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of the Nose and Throat to
Disorders of Digestion.

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TO DISORDERS OF DIGESTION.*

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THE relation of chronic diseases of the throat, nose, and ear to disorders of the digestive tract is apparently not fully appreciated by the majority of even modern writers on these subjects. The relationship is not mentioned in some of the text-books, dismissed with a few words in others, and, in the writer's opinion, is not sufficiently emphasized in any. While, perhaps, the majority of writers mention dyspepsia and hepatic derangements as causes of pharyngitis, they lay, with few exceptions, but little stress upon such causes, evidently considering them of minor importance. This is shown by the liberal use of the text in describing methods for the local treatment of the disease and the omission of the suggestion for the necessity of treating the underlying cause. It is be-

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lieved that a free discussion of the subject will result in a much better understanding of the degree in which diseases of the upper air tract are dependent upon digestive disorders and stimulate further researches in this direction.

The causes of chronic catarrhal pharyngitis mentioned in text-books on diseases of the throat, nose, and ear, and in monographs on pharyngitis, are very numerous. The conditions and diseases which are given the most prominence, and upon which accepted authorities are more or less agreed, are: Frequent attacks of acute pharyngitis. Extension of catarrhal inflammation from the nasal passages or nasopharynx. Nasal stenosis. Nasal polypi. The excessive use of tobacco or alcohol. Improper use of the voice. Reflected irritation from a disordered digestion or diseases of the genito-urinary tract. Diseases of the glandular and nervous systems. Congested portal venous circulation. Lithæmia. Rheumatic and gouty diathesis. Dust. Smoke, in which acid fumes are inhaled, and sudden changes of hot and cold foods. While it is possible that all the above-mentioned conditions may play important parts as factors in the production or aggravation of catarrhal pharyngitis in certain cases, my belief is that in a very large majority of cases the cause of this disease will be found in some portion of the gastro-intestinal tract. Except in a few of those who have grossly abused the vocal apparatus in speaking and singing, I do not recall having examined a patient with chronic catarrhal or follicular pharyngitis in whom some disturbance of the digestion could not be detected. Indeed, I believe that some degree of indigestion in some portion of the digestive tract can be found in every case of pharyngeal catarrh, but whether

the relationship of cause and effect always exists between these conditions is, perhaps, yet to be demonstrated. Nevertheless, that which I believe to be demonstrable is that one rarely, if ever, exists without the other, and this is in itself highly suggestive of a distinct relationship, and, perhaps, interdependence. It seems to me to be quite reasonable to suppose that many of the diseases and conditions mentioned as causes of pharyngeal catarrh may act indirectly as factors by first causing the disorder of the digestion.

Nasopharyngeal catarrh is often spoken of as our national disease, and I presume it is a fact that the disease is more prevalent here than in other countries. This is commonly attributed to the climate and its changeable character, to our unclean and dusty cities, and to various other conditions. In comparison with the inhabitants of other countries, we are a fast-living people, and our modes of life are highly conducive to the establishment of digestive disorders. There is probably no other country in which disturbances of the digestive function are more common than in ours. Catarrhal affections of the upper air-passages are known to be most prevalent where the climatic changes are the greatest, but I believe it will be found that catarrh of the pharynx, at least, prevails in communities where the general air of activity causes the habit of eating in haste and at irregular intervals. It is, perhaps, safe to say that the commonest error committed by the average American in ordinary daily life is that of eating hastily. Even in regions where catarrhal diseases are little known, as, for instance, the mountains in the northern part of New York State, but where the habit of eating improper food and eating rapidly prevails, especially among the working classes,

I have rarely found what may be called a normal pharynx.

I refer in these remarks more particularly to the catarrhal form of pharyngitis, though I have observed many cases in which the follicular variety seemed to have been produced in the same way, or, perhaps, as the result of a pre-existing catarrhal inflammation, there being no history or appearance of lymphatic disturbances elsewhere.

With the view of assisting in determining the frequency of the concurrence of pharyngeal catarrh and gastric or intestinal indigestion, and also to show the almost universality of catarrh of the pharynx, I examined the throats and nasal cavities and asked questions in regard to the digestive function of fifty students of the Long Island College Hospital, none of whom had symptoms of sufficient importance to prompt them to seek medical advice, and most of whom were unaware that their pharynges were not absolutely normal. Objection may be made to the selection of medical students for an investigation of this character on the ground that they live hurried and irregular lives. This is undoubtedly true, but I do not believe that they exceed in either particular the average man in large American communities. They represent a class of people living under the average conditions existing in the life of a large city, as well as that of smaller towns and villages, where the majority of these men have spent most of their lives. While, of course, the result of the examination of so small a number is not offered as in any sense conclusive, it is, nevertheless, highly significant.

