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OPHTHALMIC HOSPITAL REPORTS,

AND JOURNAL OF THE

ROYAL LONDON OPHTHALMIC HOSPITAL.

No. I.

October, 1857.

At a meeting of the Medical Council of the Hospital, on the 25th of August last, it was determined to issue a periodical record of ophthalmic observation and experience; it was thought that at Moorfields, alone, much valuable information is gained and lost that should be preserved, and that such a Journal might obtain favour in the hands of many engaged in practice throughout the country. Mr. Streatfeild was appointed to collect and arrange, from time to time, the material, and order its publication.

The Ophthalmic Journal will be, for the present, issued quarterly. It will give short monographs, by members of the staff, and of the Profession generally, (if we are so fortunate as to engage their attention,) on any physiological or pathological subjects connected with our especial study; with, it is hoped, occasional engravings, or photographs, as illustrations. It will also contain a summary reprint of the monthly reports of the Registrar of the Hospital, and the titles of books and preparations presented to the Ophthalmic Library and Museum of the Hospital. It will not contain reviews of books, as such; or, any correspondence; or, anonymous publications. The opinions expressed in it must be understood to be those of individual authors. The editor will collect minor noteworthy observations, and record novelties and illustrative cases, with regard to consecutive detail. He is well assured of the active co-operation of his colleagues, and confidently depends on the kind consideration of others in promotion of this undertaking, for the mutual improvement of science.

He would be much obliged for any suggestion to increase the practical value of the Journal.

STATISTICS OF CATARACT,

R. L. O. H.

In the sixteen years, 1841 to 1856 inclusive, 5403 cases of cataract have occurred, being, according to the annual reports, nearly one twenty-fifth of all diseases in the same length of time. Of this number, many were admitted to the hospital wards, for operation, without passing the out-patients' register books. This registration (however insufficient), has been uniform since January, 1841, and in the sixteen and a half years to June, 1857,* gives 3506 cases, their sexes, and ages. Some few cases of "Lentitis" are identified, and there occur frequent entries of "dislocated" or "displaced" lenses.† In 247 cases, initials have been substituted for Christian names; of this number I should allow two-thirds to the males, as it is less usual for females to give initials; *without* these cases, 1691 are of men, and 1568 of women, the former number prevailing and increased to a majority of 206, when two-thirds of the neutral cases are added. But, *rejecting casualties,* the comparative frequency appears to be rather greater in females, for 251 are specified as "traumatic" cases, and these are nearly all of males (under the age of 20). On the other hand, it must be remembered that more women live to great ages than men, and (in the London district) at all ages outnumber them, this is a source of error, and corroborates the male majority. Even omitting the traumatic (and neutral cases), as well as correcting for the actual excess of females, (113·476 in the London district to 100 males, Census‡ 1851) males have a majority, (as at first appeared) of 357, *virtually.*§ Sixty is the age at which most cataracts have been found, and of the 199 patients of this age

* Taken annually, the greatest total (283) occurred in 1853, and the same total occurred in 1854. Taken monthly, the greatest total (406) occurred in May, and the same total occurred in June.

† A mother and her three eldest boys came lately for shortsightedness, all having both lenses *displaced* laterally.

‡ The population of London rapidly increasing, the census for their ages and sexes is a fair average, as its date corresponds to the end of the tenth year of the sixteen and a half years for which we have calculated the respective number of cataracts. The census statistics of "Blindness" agree generally with those here given of "Cataract;" in the former, 47 per cent. are above the age of sixty; in the latter, only 43 per cent.

§ *i. e.* If the number of males in London had been equal to that of females, the cases would have been 1925 (instead of 1691) to 1568 females.

in the sixteen and a half years, 80 were males, and 104 were females, being thirteen twenty-thirds of the latter sex. To complete the number, there were fifteen "neuters" of the same age, and adding two-thirds of them to the male side, and one-third to the female as I have before done, the proportion, *at this age*, still gives a majority to the female sex. At seventy (the total next to the highest), the women still preponderate considerably, the numbers being, males seventy-two, females twenty-three, neuters fifteen. At the age of fifty they have a very large majority, for of the eighty-four cases recorded, twenty-one are males, fifty-four females, and nine neuters. Women would not then mistake or care to evade the truth, and fifty is not a sufficiently great age to be affected. The greatest prevalence of cataract at sixty, next at seventy, and at the decennial periods, is of course fallacious. Many of the poor say for some years they are sixty, and afterwards seventy years old; in this way the difference of the numbers of cases, recorded at sixty and sixty-one (147), and at seventy and seventy-one (131), is explained. The same fallacy is hardly found at the age of eighty. Of the number of cases recorded at all ages in order of frequency, six months and seventy-nine years are contiguous, and five and eighty-one are so also: this is no fallacy, and may be thus accounted for. Nearly all cataracts in early life are "congenital," but (as will be shown), they are not numerous; few are living at the ages of seventy-nine or eighty-one. Senile cataract is a common affection, but only 3·75 of the age of eighty-one were living in England and Wales in the year of the last census, to 100 of five years old, when it is probable, that, the congenital defect, existing, should have been discovered by the parents. These cases, commonly considered to be "congenital," have not been sufficiently often identified for statistical purposes; but, Saunders, who established the operation for congenital cataract, during the five years after he had founded the hospital, in 1805 to 1809, when he died, treated forty-five cases, being ·0051 of all the patients. To the end of 1814 (in the first decennial period), seventy congenital cases applied, being in the far less proportion of ·0028, and in the proportion of ·27 to the 259 cataracts of all kinds in the ten years; sixteen were less than two years old, and thirteen-fourteenths under fifteen years. In all of them the needle operation was used *at once*. To the end of 1840, 158 congenital cases are reported, being ·114 of the concurrent aggregate number of cataracts. In the sixteen and

a half years (January, 1841, to June, 1857, inclusive), *when distinguished* in the books, they have occurred almost exclusively in infancy or childhood (discovered when first learning to notice objects, or to read), in a small proportion, not greater than that previously ascertained. *Congenital* cataracts are usually of both eyes. Of the grand total in the sixteen and a half years, 847 "double" cases have been fortuitously registered; it proves no more than that the change had occurred notably in both eyes when these patients were first admitted, or that in so many cases it was recorded. Occasionally they are specified as of the "right" or "left" eye, but not often enough to show results. Ninety-seven *operations* for the removal of cataracts, registered in the first half of 1857, at the Royal London Ophthalmic Hospital (excluding traumatic cases, and secondary operations), give thirty-four to the right eye, and forty to the left, the remainder having been double operations.* I believe, that although both eyes (in idiopathic cases) are, or will be, affected, in most of them the *left* cataract is generally more advanced, and first discovered.

J. F. S.

TABLE I.—The number of the 3,506 cataracts, to all ages, taken quinquennially (And calculating the proportionate number of each of them to the population of the London district, after the census of 1851, taken for similar periods of ages). The frequency of occurrence of cataract, in every five years of life.

