dition to whatever disease they suffer from, there is always neuræsthenia and defective control of the brain centers, which may come into prominence at any moment, from causes both known and unknown. This hereditary bias and neurotic instability enters into all cases.

The general principles which should govern in the treatment may be grouped as follows: 1. No form of alcohols are safe, and narcotics of all kinds should be used with great care. 2. The diet should not include meats of any kind, because of their stimulating character; while meats contain much food force, they act as stimulants to a brain already over-stimulated and exhausted, and increase the peril of nervous disease. The pathological tendency of all these cases is to become alcohol-takers and meat-eaters, hence the diet should always be non-stimulating and farinaceous, and should be carried out with military regularity. 3. The hygienic treatment is also of the greatest importance; every means and measure which can build up a system, and avoid brain and nerve stimulation, is required. 4. Cases of this character should be guarded against every possible extreme, both in the surroundings and physical conditions that are under the control of the physician. The tendency of all energy and nerve force is to pass off in explosions, which should be counteracted; the diseases they suffer from show this tendency to concentrate and become intensified in certain directions, also to manifest distinct exacerbations. Finally, the fact of an alcoholic heredity in disease of children that we are called upon to treat, gives a wider therapeutical range of possibilities, both in direct and preventive medicine.

Recent studies of alcohol cases show that over seventy per cent. are directly inherited. If this is confirmed by later studies, the treatment of inebriety will in the future begin in infancy, and the higher science and art of medicine will win its greatest triumphs along the line of prevention.

SURGERY OF THE SUPERIOR LARYNGEAL NERVE IN SPASMODIC DISEASE OF THE LARYNX.

Read in the Section of Laryngology and Otology at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May, 1890.

BY J. P. CREVELING, M.D.,
OF AUBURN, N. Y.

The operation of which I am about to speak is one, as far as I know, new in surgery of the larynx, and one of sufficient severity to preclude its performance except in very rare cases where all other means afford no relief, and when the disease is sufficiently severe, as to render the life of the patient so uncomfortable that any procedure, however grave, if it presents even a prospective chance for relief, becomes justifiable and proper.

It will be seen later on that the merit of the operation is based on the result of two cases only, one of which was seriously complicated. It will also be seen that in the first instance the manifestation of the laryngeal disturbance was not confined to that organ alone but reflected to the lungs, producing asthmatic breathing, not very severe, but enough to give annoyance and excite apprehension.

It was not for this disease, however, that advice was sought, but for one of a much more serious nature; one for which no less severe measures could be adopted. It was in this case that I first noticed the result in the larynx of dividing the superior laryngeal nerve. I did not observe the extreme liability of food to pass into the larynx that I had feared, and therefore was less timid to attempt a similar operation for a purely laryngeal trouble of a less formidable character.

In brief I will give the history of the two cases:

Case 1.—M. C., a female, aged 30, consulted me in September, 1888, for a large irregular tumor situated in the base of the posterior triangle of the right side of the neck, and difficult or asthmatic breathing. The tumor extended down under the muscles toward the median line and rested against the trachea. Examination with the laryngoscope disclosed a tumified and engorged condition of the laryngeal mucous membrane, extending into the pharynx. The epiglottis alone remained normal.

I attributed the throat disease, as well as the asthmatic attacks, to pressure of the tumor, and proceeded to operate without unnecessary delay. The base of the growth proved to be large and nodular, pressing firmly against the trachea and adherent to the carotid capsule. It was quite easily detached from the trachea but it was necessary to remove an inch or more of the capsule of the artery. After the removal was completed the wound was closed, which healed kindly, but neither the breathing nor the laryngeal condition were benefited. She declined throat treatment and all other remedies calculated to relieve the disturbed respiration, because she had anticipated a cure with the removal of the tumor.

In about six months she again presented herself with a growth in the posterior part of the upper triangle of the right side of the neck, and one in the upper half of the anterior triangle of the left side also, extending from the angle of the inferior maxillary down along the side of the thyroid cartilage. In extirpating this last mentioned one it became necessary to divide the superior laryngeal nerve. After recovering consciousness it was observed that she was extremely hoarse, and deglutition somewhat embarrassed, but the difficult breathing had been overcome. From this time on she had no more trouble in that direction. It took a long while for the hoarseness to entirely pass away, and in fact the for-

mer strength of voice was never regained. The first opportunity for making an examination of the larynx was some eight months after the operation, when it was found the vocal apparatus of the left side was feeble and responded with less vigor than the right. This was about the only difference noticed in the two sides.