Each one of the fifty was found to have a catarrh of the pharyngeal and faucial mucous membrane, varying

in degree from a mild congestion to the atrophic variety of the disease. All but three gave unmistakable evidence of disturbed digestion of the stomach and intestines, fourteen of whom were the subjects of habitual constipation, and in one only was the tongue found in anything like a normal condition. Forty-five admitted that they were in the habit of eating rapidly, and often assisted the passage of the bolus by mixing fluids with the food in the mouth. Thirty-three were smokers. Sixteen had nasal obstruction, causing more or less mouth-breathing, and two were mouth-breathers at night, but without nasal obstruction.

The habit of rapid eating, which was found to be present in all but five of the students, would of itself have been sufficient to cause the disordered digestion from which they suffered. Even if the cause of the pharyngeal catarrh should be assigned to mouth-breathing in all of the eighteen cases mentioned, then only about one third of the whole number could have been caused in that way.

Thirty-three of this group were smokers. While tobacco smoke acts, no doubt, as an irritant in catarrhal diseases, as a matter of fact in the investigation of the throats of the students I did not find a greater degree of congestion in those who were moderate smokers than in those who did not use the weed at all; but in those who used tobacco to excess the evidences of the habit were well marked upon the pharyngeal mucous membrane. Whether the effect upon the pharynx is direct or indirect, by causing the indigestion, it is impossible to say, but in whatever way it is produced it is quite certain that the use of tobacco alone is not sufficient to give rise to the amount of disease often seen

in the throats of smokers. Many of the students who were brought up and had lived inland until they came to the seaboard to pursue their medical studies stated that there was a decided exacerbation of their catarrhal symptoms since coming to the city, but in nearly every instance they admitted that symptoms of indigestion had appeared which they had not had before, or that the symptoms which they had before were greatly augmented.

In only one of the students was the tongue found in a comparatively normal condition. A foul tongue is always accompanied by a catarrh of the pharyngeal mucous membrane, but a pharyngeal catarrh may present in connection with a tongue of nearly normal appearance.

Unless an analysis of the contents of the stomach is made, a diagnosis of a functional disorder of the stomach must be arrived at almost entirely from subjective symptoms. By the latter method we may readily fall into error as to the character of the disease, but with the aid of the stomach tube a comparatively exact diagnosis of gastric disorder can be made. With a knowledge of the stomach affection obtained in this manner the relationship of gastric disorders to catarrh of the upper air-passages can be more accurately determined.

In order to ascertain the pharyngeal condition in subjects of gastric disorder, the diagnosis of which had been made by an analysis of the stomach contents, Dr. Charles S. Fischer, of the Vanderbilt Clinic, in New York, kindly afforded me the opportunity of examining the throats and nasal passages of twenty-three of his patients whose stomach contents, after a test breakfast or dinner, he had analyzed. I am indebted to Dr. Fischer not only for his ready co-operation, but also for furnishing me with a copy of the record of each case,

which contained the history, physical examination, chemical analysis, and diagnosis. A trifle more than half of the cases were neurotic in character. The remainder were mainly cases of chronic gastric catarrh. A pharyngeal catarrh, varying in degree, was found in every one of these cases. In four of the twenty-three cases the tongue presented a fairly healthy appearance. In four of the cases there was marked nasal obstruction, causing habitual mouth-breathing. In three, there was sufficient nasal obstruction to cause mouth-breathing during sleep, and in one there was habitual mouth-breathing without apparent cause. I asked Dr. Fischer to supply only female cases for my examination, and so eliminate the effects produced by the use of tobacco, and also to offset the investigation of the medical students. While in the students' cases the contents of the stomach were not analyzed, nearly all of them presented subjective symptoms of gastric or intestinal indigestion, and, therefore, the two classes of subjects were in a general way alike. With the exception of those who smoked to excess there was no marked difference between the pharyngeal conditions in the two sexes, the degree averaging about the same in those whose stomach contents had been analyzed and those in whom the diagnosis was made from subjective symptoms. A careful study was made to determine, if possible, whether any constant pharyngeal condition existed in relation to the portion of the digestive tract affected or to the chemical character of the stomach contents in Dr. Fischer's cases, but with negative results. The appearances of the pharynx varied in cases in which the diagnosis of the digestive disorder was the same as much as in those in which it was found to be markedly different. While in two or three cases of

gastric catarrh with gastropptosis the pharyngeal conditions were seen to be quite similar, the same conditions were found in the subject of a neurotic disturbance of the stomach.

Prominent among the causes of pharyngeal catarrh mentioned by modern writers is mouth-breathing due to nasal obstruction. Unquestionably, the continued mechanical irritation from cold, dirty, and dry air over the pharyngeal mucous membrane is quite sufficient to excite a considerable amount of disturbance by perverting the function of the secretory glands; but, as food must also pass through the mouth and must be hastily swallowed to free the way for air, the consequent over-taxation of the stomach and duodenum to digest food containing little or no saliva and not sufficiently disintegrated, results eventually in a chronic gastric catarrh, which, to my mind, is the more important factor in the production of the pharyngitis.

