ance had fully made up his mind that the diffused aneurism which surrounded the patient's knee was owing to the rupture of the popliteal artery, and that consequently the patient would have to lose the whole, or part at least, of his leg. However, he resolved to wait and see at what rate the gangrene, which had plainly commenced, would spread, before taking any active steps. The patient was ordered—

R. Ammoniae sesquicarbonatis gr. iij; tincturae opii ℥x; mistura camphorae ʒi. Misce. Fiat haustus quartâ quâque horâ sumendus.

He was ordered to have half an ounce of wine every three hours.

February 12th. The foot was more gangrenous, but the loss of sensation did not extend any farther up than the middle of the leg, about the same point as on the day before. No reflex action whatever was produced by tickling the sole of the foot, though, when the dorsum was touched, the patient said that he could just distinguish that it was touched, but no more.

When seen again in the evening, the foot was found to have regained some of its natural heat; indeed, it was warmer than the other foot; a complete reaction had been induced by the combination of sedatives with stimulants, and therefore they were diminished in quantity.

February 13th. The leg continued much in the same state; but the vesication had somewhat increased, and the toes seemed darker in colour. Pulse 106. The patient not seeming quite so well, the stimulants were ordered to be resumed, with the opium; and the bowels to be moved by a clyster of olive oil and gruel.

February 14th. There was no decided change, except that the toes were again cold; but, on the application of warmth to the sole of the foot, they became warm.

February 15th. To-day it was plain that the whole of the foot was mortified; and there was a patch of gangrene on the calf of the leg.

9 P.M. There seemed to be some fear that the aneurism, which was pulsating strongly, must burst.

February 16th. He was removed at 2 P.M. into King's College Hospital, and placed under Mr. Fergusson's care. On examining the case, Mr. Fergusson found the right foot in a state of mortification, and the lower half of the leg gangrenous. The whole system was, moreover, very much affected. Under these circumstances, he considered it to be a case for immediate amputation above the knee. The man was therefore brought into the theatre, and, having been placed under the influence of chloroform, Mr. Fergusson proceeded to amputate the thigh at the junction of its middle and lower thirds. The flaps were made laterally, and the bone sawn through at the above mentioned point; ligatures applied to bleeding vessels, and the flaps brought together by sutures, whereby an excellent stump was formed. Very little blood was lost during operation. The patient was removed to bed, as he was in a very low state. In the evening, the patient was tranquil; pulse 104.

February 17th. The patient had not slept much during the night, and had suffered from sickness, arrested by administration of ice, and a mixture of lime-water and milk administered at short intervals and in small quantities. Pulse 120.

February 18th. The patient, with the aid of a narcotic, had slept tolerably during the night. The dressing was removed, from which there was very little discharge, and that of a dark grumous character. Water dressing was applied to the wound.

February 20th. The upper half of the wound had healed by the first intention; and all the sutures, with the exception of two at the lower end of the wound, were removed. The wound was dressed with slightly stimulating myrrh lotion. At 5 P.M. he was attacked with violent delirium, which lasted till 10 A.M. of next day. During the whole period of this attack, he steadfastly refused food and medicine; but he gradually dropped into a gentle sleep, on awaking from which he appeared quite sane, and took his food with avidity.

February 24th. With the exception of that on the femoral, all the ligatures had separated. The patient slept well; his appetite was good.

March 5th. The ligature separated from the femoral artery; and the stump, with the exception of about two inches at the lower part, was entirely healed.

March 8th. At 7 A.M., severe hæmorrhage occurred from the open part of the wound, by which the patient lost a considerable quantity of blood. Mr. Swain was immediately summoned, and he applied pressure on the femoral artery above, which was effectual in arresting the hæmorrhage. He then opened up the cicatrix with the scalpel for some distance, in order to search for the bleeding vessel. When, however,

pressure was removed from the femoral artery, no accession of bleeding occurred. The wound was therefore left open, and orders given that it should be watched continually.

4 P.M. Hæmorrhage recurred, which was immediately arrested by the dresser in attendance. Mr. Swain was again summoned; and, finding it impossible to secure the bleeding vessel through the incision already made, the patient was placed under the influence of chloroform, and, having again enlarged the wound, he was enabled, with much difficulty, to place a ligature on an artery which, from its size and position, he supposed to be the femoral. On recovering from the effects of the chloroform, the patient was much depressed; the pulse hæmorrhagic; the countenance pale and anxious. The patient was placed on half an ounce of brandy every half-hour, and the stump left open. He passed a good night, and the following day and night he was doing well.

