NICOTIANA TABACUM

No one can walk in the great thoroughfares of our larger cities, or even in the solitary long street which characterises our villages, without being fully aware of the prevalence of the habit of smoking which has been gaining ground with such astonishing rapidity during the last fifty years; scarcely a day passes but a new rotary appears at the shrine of the great goddess Nicotiana, & is initiated into her mysteries at the expense of many a racking headache & much more regret inspiring nausea. It is common as is the habit of putting a cigar or pipe into one's mouth and turning that organ, which was given to us for other far different purposes, into a chimney; few, who do not know the habits of the plant they are so familiar with in its dried state, & still fewer are aware of its insidious working in the human frame & the poisonous efficacy of the juice which exudes from the burning weed. It is therefore my purpose in this 'Thesis to give as clear & compact a sketch as possible of the Herb Nicotiana Tabacum,' not only as far as it is connected with Pharmacy, but
but to treat of it in whatever shape it may meet the eye of man. The plan which I intend to proceed upon is somewhat as follows. After alluding slightly to the origin of its name, I shall dilate at more length on the Botanical Character and the culture of the herb in question; I shall then carry your attention to its Manufacture & Trade, & show by Statistics what is the consumption of this herb in foreign countries, but more especially in our own land. Previous, however, to entering upon its medical uses, a few words on its Chemical Properties will come in here not inaptly. From this point we are naturally led to consider the Physiological Effects of Nicotine on the Frame of Man & beasts, together with the Antidotes which have been found most efficacious in time of need. I shall in the last place treat of the experiments which have been made with this narcotic in its various forms, as a curative agent in the diseases which most commonly assail our frail bodies.

Before proceeding, however, to the more graver considerations of this subject in the order I have laid down, I shall say a little on the Extensive use of Tobacco.

Tobacco was first brought into England in 1586 by the settlers who accompanying Sir Walter Raleigh on his expedition to colonize Virginia, returned on their attempt turning out unsuccessful; it as might be expected, the then novel use to which it was put, was a source of astonishment and curiosity, not unmixed with a certain amount of disgust.
disput, to those who then saw it for the first time. Still the custom gained ground slowly & steadily; notwithstanding the opposition it met with from numerous enemies, & especially from King James I. who wrote a curious work against it entitled "Counterblast to Tobacco" from which the following is an extract, written in a strongly argumentative strain in order to turn smokers from the folly of their ways—

Tobacco, being a common herb, which (though under divers names) grows almost everywhere, was first found out by some of the barbarous Indians to be a preservative, an antidote against the Pox, a filthy disease, wherein to these barbarous people are (as all men know) very much subject, & through the uncleanly & debauched constitution of their bodies, what through the interpenetrating heat of their climate. & so that, as soon as it was first brought, this used to be applied to tobacco, as a stinking & unsavoury antidote for so corrupt a disease, very popular a malady, the stinking fumigation whereof they yet use against that disease, making so one canker or reminue to eat out another. And now good countrymen, let us (I pray you) consider what honour a policy can move us to imitate the barbarous & beastly manners of the wild, godless, & slavish Indians, especially in so vile a stinking custom. Shall we, that disdaine to imitate the manners of our neighbour France, (having the style of the great Christian Kingdom) & that cannot endure the spirit of the Spaniards
Spaniards, (their king being more comparable in largeness of dominions to the greatest emperor of Turkey;) shall we, I say, that have been so long civil & wealthy in peace, famous and invincible in war; fortunate in both, we who have been ever able to aid any of our neighbours, (but never deepened any of their ears with any of our supplications for assistance;) shall we, I say, without blushing, abuse ourselves so far as to imitate these beastly Indians, slaves to the Spaniards, the refuse to the world, and as yet aliens from the holy covenant of God? Why do we not as well imitate them in walking naked as they do, in preferring glasses, feathirs, & such toys, to gold, & precious stones, as they do? Why do we not deny God, & adore the devil as they do?—Nor was King James satisfied with writing against tobacco, but he endeavoured to abolish its use by taxing it heavily; but finding that notwithstanding both his writings & taxings, the demand for it increased, he commanded in 1619 that no Planter in Virginia should cultivate more than 100 lbs. However, it was not in England alone that the use of this plant met with opposition, but in these earlier days Russia punished all who for the first time committed the grave offence of smoking, by flogging them with the bastin, but on the repetition of the offence the criminal was visited with capital punishment. In the East also the priests and sultans of Turkey & Persia declared smoking a sin against
against their holy religion: yet, by a strange anomaly, the countries which most bitterly opposed its use at the first are now, to judge from the demand for tobacco, its greatest advocates. We are not, however, to suppose that the nations, who from the first hailed with joy the discovery of that luxury, have now got tired of tobacco; no, by no means. The Chinese of all ranks, of both sexes, of all ages, even down to children of 3 years old, smoke cigars. The Chinese also are so addicted to the use of tobacco that every female from 8 years old upwards, wear, as an appendage to her dress, a small silk pouch for a pipe or tobacco.

The United States, moreover, takes a leading position among the Tobacco consuming countries; the degree of proficiency to which some Americans have attained in this "art," may be gathered from the following story, which is neither exaggerated nor caricatured—

"Once travelled with a gentleman from South America, who first filled his nostrils with snuff, which he prevented from falling by stuffing dry tobacco after it, & this he termed "puffing;" then put in each cheek a coil of pig-tail tobacco, which he called "quidding," in this country called "chewing;" lastly he lit a Cusco cigar, which he put into his mouth, & thus he smoked & chewed, puffing out at one time the smoke of the cigar, & at another time, sucking the juice from his mouth.

It is, I think, however, worthy of notice that, long as the practice
practice of smoking has existed in this country, it has till a comparatively late period, been much more restricted to the lower orders than at present. The tavern & public-house frequenters, at one time, the well nigh sole reputation of puffing smoke into each other's faces, & rendering the room they sat in, foul with the fumes of stale tobacco. Street smoking used to be confined to some adventurous lads, anxious to exhibit his vulgarity; or the “yard of clay” might be seen protruding from the mouth of some pot-house tot, who could with difficulty keep his legs, but now, sorrowfully bled spoken, times have changed, & gentlemen have marvellously changed with them. Go where we will, ride, walk, or sail, the almost omnipresent pipe or cigar is sure to be puffed away in your face, & unloved volutes, suffocating you, & poisoning the air you are anxious to breathe. Fresh from the winds of heaven—Almost daily are the complaints of ladies, that the gentleman opposite them in the railway carriage they had been travelling in smelt so strongly of smoke that they were very uncomfortable during all the journey. Mr —, who spoke to them on the street, was so perfumed with the unsavoury herb, that they were glad to get rid of him; & many other complaints of a similar character. Although having a person beside one who smelled of tobacco smoke is certainly an annoyance to many, it cannot be considered so intensely
so intensely unpleasant as having a person next to you who is addicted to the use of that titillating compound called snuff; no doubt the effect produced by the powder on the Schneiderian membrane is agreeable to the indulger, yet the sneezing resulting from it, which frequently lasts for many minutes, is by no means to his unhappy neighbour, the inconvenience, moreover, is greatly increased. Should the individual be in the habit of spitting, which is an invariable concomitant of indulgence in snuff, as a good portion of the powder enters the fauces & must be avoided by expectorating, to prevent its injurious effects. Notwithstanding what I have already said, all will agree with me in considering smoking & snuffing virtues in comparison with "quidding" or chewing tobacco, since being in close proximity to a "chiquer", subjected your person to the unpleasant liability of being spat upon by the indulger who incessantly ejects the juice of the herb from his mouth. Surely man's mouth was never intended to be the receptory of a smoke which blackens the teeth & defiles the breath, as certainly his nose was never intended for a snuff dust hole. For if so, it would doubtless have been turned upside down, so as to retain more conveniently what was put into it; besides this no one will venture to maintain that rolling a quid of tobacco about in one's mouth is either a natural, cleanly or pleasant use to
make of that origin, from which issues the harmony of speech & song.

