

pulmonic) whereby the blood corpuscle does not obtain the necessary oxygen for the conversion of its hemoglobin into that of oxy-hemoglobin. It is to the oxygen-carrying function of the hemoglobin of the red corpuscles of the blood, that we owe the completion of the chemic oxidations of the incompleting sub-oxidation compounds therein contained; whether such substances are destined for tissue reconstruction, or for excrementitious elimination. It is here, also, where further oxidation is required to bring about the normal changes in peptones, leucamines, etc. So that the liver as a gate-keeper for the portal circulation, may be able to completely elaborate the albuminoid products for nutrition and excretion, and restrain those compounds from entrance into the general circulation which are detrimental to the organism: pending such chemic action or change as to render them safe for nutritious distribution, or harmless for excrementitious elimination. Under such conditions, the patient, when subjected to the exposure of sudden changes of temperature or humidity, excessive indulgences or fatigue, may by any change in the normal activities, or by defective eliminations through the emunctories, experience a chill, and a rheumatic fever follow. Or a neuralgic condition may develop in consequence of retained poison in the system, acting as an irritant to sensory nerves.

By such retention of toxic material in the blood, auto-intoxication is almost without limit, in its evil effect upon the tissues and structures of the human body. In this manner, a large percentage of the insomnias, many of the mental conditions, as morbid fears, melancholia, irritability of disposition, hallucinations, impaired memory, etc., are satisfactorily accounted for.

In conclusion, chronic naso-pharyngeal inflammations are autogenetic in the development of secondary diseases of the gastro-intestinal mucous membrane, through deglutition of mucoid products or by continuity of structure, and by reflex action. The removal of the primary lesions will correct, relieve or cure, secondary remote effects of the digestive, broncho-pulmonary or nervous systems.

Further, owing to the perverted chemic, bacterial, and digestive processes of the small intestines, the more or less extensive chronic catarrhal inflammation of the intestinal mucous membrane and glandular structures, the absorption of a deteriorated chyme and chyle is continuously going on, blood deterioration and contamination is constantly taking place, the circulation conveying poisoned blood for distribution, by nutritious arteries, to the various tissues and structures of the body.

Is it, then, a wonder that the telegraphic system should give a painful neuralgic alarm, as an indication of deprivation of some structure? Is it a surprise that the delicately constructed nervous system should fail to render good service, in the innervation of the muscular fibers of the intestines, rendering them defective in their vermicular activities, and in a like manner fail to cause glands and ducts to give up their secretion?

To this failure is attributed the common complaint, constipation. From defective digestion with development of gases (abnormal fermentations) cardiac palpitations frequently occur. From incompleting nitrogenous transformations, we obtain uric acid and urates, instead of the completed product, urea. From

incomplete oxidations of the starchy and saccharin material, we obtain oxalic acid and oxalates, instead of carbon dioxid and carbonates. The transportation of such products through the renal system, is a prolific cause of renal and vesical irritations and inflammations. Such irritations and inflammations give rise to not a few distressing symptoms, viz., lumbago, myalgia, despondency, melancholia, frequent micturition, dysuria, etc. There can be but little doubt, that a large proportion of structural, renal and cystic diseases take their origin from a continuous toxic and irritant urine. To the incomplete oxidations we owe the origin of uric acid and urates, oxalic acid and oxalates, which we find constitute the nuclei and substance of renal and vesical calculi.

As near as I have been able to ascertain, fully 66 per cent. of renal calculi are composed of uric acid and urates, oxalic acid or oxalates, separately or combined in alternate layers, but almost invariably containing a uric acid nucleus. These are considered by Prof. Christian Fenger, as aseptic calculi. While the largest percentage of the vesical calculi are composed of phosphates, either separate, or in combination with urates and oxalates, these are most frequently secondary to inflammation, with decomposition of urine, and hence may be considered as septic calculi; but in some cases the phosphatic constituents are due to excessive nerve disintegration.