Ages.	Cataracts.	Frequency of occurrence.		Ages.	Cataracts.	Frequency of occurrence.	
		per cent.	One in			per cent.	One in
4	127	·0026	38,140	45—49	192	·011	9,495
5— 9	81	·002	49,632	50—54	301	·019	5,369
10—14	106	·003	33,680	55—59	326	·031	3,234
15—19	119	·003	29,630	60—64	535	·055	1,821
20--24	148	·004	26,912	65—69	387	064	1,507
25—29	115	·003	32,517	70—74	370	086	1,164
30—34	130	·004	25,574	75—79	175	·079	1,270
35—39	132	·005	20,574	80—84	48	·046	2,190
40—44	166	·007	14,349	85 and upwards.	9	·019	5,001

N.B. –At the age of 75, fewer patients consider their blindness remediable; and, after that age, a diminishing number have sought advice at the hospital.

* Extraction of both, at once, in eighteen cases.

TABLE II.—Number of the 3506 cataracts registered in each year, at the Royal London Ophthalmic Hospital since January, 1841, and their sexes, when given in the books.

Years.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	½ 1857.	Totals.
Males	66	81	68	81	67	79	82	124	92	113	132	132	142	130	133	108	61	1691
Females	56	54	61	68	67	68	79	113	101	102	110	125	132	114	118	125	75	1568
Neuters	15	7	6	12	7	18	15	9	16	18	24	18	9	39	18	10	6	247
Totals	137	142	135	161	141	165	176	246	209	233	266	275	283	283	269	243	142	3506

TABLE III.—Every age, and the number of 3506 cataracts to each.

Age.	No.	Age.	No.	Age.	No.	Age.	No.	Age.	No.	Age.	No.	Age.	No.	Age.	No.	Age.	No.	Age.	No.
¼	18																		
½	23																		
¾	8	10	25	20	23	30	35	40	53	50	84	60	199	70	170	80	20	90	..
1	24	11	13	21	33	31	19	41	16	51	36	61	52	71	39	81	9	91	..
2	16	12	25	22	33	32	33	42	34	52	50	62	78	72	69	82	7	92	1
3	16	13	24	23	32	33	29	43	29	53	65	63	99	73	44	83	6	..	..
4	22	14	19	24	27	34	14	44	34	54	66	64	107	74	48	84	6	..	..
5	12	15	20	25	31	35	22	45	54	55	69	65	94	75	48	85	2	..	..
6	22	16	20	26	19	36	34	46	32	56	88	66	77	76	37	86	2	..	..
7	18	17	27	27	18	37	16	47	26	57	64	67	80	77	34	87	..	..	..
8	14	18	35	28	23	38	38	48	45	58	65	68	86	78	33	88	3	..	..
9	15	19	17	29	24	39	22	49	35	59	40	69	50	79	23	89	1	..	..
Decennial Totals..	208		225		263		262		358		627		922		545		56		1

N.B.—No ages given in thirty-nine cases.

REINSTATED (ARTIFICIAL) PUPIL.

The following case well illustrates an operation I have now frequently adopted. It is related at length, as I believe I have introduced a new surgical treatment of a class of cases of frequent occurrence.

Thomas Sharp (Hos. Reg., No. 5276), aged twenty-eight, eleven months ago of H. M S. Wasp, able seaman, at Lisbon, had an eruption and other secondary symptoms: was sent ashore to the British Hospital, and took iodide of potassium and sarsaparilla; he soon got better, but had pain in the eyes, very severe inflammation supervened, and for six weeks he was "blind:" took "mercury pills," and when decidedly salivated, he got better again, although still nearly blind; had three "relapses," and was invalided to England; he was carried aboard ship, but recovered strength and sight rapidly on the voyage, and when he arrived in England, he could tell the lines of type on a printed page with his right eye, and with the left he could see only the outlines of objects. In Plymouth Hospital he again took sarsaparilla, with Donovan's solution,* for six weeks, and belladonna was applied locally; his health was established, but he could not read at all, and was discharged the service for "Impaired Vision." He then came to London, to stay at his brother's house, 4, Oxford Street, Sidney Street, Mile End; and came thence to the Royal London Ophthalmic Hospital, as out-patient, July 22nd, 1857; was ordered quinine and iron mixture, etc. On the 3rd of August he appeared perfectly well, had no sclerotic vascularity, and no sign of active syphilitic disease; both pupils (irregular, but of fair size) were blocked up with what is called "false membrane," of a gray colour, with a brown pupilary margin to each; the left being most opaque, with a whitish band extending across the pupil, fixing it above and below, and leaving only a slight power of motion to the iris laterally. With this eye he could only distinguish light from dark objects. Under atropine, a very small portion of the pupil at its upper and outer part appeared to be unobstructed; he could see but little better for this. With the right eye he could read fairly, objects appeared misty, parti-

* The Dublin solution of hydriodate of arsenic and mercury.

cularly in a strong light, and features could not be distinguished at many yards distance. Under atropine he could see more distinctly, but no portion of the pupil was quite clear.

August 6th.—Having inserted the spring speculum to the nasal side of the left eye, and secured the conjunctiva close to the margin of the cornea of the same side, with forceps, to steady the eye and draw it inwards, I opened the anterior chamber with the broad needle, near the margin of the cornea, to its outer side—then, introduced the spatula, —passed it through the small portion of the natural pupil then made apparent by atropine, at the upper and outer part; then, without experiencing any appreciable resistance, passed it on, and *once downwards*, between the lens and the "false membrane;" keeping the spatula always against it, and raising it from the lens capsule; in this way the bridge was lifted from the capsule, but was too strong and elastic to be torn through. I next took the canula scissors to divide it, but the aqueous had escaped, and for the safety of the iris and lens I withdrew them, without dividing the membrane. The extract of belladonna was applied around the left eye, and a bandage. Two days afterwards he had no pain, and but slight redness; the area of the pupil appeared as before the operation, and having no bad symptom, at his own desire, he left the hospital.

August 10th.—Belladonna fomentation.

15th.—Better, but slight ophthalmia; continue fomentation.

17th.—The same; ordered a small blister to the left temple.

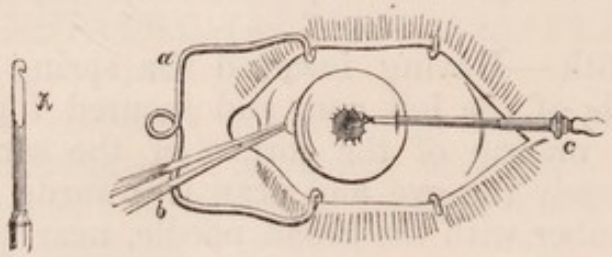
24th.—No kind of pain, but the redness continued, and on the slightest examination of the eye the conjunctiva became much injected; ordered cold water, locally.

27th.—Better; continue the same.

31st.—Still better.

September 3rd.—Having employed atropine, and the same preliminary measures for steadying the eye as before, I used the broad needle, as before, and introduced the canula scissors; then opened them, and inserted one blade, with a blunt point towards the lens, through the small portion of the pupil (at its upper and outer part), not blocked up, and readily divided the bridge of "false membrane." The

extract of belladonna was applied around the eye, and the next day he could tell the time by a watch, and read fluently.