Let me now, after this digression, if it can be called so, turn your attention to the point which I intend to bring first under your notice. viz.

"The Origin of its Name"

The generic term "Nicotiana," was bestowed on this plant in honour to Jean Nicot, Ambassador of Francis II in Portugal, who in 1560 brought some tobacco from Lisbon, presented it to Catherine de Medicis, as a herb possessing valuable properties; hence also it has been termed Queen's herb. But the origin of the common term tobacco cannot be so easily accounted for; yet the general opinion is that it has acquired this name "Tobacco," from some one or other of the following circumstances, either that it derived its name from Tobacco a province of Guatamul from whence it was first brought to Spain, & where they learned its use, or from Tobago, the most southern of the Caribbean Islands; while others say that tobacco was the name used by the Caribbees for the pipe in which they smoked; & that the Spaniards transferred it to the herb itself; and Humboldt, whom we must regard as the best authority, asserts that the latter is the correct derivation, for the word tobacco, like the word savannah, maize, &c., belongs to the ancient language of Hayti or Saint Domingo, & that
that it does not denote the herb, but the tube through which the smoke is inhaled. The origin of the name is perhaps more a subject of curiosity than of interest; we will therefore enter upon that part of the subject which will more interest the reader, viz.

"The Botanical History"—

Nicotiana Tabacum—"Virginian Tobacco".

It belongs to the Linnaean Class of Order Pentandria Monogynia, Π to the Natural Family Solanaceae. It is an annual plant; in its native soil it flowers in July, but with us it continues to bloom till the end of September; it is this species that is chiefly imported into this country as a luxury.

The calyx is campanulate persistent, divided into five acute pointed segments. The corolla is hypogynous, monopetalous, funnel-shaped, twice the length of the calyx swelling into an oblong cup, which expands into five pointed, pleated, rose coloured segments. The stamens are five of equal length inserted on the tube of the corolla. The anthers are oblong & compressed, dehiscing longitudinally. The ovary is bilocular, covered by the persistent calyx-oval, & supports a long slender style which is terminated by a roundish biledched stigma. The ovules are numerous, small, somewhat uniform, of a brown colour, their placenta are adnate.
adunate to the dorsal dissimiphilum. Every part of the plant is downy, clammy & fleshy. The stem is herbaceous, from three to six feet high, erect, round, branched towards the top. The leaves somewhat resemble those of Foxglove, & are numerous, alternate, sessile, oblanceolate, of a dull greenish-brown; those next the root are often two feet long & four or five inches broad, & decurrent, as they approach the summit they become smaller and narrower. The root is branched & fibrous. The flowers are produced in loose panicles, upon longish footstalks at the end of the stem & branches, and are furnished with long linear-pointed bracteas. It would be endless work to name the different varieties of this plant; but I will content myself with mentioning a few of those most commonly met with in America:

1. Nicotiana Tabacum, J. Linnaeus. Common Virginian or Sweet scented Tobacco. This species is the most commonly cultivated in gardens for ornament.

2. The Virginia Tobacco. N. Macrophylla of Sprenzel-Latifolia of Miller & Rustica of J. Linnaeus. It is from this species that the mild Havannah cigars are made.

3. N. Rustica of Linnaeus. English Tobacco. It is a native of Europe, Asia, Africa, and America.
It is called English Tobacco, because it was the first species that was introduced into this country for growth; it was then brought from America. It grows on the coast of the Mediterranean. In France it is known as Tabac paunsse; in Spain as Tabacco dinarosa. The much esteemed tobaccos of Salamica & Latakia appear to be the produce of this species. In the shops this tobacco is known as Turkish-

4. N. Persica. Shiraz Tobacco. This species is a native of Persia, & furnishes the famous Shiraz Tobaccos. This is about the mildest tobacco smoked; in the East it is universally smoked; but in this country only a very small quantity is consumed, as the English generally smoke the strongest tobacco. There are many other varieties of tobacco, but those just mentioned are the ones most generally met with in Britain; I will, however, enumerate a few that are never exported but are cultivated by the natives for their own consumption, such as:

1. N. quadrivalvis which grows on the banks of the Missouri -

2. N. multivalvis which is found on the banks of the Columbia river. It is very fatid, for that account selected by the natives for smoking -

3. N. Nana, the smallest species known, which grows on the Rocky Mountains. & many others.

It is
It is an onmi-present plant, & is extensively cultivated in most parts of the world, but North America is allowed to be, undoubtedly, its great nursery. It used formerly to be a good deal cultivated in Great Britain, but now, in order to encourage the American Colonies, no greater quantity than half a pole is allowed to be cultivated in a Physic or University garden. It would perhaps be advantageous to note here the localities in which it is specially cultivated. Beginning with America the parts in which it is now grown include Canada, New Brunswick, the United States, Mexico, the Western coast as far as 40° South latitude - Cuba, Brazil, Trinidad & the other West India Islands. In the continent of Africa it is found on the shores of the Red Sea & the Mediterranean, in Egypt, Algeria, along the Western coast, at the Cape of Good Hope, & at numerous places in the interior. In Europe, it has been raised with success in almost every country, at present it forms an important agricultural product in Hungary, Germany, Flanders & France. In Asia it has spread over Turkey, Persia, India, Ceylon, New Zealand & Australia. Among narcotic plants, "says Johnston" it occupies a similar place to that of potato among food plants."
Having mentioned some of the varieties of Tobacco & the places where it is chiefly cultivated we now come to the consideration of

"The Culture of Tobacco"

Especially as carried on in the United States of America. The Dutch adventurers in America who were the first cultivators of this herb, had a curious method of preparing the seed previous to sowing it; they used to take the red in preference to the white seed, which they put into a clean pot & poured milk or stale beer on it, no doubt to hasten germination; they left it for two or three days & then mixed it with a quantity of fine fat earth & let it aside in a hot chamber till the seeds began to put out their shoots. But now a perfectly different plan is adopted, the seeds are sown in hot-holds where they are raised, as we do cabbages & turnips. When the young plants have grown to a finger length, they are taken up & transplanted on an appropriate occasion, which they call a "Season." This term season signifies a shower of rain sufficient quantity to wet the earth to a degree of moisture which may render it safe to draw the young plants from the plant-bed, this season commences in April & ends in May. The ground for the reception of these young plants is deeply trenched
trenched & highly impregnated for some time before, with the manure of Doves or Swine, \( \text{II} \) is arranged in hillocks at the distance of one and a half or two feet from one another; two or three persons transplant them in the following manner.

One person suspends a basket on one arm containing the young plants, just drawn from the plant-bed, \( \text{II} \) proceeding along the field takes care to drop a plant on each hillock as he passes; others who follow make a hole in the centre of each hillock, with their fingers, \( \text{II} \) having adjusted the tobacco plant in its natural position, they spread the earth round the root with their hands, until it is of a sufficient consistency to sustain the plant against the wind & weather. After a few days, they revisit the field, \( \text{II} \) fill up in the same manner, by replanting any of the hillocks where the young plants may have perished. Should the weather be very dry, \( \text{II} \) the tender plants likely to perish for want of rain, they must be suitably watered between sunset & twilight.

After the crop is planted, it requires the closest attention, as at this period a very dangerous enemy makes its appearance, in the shape of a small worm, called the ground worm; which, rising from the ground & making great havoc among the young and tender...
9. Tender plants, by cutting off & eating the leaves quite into the herb. In consequence of this it sometimes happens that the crop has to be replanted five or six times before you can get it to stand well. It is therefore necessary to watch the first sign of the worm, & every morning you must muster your whole force to search round each plant & destroy them.

When the plants are full two feet high, the tops of the stems are broken off a nipped off, to increase the number & size of the leaves. The operation of topping & nipping of the heads of the plants is performed with the thumb nail, which is allowed to grow to a great length. Here & there a few plants are left, without having their heads topped, in order that they may afford seeds for another year. Throughout the summer the other plants are, from time to time, pruned at the top, or "sunkcured" as the planters term it, that is, the superfluous sprouts, which are wont to make their appearance & shoot forth at the stem or stalk, & about the root of the plant, are removed; this operation is performed likewise with the thumb nail by the same individuals & at the same time that they top the plants.