From the facts stated it is evident the tumors were not the cause of either the throat or asthmatic disturbance, as neither was relieved after the first operation although the growth pressed both the pneumogastric and trachea, and both conditions existed before the second growth appeared.

Case 2 does not present the complications of the one just cited, but is a typical case with the following history:

M. G., female, age 17, applied to me for treatment in January, 1890, stating that for some months past she had had "some trouble with her throat which caused her at intervals to make loud and unnatural noises, accompanied by a jerking of the muscles of the neck and motion of the head. The paroxysms occurred quite suddenly, without warning, and with sufficient frequency to prevent her leaving home without great discomfort from attracting the notice of those near her; that she was becoming nervous and irritable from the continued annoyance, and that she must have some relief at whatever cost." There was no uniformity of tone in the perverted voice: it varied from a high pitch to a low bass or guttural sound. In conversation the voice was thick and rough and some syllables not sounded. Prolonged speaking increased the hoarseness, produced discomfort in the throat and rendered the attacks more frequent.

The disease had been diagnosed as a nerve disorder by all who had treated her, so that she had taken the whole catalogue of tonics, antispasmodics, sedatives, stimulants and electricity, with no benefit.

An examination of the throat disclosed a chronic laryngitis involving the whole tube but more marked on the left side, to which side the left arytenoid body was firmly drawn, resting against the wall of the larynx.

On attempting to sound the vowels the summit of the arytenoid seemed to roll upward and outward, instead of inward to meet its fellow of the opposite side at the median line. No examination could be made during the paroxysm.

The parts were thoroughly cocaineized, but while the mucous membrane became pale, and sensibility was reduced to a minimum, it had little or no influence in preventing or modifying the attack. Local treatment was tried for a time but it gave only a negative result. Having in mind the case above mentioned, I concluded to cut down and search out the laryngeal nerve and make gentle traction on it with a view to overcome the spasmodic tendency.

An incision was therefore made just anterior to the carotid pulsation. The dissection was slow, as it will be remembered the superior laryngeal nerve is given off from the pneumogastric high up in the neck above the bifurcation of the artery, and that it passes downward and forward obliquely behind both the internal and external carotid as well as the superior laryngeal artery; and that the nerve divides into an external and upper branch above the bifurcation of the artery.

The nerve was at length found and put upon the stretch by passing a hook behind and lifting it from its bed. It was then traced from the carotid sheath to the point of division. The wound was closed. As soon as she recovered from the chloroform it was noticed that she was equally as hoarse as the preceding case, but that the throat spasm had entirely disappeared. She gradually regained her former voice. As far as known there has been no return of the disease.

From the result in the above two cases it may be inferred:

1. That the superior laryngeal nerve has an important bearing in spasmodic disease of the larynx.
2. That irritation of its terminal fibres as well as of the body of the nerve, may produce spasm of the larynx.
3. That a disturbance of this nerve may be reflected to other parts supplied by the pneumogastric and *vice versa*.
4. That division of the superior laryngeal may not be followed by serious results in the larynx.
5. That proper tension applied to the shaft of the nerve may modify its influence or action on the parts to which it is distributed.
6. That under certain circumstances it may be advisable to stretch or divide the nerve.
7. That the operation should not be performed except to relieve some extreme condition not amenable to other treatment.

ON THE MEDICAL TREATMENT OF DIPHTHERIA.

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BY WM. H. DALY, M.D.,
OF PITTSBURGH, PA.

Much has been taught of late years, yet little of practical value learned, of the more successful medical treatment of diphtheria. This fact is witnessed by the continued high death-rate. And yet it is still to the medical and not the surgical treatment that the patient must hopefully look for salvation, since, at best, the surgical aspect of intubation and tracheotomy, though valuable aids in the easement of patients, are employed as a last resort in cases that have become desperate and imminently dangerous to life.