the secretion. The water soluble scarlet red (Biebrich azo-benzine) is used. Its action is based on its antiseptic quality as a dye preventing bacterial growth, thereby removing the fetid odor and by restoring the glandular functions by stimulating cell proliferation.

The method used in applying the scarlet red emulsion is simple. First, have the patient douche or spray his nose with Dobell's or any other alkaline solution, then apply a 4 per cent scarlet red emulsion to all parts of the nasal mucous membrane and the same time massage it gently with the applicator. This will form a thick film of the emulsion. Applications should be renewed every forty-eight hours. Pronounced results must not be expected immediately, but the odor and scabs may be absent after the second application.

In conclusion, many atrophic rhinitis cases terminate spontaneously, the symptoms disappearing entirely. This tends to uphold the contention that this condition is due to bacterial origin. An acquired immunity may result, causing the disease to disappear and leaving only the damage already done to the tissues. The majority of patients suffering from this condition are women; in a series of fifteen cases, thirteen were women and two men. Whether or not patients will remain relieved by this treatment is as yet undetermined, as the length of time under observation does not warrant final conclusions. This report is made to stimulate others to try this method of treatment. Further report will be made.

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AN UNUSUAL CASE OF BILATERAL ABDUCTOR LARYNGEAL PARESIS.

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Since the work of Semon, in 1881, on the abductor muscles of the larynx, we have known of their proclivity to become affected first in lesions of the recurrent laryngeal nerve or in central lesions. I have not, however, been able to find in the literature a case in which the abductor muscles have given out under direct observation after repeated phonation, and have returned after rest to their normal function.

Hooper, and later, Donaldson, in experimental work on dogs, stimulated the recurrent laryngeal nerve with an electric current and observed the effect on the cords. Hooper obtained abduction of the

cords, but Donaldson found that this was due to a weak current; when the current was increased, the abduction gradually passed into adduction, and after a strong and constant stimulation, the abductor muscles became worn out and ceased to respond to stimuli. Semon and Horsley killed a group of dogs by an overdose of anesthetic, by puncture of the heart, or by bleeding. The larynx was immediately excised and the muscles of the larynx rapidly laid bare by dissecting off the mucous membrane. The muscles were then stimulated by an ordinary platinum electrode, the current being obtained from a Dubois-Reynold's sledge induction coil and supplied by a Daniell's cell. The results proved with remarkable constancy that the abductor muscles lose their excitability long before the adductor muscles.

Russel, in experiments on the recurrent laryngeal nerves in dogs, demonstrated that the abductor and adductor fibers are in two distinct bundles which can be isolated, and that the abductor fibers are situated on the inside of the nerve. Stimulation of these bundles separately produced, respectively, abduction or adduction, and cutting one bundle produced muscle degeneration in the muscle or muscles which it supplied. Russel traced, anatomically, the nerve fibers of each bundle to the muscle or muscles which they supplied.

A case is reported here of chronic anterior poliomyelitis with bulbar involvement, in which the abductors of the cords ceased to function entirely on one side, and functioned only partially on the other, when the patient phonated repeatedly, while the larynx was observed with the laryngeal mirror.

Case 348390. Mr. J. B. McG., aged 64, came to the Clinic, February 3, 1921. He had been quite well until four years before, when he noticed a beginning left foot drop. This gradually increased and the muscles of the left leg grew smaller. For the last few months he had noticed that his right leg was growing weaker and smaller, and that his back was growing weak; he had to use his hands to get on his feet from a sitting position. He had noticed difficulty in speaking for the last few months, and the character of his voice had changed in the last ten days.

At the time of his examination he walked with a limp and a foot drop, and used a cane. His normal weight which had been 200 pounds was now 185 pounds. His systolic blood pressure was 160; his diastolic was 90. He had some arteriosclerosis. His vision was 6/10 and 6/5; the fundus was negative. Blood and spinal fluid Wassermann reactions were negative. The neurologic examination revealed a marked atrophy of the lower extremities, with correspond-

ing loss of strength and fibrillary twitchings. In the upper extremities the corresponding loss of strength and fibrillary twitchings were moderate. The deep reflexes were diminished in both upper and lower extremities; the left tendo-Achillis reflex was absent. There were no plantar extensor phenomena, nor indication of syphilitic involvement. When the patient's larynx was first examined, both cords moved quite normally. On repeated phonation, the abductors on the right side completely gave out, and the right cord was in the position of complete abductor paralysis. On the left side the abductor gave out about one-half, and the abduction was graded 2 on a scale of 1 to 4. After the patient had rested for from five to ten minutes the cords again moved quite normally. This phenomenon was repeated a number of times and was observed by several physicians so that the change in the movement of the cords was unquestionable.

A partial or complete abductor paralysis due to involvement of the recurrent laryngeal nerve, or to central lesions, is often seen, but this is the first time that I have observed a case in which the use of the voice for a fraction of a minute tired out the abductors so that they could not function until rested. The condition of the nerve supply was responsible.

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