March 10th. At 10 A.M. violent hæmorrhage again came on, and, after some consultation, Mr. Hulke, who was present at the time, decided on placing a ligature on the superficial femoral artery in Scarpa's triangle. The patient was placed under the influence of chloroform, and the operation was performed. It was attended with some difficulty, as the parts, owing to the pressure which had been frequently applied, had become greatly engorged with blood. The ligature, however, was successfully placed on the vessel; and, on recovering from the effects of the chloroform, the man seemed to be tolerably comfortable. During the rest of the day and the following day, the patient went on well; but on March 12th, in the afternoon, severe hæmorrhage again occurred from the face of the stump, which was naturally supposed to come from some branch of the profunda. Mr. Fergusson, who happened to be in the neighbourhood, was sent for; and on his arrival, the patient being placed under the influence of chloroform, he proceeded to open up the wound more extensively; and, not being then able to get hold of the bleeding vessel, he dissected the flaps back from the bone for about two or three inches. During this operation, several vessels were cut across, and they, together with the larger one near the bone, which seemed to have been the original source of hæmorrhage, were secured. After this operation, during the succeeding night and day, the man appeared so low that scarcely any hope of his recovery was entertained. With the free use of stimulants, however, he gradually recovered, and has gone on steadily improving up to the present day. All the ligatures, including that on the superficial femoral artery, which separated on the ninth day, have come away; the stump is healing up by granulation; and the man's general health is exceedingly good.

The future progress of this case, and the appearances of the amputated limb, will be given in an early number.

MANCHESTER EYE HOSPITAL.

I. CASES OF OPACITY OF THE CORNEA.

By JOHN WINDSOR, Esq., Senior Surgeon to the Hospital.

ABOUT the year 1830 or 1831, I first noticed cases of opacity of the cornea occasioned, as I believed, by a deposit of lead on the surface of ulcers situated on that part. In these opacities, which presented a peculiar dull and generally defined *flaky* appearance, I was mostly, if not always, able to ascertain that sugar of lead lotions had been applied; and I came to the conclusion that the acetate of lead had become decomposed (by the sulphates, phosphates, or carbonates) on the surface of the eye, and that thus an insoluble salt of lead became deposited on the ulcer, the unevenness of which would afford a favourable condition for such deposit. I may add, that when I first noticed this affection, and had noted several cases, I was not in the least aware that it had been observed by any one before or elsewhere; but I found soon afterwards that Dr. Jacob of Dublin had been simultaneously making observations similar to my own, although perfectly independent.

When I published my cases in the *Lancet*, I believe about the time above mentioned, I had only seen the deposit on the cornea (and, since that period, I have met with very many such cases, which it would be now unnecessary to detail), but lately I met with an instance of similar deposit on the irregular folds of a chemosed conjunctiva.

By way of elucidation, I shall therefore adduce only one case of lead deposit on the cornea, and that on the apex of a conical cornea; afterwards relating briefly the case of deposit on the conjunctiva. It is well known that the apex of the

cone, in cases of conical cornea, frequently becomes opaque; but that is very different from the *flaky* defined opacity here described as occurring from lead deposit.

CASE I. Charles Underwood, aged 23, a finisher of cloth, became an out-patient of the Manchester Eye Hospital, August 2nd, 1851. He complained of his sight being short and indistinct. He first noticed the affection about twelve years previously. He could assign no particular cause for the complaint. He had worked a good deal by gaslight.

On examining the eyes, the corneæ were observed to be conical, especially that of the left eye, of which the vision is decidedly the worst. Although vision with the right eye was not so good as it once was, he could still see tolerably with it. Three or four drops of solution of diacetate of lead were ordered to be dropped into each eye twice a day; and a purgative powder to be taken occasionally.

August 13th. There was now a circumscribed flaky opacity at the apex of each cornea, indicating a deposit of lead there, probably from some irregularity or superficial ulceration of the surface, although it had not been previously noticed. The lead drops were omitted, and lead lotion was ordered to be applied.

September 6th. The opacity yet remained; and since the last report there had been some inflammation of the external tunics, but it seemed now going off.

1854. (Date not mentioned particularly.) The opacity was but slight now, and not flaky. In other respects, he was much the same; but his sight had been somewhat improved by the application of belladonna, which I had prescribed for him.

