towards it. The radical treatment of the disease consists in the removal of the diseased parts. For cancer of the body, no operation except total extirpation offers a prospect of cure. Cases, however, in which the conditions justifying the operation are present were not often met with. For cancer of the cervix, supra-vaginal amputation of the cervix gives excellent results. Total extirpation is, as a rule, not indicated for this condition by reason of the direction which the growth takes—its usual course being outwards and downwards, and not upwards, into the body of the uterus. Clinical experience, as well as pathological investigation, proves this fact, for when recurrence takes place after partial amputation, its seat is in the cellular tissue around the cervix, and not in the uterine stump. This clearly shows that the disease can be entirely extirpated from the uterus by the minor operation, but that it is difficult to eradicate it from the infected pericervical connective tissues. Were the difficulty in eradicating the disease from the uterus, or were the recurrence in the uterine stump, total extirpation would come to our aid; but the recurrence being in the pericervical tissues, total has no advantages over partial amputation. In operating for cancer of the vaginal portion, or of the cervix, the object should be to make the incisions as wide of the disease as possible.

NEW REMEDIES IN OPHTHALMIC PRACTICE.¹

By EDGAR A. BROWNE,

Surgeon to the Liverpool Eye and Ear Infirmary.

THE list of actual novelties for the past year is not long, but one or two points of practice may be advantageously compared. Scopoline (*London Medical Record*, 1885, p. 251), derived from the *Scopolia japonica*, is recommended by Dr. Pierd'houty as a mydriatic. It is rather more energetic than atropine, acts more quickly, and its effects pass off more slowly. It is not easy to procure at present; some of the specimens proved entirely inert. Of the hydrochlorate of aconitia as a local anæsthetic, recommended by the same practitioner, I am compelled to report unfavourably. The anæsthesia seemed exceedingly slight and transient, but the well-known tingling and burning characteristic of aconite were complained of by the patients for some hours after the application; this, together with its extremely poisonous quality, to my mind, puts it out of court at once. Iodol has been recommended by Dr. Trousseau. It is a greyish powder, obtained by precipitation with iodide of potassium of pyrrol, a product of the destructive distillation of mineral substances containing bone-oil (protein). Chemically it is described as a tetra-iodo-pyrrol, and I am informed that its formula is $C_4H_4I_4N$; it differs from iodoform (CHI_3) in containing less iodine; its constitution seems to be more stable, as it is free from odour. As the clinical value of iodoform is probably due to the very slow and continuous disengagement of iodine, this stability is presumably a drawback. As a 10 per cent. ointment, it gives rise to no pain when applied in the same manner as the yellow oxide. A small piece may be placed between the lids and rubbed over the eyeball in cases of indolent ulcers following phlyctenulæ or ulcerations of the lids. It seems to me void of offence, but unworthy of praise. Two years ago, I drew attention, in this Section, to the value of a complete and prolonged irrigation of the conjunctiva, and especially the upper *cul de sac*, in cases of gonorrhœal ophthalmia. I prefer making the application with a lid-irrigator of my own design, but I have succeeded with extemporaneous apparatus. I still continue to use a solution of trichlorophenol, a potent germicide which, in a solution of one half per cent., has no ill-effects on the conjunctiva or cornea.²

More recently I have adopted the same method in the treatment of lacrymal abscess and blenorrhœa of the sac with excellent results. An abscess is opened (under an anæsthetic), the sac incised, and a full sized probe passed. After the probe, a gum-elastic catheter, smaller than the probe, is passed to the bottom of the duct, connected with an elevated reservoir by means of a long tube and a prolonged play of the phenol solution commenced. The catheter is pulled up gradually higher and higher in the duct, and turned round to irrigate every part thoroughly. The probing and irrigation are to be continued daily.

¹ Read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association in Brighton.

² The absolute necessity of prolonged irrigation must be insisted on. Bacteriologists in laboratory experiments teach that exposure for a certain length of time is necessary to effect sterilisation, and we must remember that gonococci, or other germs, would be much more difficult to immerse on the convoluted surface of a mucous membrane than in the cultivation-medium of the laboratory.