It is, therefore, of the utmost importance to recognize the necessity of maintaining the mucous membrane of the body in a healthy and physiological condition. It is the one great essential in health, and it is equally essential, to approach as near as possible to the physiologic condition in the treatment of disease, if the physician desires to obtain the greatest success.

THREE CASES OF REFLEX NEUROSES ORIGINATING IN THE NOSE.

Read in the Section on Laryngology and Otology, at the Forty-fourth Annual Meeting of the American Medical Association.

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It is my intention to place the following three cases of reflex nervous phenomena before you with little or no comment. They are each striking in their way, and well worthy to be put on record. The first case was as follows:

Case 1.—Mrs. P., a nurse, age 28; anemic and of a nervous temperament. She complained of failing sight; had difficulty in reading the clinical thermometer. For this trouble she had consulted Dr. Bettman, who referred her to me. The treatment which she received previous to the time of her consulting me will be given in Dr. Bettman's notes which follow, and for which I now take the opportunity of expressing my thanks. I found on examination that there was a slight congestion of the palpebral conjunctiva, but the most striking feature was the difference in the size of the pupils, the left being dilated to twice the size of the right. On examining the nose I found in the left side a slight congestion of the mucosa covering the middle concha, while the anterior fourth of the middle turbinate was the seat of an enlargement about the size of a small gooseberry, quite hard, and bleeding easily when touched with a probe, being partially denuded of epithelium. This growth was shown to be a hard hypertrophy under the microscope. The pressure caused by this hypertrophy against the septum was so great as to make the passage of a probe through the fissura olfactoria quite difficult. The examination of the right nostril gave negative results. I determined to remove the hypertrophy by means of the cold snare. After cocain-

izing thoroughly with a 10 per cent. solution, I noted no change in the dilated pupil, but this did not influence me in any way, as the cocainization had little or no effect in diminishing the hypertrophy. There was nothing of moment in the operation. The day after, the pupillary dilation was greatly reduced; two or three days afterward the dilation was as great as ever, but I could justly account for this, by the fact that the pressure of the scab covering the point of operation was as great as that of the original hypertrophy; I did not take this away at once, but waited two or more days and then removed it, after which the pupillary reaction gradually became normal.

Allow me to add that in this case I found a hysterical deafness, that is to say, the watch, speech and tuning-fork tests gave normal reaction; but, as she said, "while she could hear what was said, she could not always understand, and was obliged to have sentences repeated." I would like to say too, that I was not sure that the pressure caused by the hypertrophy was the cause of the pupillary dilation, but there were ample indications to justify me in the removal of the pressure. The results were gratifying.

Case 2.—Miss B., a nurse, aged 27, was also of a rather nervous temperament, but not so markedly as in the first instance; the left pupil here was dilated to 7 mm. The right measured but 4 mm in diameter. On examining the left nostril, a diffused redness of the mucous membrane was apparent. There was no hypertrophy, but the anterior head of the middle turbinated body was so bent as to produce marked pressure against the septum. Having the experience of the previous case before me, I determined to remove as much of the turbinated as caused the pressure, which I did by means of cutting forceps; the results in this case were not so satisfactory as in the first, as the pupillary dilation diminished only gradually, and the last time I saw the patient, while it was greatly diminished in size, the left pupil was slightly larger than the right.

Dr. Bettmann's Notes:

Case 1.—Mrs. P. came to me in May, 1892, complaining of inability to read the markings of the thermometer. Upon examination I found the following conditions: Vision, both eyes equal to 20-20, accepted + 0.5D both eyes. Right pupil dilated (medium); left pupil one-half again as large. No reaction to light or on convergence. Can not read ordinary newspaper print. With $\times 1.5D$ reads fine print at twelve inches; muscular equilibrium normal; ophthalmic examination negative. Diagnosis: paralysis of sphincter muscles of irides and accommodation. No history of diphtheria, rheumatism, or syphilis. Recommended galvanic current and injections of strychnin. This treatment was carried out for two weeks, without producing any improvement in her condition. I then referred her to Dr. Pierce, who operated with instantaneous effect on the ocular symptoms. The day after the operation the pupils were normal in size and reaction and she read the finest type at close range. A few days later—as soon as a crust formed over the wound—the abnormal conditions of the eye returned, to disappear again permanently as soon as the scab came away.