A chronic pharyngeal congestion is frequently found in the throats of speakers and singers, and it is the common belief that the disease in such cases is caused by strain of the vocal apparatus. Strain is frequently an important factor, and, at times, even the main cause, but in a large number of cases it is probable that the strain of the voice acts as an excitant of an already existing pharyngeal and laryngeal congestion which, without the strain, might never have been brought to notice.

From a clinical standpoint there is reason for the belief that functional disorders of the digestive tract are capable of producing vasomotor reflex irritation of the inferior turbinated bodies, as is evidenced by swelling of those bodies at certain times, as, for instance, on rising in the morning, and during attacks of acute gastric or

duodenal catarrh. The proof of the connection is not only in the occurrence of the two affections at the same time, but also in the fact that the nasal irritation disappears after the acute indigestion has passed, or is diminished after improvement of the chronic condition of the stomach.

Beverley Robinson, in his very valuable paper on Dyspepsia as reflected in the Mucous Membrane of the Upper Air-passages, which was read before this association in 1888, suggests the probability of the mucus from a catarrh of the upper air-passages being capable of exciting a gastric disturbance. Such a relationship of cause and effect seems to me to be highly plausible, though I am well aware that it is not generally credited. It is a mooted question as to whether the discharge from a chronic catarrhal inflammation in the nose is irritating in its character. The frequency with which catarrhal pharyngitis and laryngitis exist in association with catarrh of the nasal passages would suggest this, for it would not seem to be necessary to attribute such conditions to reflex irritation from the nose. The oropharynx will, I believe, always be found the seat of a catarrhal process when gastric catarrh is present. Laryngeal catarrh does not often exist as a result of a catarrh of the oropharynx alone, as that is a comparatively mild disorder and is not attended with much discharge; but when the nasal cavities and nasopharynx are involved in the process, because of the nature and extent of the glandular structures in those situations, the discharge is far more copious, and finds its way, to some extent, into the larynx, giving rise to a catarrhal inflammation of that cavity, but to a much greater extent is carried by gravity and the acts of swallowing into the stomach.

If the catarrhal secretions flowing from the nasal passages are sufficiently irritating to excite congestion of the posterior pharyngeal wall, the mucous membrane covering the arytenoid cartilages, and, at times, even the vocal bands, they, in all probability, are sufficiently irritating to cause a disturbance of the circulation of the mucous membrane of the stomach. But whether the discharges of muco-pus from a catarrh of the upper air-passages are in themselves sufficiently irritating to excite a gastric disturbance is, perhaps, of little consequence when we consider that the process of fermentation of that material, which must occur in the stomach, would in itself be sufficient to cause irritation, not only of the mucous membrane of the stomach but of the intestinal tract as well.

The Eustachian canals and middle ears are not necessarily involved when the pharynx is the seat of catarrhal disease. Indeed, we do not know why it is that an extension into the ears occurs in one case and not in another, but it is safe to say that at least seventy-five per cent. of cases of chronic catarrh of the middle ears are caused by a catarrh of the nasopharynx. If my premises are correct, then a large proportion of the cases of middle-ear catarrh, dependent upon a pharyngitis, are indirectly caused by a gastritis or enteritis, and a proper appreciation of such an association would materially aid us in the treatment of that most persistently progressive form of ear disease.

A good voice, even for the purposes of singing and public speaking, is compatible with a moderate degree of pharyngeal and laryngeal catarrh, but when the limits of reasonable use are exceeded, the circulation in the upper air tract is disturbed, active symptoms are pre-

sented, and loss of function ensues. It is that class of voice-users, where there is to be found an underlying catarrhal condition of the pharynx and larynx of mild degree, which we, as physicians, are most called upon to treat for impairment of the vocal function. If, as I believe, the underlying cause of the catarrh is in the majority of cases an impaired digestion, we render our patients but poor service unless we extend the treatment to parts lying far below the throat. Any treatment which has for its aim the arrest of a pharyngeal or laryngeal catarrh, partly or wholly dependent upon a disordered digestion, will surely fall short if it does not include such remedies and measures as a scientific investigation may reveal the need of to assist in the physiological and chemical performance of the digestive function.

The study of the stomach and its diseases has received a large amount of attention of late years, and, though much has yet to be learned, we are far better prepared than ever before to treat successfully the functional disorders of that viscus. An analysis of the contents of the stomach, after a test meal, made by a competent analyst, once in three or four weeks, will enable us to adopt the best course of treatment for a pharyngitis dependent upon a gastric disorder. Indigestion, even when not dependent upon organic disease of the thoracic or abdominal viscera, is commonly of such an obstinate nature that nothing short of a most careful study of each individual for causes and thorough attention to detail in the matter of diet and the administration of appropriate remedies will accomplish a cure. If the indigestion is improved or cured, and the pharyngeal disease is not eradicated, then such local remedial meas-

ures as are appropriate may be employed with markedly beneficial results.

When we consider the almost certain deterioration of the vocal powers, and the liability of the implication of the auditory apparatus from the steady progress of a pharyngeal catarrh, it behooves us to give to the study of this disease our best thought and closest scrutiny.

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FRANK P. FOSTER, M.D.

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