The operation, as performed by the author, is as follows:

"The eyebrow having been shaved and the neighbourhood cleansed, a curved incision is made down to the brow from the supraorbital notch, along the margin of the orbit on to the side of the nose in the line of the naso-maxillary suture. A periosteal elevator is placed on the bone and the tissues raised from the front wall of the sinus. A strong retractor keeps an area of the bone exposed, generally sufficient for this purpose; if not, then a short vertical cut may be added at the inner end or the outer end of the first incision prolonged. A gouge is now carefully driven into the sinus, and a circular hole in the bone cut to the extent of half an inch or so.

"The muco-periosteal lining is incised and the interior of the sinus carefully examined. A forehead electric light on the operator's head is essential. Blood and pus are carefully mopped out with pieces of gauze, and growths or polypi (if any) removed; but exuberant granulations must not be mistaken for the latter. By means of a pair of forceps introduced through the sinus the anterior ethmoidal cells are broken up, so that a large communication is made with the nose. A large drainage-tube is inserted, and the upper end is left projecting from the inner end of the wound. The ends of the tube are anchored together by a silk thread. The forehead wound is now sutured, leaving only the inner extremity open for the tube.

"After treatment: For a week or nine days the tube is daily moved up and down and syringed through with a weak antiseptic lotion, at the end of which time the silk is cut out of the lower end of the tube, left attached to the upper end, and the tube drawn into the sinus, the silk only remaining outside, fixed to the forehead by plaster. The lower end of the tube is cut off until it only just projects through the anterior nares. Syringing now takes place from below until granulations almost close the upper aperture, when the tube is withdrawn downwards, the silk being cut. The wound heals soundly in a few days."

W. Milligan.

Wells, Walter A. (Washington).—*The After-treatment of Operations on the Nasal Accessory Sinuses.* "Boston Medical and Surgical Journal."

The author refers to the delay in the ultimate healing in these operations and to the frequent failure of complete success, and believes it to be due in many cases to the insufficiency of the treatment, the want of proper curetting, of removal of granulations, or the eradication of some pathological condition. He refers to what are termed the dry and wet methods of local treatment, and prefers effective irrigation.

StGeorge Reid.

LARYNX AND TRACHEA.

Onodi.—*Dead Bone wedged in below the Vocal Cords.* "Monatschrift für Ohrenheilkunde," December, 1901.

The patient, a man of thirty-two, contracted syphilis eight years ago. Three years ago he came into hospital with symptoms of laryngeal stenosis, supposed to be due to abductor paralysis, as the cords were in the median position. Sublimate injections cured his stenosis, but his voice remained hoarse. Two years ago he coughed

up some fragments of bone. In March, 1901, he was almost suffocated during a violent fit of coughing, and felt a foreign body in his throat; his dyspnœa was great. On examination, a rough-looking brownish body was seen wedged in below the vocal cords. It was removed by laryngo-fissure preceded by tracheotomy, and was found to be a piece of necrotic bone, 2 centimetres long, 1·5 centimetres broad, and 2 to 3 millimetres thick. One surface was smooth and concave, the other rough and uneven. The interior of the larynx was free from ulceration. After operation the patient's breathing was free, but he had no voice; the arytenoid cartilages hardly moved at all. The explanation of the case is as follows:

The dyspnœa of three years ago was due to syphilitic perichondritis (posterior) of the cricoid cartilage, which caused the median position of the cords. Sublimate injections relieved this condition, and the patient left the hospital apparently cured. The perichondritis continued, however, and led to the ossification, necrosis, and finally separation of the posterior lamella of the cricoid cartilage. Several fragments were coughed up three years ago, but the main sequestrum became impacted below the cords.

The case shows how early cricoid perichondritis may be mistaken for abductor paralysis, the median position of the cords being due to inflammatory or suppurative changes in the neighbourhood of the arytenoid joints while the interior of the larynx is as yet free from suggestive signs. *W. Lamb.*

Perrin.—*Tuberculosis of the Larynx in Childhood.* "Revue Hebdom. de Laryngol.," etc., January 18, 1902.

This is a study of laryngeal tuberculosis in children based on an analysis of all the cases hitherto published.

The first cases recorded are those of Trousseau and Belloc in 1837. In their collective study of this subject, published in 1861, Rilliet and Barthez brought together sixteen cases; Rheindorff, in a similar work, in 1891, collected twenty cases; Brindel, in 1900, added cases reported by Ruault and Jobson Horne, and three original observations. To these Perrin is now able to add cases reported by Simon, Haushalter, J. Bar, Boulay, Catti, Lake, Kayser, Kiaer, and two reported by himself.

