derivatives. Such accidents frequently happened to him before experience had taught him to be wary of exciting sensitive parts too strongly.

Whether or not the above explanation be correct, as to the mode in which inflammation is set up in a remote part, as the consequence of a morbid impression upon the external or internal surface, there is no question that inflammations do originate in this way. Brown-Séquard relates that, "in animals in which the spinal cord has been divided at the level of the third or fourth lumbar vertebra, so that the posterior limbs cannot give any pain, and that, also, no irritation can be propagated from them to the viscera of the head, the chest, and most of those of the abdomen," no marked alterations were seen "similar to those which are so often observed in man and animals accidentally burnt, except in the bladder and rectum, and neighbouring organs. On the contrary, when the section of the spinal cord was made as high as the third dorsal vertebra, I have seen all the abdominal viscera in a state of congestion, very much resembling inflammation in many parts, with serous infiltrations and ecchymoses, two days after one of the legs had been burnt by boiling water. . . . In two cases, on animals on which the trunks of the sciatic and crural nerves in one limb had been divided as high as possible, I have not found a state of marked congestion in any viscus three days after I had carbonised this limb from the toes up to the middle of the thigh."

Mr. Paget cites the case of a testicle becoming inflamed to the degree of having lymph and pus deposited in its structure, as the consequence of the irritation of a fragment of calculus impacted in a healthy urethra. He sees no other explanation that can be given, except that the exercise of the nervous force in the testicle was disturbed through the medium of the morbidly affected nerves in the urethra. Dr. Graves relates a case in which a chicken-bone lodged in the œsophagus for about an hour, and produced much irritation and inflammation. About the third day ensuing, the patient got a violent rigor, "which terminated in a profuse perspiration, and ushered in a well marked inflammation of the neck of the bladder." Dr. Graves believes this to have been an instance of disease being propagated in a reflex manner to other and more distant parts. The so-called sympathetic ophthalmia, and the experience of Mr. Paget as to slight conjunctivitis of the left eye being excited by microscoping long with the other, are again instances of the same kind. So is the cure of ophthalmia as the result of the extraction of a carious tooth, recorded by Dr. Campbell.

In all cases of this kind, it is manifest that the nutrition of the secondarily inflamed part must be in a weakened state beforehand, so that its equilibrium is disturbed more readily than that of other parts: it is, in fact, predisposed. This is one element in the process; another is the relation of its nerves to those incident from the seat of irritation.

9. The views above offered are, I think, applicable to many cases of ordinary inflammatory disease, but by no means to all. In particular, I conceive the influenzal affections belong to the class which acknowledges a poisonous agent diffused through the circulation. The rheumatic, on the other hand, I am very much inclined to refer, at least in part, to the cold-excited class. How far the local irritant action of cold—as, *e.g.*, on the bronchial tubes—may operate as a cause of inflammation, seems to me doubtful. If it were a potent or frequent one, the intense cold of the Arctic regions would surely produce more marked effects than the milder cold of temperate climes. The previous state (the predisposing) is probably in all cases of prime importance in determining the result of impressions of cold, not acting as local irritants. Thus, in persons subjected to tropical heats, a chill produces effects which would not occur in those who had undergone no such debilitating influences. Persons in our own country, who are much exposed to heat, as bakers, are peculiarly liable to "take cold". The nervous centres are rendered more impressionable and mobile by the high temperature, and so more sensitive to cold.

10. In the above, mention has chiefly been made of the nerves and the tissues as factors in the process of inflammation; but there is reason to regard the blood as greatly, if not equally, concerned. In the case of such disease as the exanthemata, it is the vehicle of the original, as well as the source of the multiplied virus, which acts as an irritant to produce the various inflammations. But, further, the observations of M. Vanzetti (*Brit. and For. Med. Review*, July 1859), as to the results of interrupting the flow of blood through the main artery of an inflamed limb, go to show that, when the tissues are simply inflamed, the presence of moving blood acts upon them as an irritant, maintaining and increasing that morbid condition; and that the withdrawal of this cause of irritation for a time allows the morbid state to subside, after which the blood-flow may again be restored without reproducing the inflammation. These observations go far to justify venesection, employed as a means of diminishing the stress and force of the circulation.

