ties of the town, but of individuals among the educated classes who are now but too content with their wells.

Efforts have been made to obtain a supply of hill-water for the poorest and most destitute districts, but they proved unsuccessful. The circumstances are worth noting, as illustrating one of those sanitary deadlocks for which we had fondly hoped that Mr. Stansfeld would find a remedy. It appears that the town commissioners have the power to compel owners of houses to pay at the rate of 2d. per week, or 8s 8d. per annum, but not more, for a supply of hill-water. The Water Company, on the other hand, *cannot* be compelled to supply at a less rate than 12s. per annum (5 George IV, chap. 132, p. 56). Houses, therefore, of the poorest class, may be left absolutely destitute of one of the essentials of life. A block of thirty houses for instance, with nothing but catchpools for wells, were almost destitute of water at the close of a long period of drought. The attention of the town commissioners was drawn to the facts, and they were willing to do all in their power. The Water Company offered to supply at $4\frac{1}{2}$ per cent. on the rental, with 5s. per closet, amounting to less than 12s., the lowest at which they would be compelled to supply—it came to some £17 : 13 : 8 for the lot ; but, as the rate of 2d. per week per house, which the town authorities had power to levy, and which the tenants were willing to pay, amounted to £13 : 17 : 5 only, nothing could be done beyond an appeal *ad misericordiam* to the owners, and I fear the poor people are still dependent on such wells as they have.

It would appear, then, from the tables of the Registrar-General, and also from the testimony of the seven years which I have more minutely analysed, that the annual mortality in Cheltenham, with its 42,000 inhabitants, is excessively low. Hovering between 17 and 22, it shows an average of barely 20 deaths per 1000 living, without excluding the deaths occurring in a large workhouse and hospital. The town, also, enjoys a remarkable immunity from the chief zymotic diseases, and a mean age at death which compares favourably even with that of some of our healthier counties.

A minute examination, however, shows that the mortality from three at least of the zymotic class, small though it be, is not spread evenly over the town or even over the poorer parts ; that there are whole districts and well-defined centres marked out by the fatality of scarlatina, diarrhoea, and fever ; and good reason has been given for believing that the distinctive characteristics common to these districts are, speaking generally, a porous soil, well-water for drink, and in the worst cases an old brick sewer with undoubted contamination of the water.

Should a more extended and searching investigation, at the hands of our future health-officer, confirm the conclusions at which I have arrived, it is clear that by abolishing the older sewers (a matter, of course, requiring time), by giving a plentiful and wholesome supply of water to the whole town, especially to the poorer districts on the sand-bed, and by isolating the first cases of infectious disease, the sanitary authorities of the town have it in their power to secure for Cheltenham—not once in a decenniad only, but permanently and in reality—the proud position of being the healthiest among English watering-places.

ON THE MODERN ART OF TINTING OPACITIES OF THE CORNEA.*

By CHARLES BELL TAYLOR, M.D., F.R.C.S.E., Nottingham.

EXTENSIVE leucomata and dense opacities of the cornea have long been considered among the opprobria of surgery ; we could not remove them, they were always a source of embarrassment to the surgeon, and, especially in the case of women and young persons, a serious trouble to the patient, so much so that I am convinced that patients suffering from this cosmetic defect and applying for relief cared more for the removal of the deformity than for the restoration of the partially intercepted sight. Such being the case, we hail with gratitude, as a most important addition to modern ophthalmic surgery, M. Wecker's re-introduction and perfection of an ancient method of tinting away these unsightly defects.

The operation, which, as a rule, causes very little pain or irritation, is best performed with a number of the finest needles firmly bound with the points on a level around a handle such as a penholder, or a large needle which has been grooved for the purpose by Messrs. Weiss may be substituted with advantage in certain cases. The substance which M. Wecker recommends for tinting is Indian ink ; but I have also employed sepia, ultramarine, and other colours with advantage,

and when an immediate and deeply coloured effect has been desirable, a combination of lamp-black with Indian ink, and a solution of nitrate of silver. The patient may either recline or be seated in a chair, and it is well to separate the iris with a speculum and steady the globe with a pair of ordinary forceps, taking a firm grasp of the conjunctiva. The needles are then dipped in one or other of the solutions in question, which should be made as thick as possible, and the superficial layers of the cicatrix are rapidly punctured in an oblique direction, and layers of the solution applied just as in ordinary tattooing, until the white speck is changed from a most apparent deformity into a black surface scarcely visible ; a fresh layer of the substance is then applied over the tattooed cicatrix, the patient is directed to keep his eyes open, so as to let it dry on and remain as long as possible, and he may at once go about his usual avocations.

