NOTES ON A SERIES OF OPERATIONS FOR THE EXTRACTION OF CATARACT.

By Captain D. J. Collins.
Royal Army Medical Corps.

The series of cases on which these notes are based is a small one, comprising in all 36 cases. All the operations were performed in Poona, in 1901-2, and the majority in the Cantonment Hospital in that station. The cases were all amongst natives of India, four being Parsees, five Mahomedans, twenty-six Hindoos, and one a Goanese. Cataract in India appears to be far less common amongst the Mahomedans than it is amongst the Hindoo population; in this series, the Hindoos represent 72 per cent. of the total, while the Mahomedans only show 14 per cent. The cause of this disproportion has yet to be explained, and it seems curious why one class should be more affected with cataract than another. It is worthy of notice, in this connection, that the Mahomedans as a class wear more headgear, in the shape of massive puggarees, than do the Hindoos, whose only protection from the tropical sun is frequently a mere rag; and, also, there is the fact to be noted that the Mahomedans eat more animal food than the Hindoos, whose staple diet is of a vegetable nature. Whether these matters have any bearing on the subject or not is, of course, open to question, but the facts that cataract is more prevalent amongst the inhabitants of the tropical and sub-tropical countries of Asia than amongst the...
races of the colder countries of Europe, and also that in India the Mahomedan race is proportionately less affected than the Hindoo, offer an interesting field of investigation and research.

The ages given by the patients were as follows, but it must be remembered that the average native of India is very vague about his correct age: 1 patient was 28; 4 were between 30 and 40; 9 between 41 and 50; 12 between 51 and 60; 8 between 61 and 70; and 2 between 71 and 80. Of the 36 cases, 9 were Morgagnian cataracts, 12 were nuclear, and 15 cortico-nuclear; 31 cases were successful, 4 unsuccessful, and 1 partially so.

The Technique of the Operation.—The preparation of the patient and of the eye to be operated on form a very important part of the procedure. I have found it of great advantage to have the patient under observation in hospital for a few days before the operation, in order that his general health may be attended to, and the condition of his urine investigated. A moderate degree of albuminuria is no bar to the success of the operation, but I should hesitate where the amount of albumen was large. One of the patients operated on had been suffering from diabetes for many years, the urine containing about 20 grains of sugar to the ounce; this case, however, did very well, and recovered as rapidly as those who were in perfect health. Another advantage of having the patients in hospital for a few days before operation is that they learn, by association with those who have been operated on, what they have to go through and what is expected from them later on. On the day before operation the patient is given a lotion of perchloride of mercury (1 in 5,000) and an eye-bath, and is instructed to bathe the eyes every four hours. A hot bath is given the evening before, and a purgative is also administered; on the morning of operation, the face and exterior of the eyelids are first thoroughly cleansed with soap and water, and then with perchloride of mercury lotion (1 in 2,000); next the lids are everted, and the lids, conjunctiva and canthi are irrigated with 1 in 5,000 perchloride solution, and finally a pad of gauze, soaked in this solution, is placed over the eye, and kept there by a bandage until the patient is on the operating table. When on the table, cocaine (2 per cent.) is instilled into both eyes, the lids of the eye to be operated on are again everted, and the conjunctival sacs are irrigated with weak perchloride solution, and cocaine is again dropped into the eye, until it is fully anæsthetised.

The thorough cleansing of the fornices, and especially of the inner canthus, is most important, and any retained discharge or unhealthy secretion would seriously militate against the success of
the operation. In only one case, that of a very nervous woman, was it found necessary to administer a general anaesthetic; the patient was so very irritable and nervous, that she was quite unable to keep her eyes motionless under cocaine. I think, however, that a hypodermic injection of morphia, with cocaine dropped in the eye, would have been better, as under a general anaesthetic one loses the help which the patient is able to give by rotating the eyes in the required directions. In this particular case, the movements of the eye had to be controlled by a fixation forceps in the hands of an assistant, and this fact necessarily rendered the operation more complicated, and increased the risks.