[*To be continued.*]

CONTRIBUTIONS TO CLINICAL SURGERY.

By OLIVER PEMBERTON, Esq., Surgeon to the General Hospital, and Lecturer on Surgical Pathology at Sydenham College, Birmingham.

VI.—EXCISION OF THE KNEE.

THE operation of excision of the knee in preference to amputation of the thigh, has now been resorted to in so many instances, in this the second epoch of its trial, that we might fairly conclude that its history, its complications, and its shortcomings had been told; that the cases in which it should be selected were recognised; that it was an operation in which the public possessed confidence as well as the profession; and that private individuals had experienced its benefits as well as hospital patients; in a word, that it was established in reputation as strongly as excision of the elbow, or as amputation at the ankle-joint. But, it is not so. We have yet to learn very much in connection with this operation before we can associate it with these and other well tried procedures of surgery.

The mere absence of excessive fatality will not be sufficient to establish its position. No surgeon, at all acquainted with the amount of shock, of hæmorrhage, and the other attendant circumstances of excision of the knee, will contend for one moment that the same amount of danger to life in general follows its performance, as does amputation of the thigh.

The great question is the utility of the limb preserved. The mechanic and the rustic have hitherto been the subjects to illustrate its desirability. We want to know how far they can make use of their limbs in their respective callings.

The time has gone by for us to look with deep interest on a rescued limb merely as such, in consequence of excision of the knee. We must now learn how far the remnant that has escaped will enable its possessor to labour for his living with the same facility as he would have done with a wooden substitute. A sufficient time has now elapsed for the rendering a true account on this important point, and both the public and the profession must anxiously expect to be told of the wearing powers possessed by limbs that underwent the operation in the the earlier portions of the last nine years.

Where the subjects submitted to operation had not attained full development of limb, the possession of this knowledge becomes of paramount importance, inasmuch as on the evidences afforded by such cases, more especially in regard to the question of subsequent parity of growth, will depend the establishment or the total rejection of the proceeding in similar instances for the future. With this view strongly before me, I shall submit to the profession what I may term "the further history of an excised knee-joint in the ungrown subject," comprising a period of nearly six years, and I shall add to this my experience of certain complications which may arise in connection with the operation generally, by a reference to the particulars of typical cases.

CASE I. E. F., aged 12, a pale, strumous looking boy, of much intelligence, was admitted under my care in the General Hospital, Birmingham, December 20th, 1853, suffering from disease of the left knee, of fourteen months' duration. The following was the state of the joint. The leg of the affected limb formed a right angle with the thigh, from which position it could only be slightly altered by the exercise of great force, occasioning acute pain. The circumference of the joint was larger by three inches and a half than that of the opposite one. The integuments were shiny and painful. The apertures of four sinuses were apparent; and three of these communicated with carious bone. These openings were situated as follows: one over the external condyle; one over the internal condyle; one over the anterior surface of the femur; and a superficial one over the head of the fibula. His sufferings were very

great, especially at night, from the constant gnawing pain which he experienced. Under the influence of rest and good diet, the knee somewhat improved; in a month's time, however, hectic and diarrhœa manifested themselves, so as to necessitate an operation.

In consultation, my colleagues having agreed with me in the propriety of amputation, I was left to select the alternative of excision of the joint, if I thought fit. Accordingly, upon the 8th of February, 1854, the patient being under chloroform, I proceeded to extirpate the joint.

The mode in which this was accomplished in this, the first instance in which I had attempted to excise the knee-joint, is that which I have without variation adopted in subsequent instances, with the exception that in some few cases I have removed the sawn articular extremities separately, with the view of testing the comparative advantage of such a proceeding over the method which I have advocated, after Mulder* of removing them in their connected state.

