

TABLE No. III.

Giving the area and population of each Thana in Purnia District, with the number of deaths from Cholera in 1889, and from January to June, 1891.

NAME.	AREA.	POPULATION.	CHOLERA DEATHS, 1889.		CHOLERA DEATHS JAN.-JUNE, 1891.	
	Square miles.	Census of 1881.*	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.
WESTERN HALF.						
<i>Sadr Sub-division—</i>						
Purnia Town	15,016	155	10·32	60	3·99
" Thana	424	138,704	3,960	28·55	1,001	7·21
Gondwara ,,	421	123,945	2,032	16·38	907	7·31
Damdaha ,,	514	109,391	1,470	13·54	1,115	10·19
<i>Araria Sub-division—</i>						
Araria Thana	431	200,012	3,777	18·88	2,835	14·17
Raniganj Thana	341	107,552	1,647	15·31	2,804	26·07
Matiari ,,	272	94,115	1,227	13·03	3,557	37·79
Total of Western Half ..	2,403	788,735	14,268	18·10	12,279	15·56
EASTERN HALF.						
<i>Sadr Sub-division—</i>						
Kadwa Thana	365	134,275	1,400	10·42	1,340	9·97
Kasba Amur Thana	285	124,889	980	7·04	1,240	9·93
Balrampur ,,	323	115,031	63	0·54	572	4·97
Manihari ,,	240	54,456	219	4·20	698	12·81
<i>Kishanganj Sub-division—</i>						
Kishanganj Thana	321	158,100	185	1·17	1,063	6·72
Bahadurganj ,,	393	196,142	380	1·42	2,410	12·28
Kaliaganj ,,	626	277,059	255	0·92	1,553	5·60
Total of Eastern Half ..	2,553	1,059,952	3,482	3·28	8,876	8·37
GRAND TOTAL ..	4,956	1,848,687	** 17,750	9·60	21,155	11·44

* The census of 1891, the exact results of which have not yet been published, shows a rise in population of some five per cent. during the last ten years, or a total addition of about 100,000.

** Out of the total of 17,750 cholera deaths in 1889, the deaths from June to December, inclusive, amount daily to 536.

OPHTHALMIC CASES AT THE DARJEELING DISPENSARY.

BY SURGEON-MAJOR J. O'BRIEN, M.D., F.R.C.S.E.

SURGICAL operations on the eye are not of common occurrence in this dispensary. I gather from the records that a single case of cataract extracted in 1882 was the only ophthalmic operation of importance performed within the past ten years. This state of things is accounted for by the very large amount of general practice devolving on the civil surgeon during, what is called, "the season" in Darjeeling, and secondly by the comparative rarity of diseases of the eye requiring operation. Senile cataract so common in the plains is undoubtedly extremely rare among the hill people. During the first year of my tenure of office here as civil surgeon, viz., in 1890, though constantly on the look-out for such cases, I did not see or hear of a single person suffering from cataract. Towards the close of my second year I was more fortunate. With the aid of the popular and energetic

hospital assistant of the dispensary I succeeded in getting together a few interesting cases.

Case 1.—A blind Nepalese Brahmin, aged 31, was seen by the hospital assistant being led through the bazar and induced to come to the dispensary for treatment. I saw him on 30th August, and found that it was not a very promising case. It was a well-marked instance of congenital posterior polar or posterior capsular cataract of both eyes. A dense and brilliantly white opacity of stellate appearance occupied the whole of the pupillary space at the back of the lens. It was easy of diagnosis, being saucer shaped and obviously well behind the margin of the iris. As it was central and fully a fifth of an inch in diameter, it completely destroyed direct vision.

In civilized countries cataracts of this variety are not often met with, in adults at least, as an attempt would no doubt have been made to deal with them in childhood. I do not remember having seen a single case of this kind during

the time that I worked at Moorfields, nor have I hitherto met with one in India.

