The Use of Bromide of Ethyl.

M. JACQUET made use of this anæsthetic in operations of short duration in children. The trismus which occurred when administration was unduly prolonged was not a formidable accident, as a delay of a few moments sufficed for its disappearance. Only impure samples gave disappointing results.

A Case of Fracture of the Styloid Process.

M. VAN DOORSLAER. The fracture, which occurred near the extremity, simulated the presence of a foreign body under the mucous membrane of the left wall of the pharynx. *Waggett* (*Trans.*).

AUSTRIAN OTOLOGICAL SOCIETY.

Second Annual Meeting of Austrian Otologists, Vienna, June 27th and 28th, 1897.
("Monatschrift für Ohrenheilkunde," July, 1897.)

(Translated and abridged by Dr. DUNDAS GRANT.)

Fresident—Prof. ADAM POLITZER.

Dr. GUSTAVE ALEXANDER. *On the Anatomy and Development of the Lower Part of the Mammalian Labyrinth.*

The canalis reuniens is generally described as the canal of junction between the saccule and cochlear duct; the vestibular cæcum is the vestibule end of the cochlear duct as opposed to the cupola end, which is sometimes called the "cupola cæcum." From the study of the development of the parts in the guinea-pig, and in a large number of developed mammals, the writer has come to the following conclusions:—

The canalis reuniens develops at the same time as the saccule and cochlear duct, from an indifferent stage of the pars inferior. Its development is to be traced back to a period at which it is not yet narrowed as compared with the saccule and cochlear duct.

The macular area of the pars inferior is at first connected with the pars superior and extends into the cochlear duct, but very soon the area separates from the smaller portion of the pars superior, so that the papillary area of the cochlea is quite apart from the macular area in the saccule and the ductus reuniens. The macular area of the canalis reuniens is in connection with that of the saccule, and at first it develops in an analogous manner to that, and later undergoes atrophy.

In the fully developed individual we find in its place in the canalis reuniens simply a streak of cochlear epithelium, which extends upwards to the peripheral nuclear layer of the macula of the saccule.

The writer was of the opinion that in the canalis reuniens of mammals there was the remnant of the section of the labyrinth which was, perhaps, fully developed in fish, but this part of the question required further investigation.

The cæcum developed at a period at which the canalis reuniens was

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already present, and at first it appeared as a shallow depression in the long axis of the canalis reuniens. The axis of this depression extended further and further into the course of the ductus cochlearis. The walls of this depression consisted at first of a simple layer of cubical cells. Later, certain parts of the canal of the cochlea grew towards and into the cæcum; from the connective tissues of the duct the stria vascularis extended into the floor of the cæcum and ligamentum spirali, serving as basis for the cæcum and over it towards the vestibule. From the epithelium elements of the cochlear duct a small streak extended for some distance into the cæcum in connection with the papilla. The larger portion of the cæcum is devoid of papillary elements. The cæcum of the vestibule is characterized by the absence of the scala tympani, of Corti's membrane, of nerve fibres, and of cochlear nerve epithelium in the strict sense.

Thus the parts named are found to come to a sudden stop at a certain portion of the ductus cochlearis, where a sharp line can then be drawn between the cochlear duct and the cæcum. The canalis reuniens has nothing to do with the local limitation of the cæcum; the region of entrance of the canal into the cochlear duct belongs only in a very small part to the ductus cochlearis, but in its largest part to the cæcum of the vestibule. (The paper is to be published in full in the "Monatschrift.")

Prof. GRUBER stated that at the last meeting of scientists in Berlin he had drawn attention to, and had published in the second edition of his work on "Diseases of the Ear," the description of the opening in the lower wall of the vestibule, in which the cæcum of the cochlear duct was to be found. He then showed that a bristle can be passed from the niche of the round window into the vestibule.

Dr. PANZER. *On Radical Operations in Childhood.*

As aurist to the St. Anne's Hospital for Children, he had had within the last six months the opportunity of carrying out a large number of radical operations for caries of the temporal bone. In chronic cases he practised the typical radical operation devised by Kuster, Bergmann, Stacke; and in the acute ones he held that there was no fixed rule, but the operator had to be guided by what he found at the time.