September 7th.—(The belladonna had not been used the few days preceding.) The left pupil was central, nearly circular, and dilated or contracted, at once and decidedly, on shading or exposing the eye. With it he could read the smallest print with facility, and recognize people many hundred yards off; he had no pain, and but slight redness; objects still appeared slightly clouded, but this may have originated with the original specific inflammation of the eyes; no obstruction, discoverable by the ophthalmoscope, remaining in the pupil, or on the lens. Ordered to use cold water.

September 8th.—He had got wet the day before, and had slight ophthalmia, with pain in the eye operated upon: ordered to discontinue the cold water, and to have a pad of wool and a bandage applied.

September 14th.—The left eye having quite recovered, it was determined to reinstate the right pupil. In this eye (with which he had been able to read) the "false membrane" appeared much more transparent than had the old obstruction of the opposite pupil, but it left no part of the pupilary margin free. I used the atropine, spring speculum, and forceps, as before; transfixed the cornea, at its outer side, with the broad needle, and opened with it the pupilary occlusion, at its *inner* margin; then introduced the iris hook, and having passed it through the opening made in the pupil, drew it, with the hook upwards, along the upper margin of the pupil, and again, with the hook downwards, below the pupil, and withdrew it. This membrane offered no more resistance than the blunt hook could overcome, but the aqueous having escaped it was difficult to observe the effect

A. The Blunt Spatula made for these cases, with a blunt hook on one side, and round (except the terminal quarter of an inch), that it may be turned in the corneal wound upwards or downwards. *a* Spring Speculum, *b* Forceps, *c* Canula Scissors.

upon the pupil at the time. The pain of the operation passed off the same evening, and on—

September 16th,—(Belladonna not having been employed) he said, he could now see "much clearer" than before with the right eye—the membrane was torn through from side to side, with fixed shreds. The pupil acted well to a slight influence: was oval in shape, and of useful dimensions. No present inflammation. Ordered to use atropine.

September 17th.—Since the application of the drops, he had had pain in the right eye, with less clear vision: ordered to omit them.

September 21st.—Better—no longer influenced by atropine.

September 24th.—Vision of the right eye had improved, decidedly, since the operation, he thought; but, with the left, in which it had been of no practical use to him, he could see as well as the day after the operation (September 3rd). Was engaged as "packer" in a warehouse, and was only afraid he should lose his pension. In the right eye the result was rather unsatisfactory, as shreds were left in the area of the pupil. In the left eye space sufficient for the introduction of the spatula existed in the obstructed pupil, and thus the false membrane was raised and detached from the lens capsule *as a whole, before* it was divided. This operation should have been imitated in the right eye, and (after the opening was made, at the inner edge of the pupil, from the outer margin of the cornea) the broad needle, spatula, and canula scissors, used from the inner side, for the opening of the cornea, the detaching and *then* distinctly the division of the membrane.

In cases in which the iris is adherent, at one or two points only (synechia posterior), the inefficiency and deformity of the pupil can be readily removed by operation. In a girl, with fixed pupil, (of an hour-glass shape, with atropine) I used the broad needle, and then the spatula, inserted beneath the upper and lower bands, detaching them separately. The pupil became at once, and permanently, free and circular.

J. F. Streatfeild.

ON THE TREATMENT

OF

LACRYMAL OBSTRUCTIONS.

By Mr. Bowman.

(*Received October 2nd.*—Ed.)

In the Medical and Chirurgical Transactions for the year 1851, is a paper on a new method of treating certain cases of Epiphora, in which I showed the advantages of laying open the lacrymal puncta, on the side towards the conjunctiva, when they had become everted and dry, thus carrying backwards the orifice to a point where the tears could enter the canal. Of this method I shall only say, that subsequent experience has confirmed my opinion, and rendered this the established practice.

Both before and since the above date, my attention has been largely given to the treatment of lacrymal obstructions—on account of their frequency, their intractable and obstinate nature, and the exceedingly unsatisfactory results of the modes of treatment in common use. Indeed, from the peculiar and complex construction of the parts concerned, from their small size and tortuous disposition, there is no subject in the whole range of Surgery which has been more troublesome to our predecessors, or that more invites the study of those who would fain leave science more advanced than they found it.

As if to sum up the difficulties which surround the cure, or even relief, of the more serious cases of chronic obstructions of the sac, there has arisen within a few years the practice of laying it open from top to bottom, and altogether destroying it with the heated iron, a plan said to be effectual, but, if so, by the more complete closure and obliteration of the organ diseased.

I would now refer to cases of chronic inflammation of the sac, with mucus or pus, or both at once, or at different times, occupying its cavity, and either impacted there, or discharging more or less freely under pressure, either forwards into the nose by the nasal duct, or backwards on to the eye through one or both of the canaliculi.

The various expedients hitherto in use for relieving this condition, *without inserting a style* or tube through the skin into the sac and down the nasal duct, to be worn for a certain time, may be said to have signally failed, though occasionally attended by partial or temporary benefit. Such expedients are leeches, blisters, injections of warm water or various astringents, the frequent passing of such hair probes as the puncta will admit, together with suitable constitutional treatment. The inflammation in those cases often varies in intensity, subsiding and reappearing, and such subsidiary means do often add to comfort. The patient, too, by frequently pressing out the mucus, may often succeed in abating his annoyance and keeping it in check. But, nevertheless, it almost always happens that the distress continues, and is very apt, sooner or later, to end in abscess.

The *insertion of a style*, or tube, through an opening made in front of the sac below the tendo oculi, has been the last and common resource in obstinate cases, where the disease has worn out the patience of the sufferer and the surgeon. It is an expedient so objectionable in itself, as never to be resorted to till the last moment. It is unsightly, especially in females; it is painful, and the patient has constantly to wipe away the discharge escaping by the orifice. The puncture made to admit the style, is also frequently followed by the formation of an abscess outside the sac, spreading under the orbicularis muscle, and apt to grow into that serious complication a sinuous ulcer, for the cure of which, free division, and sometimes excision, of the overlying skin is necessary. During several years in which I was in the habit of using the style, I studied its inconveniences, and devised a remedy for some of them. In particular, I

found it desirable to make the first opening large enough to allow of the free escape of the discharges from the sac by the side of the neck of the style; for if the orifice were made too small, an abscess between the sac and the skin was very prone to follow. But this large preliminary opening was apt to allow the head of the style to bury itself in the sac, an inconvenience not always obviated by a thread secured by plaster to the forehead, and I therefore came to use, in the first instance, a style so long as to rest on the floor of the nose, while the head stood just outside the orifice in the skin. The length was adapted, in each case, to the requisite depth of the parts, ascertained by a probe, the styles being made of extreme length, and shortened, at the moment, by cutting pliers, and the lower end smoothed on a hone. As the inflammation following the puncture subsided, and the orifice gradually contracted with the progress of the cure, the length of the style was from time to time diminished, so as to keep the head upon the skin. But I have now in ordinary cases, altogether abandoned the use of the style inserted by the skin. It is found necessary, by those who use the style, to continue it for periods varying from six weeks to six months, and some patients seem to wear it permanently. If the condition of the parts allows of its removal, either the orifice heals or remains fistulous. If it heals, and a relapse of the sac-inflammation occurs (no unusual thing), the whole process has to be repeated: a fistulous opening is a continual annoyance.