As projection and perception of light were good, I determined to operate. Owing to the size of the opacity which extended close up to the margin of the lens a simple iridectomy would have been useless. Failing this, three courses of procedure appeared to be possible, and each had its disadvantages. I might have attempted an ordinary extraction with the spoon after iridectomy, removing the clear soft lens and its opaque posterior capsule bodily, or I might have done a preliminary iridectomy and endeavoured to ripen the lens by bruising with a spoon or spatula passed through the iridectomy wound and subsequently extracted it in its capsule when hard. Both these methods were, however, open to objection. In the first place the necessary incision of the cornea would probably have left an undesirable condition of traumatic astigmatism; in the second place vitreous would probably have escaped in spooning out the lens, and it is well known that the vitreous is generally fluid in these congenital cases which are due to developmental defects; lastly the attempt to ripen the lens by bruising might have resulted in dislocation into the fluid vitreous. Having these dangers and difficulties in view, I decided on adopting the third course, *viz.*, to first obtain solution of the lens by needling and then to lacerate or extract the opaque posterior capsule. The objection to this proceeding was the extreme delay which it involved. I needled the right eye for the first time on 30th August, and the left a few days later; but despite two subsequent needlings the lenses were not completely dissolved until the beginning of the following January. However, the process of solution, though slow, was accomplished without trouble or pain.

Beyond a slight tenderness for the 24 hours following each needling, there was no vestige of inflammation. I merely kept the eyes bandaged for this time, and then substituted a shade.

On 12th December when the right pupil was clear of lens matter, though the periphery was not yet completely dissolved, I tried to lacerate the opaque capsule in the middle, so as to provide a sufficient aperture for direct vision. But though I tried this first with one needle and then with two, in the manner recommended by Bowman, I entirely failed either to pierce or to tear through the opacity. It had become calcareous from age towards the centre, and when pressed with the needle, instead of yielding to the point it gave way backwards into the vitreous and threatened to drag dangerously on the zonule. I accordingly desisted from the attempt.

Some days later, *viz.*, on 17th January 1892, when the lenses were completely dissolved, I extracted the entire posterior capsule from the right eye, and a few days afterwards from the

left. It was found necessary to separate the tough calcareous opacity from its peripheral connection by a circular incision made with cutting needles close to the margin of the dilated iris, and next to sever it from its connection with the remains of the hyaloid artery,—a connection that usually exists in these congenital cases: lastly, when it was found to float freely in the aqueous, it was extracted easily by means of straight iris forceps passed through a small corneal incision.

The result, I am glad to say, has been very good. The pupils are now quite clear; the cornea retain their normal curvature, and the patient finds himself possessed of a useful amount of vision. With the aid of glasses (+ 10D), he can count test spots at a distance of a few yards, and he can make his way about and do things for himself.

I showed this man to Dr. Argyll Robertson during his recent visit to Darjeeling (February 1892). He said that in his experience such cases are rare in adults, and he expressed his satisfaction at the obviously excellent result.

The remains of the hyaloid arteries are now visible, with the ophthalmoscope as floating opacities, but they do not interfere seriously with the coarse vision that is required for the ordinary purposes of uneducated life.

I have referred to the few ophthalmic works in my possession, *viz.*, those of Brudenel Carter, Nettleship and Juler for detailed instruction in the management of such cases: but the two latter merely describe this variety of cataract without entering into particulars as to treatment. Brudenel Carter is more explicit. On the subject of capsular opacities in general he writes:—

“The treatment of these residual opacities has occasioned great perplexity. It seemed an obvious resource to make an incision through the cornea, to seize the film with forceps and to extract it: but this simple plan has been so frequently followed by destructive cyclitis or by suppuration of the eyeball that it has long been abandoned. It was at one time the practice to try to drill holes through the membrane with a needle, or to tear the bands in two, or to push them down into the vitreous: but all these things are more easily talked about than accomplished. The membranes are generally elastic. The needles passed through them leave openings too small to be useful. Bands were found to stretch or yield instead of breaking; and when released, returned to their former position. At length Mr. Bowman devised the admirable expedient of using two needles at once, one introduced at each side of the cornea: and by this plan almost any band may be torn, and a central opening may be made in almost any membrane.”

I tried two needles in the manner recommended, but found it impossible to lacerate the

opacity with them efficiently. The risk of cyclitis was avoided by first completely detaching the opacities from their ciliary attachments before attempting to extract them.

Case 2.—A Nepalese girl of 18, brought by her husband on account of soft cataract of both eyes. She had been totally blind for four years. Perception of light and projection were good. I needled the right lens for the first time on 26th October, and the left on 1st November. The lens matter though soft was not fluid. Solution proceeded rapidly in both eyes. After two subsequent needlings she was discharged with clear pupils on 31st December. Her delight on being furnished with glasses, and finding that she could see nearly as well as ever was gratifying.

