects will attack the tender nurseling: these you must kill or ward off with lime or sawdust until a month has passed away, and then the plant will be safe from such depredators. As it grows every weed dies off beneath it; it occupies its space without competition; but as every living thing has its parasites—man has twenty within and without him—so has the tobacco. A peculiar caterpillar will attack the leaves and eat them up, if you are not a vigilant morning and evening visitant to nip him in the bud.

Soon the plant enlarges its dimensions, but the growth must be checked. A dozen leaves at the most are sufficient for each plant; and having developed that number, it must be topped off; and every flower-bud must be repeatedly removed so as to prevent its flowering, which would impair the quality of the leaves.

Early in September or later, according to the season, is the time of gathering the crop. In hot

climates, at the time of maturity, there is an odour of tobacco round about the plant; but nothing is more absurd than the Munchausen story sometimes told by knowing wags, to the effect that the best relish of a cigar is when the leaf is just culled from the plant and rolled up there and then into a cigar and smoked! This is a pure fable: you might just as easily set the Thames on fire with a rushlight. The leaf when gathered—whether on the stem as in America, or separately as in France and Germany—is rich in its peculiar juices, greenish as any autumnal leaf, and very brittle.

The leaves are then hung up in covered sheds or lofts, admitting the light and air freely on all sides, and there they remain for six or seven weeks, until they are perfectly dry and withered.

It is a better plan, however, to lay them in heaps, and give them a sweating for a week before suspension: the drying process will thus be more rapid, and the tobacco will be improved in flavour.

After this drying, a moist, "juicy" day, as the Yankees call it, is chosen; the leaves are

thrown in heaps on the floor, covered with mats or blankets, and thus retained for the purpose of setting up the *fermentation*, which results in the peculiar aroma of tobacco. The dry leaf has scarcely more odour than any other leaf: it is its peculiar fermentation which gives it the fragrance of the "weed." The speed of this process will depend upon the surrounding temperature: 36 hours will sometimes suffice. The fermentation must be stopped at attaining a precise degree of heat, which is ascertained by shoving in the hand: below or above that point (which practice makes easy of detection) the tobacco would be "foxy"—deteriorated in the market. The fermentation is stopped by uncovering, and spreading out, and turning over the leaves.

Various manipulations ensue in various countries. In some the leaves are twisted into rolls, in others made up into bales; and in America they are pressed into hogsheads, or other like receptacles, with a powerful lever, which has the effect of spreading the oil of the leaf uniformly through its mass.

Supposing the planter to have succeeded in

getting his 800 lbs. per acre, we may proceed to calculate what the product of each acre may fetch in the London market. The calculation does not take into account the cost of production, freight, &c.:—it merely shows the value it represents immediately before it begins to add to our comforts and to the revenue. Taking the *average* prices at present given, some kinds of tobacco would figure as follows—"errors excepted."

				Per Acre.
Virginia-leaf, 800 lbs. at	1*s.*	a lb.	=	£40 0 0
Amersfoort	,,	6*d.*	,,	20 0 0
Cuba	,,	8*d.*	,,	26 13 4
Columbian	,,	2*s.*	,,	80 0 0
German	,,	1*s.*	,,	40 0 0
Manilla	,,	1*s.*	,,	40 0 0
Porto-Rico	,,	5*d.*	,,	16 13 4
Havannah	,,	3*s.*	,,	120 0 0

The reader will complete his ideas on the subject by examining the following price-list of Grant, Hodgson, and Co., brokers, for the beginning of the present month, February, 1857; remembering always that 3*s.* 2*d.* is the duty to be superadded on each lb. of tobacco, and 9*s.* 6*d.* on cigars and any other form of the manufactured article. This duty, of course, is the cause of its

high price to the consumer, and it clearly amounts to a considerable sum thus paid to government by even the most moderate smoker during the year. Smokers should therefore enjoy the special favour of governments, as no other member of the community pays taxes in proportion to the tribute of the smoker for the enjoyment of his weed. I take it that the consumption of one ounce of "shag," "returns," or "bird's-eye" per week, would constitute a very moderate smoker:—call it 4 lbs. of tobacco per annum. For this favour he pays to government 12*s.* 8*d.* Still it must be admitted that the duty on tobacco is unquestionably one of the finest strokes of fiscal ingenuity, for it collects an enormous revenue from an article which is not indispensable, and yet which is made a necessary of life by an irresistible craving of man. As an indirect tax it is also absolutely perfect:—for it reaches every consumer by imperceptible gradations—from the richest to the poorest—the latter not being inconvenienced, the former scarcely feeling it at all.

WHOLESALE PRICE OF TOBACCO AND CIGARS.

Maryland.

	d.	d.	
Fine yellow	10	11	per lb.
Yellow	9	10	,,
Brown to coloury	8	9	,,

Virginia and Kentucky.

	2nd Feb. 1857.		1st Feb. 1856.		1st Feb. 1855.	
	per lb.		per lb.		per lb.	
	d.	d.	d.	d.	d.	d.
Fine Scotch and Irish Spinners	11	12	8	8½	8	8½
Good middling ditto	9½	10½	7	7½	7	7½
Ordinary to middling	7½	9	5½	6½	5½	6
For fine Shag and part Spinning	9	10	7	7½	6½	7
For common ditto	7	8	5½	6½	5½	6
Old and dry (scarce)	..	..	4½	5	4½	5
Fine black sweet-scent	10	..	7	7½	6½	7
Good stout, rich Snuff Leaf ..	8	9	6½	7	6¼	6½
Middling ditto	7	8	6	6¼	5½	6
Ordinary short and part faded	6	6½	4	5	4¼	4½
Stripped leaf, or Lux fine Spins	14	16	10	10½	10	10½
Ditto good middling ..	12	13	8½	9½	9	9½
Ditto middling & Planters	..	..	7¾	8	7½	8
Kentucky Stemmed, fine ..	14	15	9½	10	9	10
Ditto good and leafy ..	12½	13	9	9¼	8½	8¾
Ditto short to middling	11⅓	12	8	8½	8¼	..
Ditto Leaf, good to fine ..	9	11	6½	7½	6½	7½
Ordinary to middling	6	8	5½	6	4¼	5½
Stout rich Yorks for Snuff ..	..	..	6½	7½	6	7
Cavendish	8½	10	7	8½	7	8½
Negro-head, part heated ..	5	6	3	4	5	6
Ditto good	11	..	9	10	9	10
Ditto fine	11½	13	10½	11	11	12
Ditto Barret's fine twist	18	19	17	18	21	..

	Per lb.			
	s.	*d.*	*s.*	*d.*
Amersfoort for Cigars & Snuff	0	6	0	7½
Akyab	0	6	0	6½
Brazil	0	5	0	6
Cuba	0	8½	0	11
Columbian	0	9	2	2
Ditto (in Roll) ..	0	8	0	10
Esmeralda	1	6	1	10
Florida	1	8	2	0
Greek	..		..	
German Flat covers	1	0	1	8
Ditto Folded covers	0	8	0	11
Ditto for cutting	0	6¼	0	7½
Ditto Stemmed ..	0	8	1	8
Havannah Leaf ..	1	2	4	6
Java	0	7	0	11
Manilla	0	8	1	8

	Per lb.			
	s.	*d.*	*s.*	*d.*
Porto Rico	0	4½	0	6
Palmyra	1	3	1	10
Paraguay		..	0	9½
Ditto (Roll)		..	0	9
Turkey Leaf ..		..	0	9
Seed Leaf	0	8	0	8½
Upata	0	7	0	8
Varinas Roll ..	0	9	0	11
St. Domingo Leaf		..		..
Yara	1	2	2	9
Havannah Cigars	8	0	21	0
German ditto ..	1	2	2	6
Manilla Cheroots	7	0	7	6
East India ditto ..		..	1	0
Kentucky Stalks	3	1	3	2
Virginia ditto ..	3	2	3	3
Mixed ditto	2	11	3	0
Smalls (nominal)	2	9	2	10

PART III.

MANUFACTURE.

THE various kinds of tobacco arrive in different kinds of package—bales, boxes, peculiar frails or panniers called *serons* in Spanish, in tierces, and in hogsheads;—this last form being best adapted to the large Virginian or Maryland leaf, which is essentially the poor man's tobacco. Immense lever-force is applied in the packing of these hogsheads—a mass of leaves twelve inches in depth being compressed to three, so as to form a compact solid substance—in which state it will keep for almost any length of time. A hogshead, 48 inches long by 32 in diameter, will hold more than 1000 lbs. weight of tobacco, when thus compressed.*

* This odd name, *hogshead*, has actually been supposed to be derived from its form; but it would be difficult to make out a resemblance in that monster-barrel to the head of a hog, even if we ignore the snout of the latter. *Ocks* is a measure in Brabant; and *houden* means to hold. The composite word is thus rationally explained; and it is clearly the same as the Danish ockshood, or oghshood, and the German oxhoft.

In the tobacco warehouses at the London Docks may be seen ranges, tiers, or alleys of hogsheads, whose number is immense. Passage after passage occurs, each several hundred feet in length, and only wide enough to admit the necessary traffic: all parallel one to another, and all bordered on both sides with close compact masses of hogsheads, generally two in height. The whole are under one roof, or rather one succession of roofs; and there are sometimes deposited there as many as 20,000 hogsheads, averaging 1200 lbs. of tobacco in each.

Those who are unacquainted with the Customs and Excise regulations may wonder why this enormous quantity of tobacco is kept in one place. The reason will be evident when the duty on tobacco is remembered. This duty is not demanded as long as the tobacco remains at the docks, or rather in the warehouses. In this safe-keeping it is said to be *in bond*, under the State, and cannot be removed until the duty is paid. If by any casualty the whole or a portion of a hogshead of tobacco becomes injured previous to its arrival at the docks, the owner would

rather lose it entirely than pay the heavy duty on the damaged portion. Were the duty very small, possibly the damaged portion might be sold at a price which would more than cover the duty; but the duty is too high to permit such a speculation. The state allows the damaged portion to be burned, without any duty having been paid on it. When a hogshead is to be opened, the head is knocked out, some of the staves loosened, and by a dexterous management the hogshead is taken completely off the tobacco, leaving the latter standing upright, as a brown mass of tobacco-leaves, dense and impenetrable. If, by the action of sea-water, bad packing, or any other cause, any of the mass has become injured, two men, armed with long cutting instruments, stand on opposite sides of the mass, and chop away all the injured part, by small bits at a time—an operation of no small difficulty owing to the solidity and hardness of the mass. The remainder is then weighed, its duty is determined, and samples are taken by the brokers, who proceed to effect a sale in the usual way of business. The damaged tobacco is burned in a

huge kiln, called "the Queen," at the Docks; by which it is reduced to ashes. What is done with this tobacco-ash I do not know; but it is decidedly a valuable commodity, and should be shipped back to the tobacco-plantations as an almost priceless manure. The leaves of all plants are especially rich in incombustible ash, and those of tobacco are amongst the richest in this respect. The dried leaf when burnt yields from 19 to 28 per cent. of ash; on an average, every 4 lbs. of perfectly dry tobacco contain 1 lb. of mineral matter—the same that forms the ashes of our pipes and the nozzles of our burning cigars. It is important to give a little consideration to this subject, and I invite attention to the following hints.

Tobacco is an "exhausting crop;" in other words, it is found to impoverish the soil more rapidly than other vegetables. It is in the ashes of plants that we find what they took from the soil, and it is certain that no plant will thrive unless the soil contains the elements of its ashes. Practically, this simple law of nature has been universally ignored; but the operations of nature

are accomplished notwithstanding. The ultimate particles—the mineral constituents of plants—can never be destroyed; and whatever we do with them, or wherever they happen to rest at last, after their endless transmigration through the blood and bones of animals, nature garners them up to renew a subsequent vegetation.* They belong to that class of bodies which are at once most necessary to vegetation and least abundant, for the reason above stated, even in fertile soils. Exactly then in proportion to the weight of leaves gathered must have been the weight of those substances withdrawn from the soil. Now, every ton of perfectly dry leaves of tobacco carries off 400 to 500 cwt. of this composite mineral matter! What a valuable waste, then, it is to throw away the ashes of our tobacco! One pound of this ash will supply four pounds of tobacco; it has, consequently, a most appreciable value, and it would decidedly pay if depôts were established for the purchase of the ash of our pipes and cigars, were it only to give pin-money to our indulgent wives

* For valuable agricultural hints on this subject, see Liebig's 'Letters on Chemistry,' i., Letter xvi.

and daughters. The high price of tobacco commends the idea to domestic economy, and a "Society for the collection and exportation of tobacco-ashes (limited)" would unquestionably be a sound speculation, although it must necessarily begin with smoke.

For want of these mineral salts many plantations have gradually become exhausted, incapable of profitable cultivation, and now lie waste and desolate: the fortunes of tobacco-planters, even in naturally favoured regions, have gradually declined with the failing fertility of their wearing-out plantations. And it is upon the Atlantic borders of the United States of America that the effects of this exhaustion are strikingly found, whilst it is the boast of chemistry that it has ascertained, beyond doubt, what the land loses by every crop of tobacco, or any other vegetable, the cause of its barrenness, the mode of its renewal, and tells us how fortunes may be extracted from the same old soil with matter hitherto cast away as a nuisance.*

* In Hungary extensive districts are not uncommon where wheat and tobacco have been grown alternately upon the

The manufacture of tobacco comprises the three modes in which it is consumed:—the manufacture of cigars; the preparation of the various kinds sold, under the name of Shag, Returns, Bird's-eye, Cavendish, K'naster, &c., for the pipe; and snuff-making. Each has its peculiar "mystery" or "craft" both in the old and modern sense of the words.

Cigars.

The persons engaged in the London tobacco-trade are: 1. The brokers, twelve city houses, who receive the consignments of tobacco and cigars, and supply, 2. The manufacturers of tobacco for smoking, snuff, and cigars, 90 in number; and 3. The tobacconists or general dealers in the article, who number about 1569 throughout London, according to the Directory. In connection with this I may state that there are no less than 82 clay-pipe makers in London.

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soil for centuries, the land never receiving back any of those mineral elements which were withdrawn in the grain and straw, because some soils abound in silicates so readily decomposable, that in every one or two years as much silicate of potash becomes soluble and fitted for assimilation as is required by the leaves and straw of a crop of wheat. Liebig, i. xiii.

Some of the large manufacturers of cigars employ as many as 300 makers, besides mere "strippers" or inferior workmen, apprentices or women, whose function it is to separate the mid-rib from the two halves of the leaf, without damaging its texture. The cigar-maker is paid at the rate of so much per hundred cigars—the remuneration varying from 1*s.* 6*d.* to 3*s.* per hundred, according to the "style" or make of the cigar. The best workmen easily earn 2*l.* 10*s.* per week. According to information which I have received on the subject, the number of workmen employed varies somewhat in the following ratio: 300, 100, 60, 20, 12, 6, according to the extent of the manufactory. Taking the number of manufacturers, as by the Directory, to be 90, and the average of those numbers to be 82, we get a result of 7380 workmen employed in the making of cigars, snuff, and tobacco for the pipe. This arithmetical guess can scarcely be above the mark, considering the prodigious quantity of home-made cigars in circulation—the quantity of cigars imported being most strikingly disproportionate to that of the leaf adapted for the manu-

factures. Last year the duty paid on the leaf was, as I have stated, 5,070,388*l.*: this sum represents the enormous importation for the home-supply of 33,802,000 lbs. over; whereas the quantity of cigars imported, represented by 150,000*l.* duty paid, amounts to only 315,750 lbs. in weight, or, allowing 100 cigars to the pound (a variable number), we have only 31,575,000 foreign cigars imported. A little arithmetic will put the question beyond a doubt. Let us assume that this number of foreign cigars were actually sold last year. If we divide those figures by 313, the number of week-days in the year, we have the quotient 100,878—the number of foreign cigars sold per day—which we may certainly assume for the argument, admitting the total to have been imported. Now, there are 1569 tobacconist-retailers in London alone. Taking this number as a divisor to the daily sale of 100,878, we get only 64 foreign cigars to represent the retail-trade in that article, as the daily sale of each. But the divisor must have very large additions to it for all the towns of England, Ireland, and Scotland, all which have their tobacconists, who profess to

sell "real foreign cigars"—which additions would doubtless reduce the daily sale to a very small fraction. If this arithmetic be correct, it follows that foreign cigars, "real Havannahs," must be very rare indeed, and also that the number of workmen employed cannot be less than 7380, in order to make the tremendous supplies required.

The statistics of the manufacturing trade in Hamburg confirms my argument. This manufacture is the most important branch of trade in Hamburg. It gives employment to more than 10,000 persons, for the most part women and children; and it supplies 150 *millions* of cigars per annum! About four millions sterling is the value of the article. A printing-press with a numerous staff is exclusively occupied in printing the labels for the boxes and packets of cigars. The imports at Hamburg from the Havannah and Manilla amount to 18 millions of cigars annually; which, with its own production, swell the number of the annual trade supplies at Hamburg to the number of 168 millions of cigars. About 153 millions are exported; the remainder, 15 millions, are consumed in Hamburg—giving,

as I have before stated, about 40,000 cigars as the daily consumption in a male population of scarcely 45,000 adults.*

Tobacco and snuff manufacturers pay an excise duty beginning at 5*l.* 5*s.* if they manufacture under 20,000 lbs. weight, and rising gradually up to 31*l.* 10*s.* if their manufacture exceeds 100,000 lbs. Mere dealers or tobacconists pay 5*s.* 3*d.* Excise inspectors visit the former, at any time, to test the quantity in hand.

Of all the various ways of using tobacco in England, none has made a more striking advance within the last twenty years than cigars. From the earliest times familiar in the tropical regions of America and Spain, the cigar was for a long period scarcely known in England, and was confined to the richer class of smokers. It is now in universal use.

The tobacco-leaf being delivered to the manufacturer in bales, boxes, or hogsheads, it is turned out and sorted according to its quality—some leaves being only fit for the interior, others for

* Joubert, 'Tabac,' p. 9.

the covering of that interior; and, lastly, the best are reserved for the exterior or outer covering, which recommends it to the "customer." These various parts are respectively called "fillers," "bunch-wrappers," and "outsides."