The expedient—to which some surgeons have been led—of introducing a style or tube by the skin, and burying it in the sac and nasal duct, healing the skin over it, has been an attempt to escape from the annoyances of the external opening, but such metallic substances usually act sooner or later as foreign bodies, causing abscess, and the utmost difficulty in extracting the offending cause. Of this I have had several examples.

The inconveniences of the style are indeed such, that it is seldom resorted to till the last moment, when pus has

formed in the sac, or perhaps an abscess is threatening or has burst, the surgeon and patient being almost equally unwilling to have recourse to it, and wasting their time on the temporizing and palliative measures first alluded to, which seldom effect a cure, or do more than keep the annoyance in check.

Influenced by these considerations, and having in view the perfectly innocent result of laying open the punctum where it was everted, I began as early as 1851, to slit it up as far as the caruncle, in *all* cases of lacrymal obstruction, and have since, by degrees, arrived at a method of treating almost all such obstructions without opening the skin at all. In fact, I have found it possible to treat the greater number of cases, mechanically, through the upper or lower canaliculus thus opened at the punctum, by passing probes, of suitable size, downwards into the nose, thus commanding the entire length of the passages, and not being limited, as by the old method of the style, to occlusions of the nasal duct. In this way I have arrived at some facts not previously ascertained, as to the history of these obstructions, and have adapted the treatment to them respectively. I have avoided the inconveniences of the opening in the skin, and have established, at the very commencement of the treatment, a permanent opening, unseen, and attended by no inconvenience, through which the use of the treatment by probes can, at any time, be at once resumed in the event of relapses.

In the course of my investigations I have kept constantly in view the analogy of these obstructions with those of the urinary passages. They are in many respects closely allied and mutually illustrative, and I have borrowed from our experience of urethral strictures some hints applicable to the treatment of those of the tear-ducts.

Before the proposal to slit up the punctum, some anatomists may have been aware that the canaliculi were capacious ducts, large enough to admit an ordinary probe; but, certainly, surgeons took no account of that important fact. They have been syringed, and probes have been passed down them,

(I had done it a hundred times myself); but the instruments employed were only such minute ones as the puncta would admit, namely, of the size of a horse-hair. It may be even true that such probes may have been passed into the nose, but their effect, even then, can have been only such as would be produced on a urethral stricture if the surgeon were restricted to the use of the smallest urethral bougie. They may have passed the stricture, but can have done little to dilate or cure it.

When I first began to slit up the puncta I became aware that the canaliculi were naturally capacious enough to admit a probe of one-twentieth of an inch diameter or more; and finding, not unfrequently, that strictures existed in the canaliculi, sometimes about the middle, but oftener close to the sac, I had a series of probes constructed, reaching from a fine hair probe (No. 1) to one of one-twentieth of an inch diameter (No. 6). For convenience in use I have three probes, the six ends of which give the six sizes required, and the larger of which are so bent as to facilitate their passage through the nasal duct as hereafter to be noticed.

In the great majority of cases of sac-obstruction, a simple Epiphora precedes, for a considerable period, the more inflammatory stages: there is regurgitation only of tears at first, afterwards of mucus, and of pus; the two latter being often rather sudden in their appearance, and often following immediately on a cold or catarrh, or some stomach derangement. The moment the secretions from the lining of the sac become too thick to escape easily, either through the canaliculi or nasal duct, they appear at once to aggravate the inflammation by mechanical distention; and I was early led to assign much benefit to the opening of the punctum, merely on the ground of the greatly increased facility with which the discharge could then escape on to the eye, either spontaneously, or on slight pressure. The punctum, too, having, no doubt, the attributes of a sphincter, is often highly sensitive, and its lips turgid and angry, when the passages are inflamed; and great immediate relief to the whole disease

seems often to follow its division—much, perhaps, of the same kind as that which follows the division of the sphincter ani in irritable fissure of the rectum.

The punctum is most conveniently slit up as follows:—The patient sits in a chair and leans the head against the chest of the surgeon, who stands behind and bends over. For dividing, *e.g.*, the left lower punctum, the ring finger of the left hand is placed on the skin over the lower edge of the orbit, and fixes it there, while tightening or relaxing the lower canal by a sliding movement of the skin upon the bone—the punctum being at the same time everted. The right hand now inserts the No 1 probe while the canal is relaxed, and then places the probe between the index finger and thumb of the left hand, which holds it in the canal, and further everts the punctum by turning the probe downwards on the cheek, while the ring finger stretches and fixes the canal by a sliding movement of the skin outwards, toward the malar bone. A fine, sharp-pointed, knife held in the right hand, now slits up the canal on the everted conjunctival aspect, from the punctum, as far as the caruncle, and the probe is raised on its point out of the canal, to make sure that the edge of the punctum has not escaped division. Care should be taken not to slope this little incision obliquely through the tissues it severs, as there is then a broader surface exposed, and greater chance of union by the first intention. To avoid this, it is in all cases desirable to pass a probe across the line of incision, on each of the few ensuing days, to break through adhesions if they form, and to secure patency. If the punctum is slit up when already inflamed and discharging pus, there is much less disposition to this primary union than when it is done for simple Epiphora.

Having slit up one or both puncta, as may seem desirable, the canals are at once probed to ascertain whether they are of full size. Where the fluids of the sac regurgitate towards the eye there is usually no contraction that may not be at once overcome by a full-sized probe (No. 6); but it is well to

have noted beforehand, whether regurgitation occurs from *both* puncta, and in the first instance to be content, in ordinary cases, with slitting up the lower punctum, inasmuch as this usually suffices for the cure, and it is through this that the passages can be most conveniently probed in their whole extent, down to the nose.

In examining the canal for stricture some experience and tact are requisite to avoid errors, just as in the examination of urethral strictures. The instrument should be handled very delicately, and the canal held by the surgeon in the same way as when the puncta have to be slit, and he should, of course, have in his mind's eye at the moment, the anatomy of the parts with which he is dealing—no *force* should be used. If No. 6 will not pass, No. 4 or No. 2 may be tried; and if these fail, it is better to postpone further proceedings till a few days have elapsed, and the slit in the canal is permanently established. Speaking loosely of the general result of a great number of cases, I may say that I have not found any stricture in the canals in more than one-fourth, and that the common situation of the stricture has been close to the sac—less frequently about the middle part of the canal. The stricture of the middle parts is commonly in old cases, where there is rigid thickening of the coats, and probing by instruments successively larger suffices to dilate it. The canal should be stretched lengthwise as the probe reaches it, as its passage is thereby facilitated—for it is easy to fold the canal before the point of the probe. The greatest care is to be taken to proceed gently and not too rapidly—as, if a false passage be formed and the wall of the canal torn, the injured part is liable to become more rigidly occluded.