During the season the field must be carefully weeded.
weedled, & the earth repeatedly stirred between the plants, in order to make the growth of the leaves, the average number of which are six or eight on a stem, much more vigorous.

About this time, that is, after the plants have been topped & secured, the crop is liable to be attacked by another enemy, as dangerous as destructive as the former, viz. the Hornworm; which is of a green colour, & grows to a large size, & if suffered to remain will destroy the entire plant. The best & most effectual way of destroying these worms, is by turning into the field a number of young turkeys.

The Tobacco leaves are ripe & in a fit state for gathering in the month of August, when the plants should be cut, when ripe the tobacco changes its colour, & looks greener, the leaves feel thick, & if pressed between the fingers & thumb, will easily crick.

The plants should be cut close to the ground between the hours of 10 A.M. & 4 P.M., it being more advantageous to gather them when they are dry, than when they are moist. After the tobacco is weathered a little in the sun, it is conveyed to the tobacco house or shed, where the plants are suspended by pairs upon cord or sticks, leaving a space between each, as finger
as paper at the paper mills, in as full exposure as possible to the influence of the sun, air, but so as to receive no rain. In this exposure they remain till the month of March & April following; when it is in proper "case," as they call it, or the atmosphere neither too moist, nor too dry; they "strike" it or take it down, then cover it up in "bulks," or a great heap, where it lies till they have leisure or occasion to strip it, that is pull the leaves from the stem, or stalk it, that is to take out the great fibres, & tie it up in hands, or straight-lay it, 

and 

by degrees "press" or press it with proper machines into great hogsheads, containing from about 600 to 1100 lbs., found which hogsheads make a ton, by dimensions, not by weight; they are then shipped & carried across the seas to different ports, & among others to London.

"Manufacture & Trade" -

Upon its arrival here, it is conveyed to bonding houses. Those of the metropolis, which are of immense extent, are situated at the London Docks, where every cask is opened to examine its contents & to remove any tobacco which may have sustained injury in the passage. Here the tobacco is weighed & a high import duty is put upon it. All the damaged tobacco is consumed on the premises.
in a furnace, which, with its long chimney, is peculiarly termed 'The Queen's Tobacco Pipe.'

Having given a cursory view of the manner in which the tobacco is treated in the Metropolitan Tobacco Warehouse, I could not do better than quote Dickens's account of this Warehouse, as it is the most extensive in the World.

'This extensive Warehouse, called the Queen's Warehouse, is situated in the London Docks, so named because the Government rents the Tobacco Warehouses there for £14,000 per annum. This Warehouse has not its equal in any part of the world; it extends over five acres, yet it is covered with a roof, the framework of which is of iron, erected, we believe, by Mr. Barry, the architect of the New House of Parliament. It is so light and skillful a construction, that it admits of a view of the whole place; so to slender are the pillars, that the roof seems almost to hang upon nothing. Under this roof is piled a vast mass of tobacco in huge earths, in double tiers; this warehouse, when full, is said to hold 24,000 hogsheads, averaging 1,200 pounds each, equal to 30,000 tons of general merchandise. Each earth is said to be worth, duty included, £200, giving a sum total of £4,800,000 in value!

Besides this there is another warehouse of nearly equal
equal size, where finer kinds of tobacco are
deposited, many of them in buffalo-hides marked
"4iron," & Manilla for the roots in packages of pack-
ing lined with palmetto leaves. There is still
another warehouse for cigars alone, called the
Cigar Floor, in which there are frequently 1,500
 chests, valued at £100 each at an average, at £150,000
in cigars alone.

Every one of these giant hogsheads, is stripped twice
from the tobacco during its stay in the Warehouse;
 once on entrance, to weigh it, & again before leaving
 to ascertain whether the map is uninjured, & to
 weigh what is found good for the duty, & for the
 sale price to the merchant. Thus the cooperers take
all these hogsheads twice to pieces, & put them
together again.

When removed from this Warehouse by the
merchant, it is taken to a Manufactory where
it is prepared either as Snuff, as Tobacco for
smoking in pipes, or as Cigars.

In the manufacture of Snuff, tobacco cut in
small pieces is first fermented by placing it in
heaps & sprinkling it with water, a solution of
salt, the latter prevents the tobacco becoming
mouldy. The heap soon becomes hot & evolves NH3
The extent to which this process is allowed to proceed
varies...
Varies with different kinds of snuff. The usual time is two or three months, seldom less than one month. The fermented tobacco is then ground in mills, or powdered with a kind of pestle and mortar. The Scotch and Irish snuffs are prepared for the most part from the midribs, the Strasburg French and Russian snuffs from the soft part of the leaves. The siftings sometimes called '-thirds' are usually reground.

The snuff is now in a fit state to be put into the large jars which surround a Tobacconist's shop bearing the names of the different qualities which are divided into two kinds—Dry and Moist Snuffs.

Dry snuffs derive their characteristic property from being dried at a high temperature previous to being ground. Scotch, Irish, and Welsh are well known high dried snuffs. Spanish snuff is also a dry snuff. The Welsh frequently contains lime, the particles of which may be usually distinguished by the naked eye.

Moist snuffs or Rapiers are prepared by grinding the tobacco to powder in a moist state. It has been affirmed that pearlash is added to these snuffs to keep them moist. The Rapiers of the shops may be divided into three classes—Simple Rapiers as
Brown, Black, Cuba, Latakia & Balangero - Mixed
Rappee - as Hardhannes Genuine No. 37 - & Scented
Rappee - as Princes Mixture & Princeza - etc. - This now
brings us to the consideration of Tobaccos for
Smoking & Chewing -
Manufacturers divide Chewing Tobacco & those used
in pipes into two kinds - viz. Cut & Roll Tobacco -
For smoking in pipes cut tobacco is principally used
in England; the roll in Scotland & Ireland. The
different kinds of cut tobacco are manufactured by
moistening & compressing the leaves of tobacco, cutting
the compressed mass into small pieces or shreds. By
the addition of water, or the bauce or liquor as the
manufacturers term it, which consists of salted
water, or as some say water coloured with treacle;
cut tobacco increases in weight from eight to sixteen
per cent., according to circumstances.

"Shag Tobacco" is chiefly prepared from the Virginia
& Kentucky sorts, the leaves having been previously
defined of their stalks & midribs. The kind called
"Turns" is a very mild tobacco for smoking & is
composed of the small pieces of broken leaf, & the dust
& cuttings produced in the various processes of
manufacture. It derives its name from its being
formerly prepared by returning Shag for recutting.
The "Birds eye tobacco" is prepared like Shag, with the
exception
exception, that the mists of the leaves are retained, the slices of which have been compared to the eyes of birds. "Maryland & Lancaster art. Lancaster" are likewise cut tobaccos, the latter is very much smoked in this country, & receives its name from Lanasta (a Spanish word signifying a basket) because it was imported in baskets; it is prepared from "Varina tobacco". "Nicoee, Turkey & Persian are also cut tobaccos."

The Span, Roll, or Twist Tobaccos are prepared by twisting tobacco into a kind of rope, which is moistened with liquor & is usually made up into cylindrical or barrel-shaped rolls or sticks, which are subjected to pressure before they are considered fit for sale. During its manufacture roll tobacco increases in weight from 15 to 25 per cent. Pigtail, Nepokid, Lavandish, Irish-twist &c, are all roll tobaccos for chewing & smoking.

"Cigars & cheroots" are small rolls of tobacco permeable to air & adapted for smoking. Cigars were originally derived from the New World. They are distinguished from a cheroot by their pointed extremity, called the curl or twist. The Havannah cigars are in greatest request among smokers. Cheroots were originally derived from the East, they are characterised by their truncated extremities. Manilla cheroots are much valued by smokers.
Cigars, however, as well as cigars are extensively manufactured in all our large towns.

