content with such an arrangement. Let us hope the members of an honourable profession will never deteriorate into mere gatherers of sputum, who, in return for their forwarded specimens of sputum or membrane, receive small consignments of varying antitoxins, with full instructions as to use.

But bad though this would be, a still worse state of matters would be that we should be entirely in the hands of others. Everything would depend upon the care and perseverance, and methods employed, and the competency of the bacteriologist. Dr. Gerhardt's assistant in Berlin stated, in 1891, that as many as sixty examinations sometimes were made before the tubercle bacillus was discovered.

A negative result may in such circumstances mean much or little. An erroneous report as to the isolation of tubercle bacilli would mean the possible removal of a patient suffering from a severe catarrh or pneumonic consolidation to a sanatorium, where, of course, he would be rapidly cured, but earnestly advised to spend the winter months in a dry climate. Medical diagnosis and treatment would thus degenerate into a simple "rule-of-thumb" arrangement. Let us therefore as medical men welcome the aid of the bacteriologist, but do not allow him to supplant us. And to do this our teachers must strive to inculcate on the students the pressing need of mastering the old, the modern, and the new methods of diagnosis. Let them teach them how to diagnose disease as the great clinicians did one hundred years ago, and confirm it by the auscultatory and clinical methods of later years. Let their students be congratulated and encouraged when obscure cases are diagnosed by the old method, and even by the second. By so doing they will give them self-reliance and a sense of dignity, and in this way they will hand down unimpaired the medical traditions of the past, hand in hand with the results of modern scientific research, and enable the profession to remain in the future, as it has so long been, a "learned one."

REMARKS ON CONGENITAL CYSTS OF THE TONGUE.

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CONGENITAL cysts of the tongue are not a common class of tumours. They generally occur in the middle line between the genio-hyo-glossus muscles, or between the genio-hyo-glossus and the myo-hyoid. Sometimes they remain unchanged for many years. Their contents consist of soft sebaceous matter, and occasionally they contain also hair and solid masses of true dental tissue. When they undergo inflammatory changes, the putty-like material is mixed with purulent and offensive fluids. The cyst wall is lined with squamous epithelium, and is of delicate structure and easily torn, but it is occasionally thick and fibrous. Now these tumours do not fluctuate, but feel elastic and tense on palpation. They are generally observed in young adults, and their existence is often overlooked during infancy and early life. They are painless, and increase with the development of the individual; but, if anything irritates their surface or disturbs their lining membrane, they are apt to suddenly increase in size and to undergo inflammatory changes. Congenital cysts have their origin in the accidental displacement of some epithelial structure. During early embryonic life a portion of the epiblast, consisting probably of only a few connective-tissue cells, gets folded in and shut off from the external surface. They always possess a true epithelial lining, provided it has not been destroyed by necrotic and suppurative changes.

Inflammation of a Congenital Cyst of the Tongue caused by Wearing Artificial Teeth.

S. P., aged 40, a married woman, consulted me in February, 1901, in consequence of a painful and rapidly-increasing swelling of the tongue.

History.—She stated that soon after birth her mother noticed a small tumour on the side of her tongue. When 10 years of age it was the size of a marble, at 30 it had enlarged to the size of a small egg, and in 1899 it had increased considerably, and its presence caused great discomfort, especially during eating and swallowing.

Condition when First Seen.—The swelling almost filled the mouth, and the gums and base of the tongue on the left side were extensively

ulcerated. She was unable to swallow anything but a little fluid, and there was also great swelling and tenderness in the submaxillary region. In December, 1900, she commenced to wear a lower plate of artificial teeth, but they caused so much pain and swelling that in a few weeks she was compelled to give them up.

Operation.—On making an exploratory puncture a little thick, yellowish matter escaped. Ether was then administered, the tongue secured with a ligature, the incision extended, and the thick material removed by pressure and a scoop. The cavity was then completely laid open to the base of the tongue, and the thick cyst wall, which was intimately connected with the substance of the tongue, dissected out. The patient rapidly recovered, and a few weeks after the operation the tongue was normal in size, with a long linear scar along its margin.