If the exploratory probe is arrested at the point where the canals coalesce and join the sac, the fact may be known by noticing that the skin near the tendo oculi is moved when the probe is moved, and an elastic resistance is experienced; whereas, if the probe has entered the sac, it hits against the inner bony wall, and the skin is motionless. Where the sac is not distended, attention to this point is particularly neces-

sary, and, it is also requisite that the canal should be held on the stretch by the finger on the cheek, otherwise the outer wall of the sac may be pressed against the inner and give a wrong indication, for the opposite walls are very near each other. Care must also be taken, when an obstacle is encountered, to turn the point of the probe in different directions, urging it gently forwards in each, for otherwise it may merely be caught in a fold of membrane at the orifice to the sac. If there is decided obstruction still, the probe may be forced here, and if it does not then at once pass into the sac,—(and particularly if, the sac being distended, there is no regurgitation by the canal,) I have recourse to the *canula-lancet*, described in the Annales d'Oculistique of 1855–6, and, after piercing the obstruction, immediately pass the largest sized probe (No. 6).

Such strictures of the canals, when once they admit a No. 6 probe, are treated by its repeated use at suitable intervals, in conjunction with the treatment of the passages below, and therefore they need not be further separately dwelt upon.

I have now to describe the subsequent steps of the treatment. In all cases I prefer to explore the nasal duct by pushing down the No. 6 probe into the nostril. When the sac discharges pus or mucus, this always has to be done again and again, in order thoroughly to open the duct, and even where the sac is not inflamed, it is satisfactory to have passed the probe once.

The passage of a probe or style in the old method, through an orifice in the skin, is not always an easy task. There is frequently a firm closure of the nasal duct, requiring the use of considerable force to overcome it, and a surgeon without experience is apt to be timid or to make pressure in a false direction. In fact, with the old style or probe which was always straight, it was often impossible to find the lower orifice of the sac, and the rude force exerted was apt to make the end of the style scrape the surface of the bone, and detach the membrane from it. When the probe is introduced

in my method, from the canal, it enters the sac *behind* the tendo oculi, and is in a better position for *finding*, as it were, the orifice of the nasal duct. But to make this proceeding as easy as possible, I have my larger probes (Nos. 5 and 6, which are the only ones used for this purpose) *slightly* curved at each end in two different directions within the terminal inch or inch and a half, while the central part (or that held by the finger and thumb) is straight, and they are cylindrical in their whole length. The effect of this is that when the probe is inserted into the sac, and brought into a vertical position, a slight rotation of it on its long axis makes the lower point, which is in search of the orifice of the duct, describe a small circle; and by slightly varying the inclination of the probe and making gentle pressure at the same time, with slight rotation, the point never fails to enter the duct. The right and left probes have opposite curves, to suit the inclination of the duct.

The probe is known to have entered the nostril by the depth to which it has entered compared with the external position of the nostril, and also by its coming in contact with the floor of the nose. It is allowed to remain there for a few minutes, or is immediately withdrawn according to circumstances.

In any ordinary case of chronic inflammation of the sac, I consider the cure well begun, and often half accomplished as soon as a full sized probe has thus passed into the nose through the whole course of the natural channels. To repeat the probing is a very simple process, the enlarged punctum being always ready to admit it, and the proceeding being usually more easy each time it is practised. I repeat the probing every day, every other day, every three or four days, or every week, according to the progress of the cure and accidental circumstances. It usually becomes at once easy for the patient to press mucus or pus from the sac, as it is secreted, both by the canaliculus and nasal duct; he is enjoined to do this very frequently, and hot fomentations are used if required. It is common to find in a few days,

that no more pus is formed, and in a few weeks that mucus ceases to accumulate. In many cases the relief to the Epiphora is immediate, and the patients are made at once much more comfortable, losing all that distress that has been occasioned by the distension of the cavity of the sac, and the congestion of its lining membrane.

Rather more than a year ago I contrived a mode of inserting a style by the canaliculus, and leaving it for a certain time in the passages, in order to open them on the principle of the old style. The style was made to taper rather suddenly at one end, and it was bent at about a right angle, so that the thick part should be placed vertically in the sac and nasal duct, and the thin part horizontally in the canal. The length of the thick part was adapted in each case by the surgeon, so as to extend from the point at which the canal enters the sac downwards as far as the floor of the nostril, on which it rested, being thereby prevented from falling too low and burying itself out of sight. The proper length was ascertained previously by measurement by a probe. The horizontal part was, in like manner, adapted to reach to a point of the canal midway between the caruncle and the punctum, and a bend was given to it, making it lie exactly within the canal, concealed from view in the channel formed by the slitting up of that passage. The material was silver, and the ends, after being cut to the requisite length, were carefully rounded, and the thin one tipped with sealing wax.

These *bent styles*, when suitably adjusted, I found could be generally worn with very little inconvenience for a few days, and admitted of being readily removed and reinserted, and I still employ them when the stricture is dense and obstinate, or when a rapid opening of it is required. But they sometimes occasion trouble, and become a source of irritation, and they may even produce ulceration of a portion of the canal if badly fitted, or if left in too long, as, for example, when the patient has absented himself during the treatment.

I, therefore, prefer to treat the obstructions in almost all cases by the intermittent use of the probe, as already described, and especially as the results by that method are so satisfactory. I do not recommend the bent styles for general adoption.

In speaking of the rapid relief or cure of cases thus treated, I must not omit to say, that of course I do not neglect such general and local means as are familiar to all, and which were, at first, enumerated. They are useful as aids, but without the surgical interference would be unavailing. Nor do I wish to have it thought that all cases get well at the same rapid rate, or that relapses never occur. Unfortunately these cases of obstructed ducts generally occur in subjects more or less debilitated, scrofulous, or otherwise unhealthy, and there may be complications of disease of neighbouring parts or of the Schneiderian membrane. But all these inconveniences belong to the old method even more than to mine, the advantage of which is, as I conceive, that it effects the opening of the passages in the most simple way conceivable, and with the least possible interference with the natural structures. It, therefore, seems preferable, not merely in itself, but also inasmuch as it is able to be employed in the required degree and extent, and in that only, at a period of the disease however early, and under all contingencies of relapse; and therefore, if generally adopted, it may be expected to alleviate the severity and diminish the number of these distressing affections, which have been hitherto hardly less troublesome to the surgeon than to the patient.

I must also state that there are cases of an aggravated nature, which have passed beyond the stage at which the above simple treatment is available — where abscess has formed, where the sac is enormously dilated and thickened, where bone is diseased, where styles have been previously worn, and fistulous orifices exist. My hope is, that such cases will gradually now become less frequent.

PROTRUSION OF THE EYEBALL.

By Mr. Poland.

(*Received September* 15*th.*—Ed.)