The manufacture of cigars is very simple. One man with a quantity of unstripped leaves before him, takes them one by one, strips them of the stalk, 

and passes them to the cigar maker, who is seated on a low stool with a low work bench before him. He takes one of those stripped leaves of tobacco, spreads it smoothly before him on the bench, and cuts it to a form resembling one of the strips of a balloon; he then lays fragments of tobacco leaf in its centre, rolls the whole up into a form nearly resembling that of a cigar; he next places the partially formed cigar in an iron press, which cuts it to a given length. The maker then lays a narrow strip of leaf upon the bench, and rolls the cigar firmly in it. All this is done with great rapidity, a few seconds being sufficient for the production of a cigar.

We have here a good opportunity of deriving from statistics the great increase there has been of late years in the consumption as well as demand for tobacco. In 1662 the quantity raised in Virginia, then the chief producer of this herb on the American shores of the Atlantic, was only 60,000 lbs. The quantity exported from that colony in 1689 only 180,000 lbs. During
the 160 years which have since elapsed, the produce of this coast has risen to nearly twice as many millions of lbs. The enormous extent to which its use has increased in our own country, may be judged of from the fact, that while in the above mentioned year (1689) the total importation was only 120,000 lbs, of Virginia tobacco a part of which was reexported, the consumption in the United Kingdom is at present about 60,000,000, lbs; thus the quantity entered for home consumption in 1831 was 28,012,841 lbs, in 1832 was 28,558,733; in 1833 was 29,737,561 lbs; 9 to this must be added the large quantity of contraband tobaccos which the heavy duty of three shillings per lb. tempts the smuggler to introduce. That the consumption amongst us is still rapidly on the increase, appears from the above numbers; but it is more clearly shown by the following table, which exhibits the quantities consumed at each of the decennial periods since 1821.

<table>
<thead>
<tr>
<th>Years</th>
<th>Total Consumption</th>
<th>Population</th>
<th>Consumption per head</th>
</tr>
</thead>
<tbody>
<tr>
<td>1821</td>
<td>15,598,152 lbs.</td>
<td>21,282</td>
<td>11.71 oz.</td>
</tr>
<tr>
<td>1831</td>
<td>19,533,841</td>
<td>24,410</td>
<td>12.86 oz.</td>
</tr>
<tr>
<td>1841</td>
<td>22,309,360</td>
<td>24,019</td>
<td>13.21 oz.</td>
</tr>
<tr>
<td>1851</td>
<td>28,062,841</td>
<td>27,452</td>
<td>16.86 oz.</td>
</tr>
</tbody>
</table>

The
The numbers 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 ounces 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 does: thus, in 1853 the home consumption in the two countries was:

<table>
<thead>
<tr>
<th></th>
<th>Great Britain</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Consumption</td>
<td>24,940,555 lbs.</td>
<td>4,624,141 lbs.</td>
</tr>
<tr>
<td>Consumption per head</td>
<td>19 ounces</td>
<td>12 ounces</td>
</tr>
</tbody>
</table>

being one half greater in Britain than in Ireland.
The duty on tobacco is exceedingly heavy being three shillings per pound, is a great addition to the revenue of the United Kingdom; thus, it was in

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Duty</th>
<th>Duty per head</th>
</tr>
</thead>
<tbody>
<tr>
<td>1852</td>
<td>£ 4,560,742</td>
<td>3. 3. D.</td>
</tr>
<tr>
<td>1853</td>
<td>£ 4,751,760</td>
<td>3. 4.</td>
</tr>
</tbody>
</table>

We have reason to believe that the consumption in Europe generally is greatly restricted by the heavy duties imposed upon it, yet the consumption of the United Kingdom is said to be less than that of most of the other European nations. In France it is about 13 ounces per head; three eighths of this quantity being used in the form of snuff. In Denmark it amounted in 1848 to about 70 ounces.
or 4½ pounds per head, in Belgium it averages at present 3¾ ounces, or 4½ pounds per head. These quantities are probably to some extent beyond the European average, but in some of the States of North America the proportion greatly exceeds these quantities; while among Eastern nations, where no duty is imposed upon tobacco, it is believed to be greater still. Mr. Crawford, therefore, estimates the average consumption of tobacco by the whole human race of 1000 million persons at 70 ounces a head, or the total produce & consumption of this favourite narcotic at 200,000,000 of tons or 4,000,000,000 of pounds. At 300 pounds per acre, this would require upwards of 5½ millions of acres of rich land to be kept constantly under tobacco cultivation. The comparative magnitude of this quantity will probably strike the reader more forcibly, when it is stated that the whole of the wheat consumed by the inhabitants of Great Britain, estimating at a quarter a head, or in round numbers at 20 millions of quarters, weighs only 4½ millions of tons. The tobacco yearly raised, therefore, for the gratification of this one form of the narcotic appetite, weighs as much as the wheat consumed by 10 millions of Englishmen; and reckoning it at only double the market value of wheat, a two pence a fraction per lb., it is worth in money as much as all the wheat eaten in Great Britain. Having
Having thus imperfectly discussed the subject of Tobacco, as we find it both in its native & prepared condition, we will now turn the attention of the reader to a totally different though not less interesting part of this subject—viz.

"The Chemical Properties of Tobacco"

The chief chemists of the present century have discovered by analysis, that the plant is composed of three principal constituents—viz. I. The alkaloid—Nicotia. II. Nicotianin. III. Tobacco camphor. IV. Euphyumnatic oil besides other bodies mentioned in the subjoined tables.

Kugelhob by his analysis in 1809 makes out the plant to be composed of the following constituents.

| 1. An aerial volatile principle (Nicotina) | 6. Chlorophyle |
| 3. Acid matter soluble in Alcohol & Water | Chlorate of Potassium. |
| 5. Superphosphate of Lime | 9. Water |

The leaves contain in addition to the above, Woody fibre, Oxalate & Phosphate of Lime, Oxide of Iron, & Silica. The two latter substances were obtained from the ashes. Manufactured tobacco contained the same principles with addition—Carbonate of Ammonia; Chloride of Potash, perhaps produced by the reaction of Sal ammonia & Lime, which are added to the Tobacco to give it pungency—
Pozzelt & Heinemann's analysis in 1827, differs in one material point, viz. in its containing Nicotianin the
concrete volatile oil, which was not discovered till 12 years after Vanguelin's analysis, by Hermelstadt. It also differs
in a few minor points, I therefore think it right to give
the result in full:

| 1. Nicotiana                  | 0.06 |
| 2. Concrete Volatile Oil (Nicotianin) | 0.01 |
| 3. Bitter extractive          | 2.87 |
| 4. Gum with Nature of Lime    | 1.74 |
| 5. Chlorophylle               | 0.267|
| 6. Albumen & Gluten           | 1.308|
| 7. Malic Acid                | 0.51 |
| 8. Lignine & trace of Starch  | 4.969|
| 9. Salts Sulphate, Potash &  |
| Aluminate of Potash, Phosphate of |
| Potassium, Phosphate, Phosphate of |
| Lime, & Phosphate of Ammonoid | 0.724|
| 10. Silica                   | 0.088|
| 11. Water                    | 88.280|
| Total Leaves of Tobacco      | 100.236|

De Lorwells analysis in 1831, differs in several respects from
the two preceding. He supposes the leaves to consist of:

| 1. Gum          |
| 2. Mucilage soluble in water |
| 3. Alcohol      |
| 4. Tannin       |
| 5. Gallic Acid  |
| 6. Green pulverulent matter, |
| 7. Yellow Oil having the odour, |
| 8. Pale yellow resin (large quantity) |
| 9. Nicotiana    |
| 10. A substance analogous to Morphia |
| 11. Anorange and colouring matter |
| 12. Nicotinian  |

