

of the cases. The undulating comb was certainly seen in many individuals, but was absent in others. Perhaps both species were mixed. The posterior end of most of the parasites was much more rounded than is represented by Leuckart and Blanchard, but the terminal filament was generally present, and was frequently employed in dragging about particles of loose matter. Conjugation was frequently seen. These parasites die quickly after evacuation. Fifty or more have been frequently found in the field of a  $\frac{1}{4}$  inch glass. Case 5 is illustrative of the swarms of parasites which may infest people who are not careful of their drinking water in the tropics.

*Addendum.*—I should like to add a few lines closing my list of amœba and cercomonas cases up to date of my departure from Bangalore (29th March). Cases 8 and 9 were much improved under quinine and a morning 1-grain dose of thymol. In Case 10 the motions had become solid, and the cercomonads had vanished under a morning 10-grain dose of thymol but amœbæ still remained in some numbers; while on the 20th a specimen unexpectedly showed a few eggs of anchylostoma and trichocephalus, which had not been observed before in numerous specimens. Some of this motion was placed in sand and water with a view of rearing anchylostomæ; nothing was found on the 28th instant, but Mr. Appia writes that on the 31st the sediment contained numbers of large amœbæ, a point worth noting, though the amœbæ may have been ordinary fauna. The following additional cases have been found in a day or two.

*Case 14.*—M., aged 35. Diarrhœa and slight dysentery of recent origin. On 26th a few cercomonads in a nearly solid motion. On 28th a stool consisting of thick slime stained with blood. *Amœbæ coli* in considerable numbers and cercomonads very numerous; also clusters of bodies looking like dead cercomonads. Many cercomonads seen *dragging about red corpuscles*.

*Case 15.*—F. 35. Obstinate diarrhœa of recent origin. Very numerous cercomonads, which disappeared after injection of nitrate of silver, but were seen again in a day or two.

*Case 16.*—M., aged 15 months. Fever (continued) and diarrhœa; numerous cercomonads.

*Case 17.*—M., aged 6 years. Diarrhœa of recent origin. No emaciation. Numerous cercomonads; also clusters of bodies as in Case 14. Very numerous eggs of ascaris and trichocephalus; 14 of the latter in a cluster also numerous *Charcot-Leyden* crystals.

These crystals were also observed in previous cases of parasitism, and so far as I remember (I forgot to record them) in Cases 4 and 5. On the 29th instant Mr. Appia most unexpectedly found amœbæ and eggs of anchylostoma, ascaris and trichocephalus still present in Case 5, nearly 4 weeks after I thought that I had got rid of these parasites with ipecacuanha and thymol (which have been remitted for three weeks). *Filaria*

also are of course still in the blood, and the patient remains restless at night and anæmic. We may apply some such term as Herodiasis or Herodopathy to such cases!

### SOME SUGGESTIONS AS TO THE TREATMENT & AFTER-TREATMENT OF CATARACT, DERIVED FROM AN EXPERIENCE OF 1,100 CASES.

BY SURGN.-CAPT. R. H. ELLIOT, I.M.S., M.B. B.S.,  
LONDON, F.R.C.S.

DURING the thirteen months (July 1895 to August 1896) that the writer acted as Superintendent of the Government Ophthalmic Hospital, Madras (in the absence of Surgeon-Major T. H. Pope on leave), it fell to his lot to perform about 1,100 cataract extractions, 1,068 of the operations occurring in hospital practice.

The object of this paper is to state the views as to the treatment and after-treatment of cataract which this series of operations has led him to adopt.

With certain reservations to be hereinafter stated, the operation chosen was that which in the Madras Presidency is spoken of as Drake-Brockman's operation, after the name of that famous medical officer, who is still remembered throughout India.

By the courtesy of Surgeon-Major T. H. Pope the Superintendent of the Government Ophthalmic Hospital, the writer had many opportunities of seeing that officer perform Brockman's operations, before he himself had occasion to use it. Dr. Pope has recently published an interesting pamphlet entitled "Cataract in the Madras Presidency" (Publishers, Henry Frowde, Oxford University Press Warehouse, Amen Corner, E.C.), in which he clearly and fully describes the operation we have been speaking of.