In regard to the plastic proceedings on the meatus, he found it best in children to cut away the superior posterior wall of the membrano-cartilaginous meatus, and found no disadvantage from this as regards either delay in healing or necrosis of the exposed bone.

Out of his eighteen cases he had ten of acute caries, and eight of chronic suppuration, cholesteatoma, etc. The constitutional disturbances were much greater in the acute than in the chronic cases.

Caries extended in some cases to the mastoid, and in others to the tegmen tympani, the anterior wall of the meatus and the middle wall of the tympanum, or extended beyond the limits of the tympanic cavity, and gave rise to subdural abscess. The ossicles were, again, in the acute cases generally carious, but in some quite healthy, and simply embedded in masses of granulations. In seven other cases there was complete recovery—that is to say, no trace of pus remaining in the cavity, which was lined by a firm, shining cicatrix. Two children died; one of measles

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two months after the operation, one of tuberculosis; two were removed from treatment, so that the ultimate result could not be ascertained; seven still remain in various stages of after-treatment.

The age of the children operated on varied from six months to twelve years. In every case there was a striking improvement of the general condition, and fever, pain, sleeplessness, and loss of appetite disappeared within a few days after the operation. There was a considerable amount of hearing power remaining in the case which recovered, so that whispered speech could be heard at a distance of several steps. The after-treatment consisted in plugging the cavity of the wound[1] two or three times a week with iodoform gauze, and cauterizing with chromic acid any granulations which shot up in the course of treatment. In all cases an endeavour was made to close the fistula behind the ear, and in two it was necessary to vivify the edges and introduce sutures.

Prof. GRUBER pointed out that statistics showed that in the earlier years of life suppurative otitis was not nearly so dangerous as later on. It was most dangerous between the ages of puberty and fifty years. In childhood the elements of the temporal bone were still loosely joined together, and inflammation extended more easily outwards than inwards; the separation of the necrosed parts took place more easily, so that removal could be effected without difficulty and with less danger. In the treatment of children he was slow to recommend operation, and in most cases he obtained the most satisfactory results from conservative treatment.

Dr. KAUFMANN missed in Dr. Panzer's account any distinction between the cases of chronic suppuration of the middle ear and the same when they occurred in scrofulo-tuberculous children. In the first class of cases the indications for carrying out the operation are clear and the results unquestionably satisfactory. Operation on undoubtedly scrofulous or tuberculous children had given Dr. Kaufmann no very gratifying results. He reminded those present of the discussion which had taken place twenty years before in general surgery on a question of conservative or operative treatment in diseases of the joints. On the one hand we sometimes see most striking benefit from conservative treatment with attention to hygiene and dietetic regulations in scrofulous children, so that operation is not called for; on the other hand, operation is sometimes followed by a long, wearisome period of after-treatment of the wound—sometimes even very rapid and extensive necrosis of the bone—so that the results turn out to be no better than those obtained by conservative treatment.

Dr. GOMPERTZ remarked that Dr. Panzer's removal of the inner extremity of the Stacke flap was a return to Zaufal's old method, and it was a question as to whether a return to this method was not the most satisfactory.

Dr. Gompertz advised that in chronic cases we should not hesitate too long before operating. Probably those cases of Kaufmann in which healing was very slow, would have ended fatally if operation had not

[1] By an unhappy misprint in the German paper, "Mundhohle" appears instead of "Wundhohle."

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been carried out. The necessity for operation for chronic suppuration was greater in children than in adults, because it was difficult or impossible to carry out the necessary conservative measures thoroughly in children.

Prof. URBANTSCHITSCH removed the posterior part of the meatus when the skin was diseased; otherwise, he preferred to retain the flap, in the belief that a more speedy epidermization was thereby brought about.

Dr. PANZER, in reply, stated that he had found no evil result from the removal of the posterior wall; on the contrary, the opportunity for stenosis to take place was removed. As regards the question raised by Dr. Kaufmann as to operation upon scrofulous children, he held that delay was much more serious and dangerous in caries of the temporal bone, close to the membranes of the brain, than it was in disease of a joint—such as the knee. He differed from Prof. Politzer, holding that the radical operation for acute caries was more difficult in children, because there was no typical mode of operation, but every case was different. He agreed with Prof. Gruber that the plastic proceedings were of less importance in children, because the meatus was still incompletely formed and epidermization was more easily brought about.