I. Nicotina
I. Nicotine (Nicotine, the alkaloid) Symbol N\textsubscript{2} Formulæ C\textsubscript{10}H\textsubscript{4}N\textsubscript{2}. Exists not only in the leaves, both fresh and fermented, but also in the root, seed, as well as in the smoke of tobacco. It is obtained by digesting an aqua extract of the leaves in rectified spirits, which takes up the nicotine salts. The decauded tincture is to be concentrated, mixed with a solution of Potash, briskly shaken with ether, which dissolves the nicotine set free by the potash. To purify the alkaloid, add gradually to its solution oxalic acid in powder; oxalate of nicotine, insoluble in ether, forms at the bottom of the vessel, a syrupy layer, which is to be repeatedly shaken with pure ether. The nicotine may be separated by potash and ether, as before. The etheral solution is to be distilled in a salt water bath, then transferred to a retort, through which a current of dry hydrogen circulates; exposed to a temperature of 284° Fahrenheit in an oil bath, in order to entirely get rid of the water, ether, ammonia, lastly, the temperature is to be raised to 356° when the nicotine distils over drop by drop. From 2 to 6 oz. of Virginia tobacco at least 4% percent of nicotine can be obtained by this process. A less complicated process, however, is the following: A strong infusion of tobacco is to be made in cold water, to it a large quantity of Potash is to be added, the mixture distilled...
Distilled—The product of distillation consists of Nicotina, Ammonia & Water; hydrochloric acid is to be added to the distilled product, till it has an acid reaction, and evaporate carefully to crystallization—Dissolve the remaining salt (chloride of Nicotina) with pure Alcohol; the chloride of Nicotina is dissolved by the alcohol, while the Ammonia, Chlorine, & Water are left behind. This solution, chloride of Nicotina, is distilled with Potash; the result is pure Nicotina, which, unless the heat has been sufficiently low, is mixed with Alcohol—Nicotina when pure is a colourless liquid alkaloid with an acrid odour, & an acrid burning taste. Its density is 1.024. It restores the blue colour of redined tannin, & renders turmeric brown. Like Cocine, it does not, at the ordinary temperature solidify, but becomes solid at 14° Fahrenheit; it boils at 182°; but the same time undergoes decomposition; by exposure to air it becomes brown & thick. It is readily combustible with the aid of a wick. It is soluble in Water, Ether, & Alcohol, & also in the oils both fixed & volatile. It combines with acids & forms very deliquescent salts; the sulphate, phosphate, oxalate, & tartrate are crystallizable, the acetate is not. A dilute aqueous solution of nicotine yields a white flocculent precipitate (double chloride) with
with a solution of Bichloride of Mercury, and a yellow granular precipitate with Chloride of Platinum. Nicotina is an energetic poison, almost equaling in activity Hydrocyanic acid.

The amount of Nicotina in leaf or manufactured tobacco may be estimated by Schlosser’s process: exhaust two decants of tobacco by ammoniacal ether in a continuous distillatory apparatus, expel the ammoniacal gas from the nicotine solution by boiling, then decant. After the evaporation of the ether, estimate the amount of nicotine in the residue by the quantity of diluted Sulphuric acid of known strength required to saturate it. The following are the amounts found in Various French & American Tobaccos:

<table>
<thead>
<tr>
<th>100 Parts of Tobacco dried at 22</th>
<th>Nicotina</th>
<th>100 Parts of Tobacco dried at 212</th>
<th>Nicotina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia</td>
<td>6.87</td>
<td>Nord</td>
<td>6.58</td>
</tr>
<tr>
<td>Kentucky</td>
<td>6.09</td>
<td>Ne. et Belgique</td>
<td>6.24</td>
</tr>
<tr>
<td>Maryland</td>
<td>2.29</td>
<td>Pas de calais</td>
<td>4.94</td>
</tr>
<tr>
<td>Havanaeh</td>
<td>2.00</td>
<td>Alsace</td>
<td>3.21</td>
</tr>
<tr>
<td>Lot</td>
<td>7.96</td>
<td>Tobacco in powder</td>
<td>2.04</td>
</tr>
<tr>
<td>Lot et Garonne</td>
<td>4.34</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I. Nicotianise, the concrete Volatile oil, or Tobacco

Camphor
camphor—the principle which gives the characteristic colour to tobacco. It is obtained by the following process: six pounds of tobacco leaves are to be distilled with twice their weight of water, till half has come over; to the distilled liquid add twice its weight of water and again distil; this is to be repeated; a fatty substance will be found floating on the surface of the liquid in very small quantity, the six pounds of leaves yielding about eleven grains of oil; this is nicotianin. According to Landerer fresh tobacco leaves yield no nicotianin, which therefore would appear to be developed by the drying of the leaves under the influence of air and water. Its properties are the following: it has the smell of tobacco, a bitterish taste, it is insoluble in water, but readily dissolves in alcohol. Other, dilute acids do not dissolve it, but potash does. It is volatile by heat, and if water be present without change.

III. The exsipyrumatic Oil of Tobacco seems to be formed during the destructive combustion of the herb, and does not exist naturally in the leaves, but is probably formed at the expense of the nicotina. It does not, therefore, exist in the infusion of tobacco. The active part of the oil can be removed from it with weak acetic acid.

Besides these three principal constituents just enumerated.
enumerated, tobacco contains many acids and salts, which have been mentioned already in the foregoing analyses.

But lest I weary the reader by entering further into this part of the subject, which may seem but a crude compilation of facts, which, I confess it is to a certain degree, but necessarily so from my desire not to enter too fully into detail, of which this essay scarcely admits, I will now turn to that part of the subject which comes next under our notice, and which has to a certain degree been experimentally felt by the novices in the "Art of Smoking," nevertheless, that will not hinder us from saying a few words here on the

"Injurious Effects of Tobacco on the Human Frame"

The effects of smoking are often strongly marked on the human constitution, of many of the most important organs in an inveterate smoker, but too plainly mark, in time, the ravages of this bloody poisoning herb. The organs which are chiefly liable to be affected in consequence of excessive indulgence in this narcotic, are, the Buccal & Pharyngeal mucous membrane, & their diverticula; the Stomach, the Liver, & the Heart; the Brain & Nervous System.
With regard to these consequences it may be generally stated, that they vary according to the quantity of tobacco smoked, according to the pathological conditions, peculiarities of the individual himself. The first, simplest morbid result of excessive smoking is an inflammatory condition of the mucous membrane of the lips and tongue, this sometimes taking the form of a separation of the epithelium; if long persevered in, produces, from the constant irritation caused by smoking a short clay as is generally done by the lower orders, carcinomatous ulceration of the lower lip. Then the tonsils and pharynx suffer, the mucous membrane which covers them becoming dry, congested: if the throat be examined it will be found to be swollen, with congested veins meandering over the surface, where there is a streak of mucous. The inflammatory action also extends upwards into the posterior nares; the smoker feels, from time to time, a discharge of mucous from the upper part of the pharynx in consequence of the secretion from the mucous membrane of the nares collecting within them. The irritation will also pass to the conjunctiva, not by the direct application of the fumes to the eye, but, from the nares, by means of the nasal ducts. The results experienced are, heat, slight
light redness, lachrymation, intolerance of light, a peculiar spasmotic action of the orbicularis muscle of the eye —

Descending along the alimentary canal, we come to the stomach. Here we find the effected to be, in extreme cases, the symptoms of gastritis; there is pain and tenderness on pressure of the epigastrium, anorexia, nausea on taking of food, a constant sensation of sickness, and desire to expectorate. It also possesses a laxative effect, and some people in order to obviate the necessity of taking aperients, take advantage of this property in it.

As the result of excessive smoking, Laycock says that he has frequently noticed ulceration of the cartilage of the larynx. Hemoptysis is another smoking condition distinctly traceable to its habit; it is a symptom worthy special notice, because it usually causes great alarm, and may be readily mistaken for Pulmonary hemoptysis, a true expectoration of blood. The patient experiences a slight tickling low down in the Pharynx & Trachea, & has a rather cough up a dark mucous looking blood; it has been known to flow out of the patient's mouth during the night, or be expected shortly after lying down.
The action of the Heart is impaired by the influence of the narcotic on the nervous system, great depression is produced, accompanied with strong palpitations. An interesting case of Angina Pectoris, is recorded by Dr. Corson of New York, resulting from overindulgence in this narcotic; the patient had a capricious appetite, nausea, vomiting his meals, became emaciated, nervous, & suffered from palpitations of the heart, from all of which he eventually recovered on abandoning the habit.