As this pamphlet may be easily referred to, and has doubtless had wide circulation, it seems unnecessary here to repeat the details of the operation. It suffices to say that the main features of the procedure are that:—

- (1) Mydriasis is procured by atropine, and anæsthesia by cocaine.
- (2) Needling with Bowman's needle precedes the performance of the section.
- (3) The section is large.
- (4) Simple extraction is aimed at, if possible.

Each step of the above mentioned operation will now be discussed in turn, and when that has been done, it is proposed to review the various complications that assail the after-treatment of our cases.

In this paper the writer does not presume to be dogmatic, nor does he claim that his views have by any means reached finality. Surgeons may often be heard to say "that cataract extraction is a simple affair, and one can learn all about

it after an experience of a few cases." Such is not the writer's opinion, and he believes that; though many able pens have written on this theme, it will be long before some at least of the questions raised are finally settled.

#### ON THE CHOICE OF CASES FOR CATARACT EXTRACTION.

No eye should be submitted to an operation for the extraction of a cataract unless the organ and its accessory structures are in a healthy condition.

Catarrhal ophthalmia, granular ophthalmia, pterygium affections of the cornea and diseases of the lachrymal passages must be cured by suitable treatment before an extraction is attempted.

The presence of synechiæ, especially if extensive and resistant to atropine, is a serious complication which is very likely to adversely influence our results.

As a rule, it is unwise to operate if an iris shadow be present. But in long-standing slow-growing hard cataracts, especially when both eyes are affected, it is often unnecessary and inadvisable to wait for complete maturity.

The amount of perception of vision present in cases of mature cataract varies greatly. In the hard slow-forming variety, the patient may count fingers at a foot or more from his eye, while in a case of Morgagnian cataract, one is amply satisfied if the patient can distinguish the direction of hand movements in front of his eye. Between these limits a large number of intermediate degrees of visual power will be met with. At the upper limit of the scale, an occasional doubt will arise as to the maturity of the cataract, but this doubt can be easily laid to rest by the use of the ophthalmoscope. More difficulty will be experienced in deciding on the fitness or otherwise of those cases, which fall below the lower limit, that we have mentioned. From time to time one meets with patients whose visual powers are limited to the faintest perception of light and shadow. Indeed, one may have considerable difficulty in satisfying oneself that the retina is still functional.

It is then a nice question to decide how far the absence of vision is due to the presence of lenticular opacity, and how far to fundus changes in the eye.

In India, where the history of the case is usually vague or worse, our difficulties are considerably increased. In England a Surgeon often follows his case from start to finish, or at least he can obtain from an intelligent patient, or better still, from that patient's medical adviser, an account of the incidence of the symptoms. The Surgeon in the East, on the other hand, has but two factors to guide him in this particular class of cases, *viz.* :—

(1) The density of the opacity, and (2) the degree of vision left. The writer has made it a rule that so long as a comparison of these two

factors gives any hope of benefit to the patient's condition an operation should be done. It is needless to say that such cases do not give brilliant visual results, and that, in a percentage of them, one fails to improve sight at all. It may be urged that such operations, if they fail, damage the prestige of European surgery. Further, the call for statistics from Government medical officers, makes men disinclined to risk failure. The obvious moral is that each man must choose, as doubtless we have most of us chosen, between the interests of our patients and the appearance of our statistics. That surgery of the kind here advocated does really damage a Surgeon's reputation one may well refuse to believe; the native in these matters is "no fool," and he is not long in ascertaining whether the general run of a medical officer's cases are successful or not.

It must be clearly understood that the above remarks have no reference to cases of glaucoma. To extract a lens whose opacity is secondary to a glaucomatous condition of the eye is unsound. Even the cases which appear most tempting are sure to end in disappointment, if the Surgeon is rash enough to extract the lens. On the other hand, where high tension supervenes on a simple cataractous condition of the eye, and where the case is met with sufficiently early, extraction is obviously indicated, and often gives most brilliant results.