Under chloroform, an incision was carried from a little above the outer to a little above the inner condyle, across the front of the joint, below the patella, dividing its ligament of insertion down to the spine of the tibia. The flap thus formed was turned back; and the cavity of the joint was fairly exposed. The disorganised soft parts having been cleared away from over the femur, it was sawn through above the condyles, without the aid of a spatula, or the introduction of a knife: the same process was next applied to the head of the tibia; and the articular extremities were then removed in their connected state, by a cautious dissection of the soft parts beneath, commencing from above downwards. The hæmorrhage was inconsiderable; no ligature was required. The amount of bone removed measured rather more than three inches and a half. About two inches and a half belonged to the femur; and about an inch to the tibia. The patella was left, its under surface being scraped. The head of the fibula was not interfered with.

The operation being finished, the leg was readily brought into a line with the thigh. The flap containing the patella was simply laid, in as accurate a state of apposition as possible, over the parts beneath, without the aid of sutures, and was covered with water dressing. The entire limb was then adjusted on a straight splint, reaching from the buttock to the ankle, furnished with a perinæal band, with a foot support, and with side pieces to the thigh and leg; the knee being left perfectly free on the sides and above, for the application and renewal of dressings.

In subsequent instances the swing cradle has been made use of for the purpose of suspending the entire limb, with its splint and dressings, and with the most satisfactory result, as the tedium resulting from long confinement in one position was greatly relieved by this most admirable contrivance.

Examination of the Diseased Parts. The synovial membrane was everywhere affected by disease. It presented a pulpy, thickened condition, and was of a brownish tint, and covered in places by bloody discolorations. The cartilage covering the tibial surface of the outer condyle was destroyed, as was also the corresponding surface of the semilunar cartilage of the tibia. The entire thickness of cartilage on the inner condyle and tibia was not altogether destroyed, but was in process of ulceration. The extremity of the femur above the condyles was blackened, and denuded of periosteum. The bone was soft and carious. Fresh osseous material had been thrown out behind the condyle and on the head of the tibia. The medullary canal of the bone did not present an unhealthy appearance.

No shock followed the operation; and but a single restless night marked the presence of any constitutional disturbance. The warmth of the limb, below the seat of operation, never varied. The patient had scarcely any pain, and could in the course of a fortnight exercise complete command over the muscles of the foot and leg.

Three months afterwards, the following note was made.

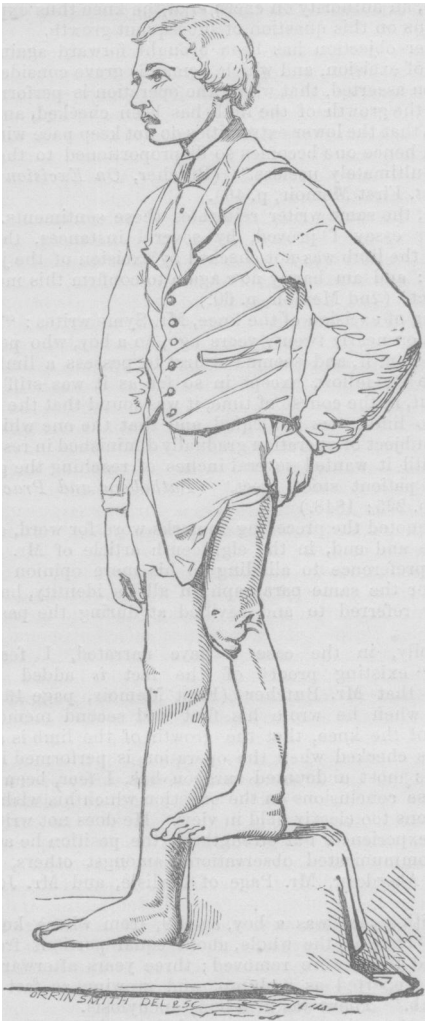
The healing of the wound had been retarded by the thickened character of the integuments. The parts in the situation of the joint were becoming firmer and more consolidated. The boy possessed perfect control over the movements of the foot, and turned it, with the entire limb, either inwards or outwards. The splint was discontinued, and the wound was firmly strapped and rolled.

Four months after the operation, the wound remained open slightly at the sides. A gutta percha splint was applied behind the joint; and the boy was directed to be out of doors on crutches. An accurate measurement was made of the two limbs, when it was found that the difference between them exactly corresponded to the amount of bone removed—namely, three inches and a half.

