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THE CAUSES OF HALITOSIS OR FOUL BREATH.

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THE CAUSES OF HALITOSIS OR FOUL BREATH.

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PRACTICE LIMITED TO THE DISEASES OF THE NOSE AND THROAT.

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PRELIMINARY REMARKS.

Mr. Chairman and Gentlemen:

As I have sat here session after session, and listened to the unfolding of so many histological, and pathological, and therapeutical truths by Drs. Fulton and Turnbull, Rum-
bold, Bleyer, Ephraim Cutter, Carl Seiler, Mackenzie and others, I have almost doubted whether the author of a paper founded, as mine is, on grosser investigations had not better burn it and flee to Canada until after our final adjournment. But having promised to discuss this subject, like very other manly man, I shall attempt the duty, and although I am but little versed in the powers of hypnotism, you will each assume a position of restful ease, with chin propped and eyes half closed, I shall begin my address, and if it proves to be a dry-as-dust, sleep-producing subject added to their worthy papers, then your visit to our fair city of Baltimore will not have been altogether without incident. But seriously, gentlemen, the subject of halitosis,*

*The term "halitosis" signifies diseased breath. It is derived from the Latin *halitus* (breath), and the Greek *nosos* (disease).—*Harvard.*

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although one of the grosser affections we encounter, is entitled to the earnest consideration of every nose and throat specialist.

A careful study of the cases of halitosis that have come under my observation in a practice limited to diseases of the throat and nose, for several years, leads me to the following conclusions: Halitosis, no matter how great or how distressing, is only a symptom, can occur at any period of life, is due to different causes, occasions no pain, not dangerous, occurs under a variety of circumstances, most frequent in the male sex, and is a prominent symptom of numerous affections and diseased conditions, yet is an affliction so repulsive and humiliating as to often make it the most marked and distressing feature of a case, causing annoyance severe, and unhappiness intense, both to the sufferer and to all who are compelled to associate with him.

The student of halitosis should be familiar with the physiology and normal chemistry of the body, and also with bacteriology and the principles of vicarious elimination, as he must necessarily go beyond the affection itself; and search into its many and diverse causes, which may be seated in the mouth, throat, nose, lungs, skin, kidneys, liver or bowels; in some cases occult, in others easily discovered; but no difference how produced, halitosis ranks so high among personal blemishes that it is certainly worthy of careful study.

Physiology teaches us that the reception of oxygen and the expulsion of carbonic acid is the function of the respiratory process. Every breath we exhale simply carries off a certain amount of animal heat, carbonic acid and moisture, hence, in health there is, and should be, no unpleasant odor from the expired air; but as soon as other natural outlets are disarranged or closed by disease, vicarious elimination begins, extraneous materials are added to the breath, and halitosis ensues.

This is because nature, to prevent their poisonous effects on the system, to maintain an equilibrium, and to prevent auto-infection, must throw all poisonous excreta and accumulations off somewhere—if not by their natural outlet, then vicariously by other organs and eliminating glands; and accordingly, many hurtful agents pass off thus by the lungs when their proper emunctories are overworked, disordered or diseased, and serious alterations of the blood, and great morbid organic changes are thus prevented, while the breath necessarily becomes loaded and foul.

A considerable proportion of the cases of halitosis that I have encountered were coupled with scrofula and general debility, or low vitality and derangement of the function of digestion, and weakness or want of power of assimilation. I have also satisfied myself that the results of retained and decomposing detritus in the bowels may easily produce foul breath, because in constipation due either to deficient peristaltic action, or to deficient secretion of mucus from the lining membrane, the imperfectly digested food undergoes rapid metamorphosis and fermentative decomposition, and not only lessens the normal secretory function of the intestinal glands and prevents them from throwing off the natural products of tissue-waste, but also invites the blood-vessels to take up the noxious gaseous products of indigestion and to excrete them by the pulmonary mucous membrane. Result—tainted breath.

The kidneys, for instance, assist in carrying off the products of metamorphosis and disintegration, in the shape of urea, creatine and creatinine. The lungs assist in the form of carbonic acid, composed of one of carbon and two of oxygen. The liver relieves the blood of bile and various other substances. The bowels assist in the form of excreta, etc.

When all these organs are performing their functions normally they give the expired air no unpleasant odors; but

as soon as they are disarranged, or their gateways are closed, a process of exosmose pours the odors out from the blood through the delicate air-cells into the more minute air-passages, thence to the smaller bronchial tubes, on into the larger ones, and through trachea, larynx, pharynx, mouth and nose. Tainted breath is the result. The odor of many drugs and of various kinds of food and liquids having strong and peculiar odors, as copaiba, onions, cheese, spices, etc., pass readily from the stomach into the circulation, and being eliminated by the lungs, taint the expired air, each giving the breath its special odor. In fact, the gastro-intestinal and gastro-pulmonary mucous membranes all have great vascularity, and their affections—indigestion, constipation, flatulence, the odors of food, etc.—easily taint the blood and create fetor of the breath. And just here it may be stated in a general way that an excess of sulphur, however formed, combined with the hydrogen-vapor given off with the breath, creates phosphuretted and sulphuretted hydrogen, and of course a foul breath of different degrees, even up to the rotten-egg variety.