CASE II. James Thompson, aged 53, whilst walking along the bank of a canal, slipped, and struck his eye violently against a stone. Almost immediately afterwards, very severe pain and inflammation came on. He procured a lotion (a sugar of lead one, he thought) from a druggist, but it afforded him little relief. Three days after the accident, he came to me, with considerable inflammation of the conjunctiva and chemosis, especially inferiorly. On the margin of the swollen conjunctiva, just below the cornea, and also, but in a less degree, on the conjunctiva lower down, there appeared a flaky whiteness, which I had no hesitation in referring to the application he had been using. I prescribed him a mild lotion and a purging powder every other day.

July 30th, 1851 (eight days after the accident). He was now quite easy, and saw well, as the cornea was clear.

August 1st. The conjunctivitis, chemosis, and pain of eye, were almost gone, and his vision was good; but the flaky lead deposit was as yet little altered.

Since the above note, I have not again seen him, but I doubt not the deposit would soon disappear, as indeed, after a certain time, it gradually, as far as I have observed, does in its usual site on corneal ulcers. Here, however, there will necessarily remain, temporarily at least, some opacity, from the filling up of any loss of substance, although the flaky stain may have quite disappeared. In this respect, it seems to differ from the permanent dark olive stain left on the conjunctiva by the too long continued application of nitrate of silver drops. In a few cases of lead deposit, I have partially succeeded in lessening the opacity by carefully scraping off a portion by the edge of a lancet.

II. VESICLES OR BULLE OF THE CONJUNCTIVA, ETC.

By JOHN WINDSOR, Esq.

The conjunctiva, both where it lies over the sclerotic, and also where it gives a thin epithelial covering to the cornea, is sometimes raised in the form of a vesicle or bulla, containing a limpid fluid.

CASE I. A little boy, named Harding, was brought to the Manchester Eye Hospital, November 14th, 1834, on account of a small globular tumour of about the size of a barleycorn, transparent, and covered by the thin conjunctiva of the sclerotic. It was ascribed to a slight accident received a few days before. On puncturing it with a lancet, a clear fluid issued, and the tumour disappeared. I heard nothing further of this boy, probably from his experiencing no further inconvenience.

CASE II. Robert Jackson, aged 34, a coalminer, residing at Oldham, was admitted December 24th, 1836. On the anterior surface of the ball of the eye, and quite covering it except in the centre, there appeared a semi-transparent tense tumour, divided somewhat into three compartments by vessels passing in the intervening sulci. The tumour was of the size of a shilling, and fluctuating to the touch. In the centre of the tumour was a small depression, the remains of the injured

cornea. On tracing the tumour laterally, it seemed continuous with the conjunctiva, commencing a little anterior to where this membrane was reflected from the eyelids; and the conjunctival vessels were seen to pass from the one part over the other.

About seven years previously, he received a blow on the part from a man's foot, which, he thought, "burst his eye"; considerable pain and inflammation followed. A surgeon whom he consulted told him the eye was lost. In about six weeks the pain abated. Three years since, the tumour appeared, and continued nearly stationary till July 1836, when, after crossing the Mersey at Liverpool, the inflammation returned, with an increase in the bulk of the tumour. He consulted a surgeon of the Liverpool Eye Institution, who punctured it, and a quantity of fluid was discharged. On puncturing it again now with a lancet, a full tablespoonful or rather more of clear serum issued, and the conjunctival cyst almost immediately subsided on the subjacent sclerotic. The corneal remains on the centre now appeared slightly elevated, instead of being depressed as before.

January 7th, 1837. The tumour had reappeared, but was not quite so distended as before. Some capillary vessels were seen beautifully ramifying over it. He had no pain.

January 21st. The tumour continuing, and being again distended with the serous fluid, was repunctured, and at the same time a portion of the conjunctival cyst was removed by the forceps and curved scissors.

February 4th. The white sclerotic remained exposed where the conjunctiva was removed; but there was no return of the tumour, and scarcely any pain or soreness. He applied a lead lotion and a little zinc ointment at night, and took occasionally a purgative.

May 20th. Where the conjunctival cyst was removed, the eye still appeared white, from the sclerotic not being there covered by regenerated conjunctiva. No swelling had returned, and he was free from all inconvenience.

August 20th. He was in about the same state. I have not seen him since.

CASE III. Jonathan Mellor, aged 43, a mechanic, residing at Hyde, consulted me February 18th, 1846, on account of an affection of his left eye, which had troubled him for two or three weeks. The conjunctiva and sclerotic were both affected, but chiefly the former, especially at the lower part, where it was very red and somewhat bulging at the edge of the cornea. The latter membrane or its conjunctival epithelium was also affected, being in one part depressed for some extent with superficial ulceration; and in two or three other parts it was a little elevated or irregularly vesicated, apparently from slight effusion under the corneal conjunctiva. The eye was tender when touched, and so painful as to deprive him almost entirely of sleep. The other eye was unaffected.

