he would have used the boracic acid." My limited experience, so far as it goes; inclines me to indorse the opinion of Dr. Jack, and I also believe that papoid and pepsin may frequently be employed with advantage. I am aware, however, that the few cases above reported are far from being conclusive, and the only value to be hoped for in connection with this report is, that it may prove suggestive, leading to more complete reports from competent observers.

SOME REMARKS ON THE OPERATIVE METHODS IN THE TREATMENT OF ADENOID GROWTHS.

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 not my intention in this paper to give a resumé of the operative methods in the treatment of adenoid growths, nor a historical outline of its gradual development and improvement; but simply to describe the operative method I have now employed for several years in the treatment of this condition. In the various steps of the operation I claim nothing original; my originality, if any exists, arises from the manner in which the successive steps are made to interlace. It is with growing interest that I have watched, year by year, the rapid increase in the number and variety of forceps and curettes for the operative removal of these growths, until my interest has become satiated with their multiplicity. Many of these inventors seem to have overlooked the fact that nature has endowed them, not only with the safest and most complete, but also the most sensitive instrument for this work. My method of operative procedure is as follows:

The child is prepared for the operation in a general and local manner, as all good surgeons prepare their patients when about to resort to operative methods. I prefer always to give a general anesthetic, as I consider the operation not only extremely painful, but excessively alarming to the little one. I prefer ether, because I consider it safer; although I do not object to chloroform, should others insist upon its use. I do not consider the A. C. E. mixture reliable. It is stated by many that ether produces an excessive flow of salivary and mucus secretion into the mouth, and that it also increases the amount of hemorrhage, by producing turgescence of the head. The former condition I have never seen to an annoying degree—very rarely any increase over that which would be produced by the use of chloroform. I have never had what I could call more than a normal amount of hemorrhage after any of my cases, and therefore can not give any evidence as to the latter assertion. My patient, prepared for the operation, is etherized in the recumbent position. The etherization is carried to the point of complete abolishment of all reflexes. After the stage of excitement has passed, the ends of the sheet, upon which the child has been lying, are brought over and the arms and legs firmly pinned therein. When the corneal reflex has completely disappeared the etherization is entirely suspended. The child is now placed in the erect position, in the arms of an assistant who has been seated waiting to receive the patient. The

assistant encircles the child with his left arm, supports its head with his right hand, and hugs the lower extremities of the patient between his clasped thighs—in this manner the child is firmly held. The gag is now placed in the child's mouth and held by the assistant. Holding the head with the right hand the index finger of the left hand is rapidly passed up behind the soft palate and the growth quickly torn away from all points of attachment. The nail of the finger must be a little prominent, as it is often necessary to tear and cut as well as crush the growth. The blood now commences to flow quite freely from the nasal and buccal cavities, and it is well at this stage of the operation to incline the child slightly forward, so that the blood and broken-down tissue can more readily flow from the nose and mouth, until the operation is completed. The operation is completed in a minute or so, and the child is held forward in the inclined position until hemorrhage has about ceased. I always have a large mouth cuspidor in front of assistant, so that the blood flowing from the patient's mouth and nose can be caught therein. The patient, now partly conscious, is cleaned of all blood about the face and put to bed. Many object to the erect position in operating upon these growths, for fear that blood will flow into larynx and interfere with respiration. I will state that no one has cause to dread such an occurrence. In the four hundred and more cases that I have operated upon in this position, I have never yet had the slightest indication that a drop of blood ever entered the larynx. There is much more danger of the blood entering larynx and causing an arrest of respiration when the patient is placed in either the supine or prone position. I have operated on several patients where other operators have been obliged to suspend interference before finishing, on account of dangerous and alarming dyspnea; and in conversing with others, I find that such a state of affairs is of no rare occurrence. The use of the finger for the various forms of forceps and curettes was a gradual innovation with me. The first hundred cases I treated entirely with forceps and curettes, requiring prolonged instrumentation and frequent introduction of finger, to learn whether all of the growth was thoroughly removed. Often I would, after removing several masses with forceps or curettes, finish the operation with my finger, and later on, I gradually found that although always getting ready my forceps and curettes I rarely took them in hand, finding that after the introduction of my finger the growths were so easily crushed and scraped away that I finished the operation with the finger. Now I never use the curette; only using the forceps when, after scraping away the greater mass of tissue, there seems to be one or more fibrous bands resisting and slipping away from the finger. These I tear away with forceps.

In most children, between the ages of two and ten years, these growths are so soft and gelatinous-like in their texture that they readily yield to the pressure of the finger and the cutting of the finger nail.

The advantages that the use of the finger offers over many forms of instruments are manifold:

1. The rapidity with which the operation can be done, requiring only the use of a small amount of ether.
2. The exactness with which the operator can work,

as his tactile sense gives him complete knowledge of what he is doing and where he is working.

3. The complete absence from all possibility of injuring normal parts or tearing away normal tissue.

4. The comparative freedom from hemorrhage, as only adenoid tissue is removed and the normal mucous remains uninjured.

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CASES OF LARYNGEAL NEOPLASMS.

