that it would be but reasonable to think that the prognosis in such a case would be more favorable than if operated later.

A final point. The diagnosis can only be suspected before enucleation. Microscopic examination of the growth alone is positive.

LANTERN SLIDE DEMONSTRATION.*

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It is my privilege this afternoon to present to you gentlemen a review of the technique of suspension laryngoscopy with some consideration of the possibilities after the larynx has been exposed to view by this means.

It has been my endeavor in all this work to bring the larynx into perfect working view in all cases, and it is this fact that has made it necessary for me to change the original hook spatula of Prof. Gustave Killian into the one I am about to show you, for, though I have worked with this original pattern and Killian's new model, I have not been able to secure the view that I do with my own. While this may be personal preference, my technique differs so considerably from Prof. Killian's, and my instrument has certain advantages and some innovations over his, that it would seem necessary to show you my technique with my own instrument, that you may compare with his the fields of view with the hope that you may adopt this method in dealing with the operative surgery of the larynx. After all, it is this broad field that up to this time has been handled in such an antiquated and unsurgical manner, and it is for this reason that I have endeavored to bring the larynx into such perfect view that we may sit quietly before the vocal cords and do all of the operative surgery necessary in just the same manner and with the same refined technique that the gynecologist uses when he begins his operative surgery of the vagina.

I have laid stress previously upon the very limited motion of the traveling crane in its horizontal direction and refer you to the "Laryngoscope" for July, 1914,

wherein is discussed my table top to correct this difficulty. I still use the table top and feel that it is essential to proper suspension.

I have worked with my own modification of the original Killian hook, with his later perfected instrument, and with some of my own, and will show you now what I believe to be the most flexible instrument yet presented, having advantages and some innovations over previous models.

This spatula is made of tool steel and is perfectly rigid under the greatest strain. Other models are of brass and will bend when under heavy pressure. The body of the instrument is quite heavily made so that we may secure a large milled screw with which to open the gag. The small screw used previously could not be adjusted under the weight of the patient. And to insure against sticking, I have had its circumference drilled so that a small handle may be used as one uses the handle of an automobile or house jack. With such leverage at hand, there need be no fear in this direction. The thread is pitched fairly low to give power, but is still quite rapid in order that during the process of introduction, when the spatula is on the tongue, no time may be lost in securing a firm grip. The mouth will open to a full $1\frac{3}{4}$ inches, which is somewhat in excess of what is ordinarily needed, and yet provides for the unusually large mouth found in some of the Negro patients. In order that the center of gravity may be kept in the mid-line, and to facilitate the attachment of the adjustable tooth plates, I have utilized a pear-shaped ring; this is attached to the milled screw and forms then a well-balanced mouth gag. In order that the tooth plate of the mouth gag may move freely in the plane of the tongue spatula, I have this screw lever attached; by its movement the tongue spatula may be driven into the mouth for a distance of at least $1\frac{1}{2}$ inches, thus making the spatula adjustable to this extent and allowing to bring the parts as near the surface as possible. At the same time there is developed here a slight tilting motion to the tip of the spatula which will still further lift the epiglottis and assist in securing a proper view of the part. The base of the pear-shaped ring is square and fitted with a slide and pass for the pur-

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pose of adjusting the tooth plates. I believe the use of multiple tooth plates giving two points of fixation against the upper jaw to be of greatest value in maintaining the instrument in the proper position and facilitating a proper view. They can be adjusted so as to press upon one or more teeth and the point of their pressure can be carefully selected beforehand to give the best point of vantage. Two are made rather small in size and set at a slight angle to fit the mouths of children and the V-shaped arches of adults; two are swiveled that they may be adapted to all the varying sizes and shapes with which one meets.

The base to which the tongue spatula fits is especially reinforced and heavy and will not give now under the strain of the heaviest extension possible. I have added an additional hook to the shank, which will permit of more motion in the vertical of the traveling crane and which can be used when the head lies on the table as is practiced occasionally on some of the baby cases.

I have tried numerous patterns of tongue spatulas and have now used this one as the best of all. They are made in five sizes and are of tool steel tempered so as not to bend. But if excessive pressure is brought they will bend before breaking. This is for safety. They are slightly concave, are black, roughened on the surface in contact with the tongue, and have fixed flanges attached at a slight angle that will keep the tongue from slipping from side to side and will prevent its infolding around the margins, thus obstructing the view. Lastly the tip of the spatula to come in contact with the epiglottis is slightly heart-shaped and bends up at an obtuse angle, after the principle displayed in Yankner's post-nasal speculum. It will bring into view the last eighth of an inch of the vocal cords to the commissure, ordinarily the hardest point to see.