Dr. SPIRA (Crakow). *A Few Words on the Conservative Treatment of Chronic Otorrhœa.*

Dr. SPIRA protested against the too great readiness to perform radical operations, which, especially in public practice, threatened to degenerate into polypragmatical excess of zeal. In view of the difficulty of deciding as to whether recovery was possible without operation, he considered it the duty of the practitioner to leave nothing untried before resorting to the knife, as long as there is no immediate danger.

He spoke highly of xeroform as an insufflation affecting the secretion favourably, and never causing retention of pus. When powders were contraindicated, he advised introducing liquids into the ear and driving them into the interstices of the tympanum by means of pressure on the tragus, while the Eustachian tube is occluded by a thick solid bougie introduced through the nose.

Prof. URBANTSCHITSCH had used xeroform, but did not find its effect remarkable. He much preferred airol.

Dr. GOMPERTZ objected to the use of insoluble powders in cases of cholesteatomatous or purulent collections in the attic or antrum. In suppuration in the lower part of the tympanum, cleansing was the chief agent, and it mattered little what material was used for insufflation.

Dr. FALTA insisted on conservative treatment in all possible cases. In attic suppuration with large enough perforation, he used small tampons of gauze, and recommended Haug's chinolin-naphthol gauze.

Prof. URBANTSCHITSCH. *On Vertigo and Apparent Movement.*

Patients were placed in front of a board on which was a circle with the vertical and horizontal diameters in black, various other diameters at intervals of about two degrees being painted in different colours. During syringing the ear, blowing air into the meatus, condensing and rarefying

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the air in the outer ear, apparent changes in the position of the painted diameters took place, radii appearing to be vertical which were really inclined at angles of from two degrees to four degrees, and even as much as ten degrees. In some cases radii appeared to close up together like a fan, and in a few cases no movement was perceived.

Numerous variations occurred, sometimes under binocular vision, sometimes under monocular, and with the ear of one side and with the eye of the other. The time required from the beginning of the experiment for the phenomena to occur varied. In some it was immediate, in others after some few minutes, and sometimes quicker for one eye than the other. Similarly the duration of the phenomena varied. Occasionally the movements were absent for binocular vision, while in the same person there was an inclination towards the right for one eye and towards the left for the other. Complete correction sometimes took place, and at other times incomplete, the latter causing the appearance of double images.

The following case may be quoted :—In place of the single vertical cross, there appeared two crosses leaning to the right for one eye, and to the left for the other ; while with binocular vision, there were three crosses, one inclined to the right, one to the left, and a vertical one in the middle. By the use of tones a complicated series of phenomena could be produced, sometimes with high tones, and then, again, only with lower tones : once only the twice stroked C, at another time some other definite tone which gave rise to the inclination towards the right or the left, or forced movements forwards, backwards, or sideways. This occurred in the perpendicular attitude with closed or open eyes. At one time the stimulus was the starting of the sound, and another time its cessation. I could repeatedly increase or correct, by the sound of a tuning-fork of definite pitch, the deviation brought about by syringing.

In another series of experiments c^1 and all the tones above it as far as c^2 brought about isolated fan movements, and tones higher than this produced wave-like movements of the radii. If a tone after the other from c^1 to c^2 was sounded, the fan movement was maintained during still higher tones, and it was not till then that the wave movements set in. Conversely, I begin with tones between c^2 and c^3, and thereby bring about wave movements.

If, however, I select deeper tones, then the wave movements only come on under the stimulus of tones which by themselves would give rise to fan movements. It is similar to phenomena that can be observed in persons having a gap in their tone scale, as in some deaf mutes. In these, by gradually going up in the scale, tones which otherwise escaped perception became perceived. If, on the other hand, tones from the region of the gap are selected, and we go gradually upwards or downwards in the scale, tones which otherwise would have been heard, escaped perception.

The influence of sounds in producing apparent movements was further varied by the application of glass of different colours ; for instance, while the tone was being produced in the neighbourhood of one ear, the coloured glass was held before the eye of the same or opposite side, or

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before both eyes, at the same time. A combination of certain colours and tones produced in the same individual apparent movements and disturbances of equilibrium of a different character, and I was able to increase, or correct, or even over-correct, the movement produced by syringing.