The patient remained in the hospital until October; more for the purpose of observation, than from any necessity. When discharged, eight months subsequently to the operation, the wound had entirely healed. One of the sinuses, existing previously to the operation, over the patella, still discharged. He could walk with the aid of a stick and a high-heeled shoe; the knee being supported by a leather case.

The union between the bones was altogether of a ligamentous or fibrous character, and admitted of free movement in any direction.

After the lapse of nearly six years, I place on record the condition of this patient's limb, and verify its description by a reference to the photograph from which the woodcut that accompanies these observations is taken.



October 1859. E. F. came to my house. He had grown in height, and had thickened considerably in his figure, but was somewhat diminutive for his age (18). The lower limbs presented a wonderful contrast in appearance. The one was strong, with the muscles, bones, and joints, well defined; the other, feeble and blighted. The sound limb, from the anterior superior spinous process of the ilium to the outer malleolus, measured thirty-four inches; the one subjected to operation, twenty-five! Thus showing a difference of nine inches: or a

* "Ossium fines separatim auferre, necessarium non duxit cl. Præceptor, uti fecerit exc. Park. Nullum inde oriebatur incommodum, et optime fines ossium exstirpari poterant. Hisce sublatis nusquam in parte vulneris profundiore detegebatur arteria poplitea; parum igitur durante ipsâ operatione metus aderat, ne illa læderetur." (Wachter, *Dissertatio Chirurgica de Articulis Exstirpandis*, p. 117.)

deficiency in growth as compared with the other of rather more than five inches since the operation. In the middle of the thigh, in the lower third, and round the calf of the leg, the measurements were sixteen, twelve, and twelve as opposed to thirteen, ten, and nine and a half. The foot of the limb operated on appeared to have expanded most, but even this was an inch and a half shorter than its fellow. The femur, the tibia, and the fibula of this limb were not larger than the same bones in a child of ten or twelve.

About the excised joint, the parts were sound, and free from pain on manipulation, a very moveable ligamentous or fibrous medium connecting the articular extremities. Notwithstanding the shortness and the flail-like joint, it was astonishing to see the power he possessed of extending the leg, and of bearing the entire weight of the body on it in walking, unaided by support of any kind; and it was quite clear that the disparity in length alone prevented him from realizing all the advantages that he might under other circumstances have obtained from the operation. With all these drawbacks, he works hard as a boat-builder, the limb being aided by a cork sole of some six or seven inches in height, and by a leather case at the knee.

The limb cannot, however, be deemed otherwise than an incumbrance, and with the best appliances to remedy the want of length, proving, after all, little better than a sad deformity.

In 1855, an authority on excision of the knee thus expresses his opinions on this question of subsequent growth.

"Another objection has been brought forward against the operation of excision, and which demands grave consideration. It has been asserted, that where the operation is performed in early life, the growth of the limb has been checked, and, consequently, that the lower extremities do not keep pace with each other, and hence one becomes so disproportioned to the other as to be ultimately useless." (Butcher, *On Excision of the Knee-Joint*, First Memoir, p. 46).

In 1857, the same writer reiterates these sentiments. "In my former essay I proved, by several instances, that the growth of the limb was not checked by excision of the joint in childhood; and am happy now again to confirm this most important fact." (2nd Memoir, p. 60.)

Speaking of excision of the knee, Mr. Syme writes: "I tried the operation nearly twenty years ago, on a boy, who perfectly recovered from it, and seemed at first to possess a limb little inferior to its fellow, except in so far as it was stiff at the knee. But, in the course of time, it was found that the growth of the two limbs was not equal, and that the one which had been the subject of operation gradually diminished in respective length, until it wanted several inches of reaching the ground when the patient stood erect." (*Pathology and Practice of Surgery*, p. 225: 1848.)

I have quoted the preceding remarks word for word, as they commence and end, in the eighteenth article of Mr. Syme's work, in preference to alluding to his mere opinion on the matter; for the same paragraph, in all its identity, has been frequently referred to and cavilled at during the past nine years.