I regard complete muscular relaxation as essential to success. The anesthetic which will yield this state best will give the nicest results. I have used both local and general with success, but prefer a general anesthetic for all operative cases in both children and adults, providing no contra indication exists. I have employed the warm ether vapor as is delivered

through a Cain-McDermott warm ether apparatus. I have never had any reason up to this time to change to this type. The ether is delivered to the mouth through a mouthpiece which fits in the corner of the mouth and which, while out of the way, is under the control of the operator at all times, a precaution for safety at least. I have worked very satisfactorily under local anesthetics for long periods of time, but the cases were suited both temperamentally and physically for this anesthetic. In babies and young children, for examination only, no anesthetic is required, and in adults when a view is desired it is not even necessary to use the crane, the hook spatula being used as one uses the Jackson, Ingals or Mosher spatula for the same purpose, having, however, the advantage of a much larger field of view and easier to maintain in a definite position.

Having the table top with crane attached, arranged so that the base of the crane will be about four inches in advance of the shoulders, a suction apparatus at hand to care for the secretions, and a patient quiet and relaxed by proper anesthetic, we proceed as follows:

The instrument is closed, and the tooth plates adjusted to the proper points relative to subject's mouth. Selecting the strong teeth, or if none, that part of the alveolus opposite the first bicuspid teeth, the patient lies on the table, head hanging free over the hinged portion and held in a position of semi-extension by an assistant, who is very careful to keep the chin in the middle line. (Fig. 1.)

I now fold a piece of gauze or dental napkin over the teeth of the lower jaw so as to prevent the tongue from coming forward and being caught between the teeth and the spatula. The mouth is opened, the spatula introduced in the midline, its tip following along the post-pharyngeal wall (Fig. 2) and its tip will be shown in Fig. 3. The spatula travels always in the mid-line along the post-pharyngeal wall until the tooth plates are engaged behind the teeth of the upper jaw; a firm hold is maintained of the patient that neither may lose their relative position and the hook is now adjusted into one of the notches on the traveling crane as in Fig. 4.

Now the tooth plate represents the fixed

point, the tip of the spatula the movable point, and by turning the screw that moves the ring to which is attached the tooth plates, we succeed in driving the tip of the spatula further into the hypo-pharynx that it may gain the laryngeal face of the epiglottis. This movement I have named "jacking," as is shown in Fig. 5. The relative position of the spatula and its relation to the epiglottis is shown in Fig. 6, and the "jacking" process in Fig. 7.

The worm gear joint on the shaft is straightened, which tends to extend the head and bring the tip of the spatula in closer relation with the epiglottis. One can now see the mouth of the esophagus and usually the posterior half of the larynx (Fig. 8). Now, by moving the crane horizontally, we produce still further extension of the head and lifting of the spatula toward the epiglottis, thus straightening the road to the larynx; and the field of view grows larger with this movement. Usually all but the anterior third of the larynx is in view, as in Fig. 9. The tip of the spatula is shown in Fig. 10, and we are now able to look clearly into the larynx.

By lifting the crane vertically, we still further straighten the road, and use the horizontal and vertical movements alternately to secure the desired view of the anterior commissure, as in Fig. 11. A sagittal section shows the position of the instrument in Fig. 12, and the fully suspended head is shown in Fig. 13. If you pardon me, in Lynch's position as a contra-distinction to that of Killian in Fig. 14—and by comparison I call your attention to the straight line or even hyper-extension secured by my method as against the curve of the Killian. This latter does not show the anterior commissure at all.

I have photographed the view of the larynx as is shown in Fig. 13; and you can readily see that once this position is secured the operative surgery of the larynx as described to you last year will be both perfectly possible and easy to accomplish. And if you follow the steps closely you will acquire just this view in most of the adult cases and in all of the children. Where the epiglottis is very thin and flexible and is not held tight by the spatula, I sometimes find it necessary to place a suture on either side of the mid-line and drive it straight while the spatula is

being introduced. This procedure has helped me a number of times. (Shown in Fig. 15.)

In Fig. 17, I am examining a child with the spatula alone; head lying on the table, the spatula being used as a lever to acquire a view of the larynx. One can see well to introduce bronchoscopes, esophagoscopes or intubate in this position easily. It will give a most satisfactory view of the parts for diagnostic purposes. Try it.