Previously to this operation the whole mass is copiously damped by means of a whisk with water, about twenty-four hours beforehand; for, the leaves being dry and brittle, it would be impossible to roll them into cigars without giving them moisture, which tobacco imbibes freely, even from the atmosphere, and soon becomes elastic and workable.

The leaves are then placed before the "stripper:" he takes them up one by one, folds them, strips off the stalk or mid-rib by a quick and dexterous movement, throws the stalks on his right hand, and lays the stripped leaves smoothly on his left. He is on the left side of the cigar-maker, to whom he hands up the leaves as fast as they are wanted. The cigar-maker is seated on a low stool in front of a low workbench, which has raised ledges on three of its sides,

open at the front. He takes a leaf of tobacco, spreads it out smoothly before him on the bench, and cuts it to a form somewhat like the gores or stripes of a balloon:—this is the "bunch-wrapper." He then takes up a few fragments of tobacco-leaf consisting of small cuttings, lays them on the bunch-wrapper and rolls them into the latter—thus making the shape of a cigar. He next places this cigar against a gauge or guide formed of a piece of iron, and cuts it to a given length as ordered. Finally, he lays a narrow strip of leaf, the "outside," similar in shape to the bunch-wrapper, upon the bench, and rolls the cigar spirally into it, pasting the tip-end with paste coloured with chicory, or with gum-tragacanth, to prevent the outside from becoming loosened. All this is but the work of a few seconds—even with the most reluctant tobacco The cigars are then either set aside to dry spontaneously—or, which is almost invariably the case, they are dried by the heat of a stove.

In this simple synthesis of the "weed" there is much that concerns the smoker:—for it follows that,

"There 's no" *cigar but can* "assume
Some mark of virtue on its outward parts."

The outside may be fair whilst the inside is verily foul—"a goodly apple, rotten at the core." Indeed it is this very synthesis which accounts for the different prices of cigars—of confessedly British manufacture—varying from 21*s.* a lb. down as low as 7*s.* Assuming that only the best Havannah leaf has been worked up throughout, 21*s.* would not yield an exorbitant profit, considering all the items of cost; but unfortunately such genuine cigars, all Havannah, seem to circulate at a price which presupposes the payment of 9*s.* duty—in plain English, the smoker pays for "foreign" Havannah and gets British. Every possible compound of tobaccos enters into the formation of cigars as sold to the public. Some are compounds of low-priced Havannah with German outsides; others are all German; some are Havannah inside and Manilla outside;—in short, it is utterly impossible to know what a cigar is made of until it is smoked—and not even then, except by the experienced veteran. Cheapness is the order of the day;

man's ingenuity makes every effort to meet its requisitions—and with perfect success. He gives the public what they want—a cheap article: it satisfies: it pays: the world rolls on as usual: sufficient for the day is the evil thereof. But the veteran smoker says, "No! *I* smoke a pound of cigars a week. I will not smoke a bad cigar. I'd rather give up smoking, and I'll do it if you don't supply me with a good cigar at or under such a price." The consequence is that the veteran smoker gets a good cigar at a cost which gives only a fair and sufficient return to the tobacconist, and both are satisfied with each other—both being good judges of cost and average profits. But, as a general thesis, it may be affirmed that the price of cigars is absolutely what can be *got* for them. I have seen cigars, which I knew could be bought at 10*s.* or 12*s.* a pound, retailed at 3*d.* each as "foreign Havannahs," and doubtless they were bought and smoked as such by those who sicken you in the streets with a truly "precious stinke."

Tobacco for the Pipe.

A hogshead of tobacco being opened, the leaf is dug out piecemeal by the aid of an iron instrument; for the tobacco in this condition is one entire solid mass; and indeed without the aid of moisture it would be impossible to separate the leaves. This moistening is technically called "liquoring."

The various kinds called Shag, Returns, Bird's-eye, are merely different preparations from the Virginian tobacco. Shag has evidently derived its name from its appearance, *bushy* or *torn*, as Pope says:—

"So the rough rock had *shagg'd* Ulysses' hands."

Returns is made of the lightest-coloured leaf, *selected* from the hogshead, after being *turned* out—hence its name; and Bird's-eye is so called because a portion of the stalk is cut up with it, the small discs of stalk bearing a fancied resemblance to the eye of a bird.

The cutting of the leaves into those fine threads or shreds which constitute common smoking-tobacco is effected by machinery acting

upon a large number of leaves pressed together in the form of a cake. The cake, as hard as a board, but clammy and wet, is laid upon the bed of the cutting-engine, worked by steam. This bed is susceptible of a slow progressive motion by means of a screw beneath it, the screw being connected at one end with a cog-wheel, in such a manner that, while the machine is working, the bed on which the tobacco is laid is urged slowly forward. Another part of the mechanism gives motion to a sharp blade, which has a reciprocating vertical motion, or rather a motion somewhat similar to that of a pair of nut-crackers, as there is a hinge or fulcrum at one end. Each action of the cutting-blade slices off a thin film from one end of the cake. As the cake is composed of a very large number of separate leaves of tobacco, it follows that each film or shaving taken from the edge, generally at right angles to the surface of the leaves, must be formed of separate pieces, in no case larger than filaments or fibres. The thickness of these fibres is regulated in a very ingenious manner. Immediately after the blade or knife has made one cut, the cake is moved

forward a small distance, so that the next following cut may be distant some small space from the former. It depends upon the number of cogs in the wheel at the end of the underlying screw whether this distance, and consequently the diameter of the fibres of tobacco, shall be greater or smaller.*

A considerable quantity of water in the "liquoring" tends to darken the leaf; and the lighter colour of "Returns" owes this quality to a regulation of the moisture as well as the pressure — both which combine to darken the colour of Shag, the strongest kind of tobacco.

The other names of the various kinds of tobacco were given to them from the places whence they come, or other circumstances, without reference to quality. "Oronoko" is so called from the South American river of that name.

K'naster, or C'naster, was originally the name given in America to baskets of rushes or cane, in which they packed the tobacco sent to Europe; and hence the designation of "Kanaster tobacco."

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* Dodd's 'British Manufactures,' Tobacco.

At present the two kinds known by these names are manufactured from either German, Dutch, or Havannah leaf.

"Pigtail" tobacco is a rope or cord about the thickness of a pig's tail, and of any length required, coiled round into a heap like cordage; and it is spun into that shape in a similar manner to rope by the simultaneous action of a man and two boys, requiring very great dexterity. A spinning-wheel is kept in motion by one of the boys: the other boy spreads out the leaves. The man follows him, and rolls up these leaves into the shape of a cord by a very peculiar motion of both hands. The length of "tail" is kept constantly rotating by the wheel, and the man, adding leaf after leaf to it with the left hand, presses and rolls it with a palm of leather or wood held in his right. The manœuvre is so quick and dexterous that a spectator can hardly see where or how the leaf becomes absorbed into the tail and made part of its substance. The black colour of the heap or ball is given to it by steeping in tobacco-water.*

* Dodd, *ubi suprà*.

Snuff.

In the price-currents of the Trade we find the item "Stalks, duty paid," varying in price from 2*s.* 11*d.* to 3*s.* 4*d.* These stalks are the same previously described as being removed from the leaf before making the cigar, and they are used in the manufacture of snuff; but every portion of the leaf is used for the purpose in the different kinds of the article. The purest kind of snuff is "Scotch," which is made either entirely from stalks, or stalks with a small proportion of leaf. The "high-dried," such as "Welsh" and "Lundyfoot," owe their qualities chiefly to the circumstance that they are dried so much as to acquire a slight flavour of scorching. "Rappee," and the darker snuffs, are made from the darker and ranker leaves. A process of *scenting* too has great influence on the flavour of the snuff, since the manufacturer can introduce any kind of scent, according to the taste of his customers. "Prince's Mixture," among the low-priced snuffs, and the interminable varieties of "fancy-snuffs," owe no small part of their flavour to the kinds

of scent introduced. The celebrated "Lundy-foot" derives its particular flavour chiefly from the fermentation carried to a very high pitch before the batch is turned; and it is said that its first discovery was owing to the neglect of the man attending upon the batches, and who, by getting drunk, made his master's fortune. An accidental fire in the manufactory is also alleged as the source of the discovery; but Mr. Barlow thinks these reports destitute of foundation, stating that, in spite of the alleged fact, the famous Lundyfoot cannot be imitated by other manufacturers. Not being a snuff-taker, my opinion may not be worth much; but I have certainly made snuff out of an Havannah cigar which was thought by snuff-takers to be Lundy-foot. I merely placed the cigar in a plate in an oven until it became perfectly dry and "crumbly" to the touch, and then rubbed it into a fine powder in a Wedgewood mortar.

Almost the whole of the snuff sold in the metropolis is ground in or near the town of Mitcham, in Surrey.*

* Dodd, *ubi supra*.

Before grinding, the tobacco is (in France at least) moistened with salted water for the purpose of preventing a putrid fermentation, which is liable to set in by over-moistening tobacco—a casualty which I think must often deteriorate the cigars of the London makers. A rotten "filler" inserted in the "bunch-wrapper" is an abomination often to be detected under the most showy "outside."

This salt and water is called the "cure" or "sauce." Formerly nothing else was used (in France at least), but at the present day (in France at least) other substances are used to give flavour, such as sal ammoniac. Each manufacturer has his own recipe for the "sauce." "The result is sometimes a very agreeable snuff, but sometimes very unwholesome." *

The material, varying in quantity for a single batch of any sort of snuff from 2 cwt. to 30,000 lbs., is first spread on the floor, when it is copiously sprinkled with the sauce or cure, in which about 2 per cent. of salt should form the principal

* Joubert, *ubi suprà.*

ingredient; but as every manufacturer has a different mode of laying down snuffs, various flavours are often introduced at this stage of the process. It is then heaped into a bin, where it is suffered to remain until it has gone through a thorough heat. The fermentation of so great a mass is frequently too hot to be borne by the hand for any length of time. By this heat the tobacco is deprived of much of its essential oil, and is rendered more mellow and less likely to ferment and turn musty after the snuff is ground. It is then turned out of the bin and suffered to cool, and at length sent to the mills to be ground to whatever grain the manufacturer chooses to direct. Such is the English method. The prejudices in favour of foreign snuff are not without substantial foundation; since, owing to the excessive duty on tobacco (amounting generally to between 600 and 900 per cent.), the English manufacturer cannot afford to allow his raw material to lie any considerable time in process of manufacture; but foreigners, for opposite reasons, can allow the snuff-work to remain in process frequently for two, or even four years.

Their method is (after having cured their tobacco) to spin it into what is termed *carotte*, consisting of long rolls of tobacco, varying in weight from 5 to 10 lbs. These are piled up in immense numbers, and undergo a gradual and almost imperceptible fermentation, instead of the violent and rapid heat into which the English manufacturer is required to force his material; and, consequently, a mellowness and flavour results superior to that acquired by our method. Foreign makers have also a superior method of reducing the article into snuff. Instead of grinding it under ponderous stones, they either cut it into grain with peculiar machinery or rasp it by a circular file, thereby entirely avoiding the great friction which deteriorates the English snuff and interferes with its flavour.*

I cannot conclude this section more appropriately than by giving a summary of the various modes of using tobacco, as given by Mr. Johnston.

On shipboard smoking is always dangerous

* Sir Richard Phillips, 'Arts of Life.'

and often forbidden, while snuffing is expensive and inconvenient, and less perfectly satisfies the narcotic appetite. If the weed must be used, therefore, the form of chewing is more excusable in the sailor. Pigtail is, I believe, the favourite form for that purpose.

In some of the southern and western states of North America, chewing, to an offensive extent, prevails; and in Iceland, according to Madame Pfeiffer, tobacco is chewed and snuffed "with the same infatuation as it is smoked in other countries." The traveller in northern Sweden may have observed the *bunde*, who accompanies or drives his post-horses, putting a large pinch of snuff from time to time into his *mouth;* thus applying to the wrong organ, as he conceives, the finely powdered leaf. An Icelander applies the snuff to his nose, but in a peculiar manner.

"Most of the peasants, and even many of the priests, have no proper snuffbox, but only a box made of bone, and shaped like a powder-flask. When they take snuff they throw back the head, insert the point of the flask in the nose, and shake a dose of snuff into it. They then, with the greatest amiability, offer it to their neighbour—

he to his; and so it goes round till it reaches its owner again." *

The box described in this passage is only a Highland horn *mull*, a little different in shape from those of modern fashion. The Highlander lifts the powder to his nose with a little shovel; the Icelander, using the small end of the horn, at once pours it in. But among the Celto-Scandinavians of Northern Britain there is the same love of the powdered tobacco as in Iceland and Northern Scandinavia, and the same amiability in handing round the box as is seen in primitive Iceland. Are these not lingering relics of similar social customs which still point to the ancient unity and common origin of the three now disconnected peoples?

The practice of using snuff is said to have come into England after the Restoration, and to have been brought from France; but it is well known that the habit of mere snuff-taking did not originate with the introduction of tobacco, since we find recipes for making snuff from herbs,

* Madame Pfeiffer, 'Visit to Iceland.'

&c., in some of the oldest books of medicine extant.

The Turks and Persians have become the greatest smokers in the world. In Turkey the pipe is perpetually in the mouth. In India all classes and both sexes smoke. The Siamese chew moderately, but smoke perpetually. The Burmese of all ranks, of both sexes and of all ages, down even to infants of three years old, smoke cigars. In China the practice is so universal that every female, from the age of eight or nine, wears, as an appendage to her dress, a small silken pocket to hold tobacco and a pipe. Indeed, from the extensive prevalence of the practice in Asia, and especially in China, Pallas argued long ago that the use of tobacco for smoking in those countries must be more ancient than the discovery of America.

"Amongst the Chinese," he says, "and amongst the Mongol tribes, who had the most intercourse with them, the custom of smoking is so general, so frequent, and has become so indispensable a luxury; the tobacco-purse affixed to their belt so necessary an article of dress; the form of the pipes, from which the Dutch seem to have taken the model of theirs, so original; and, lastly, the preparation of the yellow leaves, which are merely rubbed

to pieces, and then put into the pipe, so peculiar, that they could not possibly derive all this from America by way of Europe, especially as India, where the practice of smoking is not so general, intervenes between Persia and China."

This opinion of Pallas has since been supported by high botanical authorities. Thus, Meyen says,—

"It has long been the opinion that the use of tobacco, as well as its culture, was peculiar to the people of America; but this is now proved to be incorrect, by our present more exact acquaintance with China and India. The consumption of tobacco in the Chinese empire is of immense extent, and the practice seems to be of great antiquity; for on very old sculptures I have observed the very same tobacco-pipes which are still used. Besides, we know the plant which furnishes the Chinese tobacco: it is even said to grow wild in the East Indies. It is certain that this tobacco-plant of eastern Asia is quite different from the American species."

Other late writers dissent from this opinion, and consider that there can hardly be a doubt but that tobacco was introduced into the different countries of the East from Europe and by Europeans. The truth may possibly be, that species of the tobacco-plant are native to Europe and Asia as well as to America, and that only the *custom* of using them as narcotics was intro-

duced into Western Europe from the New World.*

If I may give an opinion on the subject, I incline to believe that all the world owes the use of tobacco to the aborigines of America. Had the practice been of anything like the high antiquity (which it had in America) in those remote countries of Asia, ancient travellers would have signalised so singular a custom. The indefatigable primitive Jesuits penetrated early into every nook of the eastern world that could possibly give ultimately a see to a Papal bishop *in partibus infidelium;* but in none of their voluminous 'Edifying and Curious Letters' do they mention the practice of smoking amongst the objects of their wonderful zeal, amidst trials beyond the endurance of common humanity.

If the theory I have advanced in the Introduction be correct, there was ample reason why the practice of smoking tobacco should be suggested by Nature in America—a region of endless morasses, swamps, forests of decaying vegetable

* Chemistry of Life, No. vii.

matter, energetic volcanic disturbance of the earth, and their consequent atmospheric alterations by miasmata incompatible with the functions of animality. In the wisdom of Nature's permissions we must acquiesce — as in the presence of that which is awful. We know not all the physical purposes of creation. Doubtless our successors in this eventful struggle of life will be more enlightened. But in any circumstances, a great fact—a universal fact—such as we must contemplate in the use of this narcotic, should make us pause and consider if there be not more in it "than is dreamt of in our philosophy."

Adulterations of Tobacco.

Tobacco is decidedly the least adulterated article of commerce. Strange and contrary to the popular belief as it may appear, Dr. Hassall —the only gentleman who has scientifically examined into the question by employing the microscope, among other tests, for impurities—found that not one of forty samples of cut tobacco was adulterated with any foreign leaf. The most

frequent adulterations consisted of the addition, in large quantities, of water, salt, and some saccharine matter, either sugar or treacle.* Water and salt are ingredients, it will be remembered, avowedly necessary in the manufacture; and the addition of sugar, though contrary to law, is positively beneficial to the smoker, because smoking tends to diminish the saccharine constituents of the blood.

From my previous statements and arithmetical calculations (if correct), the following information from the 'Tricks of Trade' will be conclusively proved to be correct—indeed, there can be no doubt about the matter:—

"The worst kind of fraud committed by the vendors of cigars consists in manufacturing them in this country from common, cheap, and coarse tobacco, and selling them to the public as foreign produce. Nearly all the Cubas sold in England at threehalfpence each, or ten for a shilling, are made in home manufactories. The Bengal cheroots at twopence each, or seven for a shilling, many of the threepenny Havannahs, and all the twopenny ones likewise, have never travelled out of the United Kingdom."

The rage of the public for enjoying luxuries at a cheap rate is the cause of the evil; for a bad

* Tricks of Trade, p. 177.

cigar is unquestionably a social infliction of great enormity. Not only does it fail in the object of its creation, but it creates the very evil which it was intended and adapted to remove.

The blame is therefore less with the maker than the consumer, who should be able to judge for himself in this very important matter. The great majority of smokers care little about quality in their tobacco—the mere act of smoking being their only object. Again, sometimes a low-priced but sound cigar will be preferred to the veritable "havannah as imported;" and, if not excusable, still we certainly cannot wonder that, in such circumstances, the price asked by the caterer should be the same as for the duty-paying and high-priced havannah. As I said before, the price of cigars is merely nominal: the usual custom is to get the highest possible price, and the *profit* accordingly varies from *three* shillings up to *twenty* shillings on the pound of cigars.