Three cases are here selected, for clinical observation, as showing some of the varieties of the causes of this effect. In one it was owing to a tumor in the orbit; in the second it resulted from phlebitic inflammation of the cellular tissues and veins in the orbit, and the third case was due to venous congestion from pressure by an enlargement of the Thyroid gland on the large vessels in the neck.

These are only a few of the causes of Protrusion of the Eyeball. A great variety of names have been given to this condition :—

a Where the eye is simply pushed out by a foreign body or tumor, etc., it has been called Exophthalmos, Proptosis bulbi, Prolapsus oculi, Ecpiesmus (*Εκπιεζειν, to press out*).

b Where the eye falls from want of power of the tissues which retain the eye in its cavity, it is called Ophthalmoptosis.

c Where it is produced by disease of the eye itself;—if inflammation, it is called Exophthalmia, Exophthalmitis; if from distension of humours, Hydrophthalmos.

The simple term "protrusion of the eyeball," satisfies all intended purposes, and thus disencumbers us from the use of a host of hard names.

Before relating these cases, the following simple table of the different causes of this affection may be acceptable, in order that one may judge of the great number the surgeon has to bear in mind before giving a diagnosis.

Many a hasty opinion has been given, and an erroneous plan of treatment adopted for want of ascertaining not what the disease is, but what it *may be*. Only a short time back there was a case where excision of the eyeball was actually proposed for this affection, when it was discovered that the protrusion was due to an abscess in the antrum, which was opened, and the eye saved and resumed its natural place.

Causes of Protrusion of the Eyeball.

1. **Congenital.**
   1. *Real* protrusion.
   2. *Apparent*—from shortening of levator palpebræ and lids.
2. **In the Eye itself.**
   1. Inflammation of globe, ophthalmitis.
   2. Phlebitic ophthalmitis.
   3. Hydrophthalmos.
   4. Tumors in eye ....
      1. Scrofulous.
      2. Encephaloid.
      3. Melanotic.
      4. Osseous degeneration.
      5. Hydatid.
3. **Within Orbit.**
   1. Inflammation of cellular tissue—idiopathic and traumatic.
   2. Suppuration and abscess.
   3. Erysipelatous and Phlegmonous inflammation.
   4. Foreign bodies.
   5. Excess of development of fat.
   6. Tumors .....
      1. Encysted.
      2. Hydatid.
      3. Encephaloid.
      4. Osseous.
   7. Aneurism and Effusions of blood.
   8. Venous congestion.
   9. Paralysis of muscles of eyeball—Ophthalmoplegia.
   10. Spasm of muscles of eyeball, as in Tetanus.
4. **External to Orbit.**
   1. *Above*—Nodes, hydrocephalus, fungus of dura mater, polypi in frontal cells and diseases thereof, tumors of brain.
   2. *Below*—Diseases of the antrum.
   3. *Internal*—Nasal polypi and tumors.
   4. *External*—Exostosis.
   5. *In front*—Contraction of lids, and eye slipping through—Hernia oculi.

We cannot of course enter into any detail of each of the above, as it would fill a volume, hence we have only adverted to such forms as the selected cases present.

Case I. comes under the third class of causes, viz., those within the orbit, and under the head of Tumors, of which it was of the encysted variety.—A delicate girl about five years of age had been an out-patient at the Moorfields Hospital four years ago, with protrusion of the eyeball forwards, upwards, and outwards; the eye was perfectly healthy, and vision excellent: an encysted tumor occupied the floor of the orbit, and the upper walls of the cyst became apparent on everting the lower lid, as evidenced by the peculiar blueish tint well known to the practised surgeon. An incision was made through the conjunctiva and anterior part of the cyst, and its contents, consisting of turbid serum, evacuated; the little finger was introduced into the cyst, which was found to pass completely to the back of the orbit; a portion of the front part of the cyst was excised, and the child sent home on the following day. On the fourth day the child was again brought to the hospital suffering most acutely, the protrusion of the eye was much greater than before the operation; the lower lid was swollen and pushed out, there had been great hæmorrhage, and, in fact, the cyst appeared to be full of coagulum; the optic nerve was evidently put on the stretch, although vision was good; yet there was acute pain in the eye but no inflammation. The treatment of course was apparent, viz., evacuating the blood. Instead of taking the child to the operating theatre, the mother left the hospital forthwith. By some little trouble, her address was found, and the child was visited at home; she had had cold water constantly applied; there had been no further hæmorrhage and no further protrusion, and the pain had subsided. Such being the case, we decided to leave well alone. A good deal of the effusion was absorbed, and the swelling subsided and contracted. About two months after, the eye had almost resumed its natural position; but the swelling in the floor of the orbit could be felt. The child remained in statu quo for about a year, when she again appeared at the hospital with exactly the same condition as at her first visit. The cyst had refilled and again pressed

the eye out; the circumference felt hard, but fluctuation was distinct. It was determined to excise as much of the cyst as possible through an incision in the integument along the lower rim of the orbit. Having no spare bed at Moorfields, the child was admitted into Guy's Hospital.

The girl having been put under chloroform; a semilunar incision was made, following the course of the lower rim of the orbit from one side to the other, so as to leave plenty of room; the cyst was laid bare and its isolation below readily effected, but above it was found to have formed adhesions to the muscles and probably further back to important vessels and nerves; hence it was not deemed prudent to run the risk of producing irreparable mischief by dividing the adhesions with the knife, the tumor being very large and bulky and extending as far back as the optic foramen, as evinced in the former exploratory operation; the cyst and tumor were therefore freely laid open, a large quantity of black fluid escaped with shreds of organized fibrine. The tumor was in fact a hæmatocele exactly like an old aneurism partly cured, containing blood in different stages of coagulation, that on the outer wall assuming the appearance of fibrine and the deposit taking place in layers, that in the centre fluid blood; between the centre and circumference a gradual change from fluid blood to organized fibrine. The whole of the contents were emptied out and removed by the finger; and it was then ascertained that the cyst had formed connections above to the optic nerve and to the optic foramen. As much of the cyst as was deemed prudent, was excised, very little blood was lost, inflammation followed and suppuration resulted, requiring the incision to be kept open; the tissue of the orbit became partly inflamed and infiltrated; but no steady suppuration set in. The child began to lose flesh, had loss of appetite, and soon had symptons of brain mischief; she became comatose and unconscious, and had all the appearances of arachnitis; she was considered moribund. By dint of careful watching and attention on the part of the mother and sister of the ward, in keeping the child alive with beef-tea and

small quantities of wine, and small doses of quinine, the child weathered through and entirely recovered, without any ill effects resulting. During this period of alarm, occupying a space of about five weeks, the attention to the eye was also directed. Large fungus-like granulations sprang up, and growing most rapidly out through the incision on the face, carrying the eye rather more forwards, but still not sufficiently to destroy sight, as vision was perfect, and the eye itself normal. The appearance of the child was like one with encephaloid tumor, and indeed it assumed so much of its character, that one was almost induced to consider it as such. Some of the tissue was put under the microscope, but nothing satisfactory adduced; there were nucleated cells. The tumor after a short time ceased growing, but discharged freely: the child had cod-liver oil and plenty of good nourishment, and was sent into the country. The child was brought to Moorfields about three months afterwards: there was hardly any trace of tumor; the eye was nearly straight; vision good: and she was quite plump and ruddy, and in perfect health. She has remained well ever since; no re-appearance at the present date, and the eye is perfectly natural, and under good control of its muscles.