In carrying out these experiments great care was taken to avoid putting leading questions, and the results were found to be remarkably constant.

Dr. POLLAK thought the results might be explained by the observations made by Mach, Goltz, and Breuer upon the function of the semicircular canals. The stimuli affecting the cochlear apparatus were easily transmitted to the vestibular. Irritations of the semicircular canals give rise, as Högyes had shown, to contractions of definite groups of muscles of the eyes, which, even though very slight, are sufficient to cause the subject to see the perpendicular line as if it were inclined to one side or the other.

Dr. HAMMERSCHLAG pointed out that the maintenance of equilibrium was a very complicated function in which various senses—sight, hearing, touch, and muscular sense—took part. It could hence be understood how a disturbance in the sphere of one of these senses could bring about an influence on this complicated function.

Dr. SPIRA thought he saw in these movements something analogous to the disturbance in the organ of sight in affections of accommodation. In myopia and presbyopia and accommodation for the fixation of near points, apparently movements of the surrounding objects and alterations of letters were known to occur. In a similar way he had attributed the described phenomena to disturbances of accommodation in the auditory apparatus.

Prof. GRUBER. *On the Study of Intracranial Attic Diseases.*

The author, in continuation of the subject which he had treated in the otological meeting of the previous year, mentioned the statistics derived from forty thousand and seventy-three *post-mortem* examinations made in the General Hospital of Vienna from January 1st, 1873, to December 31st, 1894. He was anxious to find out what changes had taken place in the mortality in recent times as compared with the former, in which the surgery of the ear was less actively practised.

Autopsies in the Periods.			Intracranial Diseases.	Percentage.
Jan. 1, 1873, to Jan. 1, 1883 ...	17,941	.....	88	..... 0·49
„ 1883, „ „ 1888 ...	8,770	.....	52	..... 0·59
„ 1888, „ „ 1890 ...	3,960	.....	26	..... 0·65
„ 1890, „ „ 1892 ...	3,683	.....	28	..... 0·76
„ 1892, „ Dec. 1, 1894 ...	5,719	.....	38	..... 0·66

At first sight this table gave no very favourable result, but it must be kept in mind that in earlier years chronic inflammations, especially those associated with caries and necrosis of the temporal bone, were only rarely taken into hospital for long treatment, as it was thought that they could be more advantageously treated in the country under favourable home conditions. Within the last ten years, on the contrary, few, except cases

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requiring operations, were taken into the hospital wards; hence it will be seen that with the development of operative otology the relations in this respect have improved.

Prof. GOMPERTZ. *Osteoporosis of the Auditory Ossicles.*

The writer presented two temporal bones from a female, aged fifty-nine, who had died from marasmus, and who had been quite deaf of the right ear and dull of hearing in the left. He had not had the opportunity of examining her during life. The bones exhibited osteoporosis in a high degree, as could be seen upon the most superficial inspection. The greatest interest attached to the condition of the auditory ossicles and the capsule of the labyrinth. In the right temporal bone the osseous substance was highly rarefied; in the left was seen, on the posterior wall of the external meatus, three depressions of a size to hold a hemp seed. The tegmen tympani contained extensive air cells, and the handle of the malleus was attached to the inner wall of the tympanum, as also was the long process of the incus by means of connective tissue. The head of the malleus and the body of the incus were ankylosed to each other, and on the inner surface of the incus was an osseous new growth, half the size of a hemp seed and hemispherical in shape. The long process of the incus was attached to the membrana tympani and to the posterior wall of the tympanum by means of firm osseous tissue. The ossicles of the right ear presented, on microscopical section, every evidence of osteoporosis.

Dr. GOMPERTZ referred to a case which he had described, the rarefying and condensing osteitis of the tegmen tympani resulting from chronic suppuration of the middle ear, and he looked upon the growth of new bone accompanying the breaking down of the normal bone as an important protection against the further extension of the inflammation.