The public should be cautioned against a sort of confraternity who tramp the streets in the garb of sailors or otherwise, offering to supply "smuggled" cigars "very cheap." A cheroot

purchased of a hawker in Whitechapel Road was made of two twisted wrappers or layers of thin paper, tinted of a bistre colour, while the interior consisted entirely of hay, not a particle of tobacco entering into the composition. Other cheroots Dr. Hassall found to consist externally of tobacco, but made up internally of hay. The vendors of these luxuries belong to the class of men who attend race-courses and skating in the Parks. They carry with them a box of these cheroots and a piece of burning tow. As they walk along they shout out, "A cigar and a light for a penny!" *

Others will decoy the simple believer to some out-of-the-way place, with the intention of robbing him by main force, aided by others who make their appearance at the catching of the "flat." This is rather too much to bear, even for the sake of the weed. Curiosity induced me on one occasion to give in to one of these "soft impeachments," and I had to show vigorous fight—but with perfect success—before effecting

* Tricks of Trade, p. 178.

an exit from the den of three of these ruffians who would take advantage of a smoker's propensity.

The adulterations of snuff are unfortunately well attested. Dr. Hassall examined forty-three samples, involving all the most celebrated and popular compositions, from Prince's-mixture to Grimstone's eye-snuff. He detected *oxide of iron, red and yellow ochre, umber, chromate of lead, red lead, bichromate of potash*, silica, and what appeared to him powdered glass. The silica, no doubt, existed in the tobacco originally; but the other powerful chemical agents must have been added—if not "with felonious intent," at all events for some trade purpose, and certainly with the possibility of poisoning the consumer. In the 'Tricks of Trade,' from which I give the above, will be found a deplorable case of such poisoning, recorded by Professor Erichson. It appears also that "Mr. Fosbroke, a surgeon, was very nearly falling a victim to this shameful and poisonous adulteration. Paralysis had commenced, but the lead in the snuff was fortunately detected in time." Dr. Letheby has

also added his testimony to this lead-poisoning in "brown rappee." During the last ten years the Commissioners of Excise have made 368 seizures, and instituted 203 prosecutions, for offences connected with tobacco:—

"We would undertake," writes Dr. Hassall, "to make as many seizures, or rather detections, of tobacco adulterated in one or other of its forms, in the space of three months as are recorded in the above return, which extends over a period of ten years." *

This opinion, the higher order of smokers will be glad to hear, does not extend to *cigars;* for the learned doctor states that all the cigars sold in shops are manufactured from the genuine tobacco-leaf, after examining fifty-seven samples purchased in different parts of London.†

In connection with this important subject, I think it proper to insert here a piece of information given by Mr. Johnston in his 'Chemistry of Life:'—

"I insert, in the form of a note, a reference to a use of tobacco, of which I can scarcely speak with confidence. It is said to be employed by unprincipled private brewers

* Tricks of Trade, which, by all means, read.
† Tricks of Trade, p. 178.

in some parts of England for adulterating beer, and by porter-sellers to adulterate porter. The country-labourer, who cannot afford of an evening to buy more than a single glass of beer, desires something for his little money which shall not only be tasted in his mouth, but also in a sensible degree affect his head; a few tobacco-leaves, introduced after the manner of hops, are said to give this quality to the beer, and a little tobacco-extract to the porter. Several trustworthy persons, who profess to know, assure me that such a use of tobacco is by no means uncommon. How is it possible to protect the poor man against fraudulent persons, whom, by a morbid craving, he encourages to conspire against himself?"

Supposing the doctors to be correct in their diagnosis—in which they are almost universally deficient—it is very probable that the "cases" which they ascribe to smoking were actually the result of tobacco taken internally in such "hocuss'd" potations. All our drinks are more or less "hocuss'd" or "flash'd,"—all our food is adulterated: it is therefore more than probable that smokers, as well as others, have been poisoned in their food and drink, and not by their pipe or cigar.

PART IV.

THE INFLUENCE OF TOBACCO ON THE HUMAN SYSTEM.

I was once told by a clergyman that the most disgusting thing he ever saw in all his life was the state of his own teeth, exhibited to him by way of double reflection on a mirror, by his dentist. I have taken a friend to Dr. Kahn's most interesting and instructive anatomical museum, and he had scarcely been in the hall three minutes before he felt "sick," and pronounced the whole collection a most detestable libel on human nature! And truly enough, for "the greater the truth, the greater the libel." I fear the reader will not peruse with much gusto the following analysis of the gentle weed, as exhibited by the chemists; the bare recital is enough to "turn the stomach" of any man who has not hardened himself against horrors in the dissecting-room and the wards of hospitals. Still, by way of encouragement, I may be permitted to assure

the reader that I am now smoking—as I have been throughout these pages incessantly—and will decidedly do so to the end—with rational satisfaction:—

"When the leaves of tobacco are mixed with water, and submitted to distillation, a volatile oil or fat comes over in small quantity. This fatty substance congeals, or becomes solid, and floats on the surface of the water which distils over along with it. It has the odour of tobacco, and possesses a bitter taste. On the mouth and throat it produces a sensation similar to that caused by tobacco-smoke. When applied to the nose it occasions sneezing; and when taken internally it gives rise to giddiness, nausea, and an inclination to vomit. It is evidently one of the ingredients, therefore, to which the usual effects of tobacco are owing; and yet it is remarkable that from a pound of leaves only two grains of this fatty body are obtained by distillation. Upon such minute quantities of chemical ingredients do the peculiar action and sensible properties of some of our most powerful medicinal agents depend!

"When tobacco-leaves are infused in water made slightly sour by sulphuric acid, and the infusion is subsequently distilled with quicklime, there comes over, mixed with the water, a small quantity of a volatile, oily, colourless, alkaline liquid, which is heavier than water, and to which the name of *nicotin* has been given. It has the odour of tobacco, an acrid, burning, long-continuing tobacco taste, and possesses narcotic and very poisonous qualities. In this latter respect it is scarcely inferior to prussic acid, a single drop being sufficient to kill a dog. Its vapour is so irritating that it is difficult to breathe in a room in

which a single drop has been evaporated. The proportion of this substance contained in the dry leaf of tobacco varies from 2 to 8 per cent. The reader may recollect the great sensation produced in 1851 by the trial of the Comte de Bocarmé, at Mons, and his subsequent execution, for poisoning his brother-in-law with nicotin.

"So far as experiments have been made, the tobaccos of Havannah and Maryland contain 2 per cent.; that of Kentucky 6; that of Virginia nearly 7; and that of France from 6 to 8 per cent. In smoking a hundred grains of tobacco, therefore—say a quarter of an ounce—there *may* be drawn into the mouth two grains or more of one of the most subtle of all known poisons. For as it boils at 482° F., and rises into vapour at a temperature below that of burning tobacco, this poisonous substance is constantly present in the smoke. From the smoke of a hundred grains of slowly-burning Virginia tobacco Melsens extracted as much as three-quarters of a grain of nicotin; and the proportion will vary with the variety of tobacco, the rapidity of the burning, the form and length of the pipe, the material of which it is made, and with many other circumstances.

"But besides the two volatile substances which exist ready formed in the tobacco-leaf, another substance of an oily nature is produced when tobacco is distilled alone in a retort, or is burned, as we do it, in a tobacco-pipe. This oil resembles one which is obtained in a similar way from the leaf of the poisonous foxglove (Digitalis purpurea). It is acrid and disagreeable to the taste, narcotic and poisonous. One drop applied to the tongue of a cat brought on convulsions, and in two minutes occasioned death. The Hottentots are said to kill snakes by putting a drop of it on their tongues. Under its influence the reptiles die as instantaneously as if killed by an electric shock. It

appears to act nearly in the same way as prussic acid. The oil thus obtained consists of at least two substances. If it be washed with acetic acid (vinegar) it loses its poisonous quality. It contains, therefore, a harmless oil, and a poisonous *alkaline* substance, which the acetic acid combines with and removes. The nature and chemical properties of this alkaline poison have not as yet been investigated." *

Of the many analyses of tobacco which I have read, the foregoing is the most minute, the most precise, and the most disgusting. That the analysis is perfectly correct there can be no doubt whatever. It only remains to test the accuracy of its alleged result in the practice of smoking. It will signify little when I assure the reader that I have smoked two cigars in transcribing the analysis—for millions have been doing the same thing during the same time all over the world; but let us embody a state of things occurring every night in London—perhaps in every town of the United Kingdom. It is easy to name, at least, dozens of places in London where many dozens of men congregate at night for the purpose of recreation—every man with pipe or cigar

* Johnston, 'Chemistry of Life.'

puffing many cubic feet of smoke from many "hundred grains of slowly-burning Virginia tobacco," each hundred containing "three-quarters of a grain of nicotin," "scarcely inferior to prussic acid, a single drop being sufficient to kill a dog!" Yet in these close, ill-ventilated laboratories of "volatile oil," "oil empyreumatic," and "volatile alkali"—in which men, women, children, cats, and dogs, enjoy a periodic respite from the toils of day—not a single case of poisoning has ever been seen, and night after night this *experimentum crucis* on a large scale has been tried, with the same result! "I recollect seeing," says Dr. Elliotson, "a young woman who could eat the hardest salt beef, and digest it well; but if she took a raspberry, or currant, or any other fruit, she was instantly thrown into the most violent spasms of the stomach, so that a stranger would have fancied her life in danger!" * But here is not a case of currants and strawberries, but "one of the most subtle of all known poisons," confessedly concocted and administered "broad-

* Practice of Medicine, p. 38.

cast," and yet the functions of life go on glibly as usual! And to tell an uneducated man, in such circumstances, that he was actually imbibing poison enough to kill a thousand cats, would provoke the reply given to a doctor by such a man: "Well, doctor, you seem to be divided as to how poor Cook came by his death, but it's clear it wasn't a room full of tobacco-smoke—else *I* must have the lives of ten thousand cats, dogs, and the like of such stupid animals."

But neither cats nor dogs are poisoned in such circumstances. There must, therefore, be some counteraction, which either renders the poison innocuous, or modifies it to an extent which practically comes to the same result.

It is certain that man gradually renders himself proof against any of the known poisons—at all events against the most powerful of the increasing, and, it appears, testless catalogue. The curious statistics of opium and its compounds are well known as such "familiar demons;" but it is not generally known that arsenic has been made a fountain of beauty, vigour, and longevity. I refer the curious in such matters to the 'Chemistry

of Life', where the subject is fully discussed.* There we read of "a hale man of sixty, who enjoys capital health at present, takes for every dose a piece about two grains in weight. For the last forty years he has continued the habit, which he inherited from his father, and which he will transmit to his children." It is not for the mere result of such a practice in the apparent well-being of the subject, that I allude to arsenic and other poisons thus familiarly taken into the human system. My object is very different; and perhaps the argument will be assisted to a right development by this aid of comparative toxicology:—

"No symptoms of illness or chronic poisoning are observable in any of these arsenic-eaters, when the dose is carefully adapted to the constitution and habit of body of the person using it. But if from want of material, or any other cause, the arsenic be left off for a time, symptoms of disease occur which resemble those of slight arsenical poisoning." †

Now, if we proceed in the same way with smoking, chewing, or snuffing, carefully adapting

* Johnston's 'Chemistry of Life,' No. x.

† *Ubi suprà.*

the quantity to the constitution and habit of the body, and then, from want of material or any other cause, the same be left off for a time—is it not a striking fact that not a symptom of the slightest kind of poisoning by tobacco is exhibited by the smoker, the chewer, or the snuff-taker? On the contrary, we are told by the opponents of tobacco of many instances in which the habit was left off with immediate beneficial results to the general health—and the fact is, in the very nature of things, perfectly possible; but it is the total absence of *poison-effects* to which I would call attention—if the body was really poisoned by the use of tobacco in the forms under consideration. It may be alleged that the mineral poison tends to remain in the system, whereas the vegetable poison tends to escape; but with regard to the latter, we are compelled to remember that many medical witnesses, at a late trial, expressed a strong opinion that one vegetable poison, strychnine, could be found in the body many months after death.* What the sensations of other

* Palmer's Case—the *Defence*.

smokers may be I do not know; but being myself what would certainly be called an inveterate smoker, I may be permitted to state that I never felt any inconvenience, "neither better nor worse," when, from circumstances, I have passed twelve, fifteen, or even twenty-four hours without smoking; and this occurred during the great trial at the Old Bailey just alluded to, at which I constantly attended. Nay, more—I have passed whole days without smoking, merely as a test of the human will. I have also tantalised the propensity by cutting down my daily consumption to one-twentieth of the usual quantity, and this, too, without any inconvenient physical sensations whatever—although, like Dr. Johnson in the matter of wine, I think it a greater trial to refrain than to *abstain altogether*.

At all events, we have the admitted fact that no permanent morbid effects remain after giving up the habit; and therefore, admitting the patient to be actually better for giving up smoking, it only shows that smoking was to the smoker what Hudibras thought the doctors were to all mankind:—

"For men are brought to worse distresses
By taking physic than diseases;
And therefore commonly recover
As soon as doctors give them over."

With these preliminaries, let us proceed to examine the medical bearings of the question.

The various names of tobacco attest the vogue in which it was held at its early introduction.* It

* The name, tobacco, has been derived from Tabasco, a town of Mexico, and from Tabaco or Tobago, an island in the Bay of Panamá. I can find no rational origin of the name. What the natives of Cuba called it when Columbus in 1492 found them, men and women, smoking "small brands" or cigars, he did not state. In Mexico it is called by the natives *Petun*—in fact, our adopted *Petunia* of the flower-gardens is a species of tobacco. A certain Mr. Neil, in 'The Lancet,' suggests Τῳ Βαχχῳ (*to Bacchus*) as its derivation, because he thinks it "a provocative or incentive to strong drinks!" Thus, as Ben Jonson says, these doctors are

"Made of all terms and shreds; no less beliers
Of [nature's] favours than their own vile med'cines."

A writer who professed to have been in the island of Cuba states that the "triangular tube alone, amongst the Indians, bore the name of *tobaco*, but not the leaf or the plant. *Fumar un tabaco* is the expression in Havannah for smoking a cigar." The word tobaco belongs, according to Humboldt, like savannah, maize, &c., to the ancient language of Hayti or St. Domingo, and was generally used in the West India islands after the Spanish conquest. The former writer gives a most extraordinary statement respecting the manufacture of cigars, which, although a striking curiosity, I almost feel inclined to omit. He says, "When the connoisseur is sauntering at his ease, inhaling with delight one of those cigars

will be remembered that King James calls it "a cure;" and Dr. Paris founds an opinion on one of these names—"Henbane of Peru"—that the oil of tobacco was "the juice of cursed hebenon" by which the King of Denmark, in 'Hamlet,' was poisoned in his orchard.* Under other more

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de la Reina, relishing with the *gusto* of a true amateur its delicious flavour, and admiring its aptitude to catch and retain fire, let him know, then, that cigar, so fiery and yet so mild, has been—well, this cigar has been, like most others he has ever smoked, rolled—yes, rolled, upon the *bare thigh* of one of the country girls, called a *guajira* in Cuba."—Bentley's Miscellany, April, 1844. Doubtless this hideously gross *canard* has circulated amongst "fast young men;"—it is a disgusting and self-evident absurdity. No one who knows how a cigar is made can believe it. A flat surface is absolutely necessary; and, besides, no human being could endure the constant repetition of such rolling or friction on the cuticle of the thigh. Moreover, the tobacco would act as a poison, its oil being absorbed.

* Pharmacol. 294. As the learned doctor seemed anxious to claim this discovery as a curiosity, since he repeats it in his 'Medical Jurisprudence,' perhaps his medical brethren, when they quote it, should record the name of the inventor, which is never done, however; but unfortunately for this hypothesis, the tragedy of 'Hamlet' was, according to Malone, written in 1596, *seven years* before the accession of James to the throne of England, whilst Dr. Paris accuses Shakspeare of playing the courtier, in thus introducing the "cursed hebenon" in accordance with the prejudices of King James. According to Campbell, 'Hamlet' was written in 1600, three years before the king's accession. This acquits Shakspeare of "playing the courtier;" indeed, the conjecture is scarcely

striking names, *herba sacra*, *herba divina*, *herba medica*, and finally, *herba panacea*, tobacco was a specific in the hands of the faculty, or at all events that portion of it called—

> "impostors,
> Quack-salving, cheating mountebanks, whose skill
> Is to make sound men sick, and sick men kill."

There can be no question that the first attempt at smoking reveals phenomena which plainly show that the herb divine requires her votaries to go through a certain ordeal or trial before admitting them to her favours, if they aspire to the rank of her highest functionaries. I know not whether my case is singular, but I can state that I enjoyed my first cigar—some twenty years ago—as much as the one I am now smoking. Others are less fortunate, and the trial-scene is

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worthy of notice, even on the doctor's assertion that the oil of tobacco *might* have produced death by the ears. The doctor seems to forget that the discovery of the empyreumatic oil of tobacco is a disclosure of modern chemistry; and if the ancients even thought it possible to poison Alexander the Great by first thoroughly imbuing with poison a girl who was to sleep with him, what wonder that a hundred such-like applications to all parts of the body might enter into the imaginations of men, and be used for their "craft" by the poets?

peculiarly painful. Each puff the novice draws is a bitter dose attended with sardonic contortions of the mouth and face. He spits abundantly. From time to time he coughs hectically. Perhaps he swears intemperately. Many have stopped at this stage, among the rest the *Great* Napoleon.

Napoleon once took a fancy to smoke, for the purpose of trying a very fine Oriental pipe, presented to him by a Turkish or Persian ambassador. Preparation having been made — the match being ready—nothing remained but to apply it to the tobacco; but that could never be effected in the way taken by his Majesty for that purpose. He contented himself with opening and shutting his mouth alternately, without in the least drawing his breath. "The devil!" he cried; "why, there's no result!"