Unhappily, in the case I have narrated, I fear that another "existing proof" of the fact *is* added to the only one that Mr. Butcher (First Memoir, page 46) could discover, when he wrote his first and second memoirs on excision of the knee, that the growth of the limb is at least sometimes checked when the operation is performed in early life. This most undaunted surgeon has, I fear, been led to adopt those conclusions on the question which his wishes and anticipations too clearly held in view. He does not write from his own experience, but strengthens the position he assumes by the communicated observations, amongst others, of Dr. Keith of Aberdeen, Mr. Page of Carlisle, and Mr. Jones of Jersey.

Dr. Keith's case was a boy, aged 9, from whose knee two inches of bone in the whole, about equal portions from the femur and tibia, were removed; three years afterwards, the limb was reported as "plump, and growing as fast as the sound limb." There was firm bony anchylosis.

Mr. Page's patient was a young lad, aged 17. Two inches and a half of the femur and tibia were removed. There was firm bony anchylosis. Reporting on his condition four years afterwards, he writes: "the growth of the stiff limb has quite kept pace with that of its fellow."

Mr. Jones's observations refer to the cases of three boys, aged respectively 7, 11, and 9. In the first instance, two inches and a quarter of bone were removed. There was bony anchylosis. In the second, rather more than four inches of the femur and tibia were removed. There was bony anchylosis. In the third, the exact measurement of bone removed is not mentioned; but there was bony anchylosis. This patient died at the end of twelve months; and Mr. Jones writes: "There cannot be a doubt that in this instance the limb, from which the joint was excised, kept pace with the other in every respect." Whilst in regard to the first mentioned cases no disparity of growth is hinted at.

From Dr. Keith, the distinguished surgeon of Aberdeen, I have received the following most lucid report of the present state of the boy's limb, on whom he operated nearly six years since. Dr. Keith's letter is dated October 12th, 1859; and he thus writes to me:—

"DEAR SIR,—I have pleasure in replying to your favour of the 7th current, but have not the additional pleasure of reporting so favourably of John Hay's limb, as I seem to have felt warranted in doing three years ago.

"Be the cause what it may—and I shall be delighted to have your opinion on the subject—I, and I presume every one who has had experience in resection of the knee, feel convinced that growth to the length is all but arrested in the lower limb after every such operation.

"I delayed my answer until I should have opportunity to see and to measure John Hay's lower extremities; this I accomplished yesterday, and annex the result.

"He is now a stout healthy boy, in his fifteenth year; his left or sound lower limb long and well developed. His right limb is really plump to look at, but seems a mere appendage to his body, when compared with the other limb: the right limb being now *seven inches* shorter than the left limb, from the anterior superior spinous process of the ilium to the heel.

"At the thick of the thigh the left measures 17 inches round; the right, 16. Around the knee and patella: left, 12½ inches; right, 12. Around the calf of the leg: left, 11½ inches; right, 10½.

"In length, the left limb is 17 inches from the anterior superior spinous process of the ilium to the centre of the patella, and 17 inches from the same spot to the sole of the foot, in whole 34 inches; while the right was only 12½ to 14½, total, 27 inches.

"Yet, wearing a boot propped up by two steel rods seven inches long, he walks and runs with great ease and energy; and when I yesterday asked him, If he now wished the limb had been removed, he at once exclaimed: 'Oh, no! my leg is worth a thousand wooden ones; it is my own leg, sir, and I feel it to be so.' I daresay the poor fellow is right. The arrest of growth to the length is a mystery. Let me see that you solve it.

"To account for my statement made to Mr. Butcher three years ago, it is only necessary to state that exercise had developed the muscles so, that the limb was plump; he wore the same high-heeled boots that I had at first provided for him, so that no increase of disproportion in length had at that date taken place between the two limbs; but now my guess is, that the dwarfish little fellow had been standing still, and neither limb growing in length, it was only when he began to shoot out in earnest that the difference became apparent, and new boots with higher and higher props became the order of the day.

"Hay's right limb has an outward curve at the knee now, though anchylosis is perfect, and he thinks it is slowly increasing. That tendency from the hour of the operation has been often noted. How is it to be obviated?