Tuberculosis of the larynx is very rare in infancy, becomes more frequent as age advances, and reaches its maximum frequency between the ages of twenty and forty. Amongst the sixteen cases of Rilliet and Barthez only four were under seven years, and none under three years old. Of Heinze's nine cases six were above four years old. Frœbelius found among 16,581 infants examined post-mortem ten with laryngeal ulcerations. Of 500 cases of phthisis observed during life, Morell Mackenzie noted laryngitis in one under fifteen years. In 100 autopsies, he found the larynx involved between five and ten years in one case, between ten and fifteen years in four cases, between fifteen and twenty years in sixteen cases, and so on. Other observers obtain similar results.

Although it is undoubtedly the case that laryngeal tuberculosis is rare in childhood and very rare in infancy, the results of post-mortem examination prove that it may exist without producing any clinical signs. The reasons for the comparative immunity of the larynx in

children are: First, at this age tuberculosis usually assumes a generalized form, which kills the patient before laryngeal lesions have time to be produced, specially as in this form there is no bronchial secretion to infect the larynx; secondly, a child is not exposed to most of the causes that predispose the larynx to tuberculous disease—*e.g.*, excessive use of voice, tobacco, etc.; thirdly, laryngeal symptoms often do not appear till the patient's general condition is so serious that no attention is paid to the former; fourthly, it has been suggested by Krishaber and Peter that the larynx in childhood is more stable than at or soon after puberty, and therefore less liable to be attacked by tuberculosis.

It is not always possible to determine by what route the larynx is infected, but probably the most frequent method of infection is by sputum from tuberculous lesions in the lung, and this method will be most common in children about the age of puberty, in whom tuberculosis behaves more or less as in adults. The next most common method is probably infection of the larynx viâ the blood or lymph stream, in which the infective focus is in one or more of the tracheo-bronchial glands. Again, the laryngeal lesion may be primary, or, least frequent of all, the larynx may be invaded directly from a primary pharyngeal tuberculosis.

The anatomical lesions present various characters and various combinations. Tuberculous infiltration is found in a large number of cases; it may be complicated by œdema, it may evolve spontaneously towards recovery by a process of sclerosis, or it may break down into ulcers. Ulceration is the most commonly observed lesion. It may take almost any form, may invade any part of the larynx, the vocal cords being, however, the seat of election. Similar ulcers frequently coexist in the trachea without giving rise to any special symptoms. Ulceration is often accompanied by œdema, and often followed—if the patient recovers and lives long enough—by cicatricial bands. The "vegetative" or granulating form of tuberculosis is more common in adolescents than in young children, but has been noted even in infants. Perichondritis is found in children just as in adults, and may be apparently primary or secondary to ulceration. Œdema may accompany any of the above-mentioned lesions. Recovery may take place by a process of sclerosis. The rarest form of laryngeal tuberculosis in children is the "granulie pharyngo-laryngée d'Isambert," characterized by a discrete or confluent eruption of granulations on the larynx, palate, uvula, etc. The laryngeal lesions never exist alone—*i.e.*, some other organ or organs are always affected.

In those cases in which the larynx is affected late in the course of a pulmonary or other tuberculosis, the symptoms of the laryngitis may be so slight compared with the other symptoms as to pass completely unnoticed. Dysphagia and pain in the region of the larynx are rare in children; slight hoarseness is more common. Attacks of suffocation may set in very abruptly, and may be so severe as to call for tracheotomy, although a few cases recover without operation. Difficulties in diagnosis arise from the difficulty of using the laryngoscope in young children. On this account the differential diagnosis between syphilis and tuberculosis must often be determined by the effect of a course of mercurial inunction. Tuberculous vegetations may be mistaken for simple papillomata, but generally the coexistence of other tuberculous lesions establishes the diagnosis; in the absence of these, examination of a piece of the growth may have to be made. Cancer need not be

considered, as it does not occur in the larynx in childhood. Lupus of the larynx is very rare in childhood, and is always preceded by lupus of the face or nose, etc.; only one case has been reported in a child under seven years of age. The "suffocating form" of laryngeal tuberculosis may simulate croup, false-croup, and other kinds of suffocation, due to spasm, œdema, etc. The diagnosis may be settled by laryngoscopic examination, or else by a consideration of the condition of other organs —*e.g.*, lungs, etc. The author considers that laryngoscopic examination is rarely applicable in children.

Prognosis, as a rule, is very grave; death generally occurs within a few weeks of the onset of laryngeal symptoms, not because the laryngeal disease has much influence in shortening life, but rather because the laryngeal symptoms only appear shortly before death. For this reason treatment is seldom of much avail. *Arthur J. Hutchison.*

Roaldès.—*Note on the Use of Electro-Magnets in Extracting Metallic Foreign Bodies from the Air-Passages.* "Revue Hebdom. de Laryngol.," etc., January 4, 1902.