Case 3.—A young man of 20 presented himself with a tough, white-wrinkled cataract probably of traumatic origin. As it was a serious disfigurement, I removed it with the spoon without an iridectomy on 11th November. A slight hyphema from the edges of the incision delayed progress a little. He was discharged with a clear pupil, and an eye not distinguishable from the other on 28th November. As the lens was removed merely for cosmetic purposes, I did not note how far vision had been restored.

Case 4.—A Kayah of 60 presented himself with a mature senile cataract of the right eye. As cataract was rapidly forming in the left, though useful vision was still retained, I thought it best to operate on the blind eye. The cataract was extracted after an iridectomy in the usual manner on 21st November. It came away entire. The patient was discharged with the wound healed and a clear pupil on 28th November. The vision was excellent.

Case 5.—A shrivelled old Mussulmani of 60, almost totally blind, with a mature cataract of right eye and one nearly mature of left. I operated on right eye on 20th November. On expressing the lens after iridectomy a bead of vitreous presented. The lens was immediately spooned out, but a small fragment of its lower segment got broken off. This though not noticed at the time subsequently excited iritis. With the steady use of atropine she recovered with a good eye.

I extracted the immature left lens on 31st December through a section of the upper periphery of the capsule made with a Graefe's knife, after iridectomy, in the manner practised by Mr. Tweedy. Even if some lens matter had been left it would not have done harm enclosed, as it would be, in the pocket of the capsule; but the lens came away entire, and she was discharged with a clear pupil on 10th January. In this case the left eye in which the cataract was decidedly immature did better than the right in which it was ripe, owing to the accidental presentation of vitreous which necessitated the use of the spoon.

Case 6.—Diabetic cataract of both eyes. This was a flabby looking old man, a garden sirdar, of about 60. The specific gravity of his urine was 1028, and it contained a decided trace of sugar. I operated on the right eye on 24th and on the left on 31st December. There was slight iritis in the left, which caused a synechia to the face of the capsule, but it gave way under the use of atropine. He was discharged on 18th January with good vision in both eyes. I showed this man to Sir Spencer Wells during his visit to Darjeeling in January as an instance of diabetic cataract that had done well under operation. He considered the result remarkably good.

Case 7.—A blind mehterani of 50 whom I met being led through the town by her husband. I examined her on the spot, and found mature early senile cataracts in both eyes. She had been blind for a year. She came to the dispensary next day, 7th January, when I operated on the right eye, and ten days later I extracted the cataract from the left. There was no complication. She was discharged with clear pupils on 2nd February, and a fortnight later she was provided with glasses.

Case 8.—Sarcoma of eyelid. This was a cooly woman of about 35, who had a tumour the size of a hen's egg, of two years' growth, springing from the outer half of the left eyelid. It hung over the lower lid and completely concealed the eye. It presented a raw lobulated surface and bled freely on the slightest touch. She was extremely anæmic and œdematous from constant loss of blood. The cornea was rough and ulcerated superficially from the friction of the tumour, and the conjunctiva was so congested and thickened that I thought it was infiltrated with the growth. In fact, such was the state of things, that I expected it would be necessary to remove the eye with the tumour. On dissecting it off, however, it was found to be partially encysted, and to spring only from the lid. The outer half of the latter was removed with the tumour on 31st January 1892. I hoped by saving the inner half of the lid to be able, by a plastic operation later on, to provide a satisfactory substitute for the lost lid. But this plan did not succeed. The action of the orbicularis on the inner half of the tarsal cartilage everted it and caused much trouble. I had accordingly to remove the remainder of the cartilage. Then to save the eye, I stitched the lower lid to the remains of the upper and kept it closed for a week. This had the effect of pulling down the remains of the upper lid and of stretching the mucous membrane. Some days later, *viz.*, on February 26th, I made a new eyelid by transplanting an oval piece of skin $1\frac{1}{2}$ " \times $\frac{1}{2}$ " with tapering ends from the front of her left forearm and imbedding it in a site of corresponding size that had been prepared for it

parallel to the free edge of the mutilated lid. This large graft which was merely laid down without stitches in the site prepared adhered as if it had been glued to the part. It was supported for eight days by a pad of sal alembroth wool and a bandage. At the end of this time it was found firmly united throughout by first intention. It well serves the purpose for which it was intended, and in course of time when the stray fibres of the orbicularis beneath it recover their tone, it will form an useful lid.

