*EPONYMS.***II.—‘BAKER’S CYSTS’, AND BAKER’S TRACHEOTOMY TUBES.**

MR. MORRANT BAKER’S paper “On the Formation of Synovial Cysts in the Leg in Connection with Disease of the Knee-joint” lies buried in the thirteenth volume of the *St. Bartholomew’s Hospital Reports*, 1877, pp. 245–261, “the family mausoleum” as the Reports were once wittily called by Sir Thomas Smith, the editor, looking to the close body from which they emanated and the very limited circulation they attained.

Mr. Baker states that his “attention was first drawn to the diseased condition which forms the subject of the present paper by the following case which was under the care at different times of my colleagues, Mr. Callender and Mr. Marsh, and of myself.

“For the notes of the case I am indebted to the Records of the Surgical Registrar, Mr. Butlin.

“LARGE CYST IN THE CALF OF THE LEG—OSTEO-ARTHRITIS OF KNEE-JOINT—AMPUTATION.

“A woman (M. S.), 38 years old, was admitted into St. Bartholomew’s Hospital, under the care of Mr. Howard Marsh, July 22, 1873, with a large swelling in the calf of the right leg. The right leg was about twice as large as the left, from just above the knee to the ankle. There was slight œdema, and the superficial veins looked tortuous and dilated. There was no great pain or tenderness, and no hardness or swelling could be felt in the track of the popliteal vein. The swelling was generally uniform, but especially marked in the calf, where deep-seated fluctuation could be felt. A slight pulsation was also perceptible, but was apparently only transmitted. There was also some effusion in the knee-joint. The patient was thin, but otherwise in fair health, and complained only of numbness and very slight pain in the leg.

“The history given by the patient was that five months ago the right leg began to swell, and had continued since slowly increasing. She thinks that, as she stooped one day, something cracked in the knee, and from that time it began to swell. She has had swelling of the leg after each confinement.

“At a consultation which was held on the case, it was generally agreed that there was a quantity of fluid, perhaps pus, beneath the superficial calf-muscles, with probably thrombosis of the deep veins.

“A day or two after the patient’s admission to the Hospital, the swelling in the calf was punctured by Mr. Marsh with a very fine trocar, and several ounces of fluid were drawn off, leaving behind a considerable amount of thickening. Much to the surprise of those present, the fluid was not purulent, but apparently cystic. It was translucent, pale red, viscid, slightly turbid, and alkaline. It contained a large amount of chlorides, and was almost solidified by heat and nitric acid. Microscopic examination failed to detect more than the presence of blood-corpuscles; there were no pus-cells.

“*July 28.*—The fluid has apparently collected again. The measurement of the right calf is 13½ in.; that of the left, 9½ in. There is no enlargement of the femoral or inguinal glands. The swelling and thickening of the leg seems to be chiefly in the upper part of

the gastrocnemius, especially in front of the muscle, and in its external head, and between the two heads as well as some three or four inches lower. The swelling below the calf is probably only œdema, on account of the pressure above.

"*July 31.*—The swelling in the lower part of the leg is much diminished.

"Since her admission the patient has been unable to retain either urine or fæces, which all pass involuntarily. This has been so, it is said, for some time past. An examination of the vagina and rectum, however, has discovered no abnormal condition, and throws no light on the condition of the leg.

"*Aug. 4.*—The leg is generally much smaller and less painful. Measurement of the calf is 12 in. The condition of the knee is not changed.

"*Aug. 16.*—The thickening in the upper part of the calf is much less. The knee is bandaged.

"*Sept. 5.*—There is still some thickening in the upper part of the calf. The knee, in spite of careful and constant bandaging, is gradually increasing, apparently on account of the fluid in the joint. The leg is now abducted and slightly everted.

"*Sept. 17.*—The thickening in the upper part of the calf is apparently permanent, but not manifestly increasing. The knee is still enlarging. The patella is now much displaced outwards, the leg is still more abducted, and the foot everted. It seems as if there were some enlargement of the upper end of the tibia or the lower end of the femur. Measurement around the knee is $15\frac{1}{2}$ in., and around the lower end of the femur 16 in.

"Soon after the last note the patient left the Hospital, but was re-admitted in August, 1874, under the care of Mr. Callender, on account of the condition of her knee-joint. In his absence she was for a time under my care, and I had many opportunities of observing the state of her limb.

"Since she had left the Hospital, the swelling of the knee had to a great extent subsided. About two months, however, before her re-admission she fell down, and from that time the leg has been 'out of place', and dangling loose and useless. There has not been very much pain. At the time of her re-admission the right tibia was found dislocated outwards and backwards, and the leg hung loose and flail-like. It could be twisted easily in all directions, and even replaced in fair position, from which, however, it at once reverted to its mal-position when restraint was discontinued. The bones grated at the knee-joint, as if they had lost their cartilage. The synovial membrane was not now very much thickened, and there was no pain or tenderness, even on free movement.

"The whole of the extremity was atrophied. No trace of the cystic disease of the calf, or even of thickening in this part, could be detected.

"Attempts were made to improve the position of the dislocated bones, and to give such mechanical support as would enable the limb to be used, but without success, and amputation of the thigh was performed by Mr. Callender in January, 1875.