After shortly summarizing a case reported by Dr. Garel in the "Annales des Malad. de l'Oreille," February, 1901, in which Dr. Garel removed a nail from a child's bronchus by means of an electro-magnet introduced through a tracheotomy wound, Dr. Roaldès points out that he had proved such a procedure to be possible by a number of experiments on cadavers. A Haab's electro-magnet was used, with current of 110 volts. This was strong enough to attract a nail ($1\frac{3}{4}$ inches long, 17 grains weight) from a distance of $9\frac{3}{4}$ inches when lying in a smooth glass tube, or 9 inches when in a leather tube.

Various iron or steel objects were placed in the nose or naso-pharynx of cadavers, and were extracted by placing the magnet in front of the nose. Pointed bodies—*e.g.*, pins, pens, etc.—were apt to stick in the mucous membrane.

Attempts to extract bodies from the larynx through the mouth were unsuccessful, the magnet being of unsuitable shape.

Through a tracheotomy wound objects placed in the bronchi could be extracted from a distance of $5\frac{1}{4}$ inches, but not further, when the electro-magnet was held in the wound.

Objects placed in a bronchus, or in the larynx or trachea, could be guided to the tracheal wound by moving the magnet in the proper direction over the chest or along the neck; but, owing to the clumsiness of his magnet, Roaldès never succeeded in guiding an object from the trachea, through the larynx and into the mouth. This difficulty, however, can be overcome by using two magnets. With one used externally the foreign body is drawn from the bronchus, or wherever it may be lodged, up to the larynx; a second smaller magnet, specially constructed for the purpose, is then introduced through the mouth and down through the glottis till it touches the foreign body; the electric current is then passed through the small and cut off from the large magnet. Thus the foreign body can be lifted out. Further experiments, however, are needed to perfect the technique of this last procedure.

Arthur J. Hutchison.

Tommasi, Dr. J. (Lucca).—*Hæmorrhagic Tracheal Catarrh.* "Annali di Laringologia," etc., Genoa, November, 1901.

The author contributes a long article on five cases of this affection, his views being generally in agreement with those of Professor Massei,[1]

[1] *Archiv. Ital. di Laryngologia*, October, 1898.

Professor Pisenti,[1] and the present reviewer,[2] whose papers on the subject he refers to. The disease is important, as it explains the absence of lung symptoms in many cases of hæmoptysis, and because uncertainty as to the source of the bleeding may lead to a more unfavourable prognosis than is warrantable. In one case influenza was the cause of acute tracheitis with hæmoptysis, while in the others the tracheitis was more or less chronic, and probably induced by nasal obstruction and consequent affections of the naso-pharynx of longer or shorter standing. Ruptures of small vessels in the relaxed and inflamed mucous membrane in that part of the trachea which lies immediately below the glottis easily take place, especially on loud speaking, coughing, or sudden muscular efforts, as in this region, as pointed out by Massei, the pressure of the expired air is greatest. None of Dr. Tommasi's patients had any predisposition to pulmonary tuberculosis. The cough, usually slight, existed for a more or less long period before the hæmoptysis. All the patients experienced tickling in the throat and a sense of irritation along the trachea above the sternum. Recurrence of the bleeding took place at very irregular intervals, and in no case was it more than from 40 to 70 grammes. The diagnosis was made from the negative result of the examination of the lungs and sputum, and from the appearances seen laryngoscopically in the trachea. The mucous membrane of the intercartilaginous spaces above the sixth ring was much congested and the bloodvessels dilated. There were, moreover, extravasations of blood in the mucous membrane and blood-clots on the wall of the trachea. The treatment of the bleeding consisted in rest of voice and body, cold liquid diet, ergotine, and ice. When the bleeding had been arrested, astringent sprays tended to reduce the volume of the dilated vessels and to improve the tone of the membrane. Abstention from smoking and strong liquors, and a change to the seaside or mountain air, were also advised. *James Donelan.*

ŒSOPHAGUS.

Adamkiewicz.—*Four Cases of Cancer of the Œsophagus cured by "Cancroine."* "La Presse Méd.," January 22, 1902.

Professor Adamkiewicz has separated out from the juices of cancer a toxine to which he has given the name of "cancroine." Its chemical constitution is not yet definitely ascertained, but it seems to be closely related to "neurine," which is a hydrate of trimethylvinylammonium. Injected into the blood of cancerous subjects cancroine or neurine is said to produce a necrosis of the cancerous elements, followed by elimination or resorption of these elements.

The following four cases are not included amongst those cases published elsewhere by Adamkiewicz.

W. Z——, merchant, aged sixty-six, came to Adamkiewicz in July last. About three months before that date he began to have some dysphagia, which rapidly grew worse; the patient suffered much and lost flesh rapidly. With an œsophageal bougie a stricture was found, through which even the smallest bougies would not pass, at a point about 42 centimetres from the teeth. It had been impossible to swallow

[1] *Archiv. Ital. di Laryngologia*, July, 1899.
[2] Journal of Laryngology, January, 1901.