It is important not to close the eye, and to prevent, as far as possible, the washing away of the pigment by the tears ; this is best accomplished by enveloping the operator's fingers with a silk handkerchief, so as to mop up the secretion, and afterwards by the avoidance of winking on the part of the patient. M. Wecker is content with ten or fifteen punctures a time, and requires from his patients four or five sittings. I have, however, usually completed the operation at once, and made any little addition that might appear necessary some weeks later ; the slightest specks, such as are left after phlyctenular conjunctivitis and small ulcers of the cornea, are easily banished by one or two pricks of the needle ; and when the whole eye has been opaque, very unsightly, and sight completely abolished, I have very advantageously substituted extirpation of the globe, or the superimposition of an artificial eye, by tattooing a round central pupil so as to restore to a remarkable and most charming degree the natural appearance of the globe. Not only is deformity removed by this slight operation, but patients generally tell us their sight is improved, a fact due, no doubt, to the circumstance that a black speck is much less dazzling than a white one.

In cases of large cicatrices, I generally make an artificial pupil first, and tint the opacity afterwards ; and when this is carefully done, it is difficult to distinguish the black speck from the neighbouring artificial pupil. I have no doubt that this little operation will also be found of service in cases where considerable dazzling follows the removal of a portion of iris, either *per se*, or when the operation has constituted a part of the operation of extraction for cataract ; as by tattooing the cornea an invisible opacity may be occasioned which will constitute a permanent shade, and shut out the light to any required extent ; soft cicatrices are readily coloured, but old, hard, and incrustated ones are more difficult of treatment. In these cases, the nitrate of silver and lamp-black are of service ; no doubt, also, lead, sulphur, charcoal, gunpowder, and other ingredients will come to be employed in time. In some cases, the coloration is not very permanent, but it may always be repeated ; and even if the perfect blackness do not remain, a greyish semitransparent coloration takes its place, which looks very like cornea, and it is infinitely preferable to the original deformity.

It is well to commence the tattoo at the lowest surface to be operated on, in order that the operator's sight may not be obscured by an overflow of the liquid. I shall conclude by quoting a case in which this addition to our armamentarium enabled me to render a real service to a young lady who was suffering not only from loss of sight, but also from a most embarrassing deformity.

HIP AND SHOULDER DISLOCATIONS, AND THEIR REDUCTION WITHOUT TRACTION.

By RUSHTON PARKER, M.B. and B.S. Lond., M.R.C.S.,
Demonstrator of Physiology and Histology at the Liverpool School of Medicine ;
late House-Surgeon and Demonstrator of Anatomy at University College, London ; etc.

IN the communication of my friend, Mr. Henry Arnott, published in the JOURNAL of 24th February, 1872, he quotes some sentences from Mr. Hutchinson's abridged comment on the work of Dr. Bigelow, and further states the undoubted fact that in some London medical schools, University College and Guy's being named, it is taught that in the easiest method by which dorsal dislocations of the hip can be reduced, flexion of the hip is required. Now, Mr. Hutchinson's remarks, as quoted by Mr. Arnott, do not necessarily ascribe to Dr. Bigelow any *priority* in his advocacy of the flexion method of reduction ; still less does Dr. Bigelow claim it for himself.

Mr. Hutchinson expresses the opinion, and I think with reason, that "the researches of Dr. Bigelow in respect to our subject" are "amongst the most valuable of recent additions to the science of surgery". Mr. Hutchinson's further assertion that "Amongst the special services which

* Read before the Surgical Section at the Annual Meeting of the British Medical Association in Birmingham, August 1872.