#### PREPARATION OF THE PATIENT: ANTISEPTIC PRECAUTIONS, &c.

When possible, it is certainly preferable to detain the patient in hospital for 48 hours previous to operation. On the day of admission, a dose of castor-oil is given, and the patient is enjoined to spend the two days as quietly as possible. On the night preceding operation the eyebrows are shaved, and the skin of the eyelids and surrounding parts is carefully washed with soap and carbolic lotion (1 in 40), the patient being told to keep the lids closed in order to prevent soap, &c., entering the conjunctival sac. This washing is repeated early on the morning of operation, and a pad of wool wrung out dry in saturated boracic lotion is kept applied to the eye until the patient is brought on the table. An hour before operation a few drops of homatropine solution (*gr. viii ad ʒi*) are instilled into the eye, this instillation being again repeated in half an hour's time if necessary. Before operation the conjunctival sac is gently washed out with boracic lotion dropped in from a dropper-bottle. Anæsthesia is obtained by using cocaine (4%) dissolved in boracic acid lotion, two or three instillations at five-minute intervals are quite sufficient.

The writer has abandoned the practice of cutting the eye-lashes, as he found that the irritation caused by the short stubby hairs sometimes led to a troublesome entropion of the lower lid. He considers that the theoretical advan-

tage gained does not balance the decided drawback just mentioned.

The procedure above advocated is to the writer's mind ideal. In dealing, however, with timid patients, who, if left a few hours in hospital before operation, are likely to take fright at the thought of the knife, and run away, one is often obliged to place them on the table at once, wash the skin, shave the eye-brow, instill the mydriatic and anæsthetic, and extract the cataract without further delay. The use of a perchloride medium for the cocaine, &c., has the disadvantage of irritating the conjunctiva and so delaying convalescence. This irritation is noticed even when a solution of only 1 in 10000 of perchloride is used. After a trial of the mercurial medium in several hundred cases, the writer has given it up in favour of a solution of boracic acid in freshly boiled water.

Homatropine is much to be preferred to atropine since its mydriatic effect passes off rapidly, and thus the danger of prolapse of the iris is minimised. In those cases, however, in which posterior synechiæ exist, atropine must of course be used.

that it cannot slide up or down. Each free end of the bandage is now slit into three tails from before backward to a point opposite the patient's temples; each centre tail is  $2\frac{1}{2}$  inches broad, while the breadth of each of the four remaining tails is  $\frac{3}{4}$  of an inch.

To apply the bandage, the ears are fitted through the holes made for them, and the two upper and two lower tails respectively are tied together, the one pair over the vertex and the other below the chin. The patient is brought on the table with the bandage thus applied. After operation one of the two broad tails is brought down across the dressings and held in position by an assistant, while the operation brings the remaining tail down on top of the previous one, and fixes the bandage by means of a pin applied at each side.

At each dressing the pins are removed, the two broad tails are thrown backward, and the dressings are changed. The eye is then closed by re-applying the middle tails in the same way as before.

By this contrivance we are able to repeatedly dress our patient without raising his head from



#### BANDAGE AND DRESSINGS.

The form of bandage, described below, was shewn to the writer by Dr. Woutersz of Ceylon. It is vastly preferable to any other cataract bandage that one has seen used either in England or India. It is made thus:—

A piece of bandage cloth is taken 4 inches broad, and of such a length that it will pass one-and-a-half times round the patient's head. The mid-point of the strip is placed over the patient's external occipital protuberance, and the two free ends are held in front by an assistant; the position of the two ears and the size of their bases are carefully measured on the bandage. This is now removed, and two holes are cut, one on each side, to fit the corresponding ears. The object of so doing is to fix the bandage so

the pillow, or in any other way disturbing him. Another advantage is that firm and graduated pressure can be very easily applied.

After operation, the eye is dressed in the following way:—A thick coat of finely powdered boracic acid is dusted on to the outer surface of the dry closed lids; over this is applied two folds of dry lint which has been previously soaked in a 1 in 5000 solution of perchloride of mercury. Great care is next taken to fill up the hollow of the orbit with absorbent aseptic wool. The opposite eye is closed in a similar manner; the bandage is then fastened as already described.

When it is considered desirable to release one eye, this is easily effected by omitting the dressings and cutting a window in the bandage opposite the eye in question.

- A—Shows the bandage as adjusted before the patient is brought on to the operating table.
- B—Shows one middle tail (the apparent right one) brought down over the dressings. The other tail is seen hanging down.
- C—Shows the bandage applied and secured by pins.