On the Brain the action of Tobacco smoking is sedative. It appears to diminish the rapidity of cerebral action & check the flow of ideas through the mind. This is a certain result, & it is in consequence of this action that smoking is so habitual with studious men, or men of contemplative minds. The phrases "a quiet pipe," or a "comfortable cigar," are significant of its sedative action.

Besides these, the following are sometimes the fearful results of excessive indulgence in this narcotic, Mania, as may be seen from the statistics of our asylums. Loss of memory takes place in an extraordinary degree in the smoker, much more so than in the drunkard. Amnesticism, occurr-
ing either with or without congestion of the brain, or usually confined to one eye. Nervousness is remarkably common, arising either from smoking, sniffing or chewing; and the most general form of palsy produced is hemiplegia. Emasculation is a very frequent result of intemperance in smoking; and the idea, that tobacco possesses anti-phrodisiac properties, is pretty universally entertained by Eastern Nations. Reanderd declares that when given to the lower animals it interferes with conception; a writer of modern times affirms that the custom of smoking acts as a considerable population check, and adds that he would desire to introduce it to the notice of our Mathurians.

The connection which exists between "The Injurious Effects of Tobacco on the Human Frame" and "Its Physiological Effects" is like that of brother and sister; though each by itself is distinct from the other, yet they have a strong family resemblance. Some statements are placed under the first head, which could with equal justice be placed under the second; vice versa; thus the two subjects
subjects dovetail into each other, we but follow the beaten path when we take into consideration in the next place—

"Its Physiological Effects"

A. On animals generally—In the carnivora, tobacco causes nausea, vomiting, sometimes purging, muscular trembling, staggering convulsive movements, and stupor. Five drachms a half of taffe were introduced into the stomach of a dog, secured by a ligature on the cesophagus, which caused death in nine hours. Sir B. Brodie found that the infusion of tobacco thrown into the rectum, paralyzed the heart and caused death in a few minutes. But if the head of the animal be previously removed, artificial respiration kept up, the heart remains unaffected; proving that tobacco destroys this organ through the medium of the nervous system only. I will here mention some experiments which were made by the physician who was examined as to the effect of nicotine on man. Animals in the famous trial of the Comte de Bocarme for the murder of M. Forzynes. He took a powerful dog and secured him so that he could not move, and gave him two centi-
three cubes of nicotine this large quantity was
given not to find out whether the alkaloid killed
but what sort of alterations it produced when
introduced into the system stomach. As soon
as the poison was dropped on the tongue of the dog
several individuals who were in readiness un-
dressed him, and the very same moment the animal
was struck down, as by a thunderbolt, from the
effect of the poison; it was soon attacked with
convulsions which lasted about half a minute
and then it died. During the continuance of these
convulsions the tongue protruded from the mouth
perfectly round and red. It was on the right side the
animal fell. A second experiment was per-
formed on a much more vigorous and powerful
dog than the former. The same amount of
nicotine was given; the phenomena presented
were exactly the same as in the first experiment.
And the animal also fell on the right side. Im-
mmediately after its death thirty centimetres cubed
of vinegar were dropped upon its tongue.
The tongue of the dog first experimented on became
violet coloured as soon as that of an empty in
contact with the nicotine. The tongue of the
second
second dog likewise became violet & purple immediately after taking the poison; but as soon as the acetic acid was applied to the tongue the purple colour was effaced & it was perfectly impossible to find out that the tongue had been subjected to the action of a caustic.

The animals were carefully laid aside for forty-eight hours & then examined. The appearance of the dog's tongue on which nicotine only was put was considerably swollen, like that of Gustave Fougères; it was red at its root very much sunk in, the mucous membrane detached itself with great ease, it was enough to touch it to bring it to shreds, exactly like the tongue of G. Fougères. The stomach & liver presented no extraordinary appearance. The lungs presented all the marks of an animal dead from asphyxia, a circumstance which struck me equally when I had in my hands the lung of Gustave Fougères. The skull of the dog was opened to the spinal marrow, between the first & third vertebra there was a very considerable extravasation. Such an alteration was not observed in G. Fougères spinal marrow as it had not been exposed.

I forthwith proceeded to the appearance of the dog which
which was first killed by the nicotine, I then had
vinegar poured into its mouth. The aspect of
the throat here was perfectly different: here it
was livid while that of the first dog was red;
moreover the tongue of G. Sougries was livid all
over, there is in this account of the colours exact
identity. The stomach of this dog was red & the ex-
ternal membrane was equally injected (with blood)
the vessels were full of black blood.

The stomach of G. Sougries presented the same al-
terations; his liver was acid; the liver of the dog
to which we gave the vinegar was acid also, in
fact the animal which was killed by nicotine
& to which vinegar was given presented a series
of phenomena entirely identical with those which
were observed.

The following testimony given in the same trial
shows the extreme strength of the poison. Some ex-
periments were made, on the lower animals, with
the nicotine which was taken from the stomach
of G. Sougries. First a very small drop was put on
the tongue of a bird, it immediately threw back
its head & went into convulsions; I then fell dead
on the right side; the same experiment was
performed.
performed on another bird of the same kind; 
I exactly similar phenomena were produced. 
A drop of the same nicotine was placed upon 
the tongue of a very lively fowle; it shook its 
head & at the same time a portion of the poison 
was ejected, from & one of my companions receiv'd 
it on his cheek; Nevertheless, the animal was 
immediately seized with convulsions & died, which 
in about two minutes, like the others, it fell too on 
its right side. These circumstances show that 
the matter which existed in the organs of Gustav 
Forvies was poison, & a destructive poison too. 
As the Physicin who made use of these statements, 
proved, in the course of his examination, beyond all 
doubt, that the poison made use of was nicotine, we 
have here good examples of the power of this poison 
& how that even when very much diluted it was suffi- 
ciently potent to deprive a fowle of life in an 
extraordinarily short space of time. 
In the Herbivora, the effects of tobacco, as other 
vegetable poisons, are much less marked; vomit- 
ing does not occur. Schickloth gave four ounces of 
the leaves to a horse at the times within two 
hours. The animals pulse became irregular, then 
slower
slower, afterwards quicker; respiration & the julus 
were scarcely affected. For two day the stools & urine 
were more frequent. 
It is remarkable that the Empyreumatic Oil of 
tobacco, does not possess the same power of paralyzing 
the heart. Applied to the tongue of a cat, one drop 
called convulsions; & in two minutes death; and pen 
ing the body the heart was beating regularly & with 
force. Its operation, therefore, is analogous to that of 
hydrocyanic acid. & Horries says it has last tending 
tendency to induce convulsions than the empyreumatic 
Oil of Foxglove, Henbane, or the Thumapple. 