"I made him observe," says Constant, "that he made the attempt badly, and showed him the proper method of doing it; but the emperor still reverted to his kind of yawning. Wearied by his vain attempts, he at last desired me to light the pipe. I obeyed, and returned it to him in order. Scarcely had he drawn in a mouthful, when the smoke, which he knew not how to expel from his mouth, turned back upon his palate, penetrated his throat, and came out by his nose and blinded him. As soon as he

recovered breath, he cried out, 'Away with it! What an abomination! Oh the hog! My stomach turns!' In fact, he felt so annoyed for at least an hour, that he renounced for ever the pleasure of a habit which he said was only fit to amuse sluggards."

Inveterate and immoderate snuff-taker as he was, surely he should have been content with that enjoyment, and given the splendid Oriental pipe to one of his brothers, to whom it would have been a greater solace than the kingdom of Spain or any other Napoleonic kingdom, as the historic reader is aware.

Such then is the first symptom of the poison; but if the novice continues, his head gets heavy, and a slight nausea disquiets his epigastrics. At this stage he has effectually taken his dose. He may then throw away his pipe or cigar, without in the least preventing the crisis which must inevitably ensue. His stomach continues to exhibit with increasing intensity the symptoms of considerable derangement, his legs totter and refuse to support him, a cold sweat bathes his thighs and his temples: he vomits copiously; and finally he faints—but to come to himself again in due time, as it were out of his *ashes*, like the

phœnix—and renews the trial—if he has the heart to do so.

Decidedly this picture seems calculated to disgust for ever all future smokers; but the reverse of the medal must be also exhibited; and the reader will perhaps be able to conceive how it happens that men will poison themselves five or six times in order to enjoy the Elysian pleasures which smokers profess to experience.

"The smoker," says a Frenchman, "experiences, indeed, a great pleasure. The snuff-taker charms away his idle cares by introducing into his nose, from minute to minute, a pinch of powder which excites his pituitary membrane. The chewer excites to a high degree his sense of taste, and at the same time wards off various diseases of the outer membrane of the mouth; hence our sailors escape thereby many dangerous diseases—for instance, scurvy. As for the smoker, we shall extend further the study of the sensations which he enjoys, for experience has taught us that, when the smoker has hardened himself to the vaporous emanations of nicotiana, he experiences three very distinct sensations. The first is altogether ideal—it charms his leisure and occupies his idle hour. We place the second in the excitement of his sense of taste; and the third, which in our opinion is the truest, in the brain-excitement caused by the beneficent fume of this admirable weed. This third sensation produces a *far niente* which it is impossible to describe. It imparts the pleasantest thoughts to the soul and magical impressions to the sensorium: what a crowd of ideas does he find in his brain when his organisation is

saturated with the fumes of tobacco! How vivid they are! It is then that his head seems to dilate by the organic repercussion which spends its entire force upon the brain. All these repercussions are so many sparks which produce a kind of intellectual convulsion, which often gives rays of imagination even to those brains which Nature has not favoured." *

So much from the Frenchman; now hear the Englishman:—†

"'Blessed be the man who invented sleep!' was the pious ejaculation of our worthy and inimitable friend Sancho Panza, and we, not denying the advantages, pleasures, and delights of slumber, change the subject-matter, and exclaim, 'Blessed be the man who discovered tobacco!' Yes! blessed be the man who first rescued this precious weed from obscurity and brought it into general estimation! For what has been more useful to mankind? what more beneficial? Its virtues are manifold; their name is Legion. Truly the Indians proved their wisdom by making the pipe the symbol of peace, for what more soothing? what more consolatory? To all men it proves of service, from royalty to the bone-picker. The philosopher over his pipe and coffee (excellent berry—rare weed) reasons and speculates with a freshness and vigour which encourages him in his labours. And if invention consist, as Condillac will have it, in combining in a new manner ideas received through the senses, when are they received with such force, clearness, and energy, as when under the inspiration of the Virginian weed? The historian, whose province it is to study facts, events, manners, the spirit of

* Joubert, 'Tabac.' † P. B. St. John.

epochs, can certainly not do justice to his subject if he be not an adept in blowing a cloud. The romancist, who differs only from the historian in that he embodies brief spaces and not centuries, families and not races, he, too, must love his meerschaum or his cheroot. Leaning back leisurely upon his sofa, if he have one, and puffing his amber mouthpiece, ideas, thoughts, feelings, rush in rapid succession upon the mind prepared for kindly and soothing emotions. In the curling wreaths of vapour which ambiantly play around him he discovers lovely and exquisite images; amid the shadowy pulsations which throb in the atmosphere he sees the fair and exquisite countenance of woman, faint, perhaps, as the shade cast by the Aphrodisian star, but yet visible to his eye. The aromatic leaf is the *matériel* of his incantations. Yes, there is magic in the cigar. Then, to the sailor, on the wide and tossing ocean, what consolation is there, save in his old pipe? While smoking his inch-and-a-half of clay, black and polished, his Susan or his Mary becomes manifest before him; he sees her, holds converse with her spirit. In the red glare from the ebony bowl, as he walks the deck at night, or squats on the windlass, are reflected the bright sparkling eyes of his sweetheart. * * * * * * The Irish fruit-woman, the Jarvie without a fare [and with one], the policeman on a quiet beat, the soldier at his ease, all bow to the mystic power of tobacco, and none more so than our own self." *

And now for a doctor:—

"In habitual smokers," says Dr. Pereira, a high authority in such matters, "the practice, when moderately indulged, provokes thirst, increases the secretion of saliva,

* Bentley's Miscellany, March, 1844.

and produces that remarkably soothing and tranquillising effect on the mind which has caused it to be so much admired and adopted by all classes of society, and by all nations, civilised and barbarous." *

Mr. Johnston, in his 'Chemistry of Life,' proceeds in a similar vein :—

"It is chiefly because of 'the soothing and tranquillising effect it has on the mind,' as it is expressed by Dr. Pereira, that tobacco is indulged in. And were it possible," he continues, "amid the teasing, paltry cares, as well as the more poignant griefs of life, to find a mere material soother and tranquilliser, productive of no evil after-effects, and accessible alike to all—to the desolate and the outcast equally with him who is rich in a happy home and the felicity of sympathising friends—who so heartless as to wonder or regret that millions of the world-chafed should flee to it for solace! I confess, however, that in tobacco I have never found this soothing effect. This no doubt is constitutional, for I cannot presume to ignore the united testimony of the millions of mankind who assert, from their own experience, that it does produce such effects. * * * * * * Generally of the physiological action of tobacco upon the bulk of mankind, and apart from its moral influences, it may be received as characteristic of this substance among narcotics—

"*First.* That its greater and first effect is to assuage and allay and soothe the system in general.

"*Second.* That its lesser and second or after-effect is to excite and invigorate, and at the same time give steadiness and fixity to the powers of thought.

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* Materia Medica, p. 1431.

"To what special action of its chemical constituents on the brain and nerves the soothing action and the pleasing reverie so generally spoken of is to be ascribed, we can only guess. According to Dr. Madden, 'the pleasure of the reverie consequent on the indulgence of the pipe consists in a temporary annihilation of thought. (!) People really cease to think when they have been long smoking. (!) I have asked Turks repeatedly what they have been thinking of during their long reveries, and they replied, "Of nothing." I could not remind them of a single idea having occupied their minds; and in the consideration of the Turkish character there is no more curious circumstance connected with their moral condition.'*

"Is it really a peculiarity of the Turkish or Moslem temperament that tobacco soothes the mind to sleep while the body is alive and awake? That such is not its general action in Europe, the study of almost every German writer can testify. With the constant pipe diffusing its beloved aroma around him, the German philosopher works out the profoundest of his results of thought. He thinks and dreams, and dreams and thinks, alternately; but while his body is soothed and stilled, his mind is ever awake. From what I have heard such men say, I could almost fancy they had in this practice discovered a way of liberating the mind from the trammels of the body, and thus giving it a freer range and more undisturbed liberty of action. I regret that I have never found it act so upon myself."†

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* Madden's 'Travels in Turkey,' i. 16.

† Johnston, 'Chemistry of Life.' The same writer says, "But extensively as it is consumed, it is remarkable how very few persons can state distinctly the effects which tobacco produces upon them, the kind of pleasure which the daily

As an inveterate smoker of long continuance, my own experience may be added to the foregoing summary of the physiological and psychological effects of smoking. I must premise that it is the very essence of all the pleasures which we enjoy, that we cannot adequately describe them after enjoyment. How pleasant it was—how delightful, &c.—are the only terms we can use to express the physical or mental condition. The moment we proceed to describe the cause, the effect becomes totally unintelligible — or certainly inadequate to the cause. For my own part, the utmost that I can say is that I find a pleasure in smoking—a sort of contentment—and its consequent submissiveness in the raging battle of life. All the wonderful mental exaltations, magical reveries, and crowd of ideas of the

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use of it gives them, why they began, and for what reason they continue the indulgence. If the reader be a consumer of tobacco, let him ask himself these questions, and he will be surprised how little satisfactory the answers he receives will be. In truth, few have thought much on these points—have cared to analyse their sensations when under the narcotic influence of tobacco, or, if they have analysed them, would care to tell truly what kind of relief it is which they seek in the use of it."

Frenchman just quoted, are, and have been, to me utterly unknown. In my twentieth year, being inconvenienced by habitual dyspepsia, with a chronic eruption on the face — a common symptom of gastric derangement in the tropics — I was advised to smoke by a friend, who promised me a speedy and perfect cure of both ailments from the practice. There and then I accepted a cigar and smoked it—my first cigar—with great satisfaction, as I have before stated. Within a week afterwards all the symptoms of dyspepsia disappeared and the eruption vanished—never to return. Since the year 1837 I have constantly smoked, either the pipe or cigar, with the exception of one year, 1838. With the pipe I smoked the Dutch and Havannah K'nasters, rarely less than half a pound a week; but unable to find any means of effectually getting rid of the disgusting oil in the tube of the pipe, I resorted to the cigar; and for the last ten or twelve years I have smoked the mildest cigars to be procured, chiefly Havannah, my average consumption having been and being one pound of cigars per week, more or less according to my occupation.

The less I am engaged in brain or hand work the less I smoke, and *vice versâ*. I make up for the extravagant cost by scrupulously denying myself other pleasures and luxuries, rarely drinking wine or spirits, and then only for the aid of carbon when the lungs are to be exposed to the full front of oxygen in the cold frosty breeze.* My

* Having alluded to this natural property of alcohol in the Introduction, perhaps it may be useful to explain my views on the subject. A complete and practical knowledge of the two grand divisions of all the elements required by the living animal for the functions of life may be acquired by referring to Liebig's 'Letters on Chemistry.' I must here confine myself to the *elements of respiration*, or rather to one of them, included in the terms wine, beer, spirits. The reasons given in the Introduction are so cogent, so all-important to the normal continuance of health, that I feel compelled to believe, in advance of Liebig, that alcohol is absolutely generated in the digestive process of all animals. Startling as the theory may seem, the consideration of corroborating facts may, perhaps, induce the reader to think it probable, if not certain. It is well known that all the vegetables we eat contain starch, all the fruits contain sugar. Now starch can easily be converted into sugar; the process of malting is a familiar instance. Barley is merely soaked in water, spread out on a floor in heaps, where it heats and forms sugar. The temperature which it attains at that result is about 10° above the atmosphere—say 70° F. Now if we take this malt-sugar, or cane-sugar, or the sugar-juice of the grape, adding water to the former, and keep them at a temperature of about 70°, the same sugar will be changed into alcohol, which we easily obtain by distillation, under the respective names of *whisky* from barley, oats, rye, and

habitual beverage is very mild "family ale," and pure chocolate, which I get made expressly

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wheat; *rum* from cane-sugar; and *brandy* from grape-juice sugar. All malt liquors being retained in that condition, in like manner contain alcohol, the result of fermentation. Excepting the *sugar* still remaining in the latter, all these fluids owe their beneficial effects entirely to the alcohol which they contain. Their flavour has nothing whatever to do with it; nay, it may be owing to substances positively injurious to the body. Now the natural heat of the body is precisely adapted, in the healthy state, to effect a similar fermentation after having changed the starch into *sugar*, which last is constantly found in the blood. That alcohol has not been found seems to result simply from the fact that it must be sought in arterial blood, or blood which has not lost a portion of its carbon *in transitu* through the lungs in the respiratory process. As if to confirm this theory, a French chemist has lately discovered that the liver *secretes sugar* as well as bile. And this fact answers the objection that may be made in the case of *carnivorous* animals, which consume no substance containing those elements of the respiratory function; their liver supplies the element. Besides, every carnivorous animal instantly kills and sucks the blood of its herbivorous victim at the *neck*, apparently for the purpose of imbibing the fluid with its normal alcohol and certainly sugar. We have hitherto attributed this sudden infliction of death to a merciful ordination of Providence. Without questioning such ordination, I may be permitted to prefer an explanation of the fact more in accordance with the wonderful harmony of creation. I may further add, that the alcohol of the blood may, as in artificial circumstances, have passed into the *acetic* fermentation in the state of disease, and even to the *putrefactive*. Many facts in pathology seem to warrant the supposition, as exhibited in the morbid animal secretions.

It is clear that these views apply directly to that dreadful malady *consumption*. Cod-liver oil owes all its efficacy to its

from the bean, without any admixture. Tea and coffee I avoid as I do the doctors—that is, on principle:—these drinks are potent and valuable medicines when required, and as such I use *them;* but I trust never to need a doctor for "advice" or "medicine."

I have never suffered from any but the most trivial ailments—such as "colds;" yet I have been where smallpox, yellow fever, dysentery, and cholera have been raging.

My bodily strength I think equal to that of any robust man of the same stature and weight. Having passed beyond my fortieth year, I am neither bald nor gray, but rather inclined to be primitively hirsute, the comfort and convenience whereof I thankfully acknowledge to nature.

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carbon; but how disgusting it is to the poor patient! Any other oil may take its place; and there is one, *ben-oil*, or *behen-oil*, which is quite scentless, and perhaps less costly than that of the cod; but even olive-oil will do. If the trace of iodine in the cod-oil be important, which is most improbable, it may be supplied by a *fish-diet*. Oil and alcohol are the only remedies of consumption. Consumptive patients who "drink" outlive those who are sober. The *quadrumana*, or ape-tribe, especially those nearest to man, die of consumption at the Zoological Gardens for want of attention to the respiratory function: if they were dieted according to these views, doubtless they would live in any climate.

My appetite is vigorous: digestion absolutely perfect. I rarely, if ever, retire to bed before twelve o'clock at night, often later; but I know no unrest. Sleep, always without dreams, restores me to myself at seven of the morning, always ready for work. Six to eight hours' sleep suffice me; but I can do with three, nay even two hours, when pushed for time by some interesting idea or pursuit.

I have never been *drunk, tipsy, nor "under the influence of liquor"* in all my life, and firmly believe that I never shall be.

Such are some few items of a smoker's life, which will be well known to many of my readers. Truly, I live by rule, availing myself of all the ascertained truths of organic chemistry and physiology in the matter of health, convinced that, if we do not live by rule, nature will certainly kill us by rule and compass. Mere life is to me an intense enjoyment, feeling in no organ an obstruction, in no member a burthen. My eye-sight is as good as ever it was in my earliest youth as far as I can remember; my memory most retentive. Headache is to me almost unknown;

and the slight indisposition which may occasionally result from atmospheric changes, almost invariably disappears within twenty-four hours. If ever I relinquish smoking, it will be to avoid the expense; I believe that it has been beneficial to my constitution in general, by ministering to the feeling of contentment and submissiveness in the raging battle of life, the ideal being intimately allied with the *physique*—

"alterius sic
Altera poscit opem res, et conjurat amicè."

Physically it seems to act also by way of stimulant; but there is no reaction in my case: I am never depressed in body or mind, and therefore I cannot answer for the soothing effects ascribed to smoking. I was always of a bilious-nervous and sanguine temperament, and am so still. What my nervous irritability was before I smoked I can well remember, and I confidently state that it is now the same.

I have been engaged in law studies for twelve, fifteen, and sometimes eighteen hours a-day, during a continuous period of six months—and this not two years ago—smoking incessantly.

"Concluding this necessarily egotistic summary, I affirm that all the secretions of my organism are perfectly normal, all its functions undisturbed and vigorous, and seem to promise longevity. Life is, however, desirable no longer than it can be enjoyed, observes Sir Richard Phillips; and the wearing out of the system in advanced life causes, in general, more pains than pleasures; while the hopes and passions which give zest in youth vanish with the powers of animality in the petrifactions of age. In the slow but certain diminution of the formative force within us, to feel the bones grow brittle, the muscles rigid, and the heart stiffened by accumulating *lime*—as it were, built up internally: to stand in the midst of animal perfections a mere diminished entity, cursed with cravings and denied a capacity to fill—but enough: if we can live without disease to the utmost verge of our prime, perhaps that will be sufficient; at all events, it will amply meet my views and wishes as a denizen of earth.

The 'modus operandi' of Smoking.

I do not believe that the poison takes effect through the lungs; clearly, if it did so, similar effects would follow in all who breathe the vapour of tobacco for the first time, which is contrary to all experience. The *modus operandi* of smoking has never yet been explained by the Faculty; and, with all due deference, I venture to offer them the following solution. The general reader must excuse the mystical terms of anatomy, since it is to the medical profession that I submit the suggestion.

Even the most inveterate smoker experiences a most unpleasant sensation if he retains the smoke in his mouth, forcing it backwards against the fauces. I attribute the whole of the effects previously described in the case of the novice, to the irritation of the glosso-pharyngeal nerve and its branches. In the *jugular fossa* this nerve presents a gangliform swelling, and, thence passing forwards between the jugular vein and internal carotid artery to the stylo-pharyngeus muscle, it descends along its inferior border to the hyo-

glossus, beneath which it passes to be distributed to the mucous membrane of the tongue, and to the mucous glands of the mouth and tonsils. Among its numerous branches are the *pneumogastric*, the *sympathetic*, and the *lingual*.

The *pneumogastric* descends the neck within the sheath of the carotid vessels, diverging in its course; on the *right* passing between the subclavian artery and vein to the posterior mediastinum, then behind the root of the lung to the œsophagus, which it accompanies to the *stomach*, lying on its posterior aspect. The left enters the chest parallel with the left subclavian artery, crosses the arch of the aorta, and descends behind the root of the lung, and along the anterior surface of the œsophagus to the *stomach*.

