



CHEMISTS, botanists, and physicians unite in pronouncing tobacco one of the most deadly poisons known. No other poison, with the exception of prussic acid, will cause death so quickly, only three or four minutes being required for a fatal dose to produce its full effect. It is botanically known as *nictiana tabacum*, and belongs to a class of plants known as the *volanaceæ*, which includes the most poisonous of all species of plants, among which are *henbane* and *belladonna*. There are more than forty different varieties of the plant, all of which possess the same general properties, though varying in the degree of poisonous character.

**Nicotine.**—The active principle of tobacco, that is, that to which its narcotic and poisonous properties are due, is nicotine, a heavy, oily substance, which may be separated from the dried leaf of the plant by distillation or infusion. The proportion of nicotine varies from two to eight per cent, Kentucky and Virginia tobacco usually containing six or seven per cent. A pound of tobacco contains, on an average, three hundred and eighty grains of this deadly poison, of

which one-tenth of a grain will kill a dog in ten minutes. A case is on record in which a man was killed in thirty seconds by this poison.

**A Pound of Tobacco Will Kill Three Hundred Men.**—The poison contained in a single pound of tobacco is sufficient to kill three hundred men, if taken in such a way as to secure its full effect. A single cigar contains poison enough to extinguish two human lives, if taken at once.

The essential oil has been used for homicidal purposes. Nearly thirty years ago, it was employed by the Count Bocarme to murder his brother-in-law, for the purpose of securing his property.

Hottentots use the oil of tobacco to kill snakes, a single minute drop causing death as quickly as a lightning stroke. It is much used by gardeners and keepers of greenhouses to destroy grubs and noxious insects.

A number of instances are recorded in which death has been produced by applying a little of the oil from the stem or bowl of an old pipe, to a sore upon the head or face of a small child.

**Poisoning Through the Skin.**—The poison of tobacco is so potent and violent in its action, that even the external application of the moist leaves to the skin is sufficient to produce most serious symptoms. If a cigar be unrolled, and the leaves composing it be applied over the stomach, great nausea will be produced in a very short time. This method has been used to induce vomiting. Cowardly soldiers have been known to place tobacco leaves under their arms just before going to battle, for the purpose of producing sickness.

Some years ago a man was detected in an attempt to smuggle a quantity of tobacco by placing the leaves next to his skin. The nearly fatal symptoms which followed, led to the discovery of the smuggler.

**Deadly Vapor.**—If tobacco is poisonous when applied to the skin, it is doubly so when inhaled. The smoke of tobacco contains, in addition to nicotine, several other poisons, the chief of which are *pyridine*, *picoline*, *sulphuretted hydrogen*, *carbon di-oxide*, *carbonous oxide* and *prussic acid*, all of which are fatal poisons when received into the system in any other than the most minute quantities. Thus it is not to nicotine alone that the evil effects of smoking are due, but to all of these poisons combined.

Birds, frogs, and other small animals die when exposed to the fumes of tobacco in a confined space. Cheese-mites, bees, and other insects may be quickly killed by directing upon them a stream of tobacco smoke from an ordinary pipe.

**Poisoning Through the Lungs.**—Inhalation is the most speedy way of getting any volatile poison into the system. The reason of this is obvious when the fact is made known that the lungs present a mucous surface fourteen hundred square feet in extent, every inch of which is in the highest degree capable of absorbing gaseous substances brought in contact with it. This membrane is of the most marvelously delicate character, being of such exceeding thinness that it forms scarcely any obstacle to the passage of gases which enter the lungs by respiration. Just underneath this delicate membrane passes all the blood in the body, or an amount equivalent to the whole quantity of the blood, once every three minutes. The vapory poison inhaled by the tobacco-smoker is not simply taken into the mouth and then expelled, but it penetrates to the remotest air-cells, and spreads itself out over the whole of the immense extent of membrane stated. Thus it is plain that the blood of the smoker is literally bathed in the narcotic fumes drawn from his pipe or cigar.

So readily does the system receive the poison of tobacco in this way, that it has repeatedly been observed as a fact that persons who are engaged in the manufacture of cigars often suffer much from the characteristic effects of nicotine poisoning, even when not using the weed.