A sclero-corneal incision, embracing about two-fifths of the circumference of the cornea, was employed in all the cases, the conjunctival flap, which is formed at the upper margin of the incision, being turned down on the cornea during the operation; union appears to take place more quickly if this conjunctival flap is made. It is advisable always to make a large incision, as considerable difficulty is experienced in delivering the lens if the incision is too small, and particles of cortical matter are liable to be left behind in the anterior chamber; these will then have to be removed piecemeal, with great risk of vitreous escaping, and subsequent irido-cyclitis. It is therefore much better to make the incision rather too large than to risk making one too small, with its attendant difficulties and dangers.

An iridectomy was performed in all cases except one. Opinion in India is much divided as to whether an iridectomy should be done or not, but it seems to me that the risk of injuring the iris, with resulting iritis, synechiae, and perhaps prolapse of the vitreous, is much greater when cataract extraction is attempted without iridectomy. The case in which the extraction was done without an iridectomy was altogether unintentional on my part. The patient was a nervous man, who directly after the sclero-corneal incision had been made rolled his eyes violently. What appeared at first to be a very large cataract presented in the wound, and was delivered without difficulty; but on further examination it was found that the lens had been expelled with its capsule unruptured, the suspensory ligament of the lens having been torn by the violent contraction of the orbital muscles. Nothing further was done beyond instilling atropine, and the patient made an unusually rapid recovery.

The capsulotomy, or laceration of the lens capsule, requires considerable care, and a rather delicate touch. If too much pressure is employed in the process, the lens is liable to be dislocated into the vitreous chamber; while if the capsule is not torn freely enough,
the lens cannot be expressed, and the cystitome must be employed again. Delivery was effected by pressure with a spoon on the sclerotic and lower part of the cornea, counter-pressure being similarly made on the sclerotic above the incision. It is most important not to employ too much pressure in effecting delivery, this being one of the commonest causes of escape of the vitreous. Cortical débris should, as far as possible, be removed by gently stroking the cornea in an upward direction. After applying a cold compress and allowing a short interval for the aqueous humour to reform in the anterior chamber, I have found the "lid-maneuvre," described by Mr. Swanzy, most useful in getting rid of any remaining particles of cortical matter. The iris is then carefully replaced with a spatula, atropine instilled, and the dressing applied. In India, where a steriliser was not available, I have always employed for the dressing gauze boiled and soaked in 1 in 5,000 perchloride lotion, with a pad of wool and bandage over both eyes. This dressing was untouched for forty-eight hours, and subsequent dressings were done morning and evening. These consisted in gently washing the eye with weak perchloride lotion and dropping in atropine. In favourable cases the dressings were removed on the seventh to the tenth day, and dark glasses substituted. In six of these cases a small amount of vitreous escaped after delivery of the lens, but all did well afterwards. This accident is extremely likely to happen where the tension of the globe is at all raised, and all undue pressure on the eye must be carefully avoided during the operation. It would, however, appear that the loss of a small quantity of vitreous after delivery of the lens is not of serious import, and normal tension is soon recovered. In two cases, as a result of too great pressure during capsulotomy, the lens was dislocated backwards, and delivery had to be effected by means of a vectis. Haemorrhage in the anterior chamber was noticed in three cases a few days after operation, probably the result of injury to the eye caused by the patients turning in bed during sleep, or perhaps due to a fit of coughing. The blood was gradually absorbed, leaving the pupil clear.

The four unsuccessful cases were the result of severe irido-cyclitis after operation. One of the patients was discharged from hospital, but returned after a week with irido-cyclitis, and vision was totally lost in the eye. In a few cases, tags of capsule remained stretching across the pupil, and needling was necessary to disperse them. As regards the resulting vision, the majority of the patients were unable to read, but had very fair distant vision when fitted with + 10 D. glasses, while those who were able to read required + 14 D. to + 17 D. lenses for that purpose.