The *internal* branches of the superior cervical ganglion of the sympathetic nerve are, 1°, *Pharyngeal*, filaments communicating with the pharyngeal plexus upon the middle constrictor muscle. They are also, 2°, *Laryngeal* to communicate with the external laryngeal nerve; and a long branch descends to the thorax, and is distributed to the *heart*, the superior *cardiac nerve*.

Lastly, the lingual nerve, arising by several filaments from the side of the corpus pyramidale of the *medulla oblongata*, escapes from the skull through the anterior condyloid foramen, with communicating branches, amongst others, to the pneumogastric, sympathetic, and gustatory nerve.*

I now proceed to the demonstration. The first symptom is the irritation of the gustatory nerve, whilst the glosso-pharyngeal excites the membrane of the tongue and the mucous glands of the mouth and tonsils to copious discharges of mucus; hence the spitting of the novice.

But the gustatory nerve is a branch of the *lingual*, by which it transmits the shock to the brain: hence the giddiness which supervenes as the second stage of the process.

Then the pneumogastric takes up the excitement and begins to render the stomach uncomfortable—at first with simple nausea, and at last with violent vomiting.

Finally, the superior cardiac nerve becomes

* In putting together this anatomical synopsis I have had before me Mr. Erasmus Wilson's 'Practical and Surgical Anatomy.'

involved, the heart's action is disturbed; then the entire brain necessarily responds to the heart's arrested action—the cerebellum can no longer preside over the locomotive muscles—the limbs totter, the patient falls and faints, until the vital force again assumes its wonted energy.

How comes it, then, that the novice so soon becomes habituated to smoking—enjoys the pleasure without suffering the pain? Five or six trials, I am told, will always be sufficient to launch the smoker: but it is difficult to conceive how the nerves affected by the nicotin and oily vapour—the latter acting on the heart, the former on the brain, as just described—can become so soon habituated to the poison. I venture to suggest that these nerves never become thus habituated to the poison; and if the most inveterate smoker were to imbibe the smoke, after the fashion of all novices in general, and Napoleon in particular, there would necessarily be an end to all smoking. It is the *art or method* of smoking which makes all the difference. The smoker does not drive the poisoned fume backwards, nor does he retain it in contact with the oral organs.

Instinctively he no sooner imbibes the vapour than he pours it forth again in a stream athwart his nostrils, where, together with oxygen, it stimulates the *olfactory* nerve, which, in my opinion, produces the beneficial effects of tobacco ascribed to it by all its votaries. This nerve—the olfactory—rests against the under surface of the anterior lobe of the brain, being lodged in the narrow interval between two convolutions, and retained in its place by the arachnoid membrane; its branches are transmitted through numerous foramina in the cribriform plate, to be distributed to the mucous membrane of the nose. The stimulus is thus immediately communicated to that portion of the brain which requires the invigorating action of oxygen for its intellectual manifestations. The larger the surface of the mucous membrane of the nose the greater the activity of the intellect or the anterior lobe of the brain; and without a well-developed nasal organ there *never* was a well-developed intellect. The nose of genius, in every age, has been conspicuous—in every sphere of its numerous manifestations. Perhaps I should rather say that its size

and adaptation to expose a large internal surface to the action of oxygen, indicates the amount of intellectual activity of which the individual is capable. Nay, so striking is this provision of nature (and comparative anatomy will bear me out), that in the case of celebrities, whose fore-lobe of the brain exhibits no marked development or expansion, nature has planted between and below their eyes a nose of remarkable dimensions in length and depth and inferior expansion. For the proof of this position I appeal to the portraits of all manner of intellectual celebrities, in every profession, in every department of art or science.

It is, therefore, apparently on the cerebrum proper, through the olfactory, that the fumes of tobacco perform their remarkable function in the human economy. Hence we constantly hear persons who do not smoke affirm that they like the smell of the pipe or cigar wafted on the breeze of morn. Their brain feels comfortable at the gentle stimulus—as it were a flavour to oxygen.

"Strong Labour got up; with his pipe in his mouth,
He stoutly strode over the dale;

He lent new perfumes to the breath of the south,
On his back hung his wallet and flail.
Behind him came Health from her cottage of thatch,
Where never physician had lifted the latch." *

This direct action of the fumes of tobacco on the olfactory nerve, and thereby on the cerebrum, is, I submit, the whole *rationale* of the various effects experienced by different smokers. These must necessarily differ according to the conformation of brain in each individual. Where the imaginative faculties predominate, their activity will be exalted; where the reasoning powers are predominant, they will attain greater concentration; and so of all the functional activity of the brain—including, of course, those manifestations which we designate as moral or social—since the entire mass of the brain must become involved in the nervous action, as I have endeavoured to show in my hypothesis. Hence I am decidedly of opinion that no one should smoke before manhood—that is, before the brain has acquired its full natural expansion and activity; in other words, before the age of twenty or twenty-five

* Smart.

years in England. Functional activity, prematurely exerted in any part of the animal system, must necessarily be injurious: he whose organs have been carefully restrained from premature activity, will find them last the longer without derangement. And tobacco is not an aid required by the young, whose mentality will develop itself by its own internal force, in due time and in a normal manner; and whose passions, if they are to subserve the great intents of nature, must not anticipate their period of development, unless they will be able to acquiesce in finding the end of their enjoyments antedated.

It follows also, from my hypothesis, that the mild cigar is the safest form of using tobacco. It has been said that "the cigar, especially if smoked to the end, discharges directly into the mouth of the smoker everything that is produced by the burning." This is precisely what it does not do. Its "discharge" is instantly re-discharged from the mouth, to act on its proper organ in influencing the brain—and even then vastly modified by union with atmospheric air—nay, possibly chemically changed, in some degree,

by contact with the mucous surface of the mouth, whose saliva is compounded of water and a variety of chemical constituents, and at times a fatty acid. It is stated to be alkaline habitually, and acid after meals; but doubtless it varies in these qualities; indeed it is more commonly acid. Now it has been found that, if the empyreumatic oil of tobacco be washed with *acetic* acid (or vinegar), it loses its poisonous quality. It contains, therefore, a harmless oil and a poisonous *alkaline* substance, which the acetic acid combines with and removes.* But *any* acid will react against an alkaline substance, and the *mouth habitually will be found decidedly acid to litmus-paper*—the saliva instantly changing the blue to red, showing a strong acid reaction, and yet the mouth does not taste acid. I have repeatedly thus tested the fact—nay, on even touching the tip of the cigar taken from the mouth, a strong acid reaction has been made evident. I contend, therefore, that this terrible oil, which kills cats and dogs and vipers as if by lightning — this "cursed juice

* Johnston, 'Chemistry of Life,' and other writers.

of hebenon," if you like—is thus deprived of its poison, and rendered completely innocuous by this provision of nature in the mouth; and nothing but "a harmless oil" remains, if it does remain, in the mouth. The bitter taste results from the harmless gums which form the largest constituents of the leaf—a property which is said to be available for tanning.

Now this reasoning is most strikingly confirmed by a statement quoted by Joubert to the following effect:—

"When a stranger arrives in Greenland he is immediately surrounded by a crowd of the natives, who ask the favour of sucking the empyreumatic oil in the reservoir of his pipe! And it is stated that the Greenlanders smoke only for the pleasure of drinking that detestable juice which is so disgusting to our European smokers."

The fact is, that it is no longer the poison it was before: the alkaline poison has been neutralised by the acid of the saliva, whose condensed moisture makes up "that detestable juice"—perfectly harmless, at least not poisonous—very bitter and nauseous to Europeans, but doubtless quite as palatable as their train-oil: indeed, there ought to be no quarrelling about taste in anything

here below. A German writer has stated that there is no substance so revolting that some of earth's inhabitants do not crave it as a luxury; and he enters into particulars with disgusting minuteness.*

This also explains how some smokers swallow their saliva without being poisoned: if the bitter principle and oil do not disagree with the stomach, it is clear they run no risk whatever. For myself, I never swallow the saliva immediately after puffing; and if the cigar be strong, or nearly burnt out, I invariably reject the fluid. If I am right, Mr. Johnston is clearly wrong, therefore, when he states that, "when the saliva is retained, the fullest effect of all the three narcotic ingredients of the smoke will be produced upon the nervous system of the smoker." And his conclusion from this erroneous position is equally, and for the same reason, mistaken. He says,—

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* Schneller, 'Geschichte der Menscheit,' i. 24. Enumerating the delicacies of all nations, he says, amongst the rest, that *die Kalmucken fressen stinkendes Aas und die Nachgeburt von Thieren;* and that die Jakuten verzehren Raubthiere, und die *Nachgeburt ihrer Weiber ist ihnen* ein Leckerbissen, worauf sie ihre Freunde einladen!

"It is not surprising, therefore, that those who have been accustomed to smoke cigars, especially of strong tobacco, should find any other pipe both tame and tasteless except the short black *cutty*, which has lately come into favour again among inveterate smokers. Such persons live in an almost constant state of narcotism or narcotic drunkenness, which must ultimately affect the health even of the strongest."

I believe that such smokers have a taste similar to that of the Greenlanders, and that it is the relish of the bitter gum which gratifies them with its peculiar flavour: it is probably analogous to the hop in its properties, and may, in large quantities, produce the habitual narcotism alleged to exist—precisely like hops, which give their soporific quality to beer. Of course, if those persons are habitual drinkers of strong liquors as well as smokers, their state can scarcely be called "*narcotic* drunkenness" arising from tobacco. The stimulus of alcohol and the stimulus of tobacco-smoke exalt the action of the brain, and the stimulus of both may be followed by a reaction, which is drunkenness or the partial cessation of the brain's function; but I contend that the habitual smoker would find it infinitely more difficult to bring on that state by smoking than

the habitual drunkard would by alcohol. Of course, for the sake of the argument, I suppose the habitual smoker to exceed the limits permitted by his cerebral organisation. This is a point which each individual must learn by experience alone. *Nihil nimis* must be the motto and guide of all who would enjoy their powers to the end. If your horse can trot twenty miles per hour, always keep him at ten, if you wish him to last; and so in all things appertaining to human exertion and enjoyment, keep below rather than at the mark—let a *little appetite* always remain unsatisfied, if you would preserve your functional activity to the utmost.

By the Turkish and Indian pipes, narguileh and hookah, in which the smoke is made to pass through perfumed water and a tube of great length, it is thought that a large portion of the poisonous vapours is arrested; it may be so to an extent proportionate to the length of the tube; but the latter I found just as rapidly fouled as any others, even to the very tip of the mouthpiece, with the disgusting and tarry oil before mentioned.

The fashionable meerschaum absorbs this tarry oil, which gradually imparts to it a beautiful colour of mahogany or rosewood; but after a time, when saturated, the fluid will ooze through the pores of the clay and soil the fingers. China, wood, bronze and other metals, are used in the construction of pipes, whilst our common clay has been fashioned into every imaginable device to suit the fancy. Numerous contrivances have been vaunted as perfectly adapted to convey only the purest vapour of the weed to the timid olfactory; but I am compelled to say that they only differ in complication and cost from the simple suggestion of nature to the savage.

Before treating of the effects of snuffing and chewing on the human system, it will be necessary to state the other constituents of tobacco, as established by the chemist. It must be remembered, however, that the somewhat extensive catalogue is confined to a very infinitesimal proportion of the given quantity; whilst pure water constitutes by far the greater part of the whole —as it does in the mass of all animals and in plants. In 100 parts of dry tobacco, about 88

will be pure water, and the remaining 12 parts will be occupied by nicotin and the other constituents already described, together with the following mineral bases, acids mineral and organic, other organic bodies, and other mineral bodies :—

Mineral bases.	Potash. Lime. Magnesia. Oxide of iron and of magnesia. Ammonia.	Organic acids.	Malic acid. Citric acid. Acetic acid. Oxalic acid. Pectic acid, Ulmic acid.
Mineral acids.	Nitric acid. Hydrochloric acid. Sulphuric acid. Phosphoric acid.	Other organic bodies.	Yellow rosin. Green rosin. Wax or fat. Nitrogenised matters. Cellulose.

Other mineral bodies—silica and sand.*

Other chemists answer also for albumen and gluten in tobacco: indeed, without the latter it would not be adapted for rolling into cigars, or cutting into the long shreds of pipe-tobacco.

It is evident from this list that the dainty dish of "plug" within the sailor's jaw, has had a very complicated cooking. Truly it is homœopathically infinitesimal in its quantitative little bits of this and little bits of that; but still all

* Fremy et Pelouze, 'Traité de Chimie générale,' tom. iv. p. 422, ed. 1855.

its enticements must depend upon the right distribution of parts—or, to borrow and adapt a phrase from that veritable genius of the stomach the immortal Soyer (who should have been knighted for his Crimean exploits), "the ingredients are so nicely blended, and such a delightful concord exists, that it equally delights the palate" of those who like it, "as a masterpiece of a Mozart or a Rossini should delight the ear."*

I confess this chewing of tobacco is to me incomprehensible; and this only shows how we are apt to find fault with those who "go the whole hog," whilst we ourselves only put in a paw—for between the tip of a cigar on the lips and a plug in the jaw, there is only a matter of small measurement. But, on the other hand, smokers have all antiquity on their side. Fume of some sort, from the earliest times, was an emblem of supernal satisfaction; and no sacrifice was otherwise ever brought to a perfect consummation. And not only in accordance with the religious instincts and adaptations of man was the fume of something burnt, in order to please, as he

* The Modern Housewife.

believed, the god whom he worshipped; but, as a natural consequence, he also burnt it to please himself—the next best object of his adoration. The ancient Scythians used to cast bundles of herbs into the fire, and then inhaled the fragrant smoke; the Thracians did the same with the aromatic seeds of certain plants: and, according to Herodotus, the Babylonians employed the same means to produce and enjoy a transient intoxication. But the analogue of the quid or plug we seek in vain amidst the primitives of earth in their early development.

And yet why should not the nerve gustatory subserve to that great engine of animality, *sensation*, as well as the nerve olfactory? Indeed, is there another animal who has contrived so many wonderful means of agitating, exciting, delighting every sense whereby his brain is continually shaken? Is man content with seeing the natural beauty of nature alone? How came he then to invent such incomprehensible combinations, beginning perhaps with "Punch and Judy," and ending —no—only further developing his ideas at the gorgeous spectacle of the Princess's? . . . Is he content with merely hearing the song of birds, the

humming of the winds, the roar of the ocean? Did he not invent the bagpipes? . . . And so, throughout the catalogue of his senses, all is tendency to expansion, exaggeration,—and then a return, a retrogression to something which, though buried in the bygone past of ages, he will not "willingly let die," but reproduces to enjoy again with new excitement. If this holds good in his "educated" senses, possibly it is as certain in the rest; and if, according to the theory of development, man is but an advanced *mammal*, perhaps the chewing of tobacco is but a "repetition" of the chewing of the cud in his antecedent prototypes—the ruminants.

Certainly the gustatory of the chewer has good reason to be excited. Whilst it escapes the poisonous oil which is produced by the burning of the leaf (by the smoker), it has the full swing of the natural volatile oil and the nicotin to contend with. How the resultant of these forces is simply an unspeakable gratification, without the penalty of poison, is a matter which the doctors must not pretend to explain by saying that, from the quantity of those substances which he involuntarily swallows or absorbs, his

appetite *must* be impaired, and his digestive powers gradually weakened. When we contemplate our hardy race of sailors, whether English or American, and consider their robust frames and vigorous appetite—when we reflect that a tolerably good digestive faculty is sometimes, or has been often, necessary to assimilate *their* "daily bread"—you may tell them indeed that they must be endowed with *dura ilia*—but if you tell them they are poisoned by the quid or the plug, they will tell you to "tell it to the marines." Who can tell what resultant is produced in the mouth of the chewer by the free *mixtura cum liquido* of all the constituents of the tobacco and the constituents of saliva, and the whole heterogeneous mass, potash, lime, magnesia, iron-rust, &c.; acid nitric, acid acetic, acid citric, phosphoric, &c.; rosin yellow, rosin green, wax, or fat, nitrogenated matters, and cellulose, with flint and sand—to all which add the natural galvanism of the organ—who can tell, I say, what resultant is produced by beneficent Nature in the mouth of the chewer? If we pause for a reply, will the doctor's, will Mr. Solly's, shake of the head, or letters in the 'Lancet,' answer the

question as truly, as scientifically, as theoretically, as practically, as the incontestable mental and bodily vigour of the jolly tar, "in shape and gesture proudly eminent"?

There is a point connected with this chewing of tobacco which is somewhat noteworthy. The wonderful dexterity acquired by man in the use of his hands and eyes in taking deadly aim as a sportsman or otherwise, however striking, is still conceivable, as we can clearly see that his hands, arms, and eyes, were adapted to the purpose; but the naturalists tell us of a little sporting fish whose endowment is, if I may think so, still more extraordinary. He rises near the surface of the summer-sea, just where the flies or other insects are vaulting in their mazy dance, and, taking his aim, spits unerringly at a fly a small pellet of water, and thus secures his prey. I know not how we are to come at the comparative anatomy of the matter, after the manner of Carus; but the Yankee chewer unquestionably "repeats" the unerring "organ" of this sporting fish to admiration. If practice makes perfect, great must have been that practice which has given

the Yankee his art of expectoration. He can hit anything, within range, at any angle, and vault you a curve of any parabolism. He will lodge his alkaline or acid pellets between each of the bars of the grate, exactly in the centre, each in succession, and begin again from the bottom. He will fusilade each corner of the heated stove, and leave at each corner the impress of the hissing conical, and finish off with a vertical shell plumb down upon the centre! Never take a bet if a Yankee offers to wager what he can do in the 'spital department; but, considering how few can do a "dirty thing" in a handsome manner, we cannot deny our admiration, in this particular, to the votaries of the plug in America.