When tobacco is applied to the mucous membrane, as in chewing and snuff-taking, its poisonous elements are absorbed in essentially the same manner as when it is applied to the skin, but much more rapidly. In chewing, considerable quantities are also absorbed through the stomach, being swallowed with the saliva.

The giddiness, nausea, and deathly sickness which follow the first attempt to use the drug, are indubitable evidence of the poisonous character of tobacco, which evidence is confirmed by the difficulty, in many cases very great, experienced in becoming addicted to its use. In severe cases of poisoning, violent vomiting and purging, vertigo, deathly pallor, dilatation of the pupil, a staggering gait, disturbed action of the heart, interference with respiration, and, in extreme cases, insensibility and syncope, are commonly observed. Only a very small quantity is necessary to produce these symptoms in a person not accustomed to its use; but in persons who have habituated their systems to the poison, a much larger quantity is required.

Persons not accustomed to the use of tobacco often show symptoms of poisoning from taking a very small quantity of the drug, as by inhaling its fumes in a smoking-car or a bar-room. Infants are often sickened by inhaling the air of a sitting-room which is poisoned by a smoking father.

The fact is established beyond the possibility of successful controversy, that tobacco is a poison, deadly in large doses, pernicious and harmful in all doses. It taints the breath, ruins the digestion, obliterates taste and smell, spoils the blood, oppresses the brain, depresses the heart, irritates the nerves, wastes the muscles, obstructs the liver, dims the vision, stains the skin, and deteriorates and contaminates every organ and tissue with which it comes in contact in the body. Its influence is to lessen vitality, to benumb the sensibilities, to shorten life, *to kill*.

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# HEALTH SCIENCE LEAFLETS.

No. 18.



**T**HAT the use of tobacco in some form is one of the most common causes of *amaurosis*, a form of blindness in which the nerve of sight is affected, is now generally recognized by medical authors, and by those who make a specialty of the treatment of disorders of the eye. Several cases of this form of blindness have come under the author's observation, and medical literature abounds in reports of these cases.

The following list of symptoms of tobacco blindness every smoker would do well to commit to memory and think of every time he lights a pipe or cigar:—

*Sudden or gradual impairment of vision; a blurring of objects; ability to see better in twilight than in full daylight; difficulty in distinguishing colors, especially red and green; after a time, partial, or complete and permanent loss of vision.* In cases in which the disease has existed for a short time, and has not advanced to its worst stages, recovery takes place with great rapidity when the use of tobacco in all forms is wholly discontinued. In other cases, however, the impairment of vision which follows the long-continued

poisoning of the nervous system with nicotine is permanent, not yielding to any known method of treatment. Probably the most frequent of all causes of this form of blindness are tobacco and alcohol, the effects of which are so nearly identical in these cases as to defy distinction.

The symptoms named as indicative of the approach or presence of tobacco-blindness, are all significant of the universal mischief in the vital economy of which the poison of tobacco is productive. The blurring of sight, dilated pupil, and ability to see better after twilight than in full daylight, are all evidences of paralysis. The little muscle which contracts the pupil is paralyzed by the nicotine, and allows the pupil to dilate. This lets in too much light, and confuses the images formed on the retina. This is why the person sees better after twilight.

The little muscles of the heart are in the same condition as those of the eye. The same is true of the muscles of the stomach. It is this paralyzing influence upon the muscles that does much of the mischief attributable to tobacco.

Another symptom connected with the eye, which the confirmed smoker may often notice, is the long retention of bright images in the eye. If a person looks at a bright object, as a window when the sun is shining out of doors, and then closes the eyes, or looks at a blank wall or a sheet of white paper, he will still see the form of the window, the sash bars, the glass, etc., for a few seconds. If the eyes are in a healthy condition, the image disappears very quickly, but when the nerves of the eye have been partially paralyzed by the use of tobacco, these images will sometimes remain for several minutes. Old smokers sometimes use this as a means of determining when they have smoked long enough. When they notice that images are long retained, they know that the degree of poisoning of the nervous system is reaching the danger point, and lay the pipe away for a few hours.