Some convenient cannula-probes are made which may be employed if desired.³

The introduction of cucaïne has enabled us to resort to the use of the actual cautery, either thermic or electric, with great frequency. A comparison of the value placed upon its action cannot fail to prove instructive. In my own practice I accord it the first place in the treatment of hypopion-keratitis, a formidable affection, occurring frequently among the poor and ill-nourished, of whom stone-breakers may be taken as the type. These unfortunate creatures present the necessary combination of noxious circumstances. They are half-starved, exposed to the vicissitudes of climate, have chronic conjunctivitis, blenorrhœa or abscess of the sac—to this is added a blow with a fragment of stone, and suppuration of the cornea is established. It occurs in the middle layers, spreading centrifugally, and if not checked, destroys the cornea. Antiseptics have no effect in the early and remediable stage, the anterior elastic lamina is intact (or practically so) and prevents alike the ingress of the medicament and the egress of the necrosed tissue. The orthodox practice (Sæmisch, Teale) of incising the abscess merionally, and teasing out the slough with forceps, undoubtedly gives occasional brilliant results. Everybody must have noticed that the results are far less brilliant in the case of large peripheral than of central sloughs. But even a better effect may be attained by the use of the cautery. It must be applied carefully along the margin, and then with a few rapid touches over the substance. A clean, easily detachable eschar is left, and healing takes place with rapid absorption of the hypopion. This proceeding has the advantage over the median incision of not opening the anterior chamber and allowing the lens and iris to fall forward and give rise to synechia anterior.

As a practical point, it must be remembered that the cautery, whether thermic or electric, must be of a dull-red heat, just sufficient to char the tissues with which it is immediately in contact. If used too hot it causes an unnecessary destruction of uninfected tissue. The cautery may also be used effectively in doing peritomy for vascular keratitis, and is superior to the scissors.

Our information on the question of antiseptics in cataract-extraction is still unsatisfactory. It is a matter of familiar observation that the corneal wound in extraction is liable to suppurate, while incised corneal wounds in general are not particularly liable to that kind of action. Iridectomies very seldom go wrong in this way—accidental wounds very seldom go wrong—and even in hypopion-keratitis, when an incision is made through the base of the abscess, it is the incision that stops the suppuration and not the suppuration that attacks the wound. Assuming that suppuration is due to the introduction of pyogenic micro-organisms, it is obvious that one kind of wound is as much exposed to infection as another, and some peculiar conditions must be sought.

The conditions of healing in a corneal wound are (1) lavage from within outwards by escaping aqueous, tending to wash germs outwards, and, of course, preventing their entrance; (2) exact apposition of surfaces; (3) an aseptic condition of surrounding secretions; (4) absence of favourable soil for germs. These conditions are less perfectly fulfilled in extraction-wounds than in many others, and less perfectly since the introduction of cucaïne. The wound is necessarily large, and the secretion of aqueous is not sufficient thoroughly to wash it. Cucaïne still further diminishes the secretion of aqueous. In addition to the chamber after the removal of the lens, there is the space it occupied to be filled. If the cornea regains its convexity by its own elasticity, before the resecreted aqueous has filled this space, it tends to draw the conjunctival secretion inwards, and woe betide if this be not aseptic. It is under these circumstances that McKeown's method of removing sticky cortex by syringe or irrigation is likely to prove valuable. The outer flow will replace the defective flow of aqueous, and the inward suction action of the cornea is counteracted. Moreover, it removes the soft matter which forms almost a perfect soil for germ growth.

To render the conjunctival secretion innocuous has been the aim of all antiseptics. M. Panas so highly praised a solution of biniodide of mercury, claiming for it almost infallible powers in the prevention of suppuration, that I felt constrained to give it a trial. The solution is nominally 1 in 20,000; but, owing to the high atomic weight of the iodine, the amount of mercury is not much above 1 in 40,000.