The lifelong presence of a tumour on the tongue, the attack of acute inflammation after wearing the artificial teeth, and the result of the exploratory incision made in this case the diagnosis an easy matter. At the time of my first examination, however, the appearance of the swelling with its vascular markings, the extensive ulceration of the mouth, the fixation of the jaw, and the submaxillary tumefaction suggested the probability of a malignant growth.

It is an interesting fact that prior to the inflammatory changes the presence of the tumour caused the patient very little inconvenience. The tongue itself was thin and small, and although burdened with a growth as large as a small orange, it proved an efficient organ, and articulation and mastication were performed apparently for many years with very little difficulty.

There are many kinds of congenital tumours of the tongue, and of these, naevi and warty growths appear to me to be the most common. Pedunculated fatty tumours have been recorded, and also large tongues in which the increase in size has been attributed to a diffused development of fatty tissue. Pure cartilaginous tumours have been occasionally observed, and also osteomata and fibromata developed in connexion with the fetal structures from which the septum originates.

Central sublingual cysts projecting into the submaxillary region are occasionally met with. A complete history with distinct evidence of their recognition in early life is often difficult to obtain. They grow slowly, and exhibit very little transparency. They are true dermoid cysts, and are the outcome of the renewed activity of embryonic relics, and appear in the position which was formerly the seat of a tubular passage lined with epithelium.

These congenital cysts are sometimes confounded with other kinds of cystic swellings arising from the transformation of connective tissue interspaces, or from the dilatation of the ducts of the sublingual or submaxillary glands. True ranula, however, always appears as a bluish, transparent, and fluctuating tumour on one or both sides of the lingual fraenum.

Central sublingual cysts are sometimes intimately connected with cystic swellings which occur near the hyoid bone, on the thyroid cartilage, and even lower down the neck. They have been regarded as bursal tumours. Their walls are thin, and they are filled with mucoid fluid.

Large Sublingual Cyst Extending Downwards below the Thyroid Region.

G. M., aged 36, a married woman, came under my care with a large cystic tumour situated in the sublingual region. Her parents never noticed any swelling in the mouth during infancy. During the last two years it had been growing rapidly. A large portion of the cyst was excised, and in two months she left the hospital apparently cured. In 1894 she returned to me again with a large and prominent swelling extending from the left side of the chin to the sternum. It did not fluctuate externally, but a distinct impulse on palpation could be discovered between the mouth and the neck. The cyst was punctured in the sublingual region, and an opening traced with the probe contained a thick mucoid fluid.

The second operation was performed in July, 1894, and the whole sac was completely excised. In many places the cyst wall was very thin, and the central muscles of the neck were widely separated. The thyroid gland was not enlarged. The large cavity was then thoroughly disinfected, and a drain inserted at the lower angle. The wound healed in a few days. The photograph was taken seven years and a half after the operation, and it exhibits the long central scar.

The congenital origin of this cystic tumour is very indistinct. The patient stated that she always had rather a full neck, but that it never gave her any inconvenience until 1891. Now, it is a well-recognised fact that the obsolete canals from which congenital cysts are developed, after remaining dormant for many years, may again wholly or in part assume activity. If, then, there were a congenital cyst, it is probable that the whole length of the embryonic tubular passage, known as the ductus thyreoglossus, had remained

unobliterated. In the early life of the embryo an invagination takes place on the floor of the pharynx between the second and third branchial arches, and a narrow median tube is formed which opens on the surface of the rudimentary tongue, and then, as the thyroid gland and the tongue undergo separation, this duct gradually elongates. About the end of the eighth week the closure of the lumen of this tube commences by the formation of a cord-like substance, which gradually diminishes in size, and at length becomes completely obliterated. Sometimes the obliteration of this tube is only partial, and a portion of it remains lined with epithelial structure. Now, it is from such a remnant that many congenital cystic tumours of the neck are developed. I have recently operated on two cases, and in both of them the cyst arose from the inferior part of this obsolete canal. These cysts are often found over the cricoid or thyroid cartilages as small and tense swellings. Their walls are thin, and they are liable to undergo chronic inflammatory changes and then to rupture somewhere near the middle line of the neck, leaving