**Ear Disease from Tobacco-Using.**—Tobacco-users are sometimes afflicted by a peculiar form of ear disease, the chief symptom of which is sudden loud or shrill sounds in the ears. These sounds are sometimes due to an enormous exaggeration of slight sounds, as a chirping of a cricket, the ringing of a bell, or some similar source of sound, but generally the sound is wholly subjective, that is, originates entirely in the ear, and is due to the diseased condition of the auditory nerves resulting from the use of tobacco.

These facts have been widely known for years, and yet they seem to have little influence with the users of the weed. So great is the fascination of this most,unclean and injurious habit, most persons who have been long addicted to its use continue to indulge notwithstanding the clearest evidence that they are being seriously injured thereby.

The effect of the long-continued use of the narcotic is to paralyze the will and to weaken the judgment, so that considerations which would influence a man in the full, healthy command of his intellectual powers have but little weight with an old devotee of the pipe or the quid. Knowing full well the consequences, he will deliberately sit down to smoke or chew his favorite brand of the poisonous stuff as complacently as he would seat himself to partake of a meal of wholesome food.

This indifference to consequences which is noticeable among the users of narcotics as a class, is well illustrated at the head of this tract. A man who has become blind from the use of tobacco is still smoking the old pipe which has destroyed his invaluable eyesight, and is led about the streets by a small boy, who, instead of taking warning by the fate of the older transgressor, is following in his footsteps to the same unhappy end by the aid of a penny cigarette. Each of these poor tobacco slaves would un-

doubtedly endorse the sentiment of the tobacco-loving poet who wrote,

"For thy sake, tobacco, I  
Would do anything but die."

Thousands go farther, and for the sake of the gratification of a depraved appetite knowingly and willingly sacrifice half a score or more of the best years of their lives.

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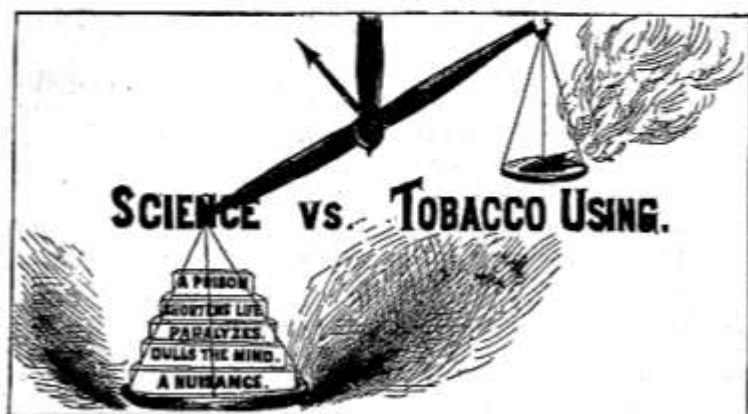
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# HEALTH SCIENCE LEAFLETS.

No. 19.



**O**UR engraving shows tobacco placed in the scales of reason and weighed with science in the opposite scale. Our artist has pictured the scale-pan which carries the smoking cigar, as rising high in the air, while the other scale pan, weighted with the charges which science brings against the use of the weed, falls heavily down.

Respecting the use of tobacco, there is a difference of opinion, as there is upon every other question relating to human affairs, physical, moral, or political. Science is the great arbitrator, to whom all questions of this sort must be referred; a court of final appeal, from whose decisions there can be no dissent. Modern science has by its marvelous achievements won the respect of all civilized men, and established its authority upon a basis of unquestioned solidity.

The mathematician sits down at his desk, with certain unexplained facts before him, and after months of figuring announces to the world a new planet. The astronomers turn their powerful instruments toward a vacant spot in the heavens, and the new world shines out, for the first time beheld

by the eyes of man. Science takes a handful of earth, throws it into a chemist's crucible, and after weeks of patient toil, writes down upon a bit of paper all that that handful of earth contained. Science does not stop with this little earth, in her inquisitive researches. She turns a spectroscope at the sun, or at a distant nebula, and with equal certainty names its constituents.

This same marvelously exact science has investigated tobacco, and has disclosed certain things about this nauseous but strangely fascinating drug, which every user of the weed ought to know about. Here is what science says about tobacco and tobacco-using.

**1. Tobacco is a Deadly Poison.**—It contains a peculiar oil, found in no other plant that grows, which is almost as deadly in its effects as prussic acid.