Dr. Bigelow has done, is that of explaining the peculiarity of 'the dislocations into the ischiatic notch', and of teaching us how to reduce them" is perfectly true, for Dr. Bigelow tells us far more about this form of dislocation than any one else does, and he shows why it is not, and cannot be, a dislocation into the sciatic notch.

Dr. Bigelow fully acknowledges the work of other men on the same subject, and, on pages 27-30, he makes a brief historical allusion to the flexion method; citing, among others, Nathan Smith as far back as 1831, but distinctly mentioning the practice and advocacy of this method by Hippocrates. In France, M. Dolbeau is said to have advocated flexion in 1867, attributing its introduction to M. Desprès, in 1835. It is well-known that cases of hip-dislocation reduced, some by flexion and rotation, others by flexion and traction, have from time to time been reported by British and French surgeons in recent years; but Dr. Bigelow has undoubtedly demonstrated how *all* recent dislocations of the hip may be reduced by flexion and other manœuvres without traction.

I do not purpose going more fully into Dr. Bigelow's work, which has less than 150 pages of large print, and is really a charming book, fully warranting encomiums even higher than those of Mr. Hutchinson; but I will now state the practical grounds upon which I ask its due for a set of principles which constitute a true "theory of hip-dislocations and of their replacement."

1. I have, on the dead body, repeatedly practised that part of the demonstration of this subject which can be done when the soft structures around the hip-joint have been removed. With the femur connected to the pelvis by only the Y-ligament and the internal obturator tendon, all the four classical dislocations were made—the position of the limb in every case being exactly that described and figured in text-books as occurring in the living body. The reduction of these (and of others) was in every case done by flexion and rotation, with adduction and abduction as required; the course taken by the head of the femur, and the part played by the Y-ligament, being *seen*.

2. One afternoon in July or August, 1869, there was brought to University College Hospital a little girl eight or nine years old, who said that, while riding behind a carriage in the Hampstead Road, she had had a fall which immediately resulted in the injury to be described. I saw her about half an hour after the accident, and found the right thigh fixed in a state of extreme flexion, the knee being bent and the leg rotated out. A dislocation of the hip was vaguely suspected, but the child would not permit the least tactile examination, any movement of the affected hip causing her to scream out. Chloroform was given to full anaesthesia, during the production of which Dr. Poore, then resident medical officer, brought a dried pelvis to assist the diagnosis. The head of the femur, on careful examination and slight rotation, could now be felt near the tuber ischii. Our concurrent diagnosis was "dislocation on to, or near, the tuber ischii." When the child was fully under chloroform, by suggestion a few circumductions of the thigh were gone through—in the order of flexion, abduction, and extension. As this did not remove the deformity, I did what I had at first intended to do. The ankle and knee were grasped, the knee and hip being flexed; and the femur was rotated in; the head of the bone immediately slipped backwards an inch or two (as I thought, towards the sciatic notch). At once the femur was rotated out, and then the head slipped into the acetabulum, not with a loud snap, which I have never heard in reducing dislocations, but with a sort of "crunch." The actual process of reduction took about five seconds. A starched bandage was applied, and the child was well in two or three weeks, all deformity being absent. At this time I knew nothing of Dr. Bigelow's classical work, nor of the part played by the Y-ligament; or I might have caused the head of the femur to enter the acetabulum by the first manœuvre. I now believe the dislocation to have been "vertically downward."

3. Cases have been from time to time published during recent years, of hip-dislocations reduced by flexion with traction, and by flexion without traction but with rotation and other manœuvres. To the former class belong Mr. Quain's case quoted by Mr. Arnott; a case of Mr. Hulke's; and that of Mr. J. W. Macdonald, and others. To the latter belong the following:—a case of Dr. Hector C. Cameron (*Glasgow Medical Journal*, July 1867), who reduced a so-called sciatic dislocation in a boy of 14, by flexion and rotation, traction having failed; a case of Mr. Amundale (*BRITISH MEDICAL JOURNAL*, 29 January, 1870), who reduced by flexion and rotation, and afterwards dissected, a thyroid dislocation in a man aged 19; a case of Mr. Lister's, the reference to which is not at present within my reach, but which was, as far as I remember, one of the downward dislocations, closely resembling my own case, and reduced by the same method.