Are we all to join M. Panas in his cry of "Eureka"? The solution is not sufficiently potent to destroy a virulent germ in a favourable

³ Trichlorophenol is a substitution product in which chlorine replaces a portion of hydrogen in carbolic acid. Carbolic acid $H_3C_6H_2O$. Trichlorophenol $C_6H_2Cl_3OH$. It apparently acts by the slow and continuous disengagement of chlorine. Its odour persistently clings to any tissue with which it has been brought in contact.

habitat. Sattler, who has carefully examined the micro-organisms of the lacrymal sac,⁴ is of opinion that Panas's solution does not ensure antisepsis. He recommends the biniodide to be dissolved in an aqueous solution of corrosive sublimate (1 in 5,000), which is a powerful antiseptic. But if we take the precaution to disinfect the lacrymal sac and the ciliary follicles—and every day more and more care is exercised on this point—we shall scarcely need a germicide of great power, and it may be sufficient to thoroughly wash out the conjunctiva with a solution that is aseptic, and not actually antiseptic.

My own practice, lately, has been to wash out the lids thoroughly with the biniodide solution, and carefully to apply iodoform ointment to the wound immediately on completion of the operation. So far so good. But are there any drawbacks? It seems to give rise to a cloudiness of the cornea in the neighbourhood of the wound. In one case—an old man—it spread downwards, and entirely covered the pupil, rendering the removal of the cataract rather a nugatory proceeding as regards vision. In the second eye the opacity was limited to the immediate neighbourhood of the wound. It has never exceeded this dimension, except in this one eye. At first I regarded it as keratitis, but I think now it is really due to the direct action of the mercury on the elements of the cornea. Cucaïne, I fear, aids this absorption by its desquamating action. I have great hopes that this effect is merely temporary. In the case of the old man the opacity is slowly clearing away. Still it is a point to be borne in mind, and I shall certainly hesitate considerably before I employ a stronger mercurial antiseptic in conjunction with cucaïne.

DISLOCATION OF THE LENS.¹

By ANDERSON CRITCHETT, M.A. CANTAB.,
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THIS accident, though not one of extreme rarity, is yet sufficiently uncommon to justify ophthalmic surgeons in placing their experiences of it on record; and as within the last two years, I have met with three interesting cases of lens dislocation in my own practice, I venture to bring them before the notice of this Section.

The first case was that of a young barrister, aged 24, who was highly myopic, and who some ten years previously had, while practising gymnastics, dislocated the lens in his right eye.

An attempt was made to remove it, but the operation was unfortunately not successful. The patient, by cautious use of the remaining eye, was able to complete his education both at school and college, and was careful to avoid any sudden or violent physical exertion; but a few days before I first saw him in September, 1884, he had, whilst fishing, been tempted to jump suddenly off a bank to secure a particularly fine specimen of the finny tribe, and at the same moment he felt that something had given away in his left eye. I saw him four days after the accident, and found the lens had become dislocated forwards into the anterior chamber. The patient could still read Jaeger 2, but the tension had increased, and after a consultation with Sir William Bowman it was decided that the lens must be removed.

When the patient had been placed under the influence of an anæsthetic, I passed a fine needle through the substance of the lens, and it was held there by my colleague, Mr. Juler, while I proceeded to make the necessary section.

This latter was not very easy to accomplish, because the lens occupied the whole of the anterior chamber, but I used a very narrow Graefe's knife, and completed the latter half of the section by a series of small cuts, after the manner of the late Mr. Streatfeild.

I did not attempt to perform iridectomy, but at once inserted a spoon beneath the lens and extracted it, Mr. Juler withdrawing the fine needle as soon as my traction instrument was *in situ*. Very little vitreous was lost, the edges of the wound were seen to be in apposition, and the lids of both eyes were kept closed with small strips of plaster. These latter were applied for more than a fortnight, and I did not suffer the eyes to be open for eighteen days, when I was pleased to find that perfect union had taken place, and a few weeks later the patient was able, with suitable lenses, to see § and read Jaeger 1.

⁴ He finds two varieties of pyococcus: filogenus, staphylococcus, which appeared to induce keratitis and iritis, pneumococcus, and six species of bacteria.—*Year-Book of Treatment*, p. 272.