Leeches had been applied, and some aperient medicine taken. He was ordered to take a calomel and opium pill twice a-day, and a laxative powder every other morning; also to apply a warm lead lotion to the eye, and a blister behind the ear.

In a few days he called again. A superficial ulceration now occupied the part previously elevated by serum. The inflammation and pain were diminished. The treatment was continued.

Soon after this last report the affected eye was nearly well.

CASE IV. Mary Garretty became an out-patient of the Manchester Eye Hospital February 11th, 1848, on account of a small lymphatic tumour, of about the size of a pea, on the conjunctiva of the sclerotic. She ascribed it to a drop of hot gravy, which had spurted on her eye about seven years previously. I punctured it with a lancet, giving issue to a little clear serum. She did not call again.

CASE V. John Holt, aged 67, from Preston Brook, applied to the Manchester Eye Hospital July 3rd, 1849, on account of a small tumour or vesicle, of about the size of a pea, which had come on without known cause. It was situated on the ocular conjunctiva, about equidistant between the valvular semilunaris and the cornea of the left eye. A fasciculus of vessels from the inner canthus ran towards it, and a few vascular striæ passed over it.

July 7th. On puncturing a little colourless serum issued, and the tumour disappeared.

I am not aware that there was any return of the affection. In cases where the serous fluid re-accumulates, the excision of a small portion of its conjunctival covering (as in the case of Jackson) will probably be sufficient to prevent a relapse.

CASE VI. William Slicer, aged 43, by trade a puddler in wrought iron, was admitted an out-patient of the Manchester

Eye Hospital August 24th, 1857. His right eye was closed by the palpebrae being adherent, except a very small chink on the outer side, where they could be slightly separated, so as to expose a very small portion of opaque cornea. The inner half of the superior palpebra was occupied by a projecting tumour, of about the size of a large hazel-nut, and by the touch evidently containing fluid; the skin covering it presented a dull, somewhat livid hue. He had no vision with this eye, but very good with the other. About eleven years since he was struck on the eye by some red-hot cinders, of which three or four portions were almost immediately extracted, but the lids became in a few weeks afterwards adherent, and remained so. About four or five years after the occurrence of the accident the palpebral tumour appeared and gradually enlarged. About eight months before his admission it was seen by a surgeon, who passed in a lancet, and evacuated, the man said, a quantity of bright water; the swelling quite subsided. In five or six weeks it reappeared, and had gradually attained its present bulk. I passed a double thread seton through the tumour, and desired the threads to be moved a little daily. A tolerable quantity of serum, of a grayish colour, issued by the sides of the threads, and consequently the swelling became considerably collapsed. He did not call again.

BIRMINGHAM AND MIDLAND COUNTIES EYE INFIRMARY.

CASES OF SINGLE CATARACT, REPORTED CHIEFLY IN RELATION TO THE EFFECT OF OPERATION ON THE VISION OF THE PATIENT.

Under the care of JAMES VOSE SOLOMON, Esq., F.R.C.S., one of the Surgeons to the Institution.

[Continued from ASSOCIATION MEDICAL JOURNAL, Dec. 27th, 1856.]

CASE XXXIX. A boy, aged 9 years, the son of a Butty collier, at Darlaston, was admitted, on March 30th, 1857, with traumatic cataract of the right eye, caused, in August 1856, by a shot from a toy gun, which was loaded with a deal stick. The accident excited iritis.

At the present time (March 30th), the pupil is adherent at its lower border to a thick patch of brownish white capsule, from which, when the iris is artificially dilated, some of the fibres of the lens of an opaque white shade are seen to radiate in a fan-like manner, the lens in the interspaces being of a bluish grey colour. The cataract when touched by the needle shelled out into the anterior chamber. It was much harder than any traumatic cataract I have before met with, and thinner than the natural lens. Neither confused nor double vision resulted from the operation.

On May 28th, my notes are as follows:—The lad clearly sees persons and furniture in a room when the perfect eye is closed, also shades of colours. His father, who is conversant with the measurement of distances, informs me that, in accordance with my request, he had tested the power of the eye operated upon to distinguish distant objects, and had satisfied himself that the boy can *identify* persons with whom he is familiar at seventy yards, and distinguish men from other objects at five hundred yards.

In reading, the eyes work together, when a two and a half inch cataract-glass is used. For the observation of distant objects, an optician's lens (No. 4, 5, 6) appeared to produce inconvenience, probably because the eyes are focused.