I would add that the Y-ligament includes the ilio-femoral and ilio-trochanteric ligaments described in Ellis's *Anatomy*, which are one at their upper attachment, rather below the anterior inferior iliac spine.

Dr. Bigelow, then, fully recognising the efforts of others in this direction, has elaborated the great principle which places this department of surgery upon a scientific basis. His book should be read by every practitioner; after which, the physical error and barbarous act of approaching a recent dislocation of the hip with pulleys should be for ever scouted.

There are still barbarities practised on the shoulder-joint when it is "out." I know that cases have been published in which luxations of the humerus have been replaced by manœuvring; further, at University College, Mr. Marshall advises it in his lectures on the subject, and describes the process. But the method is not yet largely practised, as far as I know, by house-surgeons, and they are the men who probably come across most of the cases; besides, the ordinary methods generally succeed so well, that it has not become urgent to use this. I did not attempt it properly in a single case when I was a house-surgeon. The following are my grounds for advocating the primary adoption of this method (described with the cases) in shoulder-dislocations, recent and moderately old.

1. I saw a case at University College Hospital in which one of the house-surgeons failed, with chloroform and the heel in the axilla, to reduce a forward and inward shoulder-dislocation, though much force was used. He then elevated the elbow to a level with the shoulder, rotated the arm, and at once reduced the dislocation.

2. My friend and fellow house-surgeon, Mr. R. T. Smith, tells me that he had nine cases, in none of which he used chloroform, and in eight of which he reduced the luxation by this method with little or no pain to the patient, and in an exceedingly short space of time. In one case this method was not tried.

3. I have since had a case myself in which this method was practised. A man, aged 31, fell in getting off the top of an omnibus in Liverpool on October 19th, 1871, dislocating the head of his right humerus inwards and forwards. My father and I were with him soon after the accident, when he was rather "screwed", and his muscles were relaxed. After stripping his shoulders, I raised the elbow on the dislocated side till it was level with the shoulder, then pulled back the elbow in the horizontal plane, by which the head of the humerus was brought outwards by leverage—the glenoid fossa of the scapula, I imagine, being a support for the neck of the humerus to rest on as a fulcrum. Rotation was followed in a few seconds, with but little effort and no pain, by reduction. I believe, but am not quite sure, that rotation *in* was the last reducing manœuvre.

This is the method which I should employ again in subcoracoid and subclavicular luxations. For downward dislocation, probably great elevation of the elbow would be enough; and for the backward dislocation, elevation of the elbow to the level of the shoulder, leverage of the head of the humerus by drawing forwards the elbow, and, if necessary, rotation. Concerning the two latter luxations, I only say what seems to me the requisite action; but I have never tried it.

This communication contains nothing new that I am aware of, but it deals with matter of fact throughout, except in the speculations about shoulder-dislocations.

THERAPEUTIC MEMORANDA.

TREATMENT OF ENTROPION.

IF there be any ailment more annoying to the dispensary surgeon than another, it is bad entropion of old standing. It is a disease very frequent in Ireland. My son, Dr. John W. Martin, has brought under my notice a plan which he saw adopted in such cases by Dr. De Wecker of Paris, and from which I have had exceedingly good results. It is easily performed, gives little trouble to the patient, and leaves, to my mind, a better looking eye than that from which the tarsus has been removed.

The point where the inversion is worst, and doing most mischief, is noticed; and, as near to the edge of the tarsus as possible, the point of a small curved needle, armed with a flaxen thread waxed, is inserted, and carried beneath the loose textures of the eyelid as near to the supraorbital ridge as tact and judgment show to be desirable. The needle being brought out, the ends of the suture are tied firmly with a double knot over the intervening skin; the ends are cut off; and the ligature is left to ulcerate out, which it will do in six or eight days. A wet compress may be applied. When all irritation in the lid has subsided, an examination should be made to find out if there be another point requiring a repetition of the stitch. Many cases require three or four stitches, but two generally answer.

JAMES MARTIN, Portlao.