The influence of mental emotion, peevishness, ire, passion, depressed spirits and nervous mobility, in changing healthy to morbid conditions, must neither be overlooked nor underrated, for they are each capable of exciting decided and obstinate varieties of bad breath. In halitosis of mental origin I am not able to trace the chain of connection as clearly as we would a telegraph connecting different communities, but suppose the combination is due either to the conductivity of nerves through brain action affecting ganglionic nervous sympathies and vascular links, or to direct irritation of the vaso-motors, else to some mysterious and undiscovered nerve-connection that may exist in the nature of a tropho-neurosis.

Extensive burns seem also capable of causing foul breath. My father, Dr. D. W. Cathell, once told me of a youth who sustained extensive burns on his face, neck, hands and arms that proved fatal at the end of four months. During this time, his breath, said to have always been pure and sweet, from checking and destruction of so much of the (so-called) respiratory function of the skin, changed to a disgusting odor resembling that of bisulphate of carbon. This is not so surprising when we reflect that the perspiratory glands act as a skin-sewerage, and that if all those of an adult were straightened out they would reach two and a half miles in length.

The catamenia has the well-known power to taint the breath in many females whose breath is pure and sweet at other times.

Halitosis is one of the diagnostic signs of various diseases; especially in chronic wasting affections, where there is disturbed nutrition and retrograde tissue metamorphosis, with more waste of tissue than nutritive repair, the natural eliminating glands becoming unable to do all the work required, vicarious elimination of the mal-products by the lungs necessarily begins, and bad breath ensues.

Diabetes mellitus can produce a sickening fetor of breath, reminding one of honey or sugar; and Bright's disease can give an ammoniacal odor to the expired air, both being examples of the abnormal circulation in the blood of its own poisonous elements, and of attempted vicarious elimination.

Putrid bronchitis and dilated bronchi, dependent on chronic bronchitis, or on bronchiectasis, and in fact, the accumulation and decomposition of muco-purulent material in fetid cavities anywhere in the air-passages, or a vomica lined with a pyogenetic membrane, necessarily load the sputum and breath with pulmonary fetor, often so horrid as to resemble sulphuret of potassium; but pulmonary gangrene is worse still, for it makes the breath so revoltingly

and peculiarly offensive, especially after coughing, as to make the sufferer an object of disgust to himself and to all around, filling a whole room with a fetid and intolerable stench, reinhaling which must be an actual poison. I have encountered but two cases of the latter and these are quite enough.

Tuberculosis may sometimes be recognized by the peculiar odor it communicates to the breath; and unclean teeth, decaying tooth substance, tartar, and the septothric buccalis, about their roots, particles of food in cavities and in the dental spaces, and lowered vitality of the gums in scrofulous persons, can each cause an extremely foul or putrid breath; but whether bad teeth are the sole cause of any case of halitosis, or only an accessory, is an important question, so much so that we must never promise such patients too much from the application of the dental forceps.

The mucous membrane covering the tongue is often seen to be catarrhal, furred and desquamating in otherwise healthy persons, the material on the tongue consisting of an excessive shedding of epithelium, pathological though superficial, besides mucus, and swarms of bacteria; here the fetor is due to the decomposition of these three products. Besides, when the tonsil, pharynx, etc., become inflamed from any cause whatever, the tongue also becomes furred and thickly coated with altered saliva and buccal mucus, and readily becomes a cause of foul breath, and even the mucus and other debris scraped from it, emit a repulsive odor.

The excessive use of tobacco can also give the breath a vile odor; and in marked cases of chronic alcoholism, the breath has a characteristic taint well known to all physicians, and in all seriousness I utter my belief that the serio-comic cases we see reported of spontaneous combustion, or catching afire of rotten alcoholic breaths, result not so much from the breath being loaded with alcohol, as to its chemical decomposition, and the atomic mingling of the resulting carbon and hydrogen, creating inflammable carburetted hydrogen.

Dyspepsia and gastric catarrh may also give rise to marked halitosis, and when due to these it seems to be caused by vicarious pulmonary elimination, to which is added tongue catarrh and a peculiar tendency to decomposition of the oral and nasal secretions.

Diseases of the nose and throat are responsible for a large percentage of the stinking breaths encountered, for, besides their being the chief avenues of respiration, there is a close connection between the diseases of these avenues and the general health of the body.

Among the affections causing halitosis that naturally fall within the province of the throat and nose specialist, *ozæna* holds first rank. It is characterized by certain well marked pathological features, and is usually associated with atrophy or destruction of the nasal mucous membrane and its glands, and possibly with the presence of polypi or dead bone. Besides the muco-purulent secretions of *ozæna*, there are pus-cells, mucus, and enormous quantities of bacteria. Some other varieties of halitosis may be present one day, week or month and absent the next, but *ozæna* is both omnipresent and as disgustingly malodorous, as though a thousand varieties of rotten-egg bacilli, cess-pool micrococci, garbage-box spirilla and buzzard-nest bacteria were holding a loud and endless stink-convention in that miserable victim's nasal fossæ.