B. On Man. In small doses tobacco causes a sensation 
of heat in the throat, & sometimes a feeling of warmth 
at the stomach; these effects, however, are less obvious 
when the remedy is taken in a liquid form, or largely 
diluted. By repetition it usually operates as a diuretic 
& frequently as a laxative. Accompanying these 
effects are sometimes nausea & a peculiar feeling 
usually described as giddiness, but which scarcely 
accords with the ordinary acceptation of this term. 
Astrophic swellings sometimes disappear under 
the use of its doses, it has been inferred that the 
remedy promotes the operation of the absorbents.
In larger doses it provokes nausea, vomiting & purging. Though it seldom gives rise to abdominal pain, it produces a most distressing sensation of sinking at the pit of the stomach. It occasionally acts as an anodyne, or more rarely promotes sleep. But its most remarkable effects are languor, feebleness, relaxation of muscles, trembling of the limbs, great anxiety, & tendency to faint. Vision is frequently enfeebled, & it has been alleged that the extent to which smoking is carried among the Germans accounts for the weakness of their eyes for which they are almost proverbially noted; the ideas become confused, the pulse small & weak, the respiration somewhat labored, the surface cold & clammy, a feeling in a cold sweat. In extreme cases, convulsions are observed. In excessive doses the effects are of the same kind but more violent in degree, to those just mentioned, but with the following additional symptoms, viz. a marked depression of the nervous system, manifested by feeble pulse, pale face, cold sweats & tending to faint, convulsive movements, followed by paralysis & a kind of torpor terminating in death. There are several cases, one of which I shall here mention, in which the smoking of tobacco has
has been attended with fatal consequences. It is mentioned by Gmelin, that two cases of death took place from smoking in the one 17 in the other 18 pipes at a sitting. Besides this an interesting case, which had nearly terminated fatally, is related by Dr. Marshall Hall, of a young man, who in his first essay, smoked two pipes. He shall add to these the following case, showing the effect of an infusion of tobacco on a person. A young man residing in Leicester Place, London, unaware of the serious consequences, infused about 1/2 lb. of tobacco in a quart of coffee, that was standing in the pot for the use of the maid servant, a girl 18 years of age, of robust health. Of this a large tea cupful was hastily drunk, which immediately produced the most depressing nausea, inefficient attempt to vomit, vertigo, tremors, a copious flow of urine, the greatest depression of vital powers that could be imagined. Under these circumstances, M. Churchill was sent for, and found her bathed in cold perspiration, the pupil was dilated, the pulse was so feeble as scarcely to be felt; the head lost the power of speech, frictions to the region of the heart were vigorously employed, vomiting excited by large draughts
...of the Carbonate of Ammonia dissolved in water, & by the application of a feather to the fauces. These effects were soon effectual in evacuating the stomach, but the general terror of the system existed for six hours. She required constant attention for that time, during which friction was very generally employed; hot water was applied to the feet; & a stimulating purgative injection was most advantageously administered. When vomiting had been copiously excited, pills composed of the Compound Extract of Ipecacuanha, combined with ephedrine, evacuated the intestines; after which, the girl quickly recovered, merely requiring some effusing medicine, containing small doses of opium. Taken in the form of snuff its principal effect is topical. It causes increased secretion of nasal mucous in those unaccustomed to its use, sneezing. Getting into the throat it produces a feeling of nausea, & sometimes nausea. From some kinds of snuff, giddiness & great prostration of strength has been experienced. Langoni states that an individual fell into a state of insensibility, died lethargic on the twelfth day, in consequence of taking too much snuff. The habitual use of this substance blunts the sense of smell & alters the tone of voice; but Dr. Pereira says that he is unacquainted with any other...
other well ascertained effects, though Bullein ascribes loss of appetite & dyspepsia to it; Dr. Front observes, that the same severe & peculiar dyspeptic symptoms sometimes produced by inveterate snuff-taking are well known; I have more than once seen such cases terminate fatally with malignant diseases of the stomach & liver. I have known several inveterate snuff-takers, who, after many years use of this substance, have discontinued it with impunity; but Dr. Bullein thinks that when the discharge of mucus is considerable, the easing or suppression of it, by abstaining from snuff, is ready to occasion the very disorders of headache, toothache & phthisia, which it had formerly relieved. Though there are cases in which snuff has had a baneeful effect on the constitution, yet there is every reason to consider its action very much less destructive than that of tobacco for smoking.

The application of Tobacco to abraded surfaces is a very dangerous practice, that in some instances been attended with violent or even fatal results. Mr. Weston has related a case in which the expressed juice of tobacco, was applied to the head of a boy aged eight years, for the cure of stenitis laryngitis; death took place three hours & a half after the application.
A case of a similar kind is mentioned by Tourguier of a young man, who, while using the infusion of Tobacco as a potion in Sinus Epistostis, felt the taste of the herb as distinctly as if he had been chewing it, but without any serious results.

The beneficent effects which follow its application, not only to the abrased cutis, mucous membrane, or serous surface, but even to the entire cuticle may be observed by the following account related by Percy of a company of soldiers who almost invariably after a manœuvre became unwell a circumstance which was attributed to a new shako having a high crown of a black colour which had recently come into use; being frequently baffled in his endeavours to ascertain the cause, he one day inspected the shakos of several, after returning from exercise, who were affected with vertigo & vomiting; & found that in almost every one there was contained a considerable quantity of tobacco; his views were confirmed as to the real cause of the malady from the circumstance of his having, while military surgeon, frequently observed similar effects produced on soldiers who were smuggling tobacco hidden under their cuirasses or in their breast.
The effects of tobacco applied to the skin is so well known to the soldiers in America, who insert a piece of it within the arm pit, in order to render themselves unfit for duty.

Peculiar sensations have been felt by persons who have breathed for any length of time an atmosphere thoroughly impregnated with the exhalations from tobacco, and even fatal consequences have ensued. The following is an accurate description of these sensations, related by a person who slept in a cabin in which there were several bales of tobacco. "When the evening was pretty far advanced, the master of the schooner conducted me to the cabin, which was almost full of large packages, pointing out where I was to sleep, left me alone. I felt a heavy suppressive smell, but did not examine the contents of the bale, and immediately went to bed. Soon afterwards I was harassed by wild and frightful dreams, and suddenly awoke about midnight, bathed in a cold sweat, and totally unable to speak or move. However, I knew perfectly where I was, I recollected every thing that had occurred the preceding day; only I could not make any bodily effort whatever, I tried in vain to get up, or even change my position. The watch on deck struck four.
four bells, I counted them, though it seemed to me that I did not hear the beats, but received the vibration through the body. About this time, a seaman came into the cabin with a light. I carried away an hourglass that hung upon a nail, without observing me, though I made several efforts to attract his attention. Shortly after a pane in the skylight was broken by accident, I saw the fragments of glass drop on the floor. These circumstances actually occurred, as I found on inquiring the next day. I mention them to prove, that the sensations I describe were realities, not the offspring of perturbed dreams. My inability to move was not accompanied with pain or uneasiness, but I felt as if the principle of life had departed from my frame. At length I became totally insensible, and continued so till an increase of wind made the sea a little rough, which caused the vessel to roll. The motion, I suppose, had the effect of awakening me from my trance, and I continued, somehow or other, to get up and go upon deck. My memory was totally lost for about a quarter of an hour. I had no ideas connected with any thing that was not present before me; I knew that I was in a ship, but nothing more.

Foucault, moreover, mentions a somewhat similar case.
case of a girl having died convulsed from sleeping in a room where a considerable quantity of tobacco had been smoked.

Cases of poisoning by nicotine are generally treated in a manner similar to the treatment of poisoning by other means; the first step being to withdraw the contents of the stomach as quickly as possible; and since no chemical antidote has as yet been discovered, the physician must use his endeavours to nullify the power of the poison by means which shall weaken the patient as little as possible, in which attempt he will of course be greatly guided by circumstances. The vegetable astringents, infusion of nut-sallows, green-tea &c. have been used advantageously and therefore deserve examination; as anti-narcotics, the vegetable acids & coffee may be administered. When the depression of the vascular system is extreme, ammonia and brandy may be given with good effect, & frictions employed; likewise cataplasmas to the region of the heart & stomach, & to the soles of the feet. Artificial respiration should not be omitted when other means have failed. If apoplectic symptoms present themselves, bloodletting may, perhaps, be requisite...
Since many of our most powerful curative agents are, in large doses deadly poisons, enterprising physicians gave to tobacco a fair trial in order to see whether it had a just claim to a place in the pharmacopoeia or not. As is the case with every novelty, when tobacco was used medicinally for the first time & proved beneficial to a certain degree, it became a fashionable remedy & was for a little time considered infallible. Its power is locally a stimulant, & remotely a sedative; a narcotic, sedative, emetic, laxative, diuretic, and antispasmodic; but it afterwards fell into disuse, on account of the superior claims of other bodies which possess these properties, besides having in addition the advantage of not being attended with so much risk to life. Yet, as its medicinal power was tried in almost every disease with more or less success, I subjoin several examples giving the result of the trial in a few of them.