"**EXAMINATION OF THE LIMB AFTER REMOVAL.**—The joint-surfaces were found in great part denuded of cartilage, smooth and eburnated, having nodules of bone growing out from their edges. Portions of the cartilage remaining were soft, vascular, and pulpy. The ligaments had been almost wholly destroyed. The synovial membrane was thickened, many of its processes standing out on its interior like small firm fibrinous nodules. A considerable quantity of viscid fluid was in the joint.

"No trace of the cyst in the calf could be discovered.

"On thinking over this case, it seemed to me more than probable that the supposed cyst in the calf of the leg was formed really by a collection of fluid which had escaped from the interior of the knee-joint. The character of the fluid, the progress of the case as it developed, and the total disappearance of the cyst—so that even on examination of the limb after removal no trace of it could be discovered—all seemed to favour this view of its nature."

Details of seven other cases are given, and Mr. Baker then proceeds to discuss the route which is taken by the fluid when making its way out of the knee-joint to form an artificial synovial cyst in the neighbouring tissues.

The paper ends with : "The following are the conclusions deducible from the foregoing cases :—

"1. That in cases of effusion into the knee-joint, and especially in those in which the primary disease is osteo-arthritis, the fluid secreted may make its way out of the joint, and form by distention of neighbouring parts a synovial cyst of large or small size.

"2. That the synovial cyst so produced may occupy (*a*) the popliteal space and upper part of the calf of the leg, or may (*b*) be evident in the calf of the leg only, projecting most, as a rule, on the inner aspect of the leg, or (*c*) may be perceptible only at the upper and inner part of the leg as a small defined swelling, not approaching within three or four inches of any part of the knee-joint.

"3. That, however large the synovial cyst may be, fluctuation may not be communicable from it to the interior of the knee-joint ; but the absence of such fluctuation must not be taken to contra-indicate the existence of a connection between the joint and the cyst.

"4. That the synovial cyst may be expected to disappear after a longer or shorter period, without leaving traces of its existence, even on dissection of the limb.

"5. That the cyst should not be punctured or otherwise subjected to operation, unless there appear strong reasons for so doing ; inasmuch as interference may lead to acute inflammation and suppuration of the knee-joint.

"6. That most often the disease in the knee-joint will be found to have begun some time before the appearance of the secondary synovial cyst ; but sometimes the patient's attention may be first drawn to the latter, or the cyst may seem for a long period the more important part of the disease."

It is interesting to note how this opinion is borne out. The case on which these observations is founded presents all the characters of a tabetic arthropathy, a condition but little known to surgeons in 1877, though it had been described by Charcot, Clifford Allbutt, and other physicians.

The series of synovial cysts in connection with joints was enlarged, and the pathology was placed upon a more sound footing, by contributions to the Pathological Society of London in 1885 and 1887.

BAKER'S RUBBER TRACHEOTOMY TUBES.

Mr. Morratt Baker read a paper before the Royal Medical and Chirurgical Society on November 28, 1876, entitled "On the Use of Flexible Tracheotomy Tubes". The paper is published in *The Medico-Chirurgical Transactions*, 1877, lx, 71-84. He says :—

"It had long occurred to me that an elastic tracheotomy tube might be constructed which would answer all the purposes of the rigid cannula, and at the same time be free from its disadvantages ; but it was only last year that my idea was brought into working shape by my friend Mr. Paley, House Surgeon to the Evelina Hospital, to whom I am indebted for taking much trouble in superintending the construction of an indiarubber tube, made by Mr. Millikin, of St. Thomas's Street. The tube was made of ordinary indiarubber, and answered the purpose for which it was intended very fairly ; but it was evident that a better material would be preferable, and the cannulæ have been since constructed of vulcanized red rubber, a material which is in a high degree elastic, tough, and durable, and remains almost unaltered after long soaking in pus or other like fluids.

"The shape of the cannula is that of the ordinary silver tracheotomy tube. There is no laryngeal opening, but this can be made at any moment, with a sharp knife or scissors, at the part of the tube which seems best for the case in which it is being used. The tube is single, and it has been found hitherto so easy of introduction and withdrawal, or, in other words, one tube can be so easily replaced by another, that I have not thought it necessary to devise a combination of inner and outer tubes, as in the case of the silver cannulæ commonly in use."

Mr. Baker then proceeds to point out the advantages and disadvantages attending the use of such a tube, and gives notes of cases in which it had been employed, including one from Mr. H. H. Clutton, who was then acting as resident assistant surgeon at St. Thomas's Hospital.

William Marrant Baker, the son of a solicitor, was born at Andover in 1839, and was assistant surgeon and surgeon to St. Bartholomew's Hospital from 1871 to 1892. He lectured on physiology in the medical school, and edited the 6th to the 13th editions of Kirke's *Physiology*, a popular text-book on physiology which was subsequently issued under the supervision of Professor Halliburton. Baker introduced the practice of removing the tongue in two halves, an operation which he usually performed by splitting the organ longitudinally and then removing each half with an *écraseur*. His ingenuity is shown by the fact that as early as 1860 he had invented a reading lamp with a metal bar of about a quarter of an inch in width in the long axis of the flame immediately above the burner. The flame being thus divided, there was a more perfect combustion of oil, with a considerable increase in its illuminating power. The principle afterwards became universally recognized as the 'duplex burner'. He died after a long illness on Oct. 3, 1896.