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

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The following cases are reported, not with the view of adding anything new to the already extensive laryngeal literature, but for the purpose of placing on record two interesting cases:

Case 1.—A. K., female, age 21 months, was brought to my office Aug. 22, 1892, having been referred to me by Dr. Blickensderfer of Denver. The child presented all the evidences of laryngeal dyspnea with marked stridor and especial embarrassment in inspiration. The voice was aphonic and there was a slight cough. The general condition of the child was bad; her appetite was poor; she was anemic, weak, with a rapid, small pulse. The following history was obtained: at birth the little one required resuscitating, which was accomplished in about one hour with great difficulty. After this, the voice and respiration were good until at the age of about 8 months when, with the beginning of dentition there developed some difficulty in breathing, lasting until the first tooth appeared. At the same time the voice was lost but was soon restored, although imperfectly. At the age of 13 months there was a return of the dyspnea, at which time the attack was worse than before and lasted about one week. The voice was now left less clear, and from that time gradually became aphonic. At the age of 16 months another and very severe attack occurred, which was termed by attending physicians "croup," this being the first diagnosis ever made in the case. The child never fully recovered from this attack, but was left completely aphonic, with more or less difficulty in breathing at all times, the dyspnea being frequently exacerbated and often associated with fainting spells. The case had been seen by many physicians in Iowa, and the diagnosis of asthma often made. A change of residence to Colorado was ordered.

The evidences of laryngeal obstruction being clear, a laryngoscopic examination was attempted but, notwithstanding the greatest perseverance, could not be accomplished. A digital examination was also unsuccessful in determining the nature of the case. Tonic and anti-spasmodic treatment was instituted, with a view to gain more time and attempt subsequent examinations. Three days later, at midnight, a hasty summons took me to the little one whom I found cyanotic and rapidly suffocating. The case had appeared to be one of either laryngeal paralysis or papilloma. I had previously decided to intubate in either case. This was easily accomplished with the smallest tube and the relief immediate and grateful. August 29, four days later, the tube was coughed out, its re-insertion, however, being demanded the following day. At intervals of three days the tube was expelled and re-inserted. September 11, the next size tube was placed in the larynx and remained in situ until November 28, a period of sixty-eight days, during which time the child gained in weight, ate well without the slightest difficulty and improved remarkably. The tube was now removed but its removal was followed by immediate and alarming apnea. Artificial respiration and stimulation resuscitated the child in about twenty minutes, and the breathing became quite easy. The following day, however, surgical interference was urgently called for and the same tube placed in the larynx. March 20, 1893, the child was found suffering great dyspnea, the attack having come on gradually with several remissions, during the previous three days. The intubation tube was found in situ and evidently unobstructed from the fact of free expiration. It had been in place 111 days without removal. Tracheotomy

was earnestly advised, but not acceded to by the mother until the child was unconscious, when it was rapidly performed, not without a good deal of hemorrhage, however. The tracheal opening was held open by a silk thread until a canula could be obtained, the operation having been demanded without loss of time. Following the tracheotomy the respirations became more tranquil but the dyspnea was not entirely relieved. On inserting the tracheal tube the breathing became more embarrassed and remained so despite the prompt removal of the canula. A digital examination revealed the fact that the intubation tube which had been allowed to remain in the larynx had disappeared, probably into the trachea. A pair of McKenzie's laryngeal forceps passed into the trachea came into contact with the lost tube and its withdrawal was at once followed by complete relief. During the operation and examination for the cause of the dyspnea, the presence of soft irregular growths was determined by the finger. These appeared to occupy a considerable portion of the larynx, both above and below the vocal bands. No attempt was made at their removal, owing to the low condition of the patient from loss of blood and the continuous dyspnea. With the exception of great weakness and several severe convulsions, during one of which the respiratory muscles seemed fixed, the patient made a good recovery and is now gaining rapidly in point of general health.

The patient is now but little over two years old. The question of performing laryngotomy and removing the neoplasms, or waiting for an opportunity to perform an intra-laryngeal operation, or for the not impossible spontaneous expulsion of the growths, is an important and interesting one. The dangerous consequences of thyrotomy, both as to the life and subsequent voice of the patient, have been well considered. Intra-laryngeal removal can successfully be accomplished at a very early age, Rice¹ having performed it at five years and Hovell² at three and one-half years, this being probably the youngest on record, while the case of Boylan's³ at ten years is an example of what can be done by a few years of waiting.

Extreme Abduction.

That spontaneous cure of papillomata is quite possible, is illustrated by the case of Major,⁴ in which a quantity of the growths was expectorated, and the cases of Hunter McKenzie,⁵ Eliasberg,⁶ Oertel,⁷ Lowman,⁸ White⁹ and Garel.¹⁰ Massei¹¹ shows that many papillomata may disappear because of their being more properly granulomata. Browne,¹² by enjoining absolute silence and applying cold prevented recurrence, while Eliasberg believes the removal of the respiratory process from the larynx withdraws certain irritant factors.

It is interesting to note the results of treatment for papillomata by intubation, and incidentally the use of this method in other conditions besides croup and diphtheria, as well as the length of time a tube may remain in the larynx without doing any harm. Seifferts¹³ reports a case in which intubation was done after thyrotomy for papillomata. Massei¹⁴ used it in one case; Lichtwitz¹⁵ recommends a fenestrated