Photograph of patient taken $7\frac{1}{2}$ years after second operation.

behind them troublesome sinuses, which can often be traced inwards to the thyroid bone and deeply behind the sterno-thyroid muscles. Complete excision of these cysts is the only remedy. The platysma and fascia should be freely divided, the central muscles separated, and the cyst or sinus carefully dissected out. Small masses of glandular tissue have been found in these cysts resembling in structure the thyroid gland. Sometimes the upper part of this embryonic canal continues unobliterated, and the sinus may then communicate with the floor of the mouth or with one of the salivary ducts, causing a thin mucoid discharge to flow from the orifice in the neck during mastication and deglutition, which adds greatly to the discomfort of the patient.

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ABSTRACT OF The Hunterian Lectures

ON THE

ANATOMY, PHYSIOLOGY, AND PATHOLOGY OF THE IMPERFECTLY DESCENDED TESTIS.

Delivered before the Royal College of Surgeons of England.

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LECTURE I.—ANATOMY.

THE human testis may be arrested at one of several spots in the normal route along which it migrates, namely, within the abdomen, in the inguinal canal, just below the superficial abdominal ring, or in the higher part of the scrotum. These constitute non-descent, partial descent, or retention; or the testis, having proceeded as far as the exit of the inguinal canal, may pass into an unnatural position, such as the perineum, Scarpa's triangle, the root of the penis, or upon the superficial surface of the aponeurosis of the external oblique muscle of the abdomen. These constitute abnormal descent or ectopia.

The conditions which have been considered to be the causes of the arrest of the human testis may be classified as follows:

(a) Conditions associated with the mesorchium: (1) The mesorchium too long, the testis would then hang too freely in the abdominal cavity, and would thus be prevented from engaging the ostium of the processus vaginalis; (2) adhesions between the peritoneum forming the mesorchium and the adjacent portions of the serous membrane, generally the outcome of intrauterine fetal peritonitis; (3) abnormal persistence of the plica vascularis.

(b) Conditions associated with the testis and its component parts: (1) The spermatic vessels too short; (2) the vas deferens of insufficient length; (3) the epididymis abnormal in size; (4) fusion of the two testes—synorchism; (5) certain forms of hermaphroditism.

(c) Conditions associated with the gubernaculum testis: (1) Absence of the upper normal attachments of the gubernaculum; (2) deficiency of its muscular fibres; (3) deficiency or absence of its scrotal attachments.

(d) Conditions associated with the cremaster: (1) Retraction of the testis after it has descended to its usual habitat in the scrotum; (2) want of action of the internal fibres of the cremaster before the testis has reached the inguinal canal.

(e) Conditions associated with the route: (1) Ill development of the inguinal canal; (2) ill-development of the superficial abdominal ring; (3) ill-development of one-half of the scrotum.

(f) Other conditions, such as the wearing of a truss preventing the onward passage of the organ into the scrotum.

In some cases the body of the testis may be arrested in the canal, while the epididymis and vas pass into the scrotum.

There are probably only two causes of the abnormal descent of the human testis, or its ectopia; one is that it may be drawn into its unusual position by the traction of certain sets of fibres of the gubernaculum testis, or it may be pushed into its abnormal site by an advancing hernia (Fig. 1).

The actual regions in which they have been observed are Scarpa's triangle, about the root of the penis, and towards the anterior superior spine of the ileum in front of the aponeurosis of the external oblique muscle of the abdomen. Those fibres which pass into the perineum may terminate by the side of the anus, may blend with the external sphincter ani, or may be attached to the ramus of the ischium (Fig. 2).

It is extremely doubtful whether the testis has ever reached the upper part of the thigh by a spontaneous passage through the femoral ring. Nearly always the spermatic cord can by careful manipulation be traced up to and through the superficial abdominal ring, thus proving that the organ left the abdomen by the inguinal canal, and it was only after its exit from the superficial abdominal ring that it passed into the upper part of the thigh. That a hernia in its advance may force a testis from its normal course into a position which is altogether unusual for it is fairly certain,