Such is but an imperfect outline of this very interesting case. We gather the following lessons:

Firstly.—That, cysts in the orbit are not such simple things as one might be disposed to call them. "It is only a cyst in the orbit, and we will easily remove it for you;" may be the language of a surgeon to his patient. However, when he comes to reflect for a moment, he will find that the orbit, at the back part especially, is in close proximity to the brain and its membranes, and that the dura mater is in direct continuity with the orbital cavity; that, these encysted tumors often extend as far back as that point, and some even pass through the optic foramen; and that injury or inflammation occurring to this cyst may by contiguity extend itself to that membrane, and onward to the brain, as seen in the present case. This untoward occurrence is by no means

rare—look into Mackenzie's book on the subject, and you will find cases there detailed; as also, in Wardrop's and other works on ophthalmic surgery.

Secondly.—The simple puncturing and laying open of the cyst is also not unattended with danger: in the first instance, it may be followed by acute inflammation, which may extend to the cellular tissue of the orbit, and to the brain; or it may induce suppuration; or it may be followed by effusion of blood in its interior, as happened in the present case, and in one of Mackenzie's selections. Again, puncturing very seldom cures, as the sac rapidly secretes its peculiar contents.

Thirdly.—Complete excisions cannot always be accomplished; hence, we must remove as much as is within reach, without detriment to the eye or its appendages. In performing the operation we must have a free opening, and there is no reason why we may not do this by an incision through the integument, where there is difficulty in accomplishing our object through the conjunctiva: this, of course, only applies to tumors of a large size.

Case II. Protrusion of the Eye, consequent on inflammation of the cellular tissue of the orbit, accompanied with effusion; subsequent suppurative inflammation of the ophthalmic vein, extending to the cavernous sinus and middle cerebral veins;—rapid death.

Mrs. ——, rather stout and above the middle period of life, was attacked with Erysipelas of the head and face, which was successfully combated by an antiphlogistic treatment, but it left her exceedingly low and weak; a small abscess formed on the forehead, which was opened and poulticed. About three or four days after the subsidence of the erysipelas, and the day after the opening of the abscess, she complained of great pain in the orbit and temples, as also in the eye itself; this was accompanied with conjunctivitis. Leeches, low diet, and calomel were prescribed by the attending medical practitioner. The patient rapidly became

worse; in forty-eight hours the right eye was observed advancing from between the lids, which were puffy and swollen, and the eye itself become somewhat involved; there were symptoms of the same mischief appearing in the other orbit. It was not until the third day from the onset of the attack that the case was seen by me. The following was the condition in which she was found:—she was in bed, with great prostration, and under the influence of mercury; she was conscious, and answered questions rationally, although with some degree of slowness, and then only in few words. The right eye was found protruded to a great extent, and was perfectly motionless, cornea dull, and the globe itself generally inflamed, but it was not much larger than natural: the pupil could be seen, but it was fixed: there was no vision: the lids were livid, puffy, and swollen, but not to any extent to act as a constriction to the protruded eye: the cellular tissue of the orbit seemed to be infiltrated. The left orbit appeared to be undergoing the same changes, but had only been attacked one day; the sight was good, and the pupil acted, and the eye was but little advanced from its natural position: there was some degree of conjunctivitis: she complained of deep-seated pain, and a sense of pressure: the lids on this side were also swollen and puffy, and the tissue around the eye, within the orbit, could be felt rather indurated and brawny. The diagnosis was "Suppurative inflammation of the cellular tissue of the orbit"; and the prognosis given at the time was, "Loss of both eyes, and speedy death would result, probably, from phlebitis." However, the only chance of saving life was immediate support—quinine and stimulants. Free incisions were made into the right orbit, and the lancet thrust to its full extent into the cavity, both along the upper wall and along the lower wall, in the hopes of giving exit to the pus, but none escaped; the same was done along the upper wall of the left side, with similar ineffectual result; a probe was also introduced, so as to reach the entire depth of the orbit, but still nothing but blood and serum escaped; hot fomentations were ordered. The patient did not rally. The left eye

took on the same course as the right; cerebral symptoms set in—rapid prostration—and death resulted on the sixth day after her first attack. Rapid decomposition ensued; and on a post-mortem examination, both orbits were found infiltrated with sero-semipurulent matter, giving it a boggy and sponge-like appearance; there was no attempt to form pure pus, but a general soaking of all the tissues, with ill-conditioned inflammatory exudation. This had caused the protrusion of the eyes, which latter were not much larger than natural. The friends would not permit the examination or removal of the eyes, and therefore their exact condition could not be ascertained; and even then these would not have given any additional evidence, as they were in a too decomposed state. Both ophthalmic veins were filled with dirty pus; both cavernous sinuses were distended with purulent matter, and the right middle cerebral vein was also similarly filled; the pus along this vein could be traced as far as the upper surface of the brain. The brain was soft, and the arachnoid opalescent; but the pathological conditions could not be relied on, owing to decomposition.

Remarks.—This case belongs to a class fortunately not often met with; however it is one that has fallen to my lot to witness on four separate occasions; and it was entirely from my previous experience of this disease that the diagnosis and prognosis of the above case was so decided. The friends and even the medical attendant were entirely taken aback when the opinion was given; the case had been mistaken for severe inflammation of the eye, and treated *secundum artem* for such, viz.:—mercury, depletion, and low diet, and was considered to be one of not any serious moment, until the eye began to protrude. The first practical lesson is as to the treatment of erysipelas: and here we have an instance of the disease subsiding under antiphlogistics. Erysipelas like other exanthemata runs a certain course, but is peculiar in its being generally of an anæsthetic character: it has its premonitory symptoms, its eruptive stage, and its decline or subsidence; and the object of treatment is either to stop it,

or if unable to do so, to help our patient through the several stages of the disease. Where it attacks the extremities we are often able to check the disease at once by local measures; but where it attacks the head and face there is a difficulty and a danger in so doing; and we have then chiefly to rely upon internal remedies. Now here we have two opposite plans of treatment laid down; the one advocating antiphlogistics, the other recommending stimulants. In a strong and healthy person an emetic may cut short the disease; but in the majority of instances the patients are *below par*. Antiphlogistics do not arrest the complaint, for it passes through all its stages notwithstanding, and then leaves the patient weak indeed; and such was the case in this instance. The woman was so lowered by previous treatment, that she could not combat an inflammation of the orbit; there was no power at repair; and as is generally the case in debilitated subjects, pyæmia sets in, and rapidly kills by its affecting such a vein as the cavernous sinus and middle cerebral vein.