Dr. GOMPERTZ. *Case of Postero-Superior Bulging of the Tympanic Membrane from Valvular Action of the Eustachian Tube.*

The patient was exhibited, the left membrane being the most typical. It was of normal colour, somewhat atrophied, convex in its superior half, especially the postero-superior segment. There was a bright light reflex running backwards from the short process. The bulging portion was sharply defined from the lower half of the membrane. The hearing distance was normal, and the Eustachian tube quite free. From former experience Dr. Gompertz recognized the case as one of valve-action of the tube, by which air entered into the tympanum more easily than it escaped, a condition he had always found to be due to a nasal lesion. He found hypertrophy of the posterior ends of both inferior turbinated bodies, a crest on the right side of the septum, and a circumscribed hypertrophy of the anterior extremity of the left inferior turbinated body.

Prof. A. POLITZER. *Contributions to the Pathological Anatomy of the External Attic.*

This was a continuation of the demonstration of preparations which had been commenced at the International Otological and Laryngological

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Congress in Paris, 1889, and continued at the tenth meeting of the South German and Swiss Otologists at Nurenburg, 1890.

In regard to the normal anatomical relations of the external attic, he was convinced that, in spite of the exhaustive works of Kretschmann, Chatellier, Zuckerkandl and himself, the anatomy of the external section of the attic required still further investigation. It was very difficult to construct a normal picture on account of the numerous varieties in the folds of mucous membrane bounding the attic and dividing it up. He would direct attention only to the more constantly found ligaments and folds.

In the new-born subject the attic is partially or completely filled with the embryonic mucous cushion. Between the membrane of Shrapnell and the neck of the malleus there is only a small cavity, which is invisible except with the help of a lens, and this constitutes the first rudiment of Prussak's space. On frontal section the attic is often found full of embryonic jelly, while the middle and lower parts of the tympanic cavity are free. The various ligaments, folds, and pediculated bodies found in the adult in the attic and Prussak's space, are residua of this mucous cushion. Attention was again directed to the slit filled with connective tissue and blood vessels, which was first described by the writer as extending from the outer wall of the attic to the upper wall of the meatus, and which he had designated "the attic slit." This is sometimes the foundation of a fistulous canal. Both the membrane of Shrapnell and the external ligament of the malleus may be inserted together into the margo tympanicus, or they may be reduced to the form of a single membrane before their insertion. Prof. Politzer, in several cases, found the external ligament of the malleus divided into two distinct bands of fibres, of which the upper extended into the attic slit, while the lower one reached the margo tympanicus.

In order to distinguish the points of communication between the attic and the lower part of the tympanum, Prof. Politzer removed the petrous bone and exposed the inner surface of the membrane; then punctured the membrane of Shrapnell from the external meatus by means of a paracentesis needle and filled the external meatus with mercury. The metal flowed through the perforation to the inner surface of the membrane, most frequently above the posterior tympanic fold—in a few cases through an opening on the prominence of the posterior pocket, and once in the anterior section of the attic in front of the head of the malleus.

Prof. Politzer presented a series of illustrations of the changes observed in the outer attic during the last four years. Among the most important were the new connective-tissue growths, developing sometimes in the upper part of the attic, sometimes most marked in Prussak's space as the result of chronic catarrh of the middle ear, and leading to partial or complete obliteration of these spaces. Of particular interest is the comparatively large number of preparations showing adhesion of the membrane of Shrapnell to the neck of the malleus, with partial or complete obliteration of Prussak's space; these conditions could be recognized during life.

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Acute processes in the tympanum give rise to the secretion of fibrinous or purulent exudations in the cavity of the external attic. ***Acute suppurative inflammation*** of this space, which is neglected by many observers, was noted in a few cases by the writer and illustrated in his drawings. *Chronic inflammations* of the external attic, with perforation of the membrane of Shrapnell, led, by round-cell development in the mucous membrane, to hyperplasia, narrowing, and partial *obliteration of the attic space* (four preparations), and the formation of granulations and polypi, which push through Shrapnell's membrane into the outer meatus. These may attain such a size as to resemble meatal polypi, their seat of origin in Prussak's space being only recognized after their removal. There were several preparations of cholesteatoma in the external attic, which, without doubt, were, in the majority of cases, of the nature of "invasion" cholesteatoma. They often remain confined to the external attic, but not unfrequently they push their way into the mastoid antrum, filling up and distending this cavity. In the latter cases they often give rise to vertigo and headache, calling for operative opening of the cavities of the middle ear.