Once your patient then is properly suspended, you are then perfectly free with both hands to do the most accurate work the larynx has known. Now, instead of pulling or pinching or biting at the tumor mass you pick it up accurately and dissect it free with a knife. You are free to cauterize accurately and carefully. It is your privilege to work in the larynx as the general surgeon works upon the skin or the gynecologist works in the vagina, and the gagging or other motion of your patient is practically impossible, for his larynx is immovably fixed.

I have removed now by dissection, and one must lay stress upon this point, sixteen cases of papilloma of the larynx in children and adults with a recurrence in but one. This in a child who was free from any recurrence for more than a year and who developed whooping cough, after which hoarseness appeared again and the papilloma returned.

A second dissection was done over three months ago, since when there has been no recurrence. Four cases of intrinsic epithelioma of the larynx have been completely removed. A recurrence took place in one who has since submitted to a laryngectomy and is now well and happy. One other was thought to have a recurrence, but on removal of a small mass proved to be microscopically simple scar tissue, and he is still well, even after three years. The two remaining are free of recurrence with no evident of any discomfort except a changed voice.

I have destroyed apparently two large epitheliomata of the hypo-pharynx growing at the mouth of the esophagus by the Percy method of cauterization, a procedure impossible by any other means. I have removed the epiglottis for tuberculosis by this means and have cauterized large areas of tuberculous ulcers under suspension

with such ease and accuracy that the dread of former methods no longer hangs over me. I have intubated by this means, have sutured both intra-laryngeally and on the post-laryngeal wall, and in one instance actually produced and sutured in place a plastic flap—a type of surgery previously impossible. One can do every type of work that has been done formerly and can do so much more than has ever been dreamed of by suspension, that it is now time for us to enter upon a new domain of laryngeal surgery and adjust our old thoughts to the more modern methods. If I can help you in this, I am satisfied.

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HARELIP AND CLEFT PALATE.*

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Nothing is more interesting to the medical mind than speculation on the cause of a congenital defect, and especially when this defect is found in as exposed a position as the face. Whether the surface only is effected or the deeper parts as well, or whether the degree of deformity is of a lesser or greater extent, it is all the same, for the features are marred and we first ask, "Why?"

However, that is of only passing moment, for our next thought is of a much more practical turn; what is best to do; when should it be done, and why; which latter question, answered fully, will also include, how.

We take a little more interest also in the deeper portion today, for we have awakened within the last few years to a fuller realization of the fact that the oral cavity is connected with the remainder of the body for other reasons than as a funnel through which to pour food.

Many theories have been advanced and many theories written upon the causation of this and other congenital malformations. But all fail to be proven on account of too little illumination, due to our present state of knowledge. And we can fore-

see the possibility of very little advance along this line in the immediate future.

Some sections of a fetus about four and one-half months of age found with a hare-lip may be of interest.

CLASSIFICATION OF DEFORMITIES.

All degrees of cleft of the lip may be seen from a small notch on the edge of the lip upon one or both sides, or a red line extending from the edge of the lip to the anterior naris on one or both sides, to a complete cleft of the lip into the anterior naris, with or without protrusion of the premaxillary bone.

Clefts of the palate occur so slight that there appears to be only a notch in the uvula, or a small groove of the alveolar process upon one side in the region of the lateral incisor, to those so great that the opening is complete from the vestibule of the mouth to the pharynx, either upon one or both sides of the premaxilla. The very great majority of these cases have the same amount of tissue as a normal child, a fact noted by Brophy and Cryer many years ago. But once in a great while we have besides failure to unite also a failure of development.

Why call attention to the degree of deformity? You have frequently heard that these children succumb early in life to the intercurrent diseases, many dying only a few days after birth. Men of large experience in this line can cite large numbers, and these are not to be considered in making up figures of operative mortality. It will be found on looking over these figures that the mortality is in direct ratio to the size of the cleft in unoperated cases, and those who live will be found with the lesser degrees of cleft. Why?

Our pediatricists will tell us that a normal child will not regurgitate food of good quality unless the stomach is filled to distension.

1. These children may be without food sometimes for days because the mother or attending physician does not realize that it can not nurse. Or if they do, are unable to overcome the difficulty and the patient gets a late start.

2. If fed early, the food given with the patient on its back and possibly at a rapid rate with much air, is very frequently regurgitated into the nose, when, if swal-

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