In Strangulated Hernia, the efficacy of tobacco depends principally on its power of relaxing muscular fibres & on its purgative properties. The remedy is applied in the form of elytric, consisting either of the smoke or of the injection. Perhaps, both methods are
are equally efficacious; but as the former requires a rather complicated apparatus which when most needed is frequently found out of order, while the other does not, the infusion may therefore be considered the most convenient. The enema has frequently effected the reduction of the protruded parts when an operation appeared almost inevitable. A surgical writer speaks in the highest terms of its use. A tense hernial tumor sometimes becomes soft and relaxed by the diminished force of circulation produced by tobacco. Sir Astley Cooper speaks of it in the following terms. He says: "it is the most powerful agent in the treatment of strangulated hernia he knows; for if when the patient is under the influence of this remedy, the hernia cannot be returned by taxis, there is but little chance of any mode short of an operation succeeding. The manner of making it is to infuse one drachm of tobacco in a pint of water; of this one half should be first thrown up, and according to the effect produced in twenty minutes or half an hour, the other half may be injected or not. This is the safest plan of administering the tobacco; it produces extreme languor, relaxation
"Of all the fibrous structures, it is certainly the most potent remedy which is employed, but at the same time requires the utmost caution in its use. The effect to be wished for, from the use of the tobacco is an universal relaxation, so that the patient has not power to exert any of the voluntary muscles, when this is produced a hernia may be sometimes reduced with very little force, after having previously resisted a firm and continued pressure. Under the influence of tobacco, a hernia, which has before its employment felt tense, will become soft, but this is not occasioned by any partial reduction of the hernia, but only by the force of circulation being for a time greatly diminished."

_Tetanus._ —— The relaxing influence possessed by tobacco over the muscular system, suggested its employment as a curative agent in tetanus. Dr. Anderson who for many years practiced at Trinidad, where tetanus is very prevalent, says that several cases of traumatic tetanus having proved fatal under the ordinary modes of treatment, he was at last led to try the effects of tobacco, with the best results. Dr. O'Beirne & Mr. Darke likewise employed this remedy with equal
equal success. Mr. Curling has collected accounts of nineteen cases, including those of Anderson, Earl of O'Beirne, treated by toboaco; of these nine recovered, 9 in seven of the fatal cases the remedy had not a fair trial; while in the eighth organic disease of the brain was found. Mr. Curling observes, that more has now been advanced in proof of the efficacy of tobacco than can be adduced in favour of any other remedy yet resorted to. I have not, he adds, succeeded in finding a single case in which, being fully & fairly tried before the constitution had given way, it has been known to fail. Its effects have been, however, like those of most other medicines in this disease, unequal.

In Dysentery, the best results, Dr. Bellin says, have occurred on the administration of Tobacco with Opium. Dr. O'Beirne relates several cases of this malady having been cured by this narcotic. I shall mention one of them. "Catherine Finlay, aged 21, residing in a low swampy situation, was attacked with dysentery, the symptoms continued for three days without any medicine being taken. She got a dose of Oleum Niciini & Spiritura Senec e, from her mother, which increased the abdominal pain & urgency to stool.
On the fifth day Dr. Brinie was called in. The patient's countenance was pale & sunken, tongue white & furred, thirst considerable, skin warm, pulse 100 small & weak, pain about the umbilicus, turning a stool every ten minutes, discharge solely blood and mucus. An enema, consisting of ten grains of Virginia Tobacco infused in six ounces of water for twenty minutes was thrown up with pain & difficulty, which was immediately returned without any effect being produced. In the afternoon an ounce of Plum Brinie was given, & in half an hour after the abdomen was fomented with an infusion of tobacco, the stupefying was continued until giddiness, nausea, & weakness came on; towards the evening she was greatly relieved of the torpor & tenesmus by means of application; that immediately after she felt her head giddily & stomach disposed to turn, her bowels were opened; great relief followed, the pulse fell to go, the countenance lost gradually its pale & contracted character, she soon fell into a profound sleep. From this time she had a rapid convalescence & recovery. Seven other cases of complete recovery are given by the same author. Many other diseases have been treated with Tobacco.
Tobacco, with beneficial results—such as spasmodic diseases, viz. spasmodic asthma, which has been relieved by either smoking tobacco or when taken internally, in nauseating doses. Periodic epilepsy—the return of the disease was prevented by the application of a tobacco cataplasm to the boc-
icularis cordis half an hour before the expected paroxysm. In hydrophobia it has been employed but without any avail. In Ischuria & Dysuria tobacco has proved most serviceable. A very severe case of laryn-
gious stridulous was successfully relieved by the application of a tobacco cataplasm to the throat, which assisted powerful depletion by the lancet.
Hartmann cured a case of Paralysis by first administering diaphoretics, until perspiration en-
sued, then rubbing for a considerable time the judicial limbs with the warm Tobacco. Tobacco has also been used in obstetric practice, St. Dewes mentions a case of Rigidity of the os uteri, in which a tobacco oyster was administered to pro-
duce relaxation, but failed, while it caused alarming constitutional symptoms. It has likewise been beneficially employed in Dropsy. A number of cases of Acutes Anasarca
which had been relieved by tobacco, have been published by Dr Fowler. Also in Bronchitis-lata, Dyspncea-Tonsillitis, Pneumonia-Chloro-Pneumonia-Intermittent Fever-Rheumatica Scleratia blie. Gout—It has been used with various success.—

As a topical remedy the infusion of tobacco & even the leaves have been employed, in gouty & rheumatic inflammations of the joints, testicle, & sclerotic coat of the eye, & in erysipelas & inflammation. The smoke & infusion have been applied to the hair & various parts of the body to destroy phlegm—As an anthelmintic to tobacco has been successfully used in the form of oliver, & in many other diseases.——

Having now discussed the last point which I intended to bring under your notice & to bring this theme to a close; although I had no intention when I began, of trespassing too much upon my reader's time, yet, as I proceeded with my subject, I found it impossible to be more concise than I have been; and, even as it is, my account of tobacco is very far from being as perfect as I should have liked.
liked it to be. But that is neither here nor there, I must not give way now to vain regrets, which are as uninteresting to the reader as useless to myself. Yet I cannot bring this to a conclusion without remarking that, if the person who loves the

"Soote retainer to the vine,
"Bacchus' black servant, negro fine;"

in a contemplative mind, he can while indulging in his

"Little tube of mighty power,
"Flavours of an idle hour,
"Object of his warm desire,
"Lips of wax and eye of fire,

he can, I say, obtain many useful lessons from it, such as, the brevity of human life which passes away like the smoke that curls gracefully upwards; that riches, beauty, or all the glories of the world vanish like a vapour; it also points out to us the fate of the ambitious, who, unceasingly keeping aloft even as the smoke, at last, like it, when they have attained the highest point that they can reach, die not to enjoy the fruits of it, but fade away and are forgotten. If every wise smokes produced such thoughts as these in the mind.
mind of the smoker, not only would tobacco be recommendable but the minds of indulgers greatly improved. An effectual stop, however, is put to these contemplations when we consider that Tobacco is generally the companion of Bacchus, who, for bids any to appear at his shrine otherwisc than hilarious: Charles Lamb shows the connexion existing between these two, very happily, in the following stanza from his "Farewell to Tobacco," which I intend to be my adieu also to the subject.

"Brother of Bacchus, later born,
"The old world was sure forlorn.
"Wasting thee, that aiding more
"The gods victories than before
"All his panthers, and the bruits
"Of his piping Bacchanals.
"These, as stale, we disallow,
"Or judge of thee meant; only those
"His true Indian conquest art;
"And, for my round his dart,
"The reformed god now weaves
"A finer thyrsus of thy leaves."

George Boates Bell