"1. I think well of cutting the tendons forming the inner hamstring.

"2. Of slicing rather more off the inner than the outer condyle of the femur.

"3. Using a splinted knee-cap for life.

"The patella was spared in this case, and has strong union to both femur and tibia; and yet with all this the callus yields after five years."

The foregoing narrative of Dr. Keith will be attentively perused by practical surgeons. In two respects, his case possessed an advantage over mine. There was anchylosis; and but half the quantity of bone was removed. Notwithstanding, at the end of nearly six years, the deficiency of growth is measured by five inches—the same amount that was recorded in my case, and extending over the same period of observation, within three months.

The circumstances which led Dr. Keith to state, in the first instance, that the limb was "growing as fast as the sound limb", are, in my judgment, sufficiently explained by the presumption that neither limb had then grown, or, if they had

done so, it was only in a very limited degree. I had the same impression some two or three years after I had operated on E. F.; but I found subsequently that the real stride in development had not then commenced; and that, when it did, the limb subjected to operation did not partake in its advance.

The lateral yielding of the callus is not, in my experience, of frequent occurrence, where firm bony union has taken place. It may happen in young subjects, and, if so, forms another drawback to the proceeding being adopted in early years; but it certainly does not occur in adults. I should, however, always use in the ungrown limb a splinted knee-cap, as Dr. Keith suggests, to guard against the possibility of the event.

The next case, which was selected to illustrate the parity of growth, was under the care of Mr. Page. But the patient was seventeen years of age; and thus being past puberty, his condition cannot fairly be adduced in support of the theory.

Then we have Mr. Jones's three boys. The third boy, aged 9, died twelve months after the proceeding. His limb was found to have "kept pace with the other in every respect"—a statement, after what we have now ascertained, that cannot amount to any determination of the question at issue. The first and second boys, however, in whom large quantities of bone were removed, should now have their limbs reported on, as, from the length of time that has elapsed since the operations (eight and seven years), the evidence which their subsequent history could afford would be most important.

Being anxious to know about these cases, I wrote to Mr. Jones concerning them; but my letter arrived at Jersey at the time of the calamitous fire in the General Hospital, or I doubt not that I should have received the information I sought. As it is, I trust that the profession, through some other channel, will ere long be in possession of all the facts concerning their present state, which this most able surgeon can afford.

On what, let us inquire, when the operation of excision of the knee is performed in early life, and the subsequent growth of the limb does not correspond with its fellow—on what does this depend? Mr. Humphry says: "In young persons, care should be taken to make the section through the epiphyses of the tibia and femur; so that a thin layer of the epiphysis, with the cartilaginous medium that unites it with the shaft, is left upon each bone. If this precaution be taken, there is every reason to believe that the limb will keep pace in its growth with the opposite member." (*Med.-Chir. Trans.*, vol. xli., p. 216.) This opinion of so distinguished an authority on the development of the skeleton as Mr. Humphry, is entitled to every consideration, and, at first view, it appears plausible; but it is not borne out by facts.

Mr. Price writes: "Should the epiphyses of the bones be removed entirely, there can exist but slight doubt that arrest of further development will take place." (*Med. Times and Gazette*, April 23rd, 1859.) If this were so, there ought to have been an arrest in the growth of Mr. Jones's first and second instances, in which the bones must have been sawn through beyond their cartilaginous joinings, as well as in the boy operated on by Mr. Page, at whose age (9) an inch from either articular extremity could scarcely fail to go beyond the epiphysis.

On the other hand, Mr. Syme informs me (July 30th, 1859) that the articulating surfaces only were removed in the instance from which he drew the conclusions already cited, the bulging parts of the bones being left.

But, supposing that the bones in the thigh and leg do not grow when deprived of their heads, how are we to explain the want of growth in the case I have narrated, in the foot and the fibula, in the absence of the plea of want of use, inasmuch as the boy has worked his little limb for years with persevering activity?