Lastly, there was a series of preparations, with carious breaking down of the margo tympanicus, giving rise to gaps in the outer wall of the attic, through which the bodies of the malleus and incus were visible; or, if these had broken down, a part of the superior portion of the tympanic cavity, and even (as Gruber has pointed out) the mastoid antrum.

In regard to treatment, the conservative methods, in the form of antiseptic irrigation by means of curved canulæ (Hartmann), with subsequent injections of alcohol solutions of boric acid, carbolic acid, corrosive sublimate, peroxide of hydrogen (Pollak) into the attic, and, further, the insufflation of antiseptic powders (Gompertz), give very good results in many cases as far as the subsidence of the suppuration was concerned. Often, however, the most careful antiseptic treatment remains without result for a long time. A frequent cause of persistence of attic suppuration is caries of the margo tympanicus, the diagnosis of which can be made out by means of probing with delicate, blunt silver probes. Prof. Politzer had within the last few years obtained cures in a large series of cases of chronic attic suppuration by repeated curetting of the rough margo tympanicus by means of small sharp spoons, and he recommends this treatment even where no roughness can be detected. The immediate effect of this treatment is to enlarge the opening in the bone leading to the external attic, and to make the suppurating cavity more accessible to antiseptic treatment. The operative exposure of the external attic in cases of obstinate septic suppuration, without dislocating the hammer and incus, is one of the most difficult tasks in operative otology. The value of this operation is indicated by the fact that some cases of attic suppuration heal spontaneously as soon as the diseased process has produced extensive openings in the external wall of the attic [such as an ideal operation would bring about.—D. G.]. The gouge forceps which have been recommended by various operators had been proved to be useless. Of late Prof. Politzer had procured a series of long burrs, provided at

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their anterior extremity with small protective plates, by means of which he could file out a part of the wall of the outer attic and mastoid antrum (using an electro-motor) without dislocating the hammer and incus. He hoped soon to carry out this operation in several appropriate cases. He only resorted to the Stacke operation where the hearing power was greatly reduced, and if vertigo, headache, and other symptoms were present, which indicated a stagnation of pus or the formation of a cholesteatoma in the attic and antrum. Collections of cholesteatomatous epidermic masses in the external attic called for periodical and continuous irrigation by means of curved canulæ. Recurrence takes place very frequently, because the growth of the epidermis on the upper wall of the meatus is quicker than on any other parts of that passage. Founded on the belief that in most cases of cholesteatoma in the attic we have to deal with an invasion of epidermis from the upper wall of the external meatus, he recommends that a strip of cutis of from three to four millimètres in width should be removed from the upper wall of the osseous meatus, and he showed the instrument necessary for the purpose. The portion of the wall thus laid bare became again covered by a cicatricial tissue, bearing epidermis. But its growth under these circumstances is extremely slight. Prof. Politzer hoped within a short time to show the result of this operation.

(*To be continued.*)

ABSTRACTS.

MOUTH, &c.

Baurowicz, A. (Cracow).--*A Pedunculated Adeno-Carcinoma of the Soft Palate.* "Archiv für Laryng. und Rhinol.," Bd. VI., Heft 1.

THE patient, a man aged sixty-seven, complained that for fourteen years he had felt something moving in his throat which rendered swallowing difficult and disturbed his sleep. He had no pain. His speech could be understood only with difficulty.

On examination, a growth as large as a hen's egg was seen occupying the space between the tongue and hard palate, so that the parts behind were concealed. It was found to be attached by a short pedicle to the free edge of the soft palate on the left side, close to the uvula. The surface of the tumour was nodulated and covered in places with necrosed masses. The pedicle was easily broken with the finger. The mucous membrane in its immediate neighbourhood was found to be quite normal.

The appearance of the growth, the absence of enlarged glands in the submaxillary region, and the patient's statement led the author to suppose that he had to deal with a fibroma. On dividing the tumour, however, besides the connective tissue which radiated from the pedicle to the periphery and formed its greater part, granular areas were observed. These proved to be nests of epithelial cells, which had originated from the epithelium of the glands. As ordinary adenomatous tissue was also visible here and there; it was evident that a fibro-adenoma had probably

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