The Finlander removes his quid from time to time and sticks it behind his ear, and then chews it again; but the Yankee keeps it in until exhausted of all its juices, and then he "chaws" another. It is said that some sleep with it in their mouth: a negro in his sleep swallowed one of these plugs, and soon awoke with vomiting, frightful cries, and frantic gesticulation. He was

bled, and, after a few doses of ether, perfectly recovered.*

Nothing seems to prove more conclusively that a very different procedure takes place in the absorption of the virtues of tobacco by chewing, to that which occurs on consigning them at once to the mucous membrane of the stomach, than the fact of the complete immunity of the sailor. And yet there is evidence that the aroma at least interpenetrates the tissues like salt in pork, or beef, or fish. The following fact was communicated to Commodore Wilkes, of the Exploring Expedition, by a savage of the Feejee Islands. He stated that a vessel, the hull of which was still lying on the beach, had come ashore in a storm, and that all the crew had fallen into the hands of the islanders.

"What did you do with them?" inquired Wilkes.

"Killed 'em all," answered the savage.

"What did you do with them after you had killed them?"

"Eat 'em—good," returned the cannibal.

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* Hygiène Navale, p. 736. Paris, 1856.

"Did you eat them all?" asked the half-sick commodore.

"Yes, we eat all but one."

"And why did you spare one?"

"Because he taste too much like tobacco. Couldn't eat him no how."

If the tobacco-chewer should happen to fall into the hands of New Zealand savages, or get shipwrecked somewhere in the Feejee group, he will have the consolation of knowing that he will not be cut into steaks and buried in the unconsecrated stomach of a cannibal, and thus find at least one advantage in the use of tobacco.*

* London Journal. Dr. Pidduck, of the 'Lancet' controversy, corroborates this curious phenomenon. I quote verbatim:—"The extraordinary fact is this: that leeches were killed instantly by the blood of the smokers, so suddenly that they dropped off dead immediately they were applied; and that fleas and bugs, whose bites on the children were as thick as measles, rarely, if ever, attacked the smoking parent. It may be said, 'But why may not this poisonous effect upon leeches, fleas, and bugs, be owing to gin, and not to tobacco?' The answer to this objection is, that the Arabs and Bedouins, who drink neither wine nor strong drink, are protected from the onslaught of the insects which swarm in their tents by poisoning their blood with tobacco, whilst the wine-drinking Europeans are attacked without mercy. What is so fatal to *insect* life (*sic*) cannot be otherwise than most formidable to the life of persons whose blood is thus poisoned."(!) And the frantic doctor avers that this "pathological fact cannot fail to settle the

Snuff-taking used to be formerly a characteristic "practice" of the medical profession. Indeed the gold snuffbox and gold-headed cane were the peculiar emblems of the fashionable leech. Mutantur tempora—it's quite a different thing now-a-days. Now the emblem is a smart equipage, yclept a "pill-box"—with tiger beside or behind, dashing past with a well-appointed cob, who knows his master. From the top of the omnibus how we envy the fortunate individual! But we think of the sad vicissitudes of poor human nature—its beautiful simplicity—its wonderful generosity in making so "han'some" a return for—

> "shelves,
> A beggarly account of empty boxes,
> Green earthen pots, bladders, and musty seeds,
> Remnants of packthread, and old cakes of roses!"

The use of tobacco for snuff is referred to the times of Catherine de Medicis: it was recom-

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controversy to every reflective mind!" Think of a learned M.D. considering our precious human organism on a par with that of bugs, fleas, and even leeches! Why, 'tis monstrous! The Philistine said unto David, "Am I a *dog*?" What would he have thought of Dr. Pidduck had he been implicated by the latter in the idea of a bug or flea, or even a leech? Is the doctor no adept in the "theory of development"?

mended to Charles IX., her son, for his chronic headaches. Its efficacy consists in irritating the pituitary membrane, and thus producing and augmenting the secretion of mucus. The poet Horace would have been much obliged to the inventor had he been contemporaneous, for he states that he would be "particularly well, were it not for a troublesome rheum"—"præcipuè sanus, nisi cum pituita molesta est." Indeed snuff-taking was evidently an original medical prescription, and as such I must leave it entirely to the doctors. *Vix ea nostra voco.* I grudge a cigar to the man who "snuffs." The olfactory cannot reasonably object to an ethereal vapour, but to bury it alive in dust, to slake it with a filthy liquor, perhaps compounded of sal-ammoniac, yellow ochre, red lead, and other infernal concoctions, is too hard to bear—even for a nerve of the nose, condemned as it is, without the possibility of defence spontaneous, to smell all manner of rats, in all manner of shapes incidental to the economy of man and universal nature.

And the sneezing which it produces may cause the rupture of an aneurism, a cerebral

hemorrhage, and, according to Haller, even squinting.

The habit, when acquired, is safe from these perils, for the susceptibility of the mucous membrane is deadened; nevertheless the repeated stimulations of the membrane act upon its structure, and ultimately thicken and harden it throughout. The peculiar titillation which snuff-takers enjoy can be procured only by augmenting the dose of snuff: their noses, their upper lip, being continually rubbed, are hypertrophied, as the doctors call it—that is, increased in dimensions: the black mucosities which ooze from their nostrils, the odour of their breath and of their garments, often disgust us with their persons, especially when old age and want of cleanliness aggravate these inconveniences. Their sense of smell is deteriorated and weakened by the exhaustion of excitability in the olfactory, which finds it very difficult to perform its function through the blackish mass of its carpet.*

* Lévy, 'Traité d'Hygiène,' ii. 263. Paris, 1857.

PART V.

MEDICINAL ACTION OF TOBACCO.

VERY early, before 1589, the Cardinal Santa Croce, returning from his nunciature in Spain and Portugal to Italy, carried thither with him tobacco. This circumstance is commemorated by Castor Duranti in Latin verses, which lavish the most egregious praises on this plant; not only it is asserted to cure every disease, but the holy Cardinal's exploit in bringing tobacco is actually compared with that of his progenitor who brought home the veritable wood of the Cross!—

> "The names of Santa Croce rightly given,
> Since they, in all respects resembling heaven,
> Procure, as much as mortal man can do,
> The welfare of our souls and bodies too."

Possibly the credulity of superstition in that age eagerly embraced this notion, and ascribed to the plant even the efficacy of a charm or

amulet. Certain it is, however, that in the course of the following century tobacco waxed strong in the popular belief as a panacea or cure for all diseases. In the small work, 'De Herbâ Panaceâ,' of Ægidius Everartus, we find enumerated all the usual ailments of the body with their apportioned dose of tobacco. The fair sex might find in its juice a primitive Rowland's Kalydor—*faciei ruborem tollit succus:* it restored hearing to the deaf, and sight to the blind. Headache, toothache, colic, catarrh, worms, uterine neuralgia, and hæmorrhoids—in a word, all diseases fled before it—*nam illas omnino curat.**

Whether its use as a medicine in those days killed ultimately more than it cured—like so many of its successors in the healing art—or that it lacked the aid of endless advertisements, doings on a large scale, fictitious testimonials, and all the other paraphernalia of humbug—it is impossible to say; but there is a fashion in remedies, in doctors, in courtesans, in warriors, in preachers, in *every* thing that can appeal to

* De Herbâ Panaceâ, Auc. Ægid. Everarto, Ant. 1664.

any thing in man physical or spiritual,—and having lived its day, its hour comes:—

"But yesterday the word of Cæsar might
Have stood against the world: now lies he there,
And none so poor to do him reverence!"

The fact is that the doctors could not manage tobacco. Nicotiana proved refractory in their hands. They knew its effects when internally administered; they had seen its vertigo—severe nausea—vomiting—general tremor of the body—cold sweats—syncope—death. Everything about the remedy suggested caution; the doctors used it recklessly—used it as they use so many things according to the books,—"try this" and "try that,"—and Death only knows what will be the end of the trial! Dr. Paris relates a case in point. It was a case of strangulated hernia:—

"The patient had been under the care of a medical practitioner in the vicinity of London, who, after repeated and fruitless efforts to return the intestine, injected an infusion of tobacco into the rectum, and sent him in a carriage to the Westminster Hospital for the purpose of undergoing the operation: but the unfortunate man expired very shortly after his arrival, in consequence of the effects of the tobacco clyster.

"It was a practice to inject the smoke of tobacco into

the anus, by means of a bellows of a peculiar construction, in cases of suspended animation, with a view to *stimulate* the rectum" .... "annually recommended for such purposes by those who professed to instruct the profession and the public upon these important topics; this may be considered one of the most stupendous errors that ever occurred in the exercise of the medical art."*

Tobacco, as a remedy, died out by the disastrous deaths which it was made to inflict by the ignorance of the faculty. If corrosive sublimate, arsenic, opium, prussic acid, strychnine, aconite, and other frightful poisons, can be made subservient to the healing art by internal administration, so, by suitable management, in skilful hands well acquainted with its properties, even tobacco may become a useful assistant in some diseases. True, in Dr. Pereira's 'Materia Medica' we find notices of such possible exhibitions of tobacco; but until the physician is accurately acquainted with his remedy, and the specific purposes to which it may be applied, perhaps the public have reason to congratulate themselves that tobacco is a dead letter in the pharmacopœia. For a certainty, in administering

* Dr. Paris, 'Medical Jurisprudence,' ii. 418 and 88.

their doses, the doctors would not estimate our bodies' capability of resistance by Dr. Pidduck's scale of fleas and bugs. *Fiat haustus* or *linctus* will not do with the pride of nicotiana. The infinitesimal globules of Hahnemann will be best adapted to a medicine which, given to the blood in its normal activity, will shake, within three minutes, all the nervous centres of the body.

§ Is Tobacco a Prophylactic?

In the Introduction I have put forth this opinion, which has been doubted by the medical profession.* It is, nevertheless, a belief of the popular mind; and, whether well founded or not, if it only tends to quiet the mind during certain epidemics, beyond doubt it has an immense advantage. Certain mineral and vegetable substances have apparently operated as preservatives against epidemic influences: the cholera, it is said, spared the manufactories where animal charcoal, sulphur, or mercury were manipulated;

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* Pereira, 'Mat. Med.'

the town of Idria, near a mine of mercury, did not present a single case.*

Dr. Stokes and others have noticed the disappearance of intermittent fevers in the marshy districts of Cornwall, after the establishment of several copper-foundries which pour into the atmosphere the vapours of arsenic; and M. Bayle has collected 2027 cases, of which 1948 prove the prophylactic efficacy of belladonna against scarlatina.†

These are facts worthy of the attention of all men. Time and observation will undoubtedly disclose more of the broad available facts of nature: it matters not if we cannot understand their modus operandi; let us avail ourselves of the blessing, and wait patiently for its explanation.

What influence has the manufacture of tobacco on the health and diseases of the workmen? On one hand, Ramazzini, Fourcroy, Cadet-Gassicourt, Tourtelle, Percy, Patissier, and Merat, represent them meagre, discoloured, yellow, asthmatic, &c.; and the same opinion is recorded

* Delmas, 'Dict. de Médecine,' art. CHOLERA.
† Bibliothèque de Thérapeutique, ii. 331.

in the 'Dictionnaire des Sciences Médicales,' quoted by Mr. Lizars in his pamphlet against tobacco. On the other hand, Parent-Duchâtelet was induced by a rigorous inquiry to deny those effects. According to the latter, the workmen are acclimatised after a time, do not contract any particular diseases, and live to a good age; the emanations of the tobacco do not inconvenience them excepting at the time when the masses of tobacco are broken down. The reports of the physicians attached to the state-manufactories seem to confirm this opinion. The official document for the year 1842 declares — 1st, that the workmen have suffered from no particular disease which can be attributed to tobacco itself, but it might have aggravated in the city of Paris bronchitis and cephalalgia, which prevailed during the heats of summer; 2nd, that tobacco might have acted as a preservative against certain diseases—typhus fever at Lyon, dysentery at Morlaix, sweating-sickness at Tonneins; 3rd, that the employment in tobacco-manufactures might perhaps be beneficial to persons threatened with pulmonary consumption,

that it might preserve them from that disease, and even cure those who might be already affected. What are we to admit between such opposite assertions and facts? asks Dr. Lévy, author of the 'Traité d'Hygiène Publique et Privée,' "Consulting Physician" of the Emperor, Inspector of the Board of Health of the Army, &c., in the present year 1857. This author then enumerates the various steps of the manufacture, calling attention to the point when—

"a considerable quantity of gas is given off, which has never yet been analysed, but which is supposed to be, from its smell, that of ammonia, acetic acid, and probably nicotin. These gases impregnate the air with an acrid odour, and render it difficult to breathe at a certain stage of the fermentation. . . . . At the end of six months the heat of the masses becomes stationary: then they proceed to break down the masses, when a thick and fuming vapour comes forth. This operation can only be performed by robust and acclimatised workmen."

Other operations ensue, attended with great rise of temperature; the tobacco must be changed from one place to another to prevent carbonisation:—

"These transfers are the most painful and dangerous labour of the workmen: they must remove a burning powder, smelling of ammonia, and fill the sacks with it,

breathing an infectious air, which stings the eyes, irritates the nostrils, and produces suffocation. This occurs three times: in a subsequent stage the tobacco-dust flies about like flour in a mill.

"Now the liability to injury from these various influences is in proportion to the conditions."

In other words, they increase in intensity until they reach their maximum in the grinding of the leaf to powder.

"We must distinguish the effects of tobacco into primitive and consecutive: — 1st. The neighbourhood of a tobacco-factory is known by a smell which increases as we approach: in the interior we do not remark that continual sneezing which Ramazzini mentions as evident even in the horses; but if we remain any time, we get headache, we feel sick, and sometimes a diarrhœa comes on. The latter, which is more frequent in the women, is salutary, and seems to be a spontaneous effort of nature to eliminate certain substances which have penetrated the organism. Many workmen cannot overcome these symptoms, and are forced to give up the employment. Those who become acclimatised forget their inconveniences. Careless of all precaution, they eat in the factory without washing their hands; and as though the tobacco did not penetrate them sufficiently, they smoke and chew tobacco. Meanwhile the slow action of the tobacco, though imperceptible, does not cease: it ultimately produces in them a deep change. It consists, says M. Mélier, in the peculiar alteration of their complexion: it is not a simple loss of colour, an ordinary paleness—it is a gray aspect somewhat dull—a sort of compound of chlorosis and certain cachexias. Their

physiognomy is stamped with a peculiarity which enables a practised eye to recognise, to a certain extent, the old stagers of the factory, for this look is confined to those who have gone through all the works. M. Hurteaux thinks that two years at least must elapse before it appears:—it is then that the workman is acclimatised completely. It is a slow intoxication, owing to the absorption of certain constituents of the tobacco. M. Boudet did not find nicotin in the blood of these cachetic workmen; but their blood in inflammation is not buffy: they are subject to passive congestions. It is rarely useful to bleed them: it is moreover probable that they discharge a part of the absorbed nicotin by their urine, which is abundant, notwithstanding their habitual perspiration. In fine, M. Stoltz, whilst engaged in the delivery of a workwoman in the factory at Strasbourg, recognised the smell of tobacco in the water of the amnios, without being aware of the previous occupation of the woman. The progress of the cachexia is shown by their becoming lean and losing their strength, especially those engaged in the more laborious departments. . . . We have no data as to their longevity. My friend, le docteur Maurice Ruef, mentions, in a population of 123 individuals, 5 old men above 72 years of age, 4 of whom have worked all their lives in the factory at Strasbourg. The ameliorations made in their condition consist in the ventilation of the workshops, chimneys, the use of steam-engines, watering the place with vinegar and water, as recommended by Ramazzini and found useful by M. Hurteaux." *

"Does the tobacco-factory preserve its inmates from certain diseases, or cure them when ill? The workmen, when attacked with rheumatism, neuralgia, lumbago, lie

* Lévy, *ubi suprà*.

down upon a heap of tobacco, and wake up cured or relieved. Dr. Berthelot uses with success in those diseases a cataplasm of linseed in a strong decoction of tobacco. Reveillé Parise has proved the efficacy of tobacco in gout. Pointe, Merat, and Delens consider tobacco a prophylactic against intermittent fevers. At Paris these diseases are rare or mild; at Strasbourg M. Ruef observed that species of fever amongst his workmen. We have mentioned its reputed preservative action against the sweating-sickness, typhus, and dysentery. M. Gasc has noticed the rarity of the itch and vermin amongst the workmen who manufacture tobacco. Five of the ten physicians attached to the State-manufactories concur in the opinion that pulmonary consumption is rare amongst the workmen, and that its course is less rapid in those who bring with them the developed germ of the malady: two of them deny the immunity; three do not mention it. M. Ruef is positive on the subject—whilst other facts confirm the contrary. In no case was consumption shown to have been stopped or cured; at least the facts produced hitherto are wanting in scientific rigidity. This point remains to be cleared up: the government has it in view." *

Mr. Dodd, in his 'Manufactures of Great Britain,' makes no allusion to any inconvenience

* Lévy, *ubi suprà*. I remember seeing in the papers the notice of an observation made at the time, that not a single case of Asiatic cholera occurred in the houses of the tobacconists. This refers to the first visitation. Mr. Lizars, in his *brochure*, thinks smokers and snuff-takers especially liable to that disease. I regret that the impression left on my mind after reading his tract compels me to withhold belief from any of his assertions whatever.

as to the health of the workmen in the factories at Mitcham in Surrey. I have stated, however, that the English process is much shorter than that of the French. The cigar-makers complain of the constant sitting being injurious to their back and loins. I have seen some of them: they did not appear to differ in look from the general run of in-door workmen. In truth, there are many worse avocations, on the score of health, in the metropolis and elsewhere. Painful as is the thought so constantly forced upon the mind that thousands on all sides must suffer for the support, comfort, convenience, and luxury of the few, yet it is nevertheless incontestable that there is no condition of man without its burthen—and, as a general rule, those feel it most who have least reason to complain. And some there are who sing their bitter toils away.

There is something peculiarly touching in the following brief sketch by Bryant, in his 'Letters of a Traveller,' relating to his visit to a tobacco-factory in America:—

"As we entered the room we heard a murmur of psalmody running through the sable assembly, which

now and then swelled into a strain of very tolerable music.

'Verse sweetens toil,'

says the stanza which Dr. Johnson was so fond of quoting; and really it is so good that I will transcribe the whole of it:—

'Verse sweetens toil, however rude the sound:
All at her work the village maiden sings;
Nor, while she turns the giddy wheel around,
Revolves the sad vicissitude of things.'