Case 9.—Was unsuccessful. This was a man of about 70 with immature nuclear cataracts in both eyes. I proceeded to do a preliminary iridectomy on the right eye, intending to remove the lens a month or two later; but no sooner had I made a moderate sclero-corneal incision upwards and the aqueous escaped than the lens covered by the iris presented in the wound. I rapidly completed the iridectomy, intending to secure the eye firmly with a pad, but the lens advanced still further when the iris was cut away, so that extraction had to be carried out. At this time the patient complained of severe pain. A pad was immediately applied and secured with a bandage, but in a few minutes blood soaked through it, and it was evident that the eye was lost. A vessel in the choroid had ruptured when tension was reduced by the escape of the aqueous, and the hæmorrhage which took place into the vitreous had caused the lens to protrude.

ABDOMINAL SURGERY AT THE EDEN HOSPITAL, CALCUTTA, DURING THE YEAR 1891.

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DURING the year 1891, thirty abdominal operations were performed by me at the Eden Hospital of the following nature:—

Ovariectomy including parovarian cysts	15 cases.	1 death.
Hæmorrhagic broad ligament cyst, probably a gestation cyst	... 1 case.	1 death.
Removal of diseased uterine appendage	5 cases.	1 death.
Kolpohysterectomy	... 1 case.	0 "
Removal of cystic kidney	... 1 "	1 "
" " cystic myoma	... 1 "	1 "
Exploratory incisions	... 4 cases.	1 "
Repair of large ventral hernia and removal of a remaining diseased tube and ovary	... 1 case.	0 "
Pyosalpinx opened and stitched to abdominal wound	... 1 "	0 "
	30 cases.	6 deaths.

Tables A and B, which will appear in a future issue, give the chief points in connection with the above cases.

The following details with regard to the above cases are of interest:—

Case No. 1.—The quantity of contained fluid in the main cyst was very large, and the secondary cysts numerous, the solid part of the tumour weighing over 3lbs. The patient suffered

severely from shock after the operation, which only lasted less than half an hour. The temperature falling to 94.2° in the mouth, but the recovery was perfectly normal.

Case No. 2.—The cyst was intimately adherent to the posterior surface of the uterus, and the pedicle was very broad, with a large bunch of varicose veins at one end of it. Two triple locking ligatures had to be used to secure the pedicle.

Case No. 3.—This case was one of great interest. The previous November she had been treated for fever diagnosed (up-country) as enteric. Since the fever the urine had frequently been purulent. Examination showed a tumour the size of a cricket ball between the bladder and uterus to the right, and a smaller one the size of an egg to the left of the uterus. After examination the urine drawn off by the catheter was purulent. When examined again after a few days, the urine previous to bimanual examination was clear, but after the larger tumour had been manipulated, the urine was again purulent. A diagnosis of pyosalpinx was made, one tumour communicating with the bladder. At the operation both tumours proved to be suppurating dermoid cysts containing hair and bones, the larger one opening into the bladder. The patient made an absolutely afebrile recovery, and is now in excellent health.

Case No. 4.—A simple multilocular cyst of small size. The right ovary was healthy, but it and the uterus were fixed in Douglas' pouch by adhesions.

Case No. 5.—In this case there appeared to be a cystic abdominal tumour, and the pelvis was filled by a solid elastic mass. Aspiration removed 65 oz. of straw-coloured fluid from the cystic tumour, and after this the pelvic mass appeared to be quite distinct from the ovarian cyst. An opinion was now formed that the pelvic mass was a fibroid of the uterus, distinct from an ovarian cyst, which was probably removable. The uterine sound entered 3½".

On opening the abdomen the following conditions were found. The uterus was pushed quite up out of the pelvis by a mass of papillomatous growth which filled it. There were papillomatous masses in the omentum, on the abdominal walls and surrounding, and quite fixing a large multilocular ovarian cyst on the left side. On the right side there was a smaller multilocular cyst covered by, but only partially fixed by papillomatous growth. It was deemed advisable to aspirate the cysts and leave them alone; but after aspiration the right cyst was found to have a good pedicle, though surrounded by papilloma. It was therefore removed and without much difficulty. The left cyst was so embedded in papilloma that I thought it best not to disturb it for fear of fatal hæmorrhage, and the impossibility of finding a safe pedicle. The left cyst was as-