**2. Tobacco is a Poison to both Lower Animals and Human Beings.**—A drop or two will kill a cat in a few seconds, and five times that quantity is a deadly dose for a strong man.

**3. Tobacco Intoxicates.**—A man who uses tobacco is never really himself while he is under its influence. A hungry man takes an extra cigar or quid, and ceases to be hungry. A tired man indulges in an extra pipe, and no longer feels fatigue. All his senses are benumbed, and it is reasonable to suppose that the delicate moral sensibilities, like the more purely physical senses, succumb to this powerful narcotic. Benzon, who traveled on this continent (America), more than three centuries ago, thus described the effects of tobacco upon the aboriginal smokers:—"They lose their reason" and "fall down as if they were dead, and remain the greater part of the day or night stupefied." Men who smoke much are really intoxicated all the time; and there is no doubt that the vice of smoking leads in a powerful manner to the vice of alcoholic intoxication.

**4. Tobacco-Using Stunts the Growth.**—When the use of tobacco is begun before the body is matured, its worst effects are seen. It effectually stunts the growth. The intellect is also blunted. This fact is now so well known that France, Switzerland, and several States in this country, have prohibited the sale of tobacco to boys under sixteen years of age, and have even made it a crime to give tobacco to boys. If tobacco is so bad for boys, is it not unwholesome for men?

**5. Tobacco is a Great Cause of Disease.**—It would naturally be expected that a poison so powerful as tobacco would be a potent cause of disease, and the facts fully justify this conclusion. It is positively known that the use of tobacco, by lowering the vital tone, is a predisposing cause of many

diseases, and it is equally well known that it is a positive cause of many maladies, among which are the following:—

(1) **Nervousness** is one of the characteristic results of the use of tobacco. Every narcotic has the effect to diminish the nerve tone, and it is only a question of time that the nerve tone will become exhausted, and then the individual will become a victim of that hydra-headed malady, neurasthenia, or nervous debility.

(2) **Dyspepsia**.—Some persons are induced to resort to the use of tobacco under the delusion that it is a panacea for dyspepsia. It will undoubtedly benumb the stomach, but it is an effectual cause of this protean malady rather than a cure for it.

(3) **Tobacco Produces Disease of the Lungs**.—This is particularly true of smoking, which introduces into the lungs a considerable amount of soot, which is deposited in the lungs and may cause the development of tubercle.

(4) **Tobacco-Using Destroys the Voice**.—This is particularly true of smoking. The hot, acrid vapors taken into the throat injure the delicate mucous membrane, and produce what is well known to physicians as "smoker's sore throat."

(5) **The Tobacco Heart**.—The rigid examination made of men seeking to enter the army has developed the fact that a very large proportion of old smokers are afflicted with what has been called, "the tobacco heart." The pulse is feeble and irregular, and indicates that the heart is in a condition of chronic poisoning. This condition is the precursor of more serious diseases of this important organ, which may result fatally.

(6) **Tobacco Blindness**.—The use of tobacco in any form is now well known to be a potent cause of a peculiar form of blindness which comes on insidiously, and is called "tobacco amaurosis." This disease is well known to oculists.

(7) **Paralysis**.—General paralysis, and especially that form known as creeping paralysis, is very frequently caused by the use of tobacco. Locomotor ataxia, a disease in which the patient reels like a drunken man when he walks, is also sometimes due to this cause.

(8) **The Sense of Smell** is soon lost by snuff-takers and cigarette smokers. The sense of taste, also, seldom survives the long use of either the quid or the pipe. Tobacco is a general paralyzer.

(9) **Smoker's Cancer**.—The death of Gen. Grant and several other prominent public men within the last few years from smoker's cancer has fully informed the public of the

fact that the filthy weed is capable of inducing this horrible and usually incurable malady.

(10) **Other Bad Diseases.**—The very worst and vilest of diseases are often communicated by means of cigars and pipes. Cigars are often infected by diseased workmen.

Science says most emphatically, tobacco is a vile and filthy weed, destructive of both mind and body. Reader, if you are addicted to its use, make haste to rid yourself of the baleful influence of this poisonous drug.

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