Verse, it seems, can sweeten the toil of slaves in a tobacco-factory.

"'We encourage their singing as much as we can,' said the brother of the proprietor, himself a diligent masticater of the weed, who attended us, and politely explained to us the process of making plug-tobacco—'we encourage it as much as we can, for the boys work better while singing. Sometimes they will sing all day long with great spirit; at other times you will not hear a single note. They must sing wholly of their own accord; it is of no use to bid them to do it.'"

§ Is Smoking Injurious to Health and Morals?

If the reader has perused the voluminous correspondence in the 'Lancet,' during the last six weeks, relating to this question, he is aware that its whole purpose is to attribute almost every disease to the use of tobacco. Diseases of the heart, of the brain, of the spine, chest, lungs, of

every organ of the body, we are told, menace the habitual smoker with premature decay or death; and we are given to understand that, unless we give up smoking, Dr. Solly, at least, will not report favourably upon us to the Victoria and Crown Insurance Offices! The mere threat of premature decay by various diseases and death might pass; but it seems the height of impropriety for a medical man to lend himself to insurance companies to enable them to screw higher premiums from the insured, which must be the result, however conscientious (though misguided) may be Mr. Solly's opinions.

If the various positions of Mr. Solly and his friends of the 'Lancet' were well founded, it would follow that every third man at least of our population must have been suffering from all manner of diseases for the last two centuries—since the consumption of tobacco has kept pace with the increase of population: nay, it also follows that, instead of increasing in population at a great ratio, as proved beyond a doubt, we have been suffering from sterility! And this in the face of the well-known fact that the popula-

tion increased last year at the rate of one thousand per day. And insanity, too, is ascribed to tobacco—whilst it is well known that the female lunatics exceed the male by a considerable number. In short, nothing but the most glaring improbabilities are adduced, and the assertions are such as Mr. Solly may make when he pleases to his pupils without fear of contradiction. I cannot but look upon the whole excitement as an exhibition of ill-conditioned prejudices — from whatever motive proceeding I know not;—but if Mr. Solly gave up smoking, as he says, because he believed that it impaired his nervous energy, I am sorry to feel compelled to say that his letters in the 'Lancet' evince very considerable nervous weakness—indeed, such a weakness as would believe implicitly in the existence of witches and hobgoblins.*

* In the presence of the following facts, it is indeed wonderful that Solly and his ilk should think it worth their while to seek in tobacco a cause of "insanity" or "mania."

"It has been calculated that drunkenness in England kills annually 50,000 men. One-half of the insane, two-thirds of the poor, three-fourths of the criminals of this country are amongst the persons given to drink. It has been proved that the four principal retailers of spirit in London receive each week 142,458 men, 108,598 women, 18,391 youths, giving a total of 269,447."—*Dr. Lévy, Hygiène*, ii. 720.

I shall therefore not waste space and time in noticing in detail the numerous puerilities of the 'Lancet' correspondence; but endeavour to lay before the reader such observations and opinions of men better informed and less prejudiced, as may enable any man to come to a right conclusion on the subject. Between the use and the abuse of tobacco there is at least a difference, if not a gulf or ocean:—for I am free to admit that there may be many who abuse tobacco—as there are many who abuse all the other gifts of nature; but, for my part, I cannot but think that it would be better for men of office and position to shrink in obscurity than to come forward to reform the universe without fact, reason, or even prejudice, to recommend them to a patient hearing.

Smoking, as to what may be use or abuse, is entirely a matter of idiosyncracy of constitution. Thus, we are told that there are cases on record of persons killing themselves by smoking seventeen or eighteen pipes at a sitting. It is possible; it may be probable; but the same result might have arisen from eating of as many dishes. And how comes it that I am at this moment thinking,

writing, and smoking indefatigably, whereas I have been thus engaged since three o'clock this morning, the hour being now four o'clock P.M.? Thirteen hours' thinking fixedly, composing, transcribing, translating, and smoking all the while; and add to this another item, that I had been writing until midnight, when I retired for the repose of three short hours. This may be called *abuse*—but I know it not to be so in my case—as my constitution is capable of greater endurance.

"With some constitutions smoking never agrees, but both Dr. Pereira, and Dr. Christison in his 'Treatise on Poisons,' agree that 'no well-ascertained ill effects have been shown to result from the habitual practice of smoking.' Dr. Prout, an excellent chemist and a physician of extensive medical experience, whom all his scientific contemporaries held in much esteem, was of a different opinion. But even he expresses himself obscurely as to its being generally deleterious when moderately indulged in. I give Dr. Prout's own words:—'Tobacco disorders the assimilating functions in general, but particularly, as I believe, the assimilation of the saccharine principle. Some poisonous principle, probably of an acid nature, is generated in certain individuals by its abuse, as is evident from their cachetic looks, and from the dark and often greenish-yellow tint of the blood. The severe and peculiar dyspeptic symptoms sometimes produced by inveterate snuff-taking are well 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 employ 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 operations. Surely, if the dictates of reason were allowed to prevail, an article so injurious to the health, and so offensive in all its modes of enjoyment, would speedily be banished.'

"Yet reason is not so certainly on Dr. Prout's side, for Locke says,—'Bread or tobacco may be neglected, but reason at first recommends their trial, and custom makes them pleasant.'" *

Whether Lord Bacon was a smoker I know not, but he says of tobacco, "no doubt it hath power to lighten the body and to shake off uneasiness."†

Warburton, one of the greatest thinkers of any age, was a most inveterate smoker. So was Sir Isaac Newton.

I have been assured by competent persons that the oldest inhabitants of every town in England are smokers.

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* Johnston, 'Chemistry of Common Life.'

† Hist. Vitæ et Mortis. He thought it *hyoscyami quoddam genus*—the botanical opinion of the age.

Cancer on the lip has been ascribed to the habit of smoking; but it should be remembered that Sir A. Cooper attributes most of the cases of cancer of the lip that fell under his care to the use of the tobacco-*pipes*, from the adhesive nature of the clay with which they are made! The part of the pipe which rests upon the lip should therefore have a wax or ivory coating.* I may be permitted to be very doubtful of the alleged cause altogether. It seems to have been suggested by the fact that lip-cancer predominates greatly in men; but if it occurs at all in women, or in men who do not smoke, perhaps we are justified in requiring more scientific connection between cause and effect than appears in the circumstances. When I smoked a pipe my lips, tongue, and mouth were frequently excoriated, and I have known others in the same condition, but a single night's rest was sufficient to repair the damage.

Sugar and water or a few lumps of sugar

Jennings, 'Treatise on Tobaaco' p. 64:—
"Her blubber'd lip by smutty pipes is *worn*."
—*Gay, Shepherd's Week.*

alone I have constantly taken the last thing at night; and I recommend to all who may, at any time, fancy that they have smoked too much, camphorated spirits of wine—two or three drops in a table-spoonful of water. Camphor is alleged to be an antidote to tobacco.

According to Dr. Laycock, some smokers experience in the morning, at waking, heat, redness, tears in the eyes, spasm of the orbicular muscle of the eyelids, with photophobia: if so, it is high time to discontinue a pleasure at the cost of positive pain.

Good smokers rarely lose much saliva; but in others the loss may be extensive enough to impair digestion and compromise nutrition; the swallowing of the bitter principle mixed with the saliva may, in certain cases, irritate the stomach, as I have stated. Percy, who exaggerated the morbid liability of smokers, ascribed to smoking squirrhous induration and cancer of the stomach. In reading all these allegations and those in the 'Lancet,' perhaps the reader will ask himself how it happens that in the minute account of the workmen in the French factories—under the

worst possible circumstances—not a single case of any of the alleged diseases is given!

Mr. Solly speaks of the fauces of the smoker being like a piece of *dirty red velvet.* A gentleman who told me he had smoked from his thirteenth year — enjoying perfect health and looking perfectly well—to whom I mentioned Mr. Solly's reproduction of Laycock's venous injection hypothesis, assured me that, not feeling well a few weeks ago, he went to an eminent physician, who on looking into his fauces said they looked like a piece of *parchment!* and that he could not account for it, unless it was caused by smoking. Between the red velvet and the white parchment where will the insurance offices require a sign?

"Evident inflammation of the stomach is only an extreme case," says Dr. Lévy, in his important work before quoted. "A little smoke is absorbed, especially by the lungs, and its narcotic action adds to the beatitude of old smokers. Is it true that they lose their appetite? By no means,—but the cigar cheats hunger as any other diversion would do, and perhaps also by allaying visceral sensibility.

"The abuse of tobacco directly affects the larynx, the trachæa, and the lungs; the voice becomes hoarse and more base; a slight cough supervenes. Mr. Laycock

mentions cases of inflammation and ulceration of the larynx. The action of the heart is depressed, and with certain outrageous smokers its pulsations are more feeble and slightly irregular, the rapidity of the cerebral action and the free flow of ideas seem slackened, and it is this nervous depression which gives to tobacco the epithet of *soother* and *consoler*.

"Desperate smokers are pale and livid; their teeth are black; their lips blue; their hands tremble; their muscles are without vigour; they are bereft of energy and decision. The mucous membrane of the mouth becomes vascular, swollen; irritation sets in with hemorrhage. This explains in a degree the great number of bleeding stomatitis common among military men.

"Now, if we weigh without prejudice the advantages and inconveniences of tobacco, we shall find that both have been somewhat exaggerated. It is not a digestive agent; it does not prevent scurvy, nor does it produce it, &c. It does not besot smokers and chewers; it does not emaciate them by the loss of saliva, &c.; it does not soil the angles of the lips with a black foam, excepting amongst those gluttons who, instead of being satisfied with a simple plug, fill their mouths with tobacco intended for the pipe.

"When it is accused of brutalizing its votaries, its effects are confounded with those of drunkenness and gross intemperance (crapule).

"Doubtless in the atmosphere of smoking-rooms, where the Flemings spend several hours given up to the absorption of the molecules of nicotiana which act on their nervous system, their hopped ale adds to the slight narcotism which they acquire every day; and this double influence, being renewed every day, ends with dimming their understanding, benumbs their sensations, &c.; but the use of the cigar, the pipe, or the plug in the open air

is exempt from these consequences, if not carried to excess.

" In truth, the introduction of tobacco amongst nations is a strange fact. Whilst civilisation advances so slowly, a fetid herb has conquered the world in less than two centuries.

" This extension, so rapid, still continuing in France (since its branch of the revenue is constantly increasing), proves that it appeals to the very depths of human nature, —qu'elle intéresse le fond de la nature humaine.

" Does tobacco only satisfy a fashion, a caprice, an inveterate habit—that substance which the workmen, the poorest of the land, will get, at the cost of other privations, with the pence which they gain by the sweat of their brow? . . .

" Or, in spite of so many observations to the contrary, to which those of Laycock, Wright, and Guerard must now be added, shall we believe, with Knapp, that it exerts a useful influence on the human body and its functions? *

" Tobacco responds to that imperious craving after sensation, excitement, with which man is tormented, and which he seeks to satisfy by feeding gross appetites, for want of the more delicate impressions which he finds in the bosom of a society of which he is actually deprived. The savage of America, the soldier in his bivouac, the sailor on the deep, the effeminate inhabitant of tropical regions who dreads to think under the whelming weight of the burning climate, the idler of our towns, the Turk enervated by the premature exercise of the reproductive function, and sunk in the double inertia of

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* Knapp, 'Die Nahrungs-mittel in ihrem chemischen und technischen Beziehungen,' p. 101.

fatalism and despotism, make use of tobacco as our dandies use the ball-room and theatres, as the poet sips coffee, as the *savant* gives lectures,—all resolves itself into that grand engine of animality—sensation.*

"Amongst smokers, some relish the immediate impression, and enjoy it instinctively, like the very air they breathe.

"Others meditate their sensations. They find in them a source of contentment which lifts them up to the hope or remembrance of bliss.† The periodic action of embracing the cigar with their lips, and expiring its vapour in puffs, rocks their minds to rest.

"Thus tobacco rises to the rank of a *moral modificator*. And then we must appreciate it—no longer in accordance with its chemical constituents or the principles of physiology, but in the light of moral reactions, which play so important a part in human hygeine. Wretches who have not eaten bread for a long time beg alms to buy tobacco. A sailor deprived of his plug for three days puts into his mouth a ball of tarred oakum, and thanks with tears in his eyes the surgeon who shares with him a bit of his tobacco.

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* Forget, 'Médecine Navale,' i. 293.

† Les autres réfléchissent leurs sensations, y puisent un bien-être qui les porte à l'espérance ou aux réminiscences de bonheur. The reader will perhaps remember the account which I have given of my own sensations whilst smoking, and will perceive that Dr. Lévy has precisely described them; and I feel great delight in the coincidence. It shows how we all are classed in relation to certain types of humanity; it is the irresistible impulse by which we are adapted for the social compact.

It may be proper to state, that the former part of my book was written several days before I procured this most interesting work of Dr. Lévy.

"If this plant has its drawbacks, it has, therefore, its sweets also. To many a man it is the remedy of that disease of civilisation which we call *ennui*.

"Even the very illusions and the erroneous ideas that men entertain concerning it deserve to be respected by the physician. One man attributes to tobacco the facility of his intellectual labour; another cannot digest his food without smoking. Oh, you may smile! But consider. The craving for tobacco is the last appetite which leaves those who are in a state of disease, and who have been accustomed to tobacco under one form or another; the renewal of that appetite is a favourable prognostic of recovery.*

"What we must blame and proscribe is the abuse—

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* This striking illustration thus suggested to the medical profession is in wonderful contrast with the sapient observation of Mr. Lizars, who says,—"A remarkable change occurs to the excessive smoker when he labours under influenza or fever, as he then not only loses all relish for the cigar or pipe, but even actually loathes them. Does not this important fact satisfactorily show that the *furor tabaci* depends on the morbid condition produced on the salivary secretion and organ of taste by the deleterious drug, and at the same time illustrate the pathological law that two morbid states seldom or never co-exist in the same individual? The sudden removal of all desire to smoke affords the best refutation to the delusive representation which the unhappy tobacco victim urges for continuing," &c. So, by parity of reason, the very common loathing for the most favourite and wholesome food on those occasions, shows that natural hunger depends upon the morbid condition produced on the salivary secretion and organ of taste by the deleterious food, &c.! And this writer actually assumes the motto, "Quem Deus vult perdere prius dementat." Nothing could be more appropriate.

the precocious use of tobacco; for, after all, that substance has no hygeinic value in itself; on the contrary, it is a poison.

"Its influence must be necessarily injurious on youth, on the young apprentice of the trades, on the students of colleges, who cultivate the pipe and cigar as signs of manhood and emancipation. It depraves their appetites; it may compromise their development.

"The habit of almost incessant smoking in the East, where the pipe is the prelude of all official acts, of all conversations, of all social relations, is detestable and brutalising. The Oriental seizes his pipe in the morning, and never quits it until he goes to bed. A special functionary —the pipe-bearer—is an appendage of all officials. In families of respectability the care of the pipes is the exclusive attribute of one or many servants who occupy the higher grade of the domestic establishment. It is in the East and in the taverns of Flanders that we behold the stupifying effects, the intellectual and moral degradation which result from the combined use of beer, tobacco, and the harems. There is no family there. The inert enjoyments of the smoking-rooms take the place of the family and cause the abandonment of the household hearth. The excessive use of tobacco enervates the intellect, plunges it into vagueness, blunts perception, weakens the memory. Smoking is, at least, a mode of cerebral idleness, which, by constant repetition and long continuance, ends in rendering the mind unfit for anything, in the irremediable torpor of the mental faculties.

"Amongst Europeans, excess in smoking almost always accompanies excess in the use of alcoholic drinks. Then Asiatic torpor alternates with the violence and brutality of the English prizefighter.

"In the East smoking is an obstacle to the regular

activity of men, to civilisation, and, above all, to the despatch of public business, the important organization of government." *

This debased condition of man, so eloquently described by Dr. Lévy, is very shocking. The mere vice of alcoholic intemperance has become an object of abhorrence to the advanced mind of Europe. But it is necessary that we should look at all things in every possible aspect, if we wish to obtain right honest conclusions.

The ancients were certainly more indulgent to the vice of intemperance: at all events they have not much abused it. Many of their philosophers speak of it very complacently. Even the Stoics advised intoxication for the good of the soul:—

"Hoc quoque virtutum quondam certamine magnum
Socratem palmam promeruisse ferunt."

That censor and corrector of public morals, Cato, was himself unable to resist the soft impeachments of alcohol:—

"Narratur et prisci Catonis
Sæpè mero caluisse virtus." †

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* Lévy, 'Traité d'Hygiène,' ii. 264 *et seq.*

* See Montaigne, liv. II. c. ii., *De l'Yvrognerie.*

In the Scriptures we find the fact itself prominently put forward—the praise of alcohol as a comfort to the heart of man incidentally noticed—its remedial efficacy recorded in the matter of the stomach.

That alcohol has its uses in the human economy I have endeavoured to show in a previous page; but I may appeal at once to the practice of all nations, in all times, from Noah to the present, for proof positive that alcohol has also been a *social modificator*, and, as such, well worthy of calm philosophical and medical consideration. Its abuse relates to morals and the innate dignity of man.

It may be the same with regard to tobacco. Dr. Lévy, just quoted, says that tobacco has nothing hygeinic—health-preserving—in it; but it is, rather, toxical – poisonous. Alcohol was long in the same category, until rescued from the disgrace by Liebig, with whose views respecting the respiratory function of alcohol Dr. Lévy agrees; but it was long before an admitted social modificator. Tobacco is clearly now in this category: the time may come when some future Liebig

shall discover in it a hygeinic, health-preserving principle.

Should such a thing come to pass, the brutalities of the Turkish and Flemish smokers will stand on a par with the brutalities of all drunkards in all ages; and some captious and irreverent mind may wonder why nature does not at once disclose her objects, instead of permitting man to knock his head to pieces before he can discover, to his perfect satisfaction, that he cannot do without it.