Nasal and post-nasal catarrhs, with their diseased membranes and stale secretions, are also the cause of very many foul and stinking breaths.

Adenoid vegetations of the nasal vault, with the resulting mouth-breathing in children, is another affection that causes foul breath, in a way that is easily understood.

Imperfect development of the turbinated bones, and decomposing secretions in the sphenoidal and ethmoidal cells, all tend to favor the retention of secretions, and to create an

acid condition that undergoes a rapid fermentation, with halitosis.

I have seen numerous cases of chronic enlargement of the tonsils, chiefly in scrofulous youths and children, with foul breath, that was due to decomposing inspissated secretions in their follicles.

Either simple or follicular stomatitis, and gingivitis, can create fetor; and specific lesions and growths of the mouth, nose, larynx and trachea are also well known sources of halitosis; and the mercurial stomatitis sometimes induced in their treatment creates a very fetid, cadaveric, and characteristic breath. So also the free use of phosphorus, arsenic, antimony, lead, etc., may cause a phosphoric, phosphuretted, or even a fecal-like odor.

Masses of necrosed bone anywhere in the mouth, throat, nose, antrum or frontal sinuses, cause an extremely offensive breath, often clearly recognizable several feet away.

Follicular pharyngitis, commonly called clergyman's sore throat, due to debility, over-use of voice, repeated colds, or downward extension of inflammation from the mouth or nose, creates a penetrating, unbearable breath. In this affection, although the mucous lining of the posterior nares is diseased, its chief seat is in the follicular pouches of the mucous membrane of the pharynx, which becomes filled with inspissated mucus and epithelial debris, resembling cheese in consistence; and these are the chief source of the halitosis.

In chronic follicular tonsillitis, the crypts are the parts most affected, and their mucous linings being in an unhealthy catarrhal condition, pour out a secretion that tends to become inspissated and cheesy, and afterwards to decompose and stink. We frequently see their points protruding from the surface of the glands like firm, yellowish-white masses, that may be squeezed from their crypts. These have a fetid odor that is positively sickening.

Purulent and muco-purulent rhinorrhœa, due to rhinoliths, salivary calculi or foreign bodies—beans, peas, shoe-buttons, cherry seeds, pebbles, masses of food, etc.—may also be the unsuspected cause of bad breath in children, sometimes even amounting to a horrid stench.

Cancerous, syphilitic or benign ulceration of any of the linings of the upper air-passages, mouth, pharynx, larynx, trachea or bronchial tubes, may easily cause halitosis; and chronic ulcerative inflammation of the turbinated bones, inspissated material, desiccated mucus, cheesy deposits or purulent collections due to inflammatory action anywhere in the nasal cavities, or in any of the sinuses opening into the nose, may cause halitosis, especially when, owing to stenosis, the nasal secretions are compelled to pass backward into the pharynx.

I might say here, that independent of special lesions, fetor due to the upper air-passages may result either from the excessive production of epithelium, or to dryness from diminished activity of the neighboring glands, as we see in atrophic catarrh.

Some persons seem to have a peculiar and congenital tendency to decomposition of their nasal secretions, and tainted breath ensues in them very readily, and as the actual quantity of vaporous material necessary for making an impression on a bystander's olfactory organs is very small, the taint is quickly perceived.

Mouth-breathing from nasal stenosis or any other cause, may either create halitosis or increase one already existing; and every person on earth, and especially those with foul breath, should keep their mouths closed and breathe through the nose. In fact, man, with all his boasted superiority and intelligence, is the only being that can violate the natural law and breathe through the mouth; all other mammals, domestic and wild, the horse, the cow, the dog, the cat, the

wolf, the lion, the rabbit, all breathe through the healthful channel provided by nature—the nose; and not doing so is not only a cause of halitosis, but is one of the chief reasons why man is the most sickly of beings; and were some angel of power to give me the privilege of saying nine words that would be heard by every human being on earth, these words would be: EXCEPT WHEN EATING OR SPEAKING, KEEP YOUR MOUTH SHUT.

Can a foul breath be due to odors rising from the stomach through the œsophagus? Certainly not. Because, except during deglutition and eructation, the stomach is closed by the sphincter at its junction with the œsophagus, and no odor can pass upwards.

Some persons through their own olfactories are conscious of the fact that their breath is foul, others are totally ignorant of the fact, and may not discover it for years, unless they are told. In my opinion, whoever has a peculiar pasty taste in his mouth should suspect that his breath is foul.

In every case of halitosis, and especially in those of an unusual character, our first duty should be to search out the exciting cause, and if possible remove it; and to insure against possible error, and to ascertain whether the odor results from the condition of the lungs, the stomach, the bowels, the teeth, the nose or the throat; the buccal and the nasal cavities should all be closely examined, and even though there is no cognizable disease of either, the mouth should be thoroughly washed, and the teeth well cleaned before beginning further examination; for in cases of halitosis as in every other disease requiring a discriminating diagnosis, it is well to follow Davy Crockett's wise motto, "Be sure you're right, then go ahead."

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