That the theory of growth being arrested in young subjects by the removal of the heads of bones, is an untenable one, we have other facts in surgical experience to prove. Take, for illustration, amputation in the lower third of the thigh or leg, or at the ankle-joint. I have never found an arrest in the subsequent growth of the bones in my experience, in the first class of cases; and I am not aware of others having met with a different result. The complaint has been, rather, that the bone or bones in the stump become troublesome, and grow too much, so as even to require the removal of some inches at a period of years very distant from the operation. At the ankle-joint, I have especially watched the parity of growth. I had occasion to amputate at this articulation in an infant only twelve months of age, nearly six years since. The malleolar epiphyses were removed. The subsequent growth of the limb has been of the most perfect character—a condition invariably observed in several other instances where I have been called on to perform this operation at tender years.

That the limb may grow in the young subject after excision of the knee, the evidence which has been given me on the subject by my friend Mr. Humphry goes some way to prove, but not, from the age of the patient at this time, quite far enough to establish an accomplished fact, even in his well observed cases; but we must at the same time acknowledge that it may not do so—a conclusion that cannot fail to make us desire a further inquiry into the causes of failure in this respect, ere we determine to recommend the adoption of the operation in children generally.

The late Mr. Mackenzie hazarded the opinion that the want of anchylosis might exercise an influence on the subsequent growth of the limb. (*Monthly Journal of Medical Science*, June 1856.) He based it on Mr. Syme's case, in which the limb allowed a slight degree of flexion and extension; and, considering that my case afforded even greater mobility, the conjecture, but for Dr. Keith's illustration to the contrary, might have been deemed to be not unfounded.

It will be seen, however, that on the two points—the section through the epiphyses, and the union by anchylosis—Mr. Humphry's case is very conclusive in an argument of results. This able surgeon thus writes to me, July 22nd, 1859:—

"The only case I know of, in which sufficient time has elapsed to enable me to derive satisfactory information respecting the growth of the limb after excision of the knee, is that of William Child, related at page 196 of the last volume of the *Medico-Chirurgical Transactions*. The operation was performed in August 1855, when he was twelve years old; and in two months there was firm union between the bones. In consequence of your note, I drove over to examine the lad yesterday, and find that, during the interval of four years, the growth of the limb has proceeded *pari passu* with that of the other limb and of the rest of the body. The bones of the foot are quite as long as those of the other side—the tibia and fibula very nearly; certainly showing no greater difference than is due to the removal of a thin slice of the upper articular surface of the former. The femur is about an inch shorter than the other femur. The difference in this respect between the femur and the tibia is, I suppose, owing to the greater thickness of the slice removed from the condyles of the femur, in order to obtain a flat surface for union with the tibia."

A fair consideration, then, of the foregoing facts, leads us to certain conclusions affecting the operation of excision of the knee in young subjects. These are:—

Firstly. That the proceeding is liable to be attended by a want of corresponding growth in the limb subjected to operation, as compared with its fellow; the result being, that ultimately the member becomes not only useless, but is an incumbrance, as it has failed altogether to grow in proportion to the general expansion of the frame.

Secondly. That whilst we, at present, have no proof that the removal of the epiphyses, or the failure in obtaining anchylosis, exercise any material influence on the subsequent growth of the limb, it nevertheless appears probable that adequate growth is more likely to be attained where care has been taken to remove as small a portion of the articular extremities as possible, and anchylosis has resulted.

Having testified to the truth, so far as my own experience can guide me, on this deeply interesting question, as it affects the operation in early years, I shall now rest satisfied, trusting in the hope that we may yet reach the means whereby even this cause of failure may be removed, as time enables us to know more and more the results that may have been realised by others.

[*To be continued.*]

Fees for Medical Attendance. The association of physicians and *pharmaciens* of the department of the Somme agreed to the following declaration at a recent meeting:—All things necessary for ordinary life have long increased in price, while the fees of physicians have remained the same. On the other hand, in fixing the amount of fees, it is not sufficient only to take into account the number of visits; but account should also be taken of the severity of the disease, of the importance of the operation, of the risks undergone by the medical man, as well as of other circumstances, such as the social position and the pecuniary means of the patients. Therefore: 1. In future, physicians are entitled to a higher remuneration; 2. This remuneration will not be calculated upon the number of visits made, but according to the circumstances pointed out above.