#### CLINICAL CLASSIFICATION OF CATARACT.

There have been so many attempts made to classify the various forms of cataract that perhaps an apology is needed for offering a classification which the writer has not hitherto seen. The following arrangement, however, is purely clinical, being intended as a guide for the operator, and dealing exclusively with mature cataract—

- I. Hard cataract :—Clinical varieties :
  - (a) Simple hard cataract.
  - (b) Morgagnian cataract.
  - (c) Hard cataract with cheesy degeneration of cortex.
  - (d) Black cataract.
- II. Cortico-nuclear cataract.
- III. Soft cataract.
- IV. Discoid cataract.
- V. Traumatic cataract.

The simple hard cataract is one in which the consistence of the lens is nearly uniformly hard through its whole thickness. The colour of such lenses varies somewhat in different cases, and the centre generally is of a deeper tint than the cortical portion.

Of the *Morgagnian cataract* little need be said. Anyone who has had experience of a large number of consecutive cases of cataract must have noticed all degrees of this condition. In some the nucleus is so small as to hide behind the iris, when the section is opened, and so evade the ken of an unpractised observer; whilst in others a large nucleus is surrounded by the thinnest possible coating of fluid matter. The writer recently operated on a high caste Hindu who had been suffering from cataract for 17 years. The nucleus of the right cataract was so small as to escape observation. When operating on the left eye, the nucleus was very carefully looked for, and was found to be a tiny lamella about two millimetres in diameter and half a millimetre in thickness.

The *hard cataract with degenerative cortex* is a form to which special attention is here directed. It is commonly confused with a true cortico-nuclear cataract, but the writer believes this to be both a pathological and a clinical mistake. From the point of view of an operation, there is the greatest difference between the hard cheesy material of the cataract we are speaking of and the soft semi-fluid matter of the cortico-nuclear variety. The latter, if left in the chamber, will be speedily absorbed, and when in

moderate quantity will rarely, if ever, give trouble, while the former, if left behind, is more difficult to remove and much more dangerous. It absorbs aqueous, swells up, and takes a long time before it itself becomes absorbed. It further appears to irritate the iris, causing local synechiæ and irregularity of the pupil. If we compare a large number of these cataracts with each other we are struck with the fact that we can trace all gradations from the most marked cataract with degenerative cortex up to the condition of an almost simple hard cataract, whereas we cannot trace any connecting link between these forms and the true cortico-nuclear cataract. The one variety is sharply and definitely marked off from the other by the physical characters both of the nucleus and of the cortex, as will be seen by a reference to the subjoined table:—

	Hard cataract with degenerative cortex.	True cortico-nuclear cataract.
Nucleus.	Hard, resembling a hard cataract, or the nucleus of a Morgagnian cataract.	Harder than the cortex, but easily squashed under light finger-pressure.
Cortex.	Cheesy—breaks off in flakes — expelled with difficulty if left in the chamber—swells up and irritates iris, if not removed.	Semi fluid — looks like a dense flocculent chemical precipitate, when seen outside the eye—easily expelled from the chamber by pressure. If left behind, is readily absorbed and causes little irritation.

If we compare these degenerative cataracts with Morgagnian cataracts, we find two features common to both, *viz.* :—

(1) A comparison of a large number of cases of either variety shows us the involution of the most marked form (be it the Morgagnian cataract or the cataract with degenerative cortex) from the typical hard cataract. In both cases we have to do probably with the secondary degeneration of the cortex of a hard cataract. In the one the cortex breaks down into fluid; in the other, the product of degeneration is a brittle, cheesy opaque material, and

(2) Both forms occur in elderly people.

Black cataract is uncommon. This is fortunate, as its association with deep-seated changes in the eye, renders the prognosis very unfavourable.

Cortico-nuclear cataract does not call for any special comment. The cortical matter has never been sclerosed; it is soft and flocculent, easily expressed and readily absorbed.

The term soft "cataract" is used in the ordinary text-book sense; nor has the writer anything special to say about the traumatic cataract.

*Discoïd cataract.*—From time to time one meets with a variety of cataract which might well be called capsular, but for the fact that this name is associated with a quite different variety of opacity in the minds of most ophthalmic Surgeons. The cases referred to usually give either a congenital history or a history of injury. The main body of the lens has been more or less completely absorbed, a thickened capsule, with possibly some unabsorbed remains being left. In this way a flat plate or disc is formed. The condition can be easily recognised by oblique illumination with the dilated pupil, and the disc can be readily removed with a pair of iridectomy forceps after first excising a portion of iris.