CASE XL. A young gentleman, aged 13 years, residing near Newport, was operated upon by Mr. Solomon in August of the present year (1857) for traumatic cataract of the right eye. Neither confused nor double vision resulted. A two-inch and a five-inch cataract-glass respectively adjusted the eyes for near and distant objects.

CASE XLI. J. S., aged 18 years, of Spon Lane Glass Works, was admitted into the Eye Infirmary, and operated upon for single traumatic cataract in the summer of 1857; after which, he continued to enjoy clear and single vision when both eyes were open, and if the anatomically perfect eye was closed, persons could be identified at a distance of twenty yards, and seen at two hundred. A two-inch cataract-glass adjusted the eyes to a focus for reading, and a six-inch for distant objects.

In two other cases in which I have operated by "linear extraction", of the respective ages of 28 and 44, I am unable at present to give particulars regarding their vision, more than that double or confused vision has never been experienced.

Original Communications.

THE EPIDEMIC DISEASES LATELY PREVAILING IN BIDEFORD, NORTH DEVON.

By T. L. PRIDHAM, Esq., Surgeon, Bideford.

IN the month of July last fever broke out in Bideford, of a somewhat remarkable type, certainly unknown in the locality for the last thirty years. The first cases occurred in the higher and poorer parts of the town, near the cemetery, and in a direct line with the shelf stratum which passes through this depository of the dead.

The symptoms which characterised the disease were for the most part the following:—Sudden rigor; loss of appetite, quickly succeeded by complete prostration; small rapid pulse; dilated pupils; pain at the back of the head; drowsiness almost amounting to coma; frequently delirium; smooth glazy tongue, which did not become coated or dark at any stage of the disease; tenderness in the region of the stomach and bowels; not much thirst; the skin remarkably dry and morbidly hot, with a peculiarly offensive smell, and tinged with bile; a great desire to be kept quiet; the body bent forward, and the head kept depressed. The urine was scanty, high coloured, and acid. The alvine discharges were yellow, and highly offensive. There appeared to be little or no remission of fever, which in some instances ran on to thirty days, whilst, in other instances, the poison which acted on some apparently healthy members of the same family killed in a few hours. To exemplify this, I may state the progress of the disease in two adjoining houses. In one, there were four cases. Three rather delicate children recovered after protracted fever; whilst one, a fine healthy boy, was seized with severe headache, sickness, involuntary discharges from the bowels, and coma, and died in twenty-four hours. In the other house, four children were seized, three of whom lingered and died, whilst one, almost an idiot, recovered, the disease passing lightly over the child, yet there is no doubt that it was the *same poison* which affected all the children.

The disease soon spread amongst the poorer classes, attacking but few grown persons. It prevailed in ill drained localities where there was a bad supply of water, and it followed the exact course of the cholera in this town in 1854. It is remarkable that in the Union Workhouse, which is situated in the midst where this fever reigned, no case occurred, nor was there a case of cholera there, although in both instances the houses adjoining were visited by these epidemics. The Union Workhouse is admirably conducted, well ventilated, well drained, and has an abundant supply of water.

Altogether, I attended one hundred and thirty cases of this fever; and out of this number fourteen died. Under one roof there were as many as nine cases at one time, almost all of them in a state of delirium. In this house one death occurred.

The chief treatment in this fever was mild preparations of mercury, combined with a sedative, with full opiates in the advanced stages; effervescing salines were also given, whilst the skin was freely sponged with a solution of chlorate of lime or zinc.

This epidemic fever had scarcely subsided, when a completely different type of disease made its appearance more generally over the *whole of the town*, attacking not only children, but persons of mature age. It commenced with rigor, followed with a sensation of fullness about the fauces, headache, a morbid tongue, and a quick pulse. Small white spots soon made their appearance on the fauces; swallowing becoming more and more difficult as the tonsils enlarged, and the fauces swelled. The upper part of the œsophagus also became involved; ulceration and destruction of parts followed, and symptoms of a malignant character came on. Generally about the fourth or fifth day a highly offensive muco-purulent discharge came from the mouth, and not unfrequently from the eyes, nose, and ears also. The soft parts underneath the chin and adjacent tissues became swollen and painful. If the patients were not relieved, death took place generally between the fourth and tenth day.

At first I treated the disease with nitrate of silver locally applied, giving at the same time bark, wine, steel, nourishing diet, and every remedy I could think of to support my patient; but this treatment was by no means satisfactory, as most of the