The changes in Case 2, Miss B., were similar to those already reported; the reaction to light very slight on convergence. Vision = 6-12, with $\times 1D$. V. 6-6 both eyes. Can only read fine print with her glasses. The ophthalmoscope revealed nothing abnormal. Advised the patient to consult Dr. Pierce for examination of the nose. Dr. Pierce operated, and the operation was followed a week later on exposure to cold by an acute catarrhal otitis media and a mastoid-periostitis, both of which yielded readily to treatment. The ocular symptoms had previously disappeared.

A third case I wish to report, was a patient referred to me by Dr. Fenger of Chicago. A farmer from the interior of Illinois; strong-framed, muscular, plethoric. Complained of a constant pain in the right half of the tongue. He consulted Dr. Fenger, fearing cancer, who, not finding any pathologic change in the tongue referred the patient to me. On examination, I found an extensive hypertrophy of the inferior turbinated body on the right side, causing complete obstruction and a marked degree of pressure in that region. Operation was performed by means of galvano-cautery. In three days the pain in the tongue had entirely disappeared, and has remained absent ever since—a year having elapsed since the operation was performed.

REPRODUCTION OF THE UPPER AIR-PASSAGES BY PLATING CASTS OBTAINED BY THE CORROSION METHOD.

Read in the Section on Laryngology and Otology, at the Forty-fourth Annual Meeting of the American Medical Association.

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While it is no new thing to obtain, in metal or other materials, casts of the cavities or structures of the body, and exquisite results have been long and by many workers obtained in this field, there yet remains much to be thus demonstrated to the scientific world at large, and far more in the way of local demonstration. It is with this latter object that I desire here to bring forward some of my results, believing that they will be new to some and interesting to others who work in the upper air tract. Made in fusible metal, which can be readily cast into the soft tissues of the recent cadaver, these metal casts have a delicacy and a durability far superior to anything which is possible with the more frequently used wax mass; and the secondary process which I have here employed has marked advantages and seems to constitute a new and important step in this matter.

All of these casts have the grave disadvantage, which grows with the increased complexity of the object, of being negatives only, and a comprehension of their real teaching can be gained only by a process of mentally turning them inside out, which many persons find very difficult and unprofitable. They are often needlessly costly, too, since one can lock up many pounds of expensive alloy in a single cast. But if the solid cast can be electroplated and its metal then fused out to leave the thin shell of deposit, we have a repetition of the negative almost as true and quite as instructive as before; while we have absolutely reproduced, in a permanent and convenient form, the hollows of the organs originally molded. Strong as is the fusible metal, it is yet so heavy that casts made of it are very apt to fracture if dropped, and my idea, as a teacher, is that preparations too delicate to take some chances of rudeness of handling are of little value except to the original student. They may be marvelous of beauty and accuracy, full of new and instructive points, but all of this is lost to those who can not handle and closely study them. These electrotypes can be featherweight reproductions if desired—delicate as the empty shells of a collection of birds' eggs—yet safe for any reasonable handling or transportation. Carefully sectioned, before or after the removal of the fusible metal within, they can afford new possibilities of study and reveal much which might escape observation, even when both interior and exterior are thus accessible.

The first results which I have now in hand to bring forward are in many respects rude and unsatisfactory; yet are delicate enough to reveal all the shortcomings of the original casts. They illustrate that the primary casting in fusible metal should be done with all care and accuracy, and with due consideration of the aims, difficulties and possibilities of the method. The metal had best be fused in a water-jacketed funnel capable of containing several pounds, so that a superabundance may be present to secure full fluidity of the material and completeness at one casting without requiring any supplementary