¹ Read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association in Brighton.

The second case was that of a young gentleman, aged 17, who was brought to me by Mr. Sydenham Knott.

Whilst he was amusing himself with chopping wood, a log flew up and struck him violently on the right eye. When I first saw him there was a little blood in the anterior chamber, and the lens was seen to be dislocated backwards. There was such severe pain, and the eye had been so seriously injured, that I doubted whether it could be saved; but I sent the patient to Mr. Hulke, who suggested that I should make an attempt to extract the lens, and, if that were unsuccessful, I must enucleate.

Mr. Sydenham Knott administered ether, and I made a corneal section upwards. As the upper edge of the lens was depressed backwards, some difficulty was experienced in passing a spoon beneath it, but by introducing the latter at the outer angle of the section, and sliding it under from the outer side I succeeded in extracting the lens. There was a considerable loss of vitreous, but the lids were supported by strips of plaster, as in the first case, and the patient made an excellent recovery, but there is a large atrophic patch near the macula, and, although the hands of a watch can be seen eccentrically, the sight must always remain very imperfect.

In the third case, a gentleman, aged 29, received a severe blow on his left eye from a cricket-ball, which dislocated the lens outwards and slightly upwards, so that it was evidently hinged upon its lower margin, because, whilst the eye was under ophthalmoscopic examination, the lens would suddenly fall downwards into something like its natural position, and then a few moments later a slight movement on the part of the patient would throw it again into its new resting place.

The patient consulted Mr. Power soon after the accident, and, as the eye was free from pain, and the tension fairly normal, I think that gentleman was justified in advocating a Fabian course of inaction, but soon after I first saw the injured eye it became so rapidly hard that I felt that an attempt must be made to extract the lens, and this opinion was confirmed by Sir William Bowman.

It will at once be acknowledged that, from an operative point of view, the case was one of exceptional difficulty, owing to the fact that the lens was entirely out of sight.

Sir Walter Scott has sung of—

“That stern joy which warriors feel
In foemen worthy of their steel;”

but I confess that I approached the operation with some misgiving as to the result. Ether was administered, and I made an incision with a very broad keratome at the inner side of the cornea, and there was an immediate gush of vitreous, but I at once passed a Taylor's vectis in the direction in which I hoped to find the lens, and as I withdrew the instrument I was delighted to find that I had secured the object of my search. Plaster was applied over the lids, as in the former cases; the patient made a slow but good recovery, and with the aid of a lens can see the time by a watch correctly. In future, I shall be inclined to use the vectis for removing dislocated lenses in preference to the spoon, because the former allows the lower portion of the soft lens to sink through the aperture in the wire loop, and there is less chance for the lens to slip away during the process of extraction.

Since I commenced to write the present paper, my friend Dr. Agnew, of New York, has kindly sent me an account of a new instrument that he has designed for the removal of dislocated lenses, and to which he has given the name “bident.” Dr. Agnew says: “It consists of two ordinary fine, straight, delicately-pointed, cataract-needles, about six-eighths of an inch long, fixed parallel at a distance a little less than an eighth of an inch apart. These needles are united at their proximal ends by a projection which is flat, and otherwise so sharpened and roughened as to be adapted to the grasp of a holder.”

He passes this instrument downwards behind the lens, and, bringing the latter upwards into the anterior chamber by depressing the handle of the bident, he passes the needle-points through the sclerotic in the other side of the globe, and leaves the instrument *in situ* while he completes his operation.

I confess that I am, as a rule, averse to running even fine needles through the ciliary region, but time will prove the safety or danger of this new operation; and Dr. Agnew certainly deserves our cordial thanks for his ingenious endeavours to solve one of the difficulties which beset us in dislocation of the lens.

The experience of the last few years, both in general and ophthalmic surgery, has shown us that operations which were formerly deemed hazardous and unjustifiable may now, by the light of modern knowledge, be safely and successfully accomplished; and I have good hope that we may be able to bring the removal of dislocated lenses into this category.