By way of colophon to this argument concerning the abuse of tobacco, the words of old melancholy Burton are very apposite :—

"Tobacco—divine, rare, superexcellent tobacco, which goes far beyond all the panaceas, potable gold, and philosopher's stones, a sovereign remedy to all diseases! A good vomit, I confess—a virtuous herb—if it be well qualified, opportunely taken, and medicinally used; but, as it is commonly abused by most men, which take it as tinkers take all, 't is a plague, a mischief, a violent purger of goods, lands, health—hellish, devilish, and damned tobacco, the ruin and overthrow of body and soul."*

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* Anatomy of Melancholy. Burton wrote when tobacco was in the very acme of its influence. Indeed it seems absurd to talk of the abuse of tobacco at the present day,

The moral influence of tobacco is not a light matter. That principle within it which imparts electric action to the brain, and therefore to the whole system by the nerves, must necessarily be a moral agent for good or evil.

That wise monarch James I., who, *gude mon*, was hardly quarrelsome on any subject but tobacco, to which he had a mortal hatred, as we have seen, used to say, in his hours of relaxation, that this plant was

" the lively image and pattern of hell; for that it had, by allusion, in it all the parts and vices of this world whereby hell may be gained, to wit,—1st, *it was a smoke*—so are the vanities of this world; 2ndly, *it delights those who take it*—so do the pleasures of the world make men loth to leave them; 3rdly, *it maketh men drunken and light in the head*—so doth the vanity of the world—men are drunken therewith; 4thly, he that taketh tobacco saith *he cannot leave it, it bewitcheth him*—even so the pleasures of the world make men loth to leave them, they are so enchanted for the most part with them; and further, besides all this, 5thly, it is like hell in the very

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when we know what it was in past times—a raging fashion prevalent in places whence it is now most rigorously excluded, and adopted for the most part with personal views, which no longer influence the public mind. If the calculation could be made, it would be found that there are fewer smokers in England now—in proportion to the increased population—than there were fifty years ago.

substance of it, for it is a stinking, loathsome thing, and so is hell. Were I to invite the devil to dinner, he should have three dishes,—1st, a pig; 2ndly, a pole of ling and mustard; 3rdly, a pipe of tobacco for digesture." *

Compared with the royal author's 'Counterblaste,' this is tender mercy, observes an anonymous medical writer; but I may add, "all joking apart," that I have been little understood in a previous part of this Treatise if my opinion concerning the *moral* action of tobacco be not apparent:—

"That sedate, sober, and capable men smoke tobacco almost incessantly," observes the same anonymous physician, "must be known to many persons, neither do their mental or physical powers suffer by it. The drunkard smokes, but his pipe is a mere appendage to his pot. Observation leads to a conclusion that there are more sober than drunken smokers." †

And some men, whether drunkards or not, reckless or sedate, cannot smoke at all, try they never so wisely.

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* Apophthegms, &c., 12mo, 1671.

† See a paper signed "Medicus" in vol. xxiv. of 'The London Medical and Physical Journal,' p. 445. The medical reader will find this article recommended by Dr. Paris (Pharmacologia, p. 81). The other work, 'Essay on Tobacco,' by H. W. Cleland, M.D., I was unable to procure, even at the library of the British Museum.

There must be then a constitutional peculiarity —a certain nervous system—a particular brain, for which tobacco is intended. How important must be, therefore, the results of smoking to the individual and to society, as a moral agent for good or for evil, if nature has thought proper to give the faculty to some and to deny it to others, whilst it confessedly acts energetically on the very masterpiece of her developments!

Curious facts on this point are matters of common observation. These must ultimately tend to elucidate and explain the mysteries of this wonderful modificator in all its aspects.

'In North America," observes Mr. Johnston, "the effects which tobacco produces, divide, physiologically, entire regions from each other. The States of intellectual New England and New York, for example, taken as a whole, appear to dislike the use of tobacco; at least there is a very large, thinking, and conscientious body of men in those States who are exerting themselves to repress and suppress the use of the weed, and who even desire a legislative enactment to prevent it.

"The Western and Southern States, on the other hand, largely, and almost universally, indulge in tobacco; and one cannot travel from New York towards those States without coming in contact with the practices of smoking and chewing in their most offensive forms.

"In the one region the mass of thoughtful and religious

men condemn the use of tobacco, chiefly, I believe, on moral grounds; in the other region, a vast majority of the mind, as well as almost universal practice, uphold and maintain it.

"In Russia, the Starovierze, or 'Old Believers,' a very moral sect of dissenters from the Greek Church, look with horror on the use of tobacco.

"These are very interesting physiological facts, well worthy of calm study on the part of those whose feelings will permit them to look at the matter coolly, and whose minds are capacious enough to take in and balance contradictory opinions and testimony. Climate gradually affects constitution and temperament. It has so affected, I believe, but in different ways, the two regions of North America to which I have referred.

"Upon constitutions and temperaments so diversely altered, the constituents of tobacco act differently; and thus the broadest assertions, both of the abusers and the defenders of tobacco in the several regions, may be strictly true, though decidedly opposed to each other, and entirely contradictory. There is much wisdom in the Irish form of equivocal assent to a doubtful assertion: '*True for you*'—meaning, 'with my knowledge you would think differently.'

"Again, in New England it is alleged as a strong moral argument against the use of tobacco, that it provokes thirst, and leads almost necessarily to excess in drinking, to frequent intoxication, and to all the evils which flow from it. This, which is sometimes alleged at home, and often with truth, is singularly at variance with its reputed effects among the Asiatic nations. Mr. Lane, the translator of 'The Arabian Nights,' says, that, 'being in a slight degree exhilarating, and at the same time soothing, and unattended by the injurious

effects which proceed from wine, it is a sufficient luxury to many who without it would have recourse to intoxicating beverages, merely to pass away hours of idleness.' Mr. Layard, whose intercourse with Eastern nations has been most extensive, entertains the same opinion; while Mr. Crawford, who has also seen much of Eastern life, thinks it can hardly be doubted that tobacco must, to a certain extent, have contributed to the sobriety both of Asiatic and European nations.*

"These opposite facts form another interesting physiological study. In North America the smoking of tobacco provokes to alcoholic dissipation; in Asia it restrains the use of intoxicating drinks, and takes their place. How complicated are the causes out of which these dif-

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* Journal of the Statistical Society, March 1853, p. 52. The Dr. Pidduck before quoted *in notis* reproduces one of Mr. Lizars's hobgoblins—enervation of the reproductive organs. He asks, "How is it, then, that the Eastern nations have not ere this become exterminated by a practice which is almost universal? The reply is, that by early marriage, *before the habit is fully formed*, or its injurious effects decidedly developed, the evil to the offspring is prevented," &c. Now, in reply to this reply of the doctor, he is informed that in India all classes and both sexes smoke—where infanticide feeds the sharks of the Ganges—and yet population is exuberant. The Burmese of all ranks, of both sexes and of all ages, down even to *infants of three years old*, smoke cigars, according to Crawford. In China, again, a country of redundant population, the practice is so universal, that every female, from the age of eight or nine, wears, as an appendage to her dress, a small silken pocket to hold tobacco and a pipe. See Johnston's 'Chemistry of Common Life,' No. vii. p. 9. Are these facts compatible with the doctor's reply, that "by early marriage," &c.

ferent effects spring! Climate, temperament, bodily constitution, habits, and institutions, act and react upon each other; and according to the peculiar result of all these actions in this or that country, the same narcotic substance produces upon the mass of the people a salutary, a harmless, or a baneful effect!" *

And clearly "the bodily constitution, habits, and institutions of each country" have preceded the use of tobacco. The use of tobacco may enable individuals to live in comfort amidst that state of things included in the words "habits and institutions of each country;" but tobacco has not formed them—it cannot form them. The Spaniard became a smoker just in time to enable him to bear patiently and proudly the downfall, the ruin, of his country—degraded by its ignorance, fanaticism, despotism, and its utter want of adaptation to a new order of events in the advance of human destiny. The same may be said of the Turk and other eastern nations—according to our notions, still more degraded. However curious may be the investigation of the

* Johnston, *ubi suprà.*

national peculiarities which distinguish the most inveterate consumers of tobacco, we must guard ourselves from the fallacy of substituting the effect for the cause. Individual life must always be the starting-point from which we must infer the life of nations. If a man has household affliction of some sort—a "skeleton in the family" —and "takes to drink,"—did the drink cause the affliction, or make his skeleton? In truth, if the battle of life be to man continuous and determined in his physical economy, it is not less so in his mind—hopes, fears, troubles, and anxieties. These he strives to resist, to fight, to overcome any how, in his desperation. You may quarrel, if you like, with the *cause*, but you had better try and alleviate its effects, rather than denounce intemperately even his temperate use of the means which he has found conducive to his ease, comfort, and consolation.

In conclusion, to inveterate smokers I say, Tobacco is a *phreno-aisthenic* agent, and by its use you charge the batteries of your nervous system. You must, therefore, either intellectually or bodily, work off the subtle electric fluid. With-

out great mental work, or much bodily exercise, no veteran smoker can escape the penalty of this plethora any more than any other.

Out-of-door exercise is absolutely essential, in this climate at least, but must never be urged to lassitude.

Frequent, if not daily, tepid ablutions of the whole body, or a great portion of it, are also essential.

Nicotiana does not like "the bottle."

Always take a lump or two of sugar before going to bed.

A piece of gum-camphor, placed anywhere in the room, is what I always keep in my library. You cannot smell it, as it resigns its molecules to the thin air. Ripe fruit of all kinds, especially apples and oranges, at any time; and vinegar at meals, but in moderation, are useful.

If you be a real smoker, you feel no evil effects whatever in body or in mind from the gentle weed.

If any such be felt, common sense advises at once—give it up.

It seems that Dr. Elliotson found some advan-

tage in smoking, in spite of this warning of nature; for he says,—

"With regard to myself and tobacco, although I have a stomach that will digest anything in the shape of food, yet if I smoke three cigars in a day, or smoke three or four successive days, it invariably produces the most extreme gastrodynia and cardialgia,—so as to make me quite miserable; and therefore *I am compelled to be temperate in that respect.*" *

He also says,—

"Dr. Cullen mentions two cases of dyspepsia, from patients taking snuff before dinner: in one the disorder of the stomach was gastrodynia,—aching pain of the stomach; in the other, a complete loss of appetite. Now, both these individuals, on being particular not to take snuff before dinner—*taking as much as they chose when the stomach had something in it*—recovered from their dyspepsia." †

Smoking on an empty stomach will not do for every one, nor immediately after meals.

My entire experience is in favour of the mildest havannah cigar.

But I must not be supposed to be adverse to the pipe. Taste is multiform. Horace, in his first Ode, has certainly not exhausted its va-

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* Practice of Medicine, p. 1094. † Ibid.

rieties. Between the taste of the smoker who would rather not taste the weed itself, and that of the Greenlander who luxuriates in its most offensive juices—*Harpyiis gula digna rapacibus*—there must be endless gradations—shades of difference—*nuances*, as the French cleverly express the idea, varying according to the natural state of the gustatory and olfactory. The smoker of the mildest havannah by preference cannot enjoy it more than does the smoker by preference of k'naster, returns, or even shag, through the medium of the pipe. Philosophically, we must contemplate the sum of sensations, by whatever means produced. In fact, we must—

"Survey the whole, nor seek slight faults to find
Where nature moves, and rapture charms the mind."

The Greenwich pensioner, to whom, in his honoured retreat, you can make no present more acceptable than an ounce of tobacco; the Dutchman in his swamps—that everlasting memento of man's original fish-condition (according to the 'Vestiges of Creation'), exhibit to the mind the very perfection of human bliss

—namely, pleasure cheaply bought and intensely enjoyed. In effect, it is the very essential virtue of nicotiana, that, in whatever form she presents herself to her votary, nought can "wither her, nor custom stale her infinite variety."

It may be proper, however, to state my reasons for preferring the cigar. Tobacco smoked in the pipe presents a much larger surface to combustion; consequently there is a greater elimination of the objectionable constituents of the weed. The first whiff or two are pleasant enough, but, in proportion to the heating of the pipe, the volatile constituents are disengaged from the whole mass of tobacco, and either circulate around the smoker or are drawn into his mouth, producing that increased secretion of the salivary glands which has been noticed. Whereas the entire bowl of the pipe is heated, the cigar may be held to within the eighth of an inch from the burning extremity. There is consequently a greatly diminished product of the objectionable volatile constituents.

The inconvenience of smoking, where and when offensive to others, is a point of some im-

portance to the real smoker. Pliny observes, "A man must do all by his own humour, or another's; now my stomach is of that nature as to digest what is entirely one or the other, without a medium." I could never enjoy smoking when it was in the least offensive to any one: for the olfactory of every man must be respected, as a helpless babe or a drunken sailor, who cannot help themselves. And yet how pleasing it is to record that never, in all my life, did I find woman object to the fumes of pipe or cigar. "Is my smoking disagreeable?" "By no means! I rather like it." Such have always been the question and answer in my own experience. But I have heard of a wife who had stipulated before marriage that her lord should give up smoking. Time rolled on, and she boasted how much better he looked for giving up the weed; at last, a friend led her to the top of the house, and through a glass-door she beheld her lord, costumed from head to foot like a Turk, and in beautiful nicotian meditation! "Never mind!" she exclaimed, "he smokes so *gracefully*."

Sir Walter Raleigh's servant cat a different

figure on a similar occasion, if the anecdote be not an invention. It is said that, having one day retired to his room to smoke, after the manner of the inhabitants of Virginia, he gave himself up wholly to his meditations, and, without paying attention to what he was doing, namely, *smoking*, he ordered his servant to bring him a cup of beer. The servant, on bringing the beer, surprised to see what he had never seen before, threw it immediately in his master's face, and ran down the stairs, crying out, as he descended, that his master's head was on fire, the smoke coming out both at his mouth and nostrils!

Se non è vero, è ben trovato. But that Sir Walter Raleigh did, by his own practice, contribute to the smoking of tobacco in this country, there is no doubt whatever.—

> "Hail mighty Raleigh! to whose name we owe
> The use and knowledge of this sovereign plant."

Certainly the practice of the Indians was much more extensive in using the weed Old Hariot tells us—

"that there is an herbe which is sowed apart by itselfe,

and is called by the inhabitants Uppowoc: in the West Indies it hath divers names, according to the several places and countreys where it groweth and is used: the Spaniards generally call it tobacco. The leaves thereof being dried, and brought into powder, they use to take the fume or smoake thereof by sucking it thorow pipes made of clay into their stomache and head; from whence it purgeth superfluous fleame, and openeth all the pores of the body; whereby their bodies are notably preserved in health, and know not many grievous diseases wherewithal we in England are oftentimes afflicted. The Uppowoc is of so precious estimation amongst them, that they thinke their gods are marvelously delighted therewith: whereupon some time they make hallowed fires, and cast some of the powder therein for a sacrifice: being in a storm upon the waters, to pacify their gods they cast some up into the aire and into the water: to a weare for fish being newly set up, they cast some therein, and into the aire: also after an escape of danger they cast some into the aire likewise: but all done with strange gestures, stamping some time, dancing, clapping of hands, holding up hands, and staring up into the heavens, uttering there-withal and chattering strange words and noises. We ourselves, during the time we were there, used to sucke it after their manner, as also since our return, and have found many rare and wonderful experiments of the virtues thereof: of which the relation would require a volume by itselfe: the use of it by so many of late, men and women of great calling, as also by some learned physicians, is sufficient witness." *

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* In the time of Shakspeare, "the amusements of the audience previous to the commencement of the play were reading, playing at cards, smoking tobacco, drinking ale,

The numerous quotations of medical opinion respecting the influence of smoking on the human constitution, leave the question undecided. The opponents of the weed unfold their views precisely with the same logical fallacies which afford amusement in the 'Counterblaste' of King James. To this royal pedant we must award the praise that he managed his argument with some dexterity, although it entirely turns on taking what the logicians call the *non causam pro causâ*. His pupils in the 'Lancet' have adopted his logic, but scarcely rise to the level of the king's respectable attainments; whilst it is evident, from the names of the respective physicians quoted in favour of the weed, that they are the highest authorities of the land in the matter of medical opinion.

We may be permitted to doubt the opinions of those practitioners who so readily jump at

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and eating nuts and apples. Even during the performance it was customary for wits, critics, and young gallants, who were desirous of attracting attention, to station themselves on the stage, either lying on rushes or seated on hired stools, while their pages furnished them with pipes and tobacco."—*Dyce*.

any cause which may enable them to answer the questions of their patients. They may even err, it seems, most shamefully, in that most important matter *diagnosis*, or the true nature of the disease.

"A poor man, labouring under true scurvy, applied to a surgeon on account of the horrid state of his mouth,—his gums being swollen, spongy, and bleeding; his teeth loose, and his breath offensive. The surgeon, not having seen a case of scurvy, supposed the disease of the gums arose from a bad state of the teeth, and extracted several in succession! He was then sent to another, of *high eminence and enormous practice*, who pronounced it a case of *fungus hæmatodes* of the gums, and admitted him into his hospital—*intending to resign him to his fate!* Being visited, however, by a practitioner who had witnessed scurvy at a naval hospital, the nature of the disease was at once recognised; some lemon-juice, fresh meat, and vegetables were prescribed; and he was well in a week or two." *

Now these practitioners were "well-informed men"—is it not dreadful to think of the blunders of the vast medical *ignobile vulgus?*

If the average annual consumption of tobacco by the whole human race be, as has been proved, 70 oz. per head (see antè, p. 24)—considerably more than an ounce per week—the enormous

* Dr. Elliotson, Practice of Medicine, p. 15.

generation of carbonic acid gas alone for the support of vegetation, to say nothing of the known curative virtues of tobacco to plants by fumigation, and to animals by lotion, against insects and other plagues, is well worthy of consideration in advancing to right conclusions on this important subject.

The benefits of tobacco, as a social modificator, are, on all sides, incontestably admitted. My own views on this universal habit of the human race I have submitted to the reader, and perhaps I may have an opportunity to enlarge upon the subject in its general bearings, apart from the individual gratification by which it is so strikingly attended; though, doubtless, many of the sequences of my theory will be inferred by the thoughtful reader, if my convictions be, as I hope, in accordance with the known laws of Nature in her mundane economy.

"Frui paratis et valido mihi,
Latoë, dones,—et precor, integrâ
Cum mente,—nec turpem senectam
Degere, nec *a cigar* carentem."

THE END.

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