Sometimes the disc is so thin that it can be torn with two needles, an aperture in the visual axis being then obtained.

The name above suggested, while it involves no theory, aptly expresses the appearance of this variety of cataract.

#### DYSENTERY IN BENGAL JAILS.

By SURGN.-CAPT. W. J. BUCHANAN B.A., M.B., DIP. ST. MED.,  
*Superintendent, Central Jail, Buzar.*

THERE is probably no subject which more exercises the mind of the medical officer of a jail than the prevention and treatment of dysentery. The following remarks are the result of several years' experience of it in several jails of Bengal. The first question to be settled is whether there exists more than one form of dysentery or not. As far as present experience goes, I consider there are three varieties of the disease, or rather three diseases or conditions, which are usually returned under the heading dysentery. Unless this is recognised, it is impossible to apprise correctly either the results of treatment, or the value of measures of sanitary prevention. For the present these three varieties are here *provisionally* called "mild," "acute," and "chronic," not a very original nor startling classification.

What then is here meant by the term "mild" dysentery? The patient (or prisoner rather as we are now considering the disease as met with in jails) seldom comes to hospital till he sees either mucus or blood or both in his stool. He will complain of straining and bearing down pain over the sigmoid flexure or sometimes in the hypogastric region. On inquiry it is often found that the attack was preceded by a somewhat copious semi-solid motion, though when first seen at hospital, the stools contained little or no feculent matter, often only rose-coloured mucus in quantity about two drachms. This stage continues for several days unless relieved by treatment. This mucus probably comes from the enlarged solitary glands of the large intestine in the neighbourhood of the sigmoid flexure. The condition is pathologically a catarrhal process, congestion, exudation, and rup-

ture of capillaries, but I cannot hold with the opinion that this complaint is to be called "intestinal catarrh," "colitis," or other such more comfortable name. Whether this disease is a separate entity or only a first stage of the acute form which has resolved before going on to ulceration is open to question, but that some cases apparently mild proceed to ulceration and even perforation the following case will show. A prisoner in Burdwan Jail was admitted to hospital in December 1896 for "intestinal catarrh," after suitable treatment apparent convalescence set in, and three weeks after coming to hospital he had even begun to gain in weight. All went well till he was suddenly attacked by acute pain in the abdomen, suggestive of acute dyspepsia, but which soon appeared to be due to peritonitis. The *post-mortem* examination showed a large irregular sloughing perforated ulcer of the sigmoid flexure with faecal extravasation and consequent peritonitis. The lower portion of the large intestine was a mass of irregular thick edged ulcers in all stages of ulceration and repair, while the small intestine was quite healthy and was loaded with faecal matter, as was the upper part of the colon.

I consider that all these cases of mild "dysentery" are correctly designated, and would restrict the term intestinal catarrh to affections of the small intestine. The majority, however, of such "mild" cases have no such history, they are usually cured by rest in bed and bland diet in a few days.

As regards causation these cases appear to be brought on by slight causes, chills due to vicissitudes of temperature, irregularities of diet, that is, either badly cooked or unsuitable food, eating raw grain (though this usually produces a form of watery diarrhoea), and in some cases the very excellence and abundance of our jail dietaries will produce this condition (*see below*). Such attacks are very liable to recur, also from slight causes. It is also probable that polluted or even muddy water will have the same effect. Some of these points will be referred to later on.

We now come to the second form of dysentery met with in jails, *viz.*, the acute. By this is meant the ordinary acute dysentery of the text-books. It is accompanied by tormina, tenesmus, prostration, fever, frequent and scanty stools. An attack lasts from 4 to 8 days, and is frequently fatal. In my (perhaps lucky) experience of the past two years at least I have found this acute form of dysentery to be much less common than the other varieties. In the Central Jail, Bhagalpur, during 1896 I met with only two such acute cases in a population averaging over 1,200, one was rapidly fatal and the other recovered. In these cases we find the regular "meat-washings" stools (*lotca carnea*) of the older writers.

(To be continued.)