The stimulating plan in erysipelas is the most rational, as its purpose is to support the powers of the patient through the phases of the disorder; ammonia and serpentary and a free use of stimulants are the remedies, and these are to be handled vigorously or sparingly, as the experienced eye of the practitioner may deem necessary.

In erysipelas of the head and where the sensorium is somewhat deranged, as evinced by delirium, stimulants are not counterindicated; on the contrary, they restore the balance of the brain, and often alleviate the delirium, the indication of want of power, and not one of imflammatory action. I can speak from self-experience respecting this, having had a severe attack of erysipelas of the head and face, accompanied with delirium. Stimulants were placed at the bedside, which were freely indulged in; this, however, could only be borne during the height of the disorder, as afterwards but a little sufficed.

The next remark to be made, is, as to the nature of the

orbital disease, and its appropriate treatment. Was it phlebitis of the ophthalmic vein, in the first instance? Looking at the history of the case, we cannot but consider the phlebitic mischief as secondary. The disease was in the first instance, an inflammation of the cellular tissue of the orbit, with rapid effusion and displacement of the eye; very similar in character, to what has been termed "Phlegmonous Erysipelas," of the extremities, where we have such destructive results; and if in such cases, sloughing and disorganization is the sequence, what must there be in a situation almost entirely surrounded by bone, and containing a soft, highly organized, and important organ! In the present instance both eyes are driven out, and totally destroyed within six days.

Unhappily in this case a second complication existed, for the ophthalmic vein became involved, and rapidly extended to the cavernous sinus and to the cerebral veins. This does not always occur, for in two of the instances which have come under my notice, the patients escaped with the loss of the eye only; the other two cases, however, died under similar circumstances to the present one.

Lastly. — With regard to the treatment, what do we advise in such affections attacking the extremities? Is not the only chance of saving important parts by free incisions and support? Who would think of giving mercury in those cases? Mercury only makes matters worse, and hurries on the disease to a more deadly end. Let us now apply these remarks to the same affection attacking the orbit. Free incisions would save the eye, but these must be free and numerous; and yet how are the surgeon's hands tied by the small amount of space to work upon, and the important structures contained; he cannot relieve it but in part, hence the organ succumbs to the distending forces and the cutting off of supplies. Support and quinine should be administered to enable nature to withstand the depressing effects, and assist the reparative powers. Mercury is strongly advocated by many able surgeons; I cannot see what good it can do;

the present case does not say much for its beneficial efficacy —on the contrary, it took away what little chance the patient had. Should a case present itself in the early stage of the disease, I should not hesitate for one moment to make free plunges and incisions into the orbit in as many places as possible, avoiding, as much as possible, important parts: much hæmorrhage may follow, but we can command this. Should there be protrusion of the eye and if it be destroyed in the advanced stage of the disease, extirpation will be necessary—mercury I should entirely discard.

Case III. Protrusion of the Eyes, associated with Enlargement of the Thyroid Gland.

J. H., a young, delicate, unmarried woman, about the age of twenty-one, was admitted an out-patient at Moorfields, on account of a peculiar staring appearance, which had come on within the last two years, and was rather increased of late. She stated that up to within the age of nineteen, the eyes were perfectly natural; although she always had what is termed a full eye, yet there was nothing in her appearance that attracted any peculiar notice; but since then, both herself and friends have noticed a gradual staring and increasing protrusion of both eyes. The eyes were certainly exceedingly prominent, but quite healthy. Having on several occasions witnessed this condition as associated with an enlarged thyroid gland, I at once drew her attention to the neck, when she at once remarked, that there had been some prominence at the lower part, which had commenced some three or four years ago, and was gradually becoming larger. She had an enlarged thyroid gland. The treatment adopted, was attention to the catamenia, internal administration of mineral tonics, and the local application of iodine to the enlarged gland, in order to diminish its size. She attended some six weeks, and with some little benefit. She was living in a low, damp neighbourhood; and, by my advice, was ordered to seek a more dry and elevated situation.

Enlargement of the thyroid gland does not always cause a protrusion of the eyes, as may be seen, at any time, among the several out-patients in the metropolitan hospitals; but, that it does so at times, cannot be disputed; and we can readily understand the cause. The enlarged gland may cause pressure on the jugular veins, and thus retard the flow of blood, which would produce cerebral congestion, were it not for the wise provision for the escape of blood from the cranial cavity. The ophthalmic vein is one of the most important ones, and should it have to perform this duty for a considerable length of time, it will, necessarily, become enlarged, and would, of course, tend to render the eyes prominent.

REPORT

OF THE CHIEF OPERATIONS PERFORMED AT THE ROYAL LONDON OPHTHALMIC HOSPITAL,* FOR THE QUARTER ENDING 25TH SEPTEMBER, 1857.

By Dr. Bader, *Curator and Registrar.*

This, and future reports, will give the number of operations; and, briefly, the mode in which they were performed, and the results when ascertained; it will specify the cases for which they were employed, and describe, more particularly, those operations which are unusual in themselves or in their application. The previous history of the cases cannot be given at length; nor frequently, can the final results be obtained. We hope, however, by indicating the cases and respective operations, to obviate some common fallacies of statistical tables.

I. Lachrymal Apparatus. Seventeen operations.

One case of paring the edges of a fistulous opening into the lachrymal sac, to produce union.

Sixteen cases of purulent discharge from the sac, treated with the actual cautery, after the plan of Desmarres (pp. 393–414, vol. i, 2nd edition). Mr. Critchett thinks favourably of the operation; in two cases he has practised it on both sacs at the same time. Chloroform was not administered in some of the cases; the patients hardly complained of pain after that of the incision of the skin. Most of the cases were of several years duration, and had undergone other curative attempts. In two of them, with a cicatrix over the sac, in the skin, the lower lachrymal punctum, as well as the passage in the nose, was closed, and there was, on pressure, regurgitation of purulent matter through the upper punctum. In one (a child), the incision was commenced from a fistulous opening in the skin, and enlarged upwards. In another case, there was a fistula above the tendon of the orbicularis. In one case, the bone was much diseased, which made the application of the "white hot" iron necessary. A patient of Mr. Poland well illustrates the pathological changes the sac undergoes after long duration of the disease. The swelling of the right lachrymal sac originated two years ago, and since then, there had been a continued discharge of purulent matter through both lachrymal puncta;

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since January, he had been treated by introduction of the probe, but did not improve; on passing the probe, one had had at times to overcome great resistance, at other times, it had passed very easily. Commencing the operation, a probe was passed down into the nose, to ascertain the relative position in the sac, which was then incised; the mucous membrane was found thrown into thick folds, stretching especially across the lower part of the cavity, whose bony walls had been dilated in every direction; many of the mucous folds were torn, and parts of them detached and hanging in shreds in the cavity; the opening towards the nose was free. The probe was then withdrawn, and the actual cautery applied to the whole surface of the sac. The difficulties there had been in passing the probe; the occasional bleeding from the nose, the impossibility of the escape of the matter downwards, etc., were, in this case, easily explained by the changes in the sac itself. The ticket of a former case, treated in this manner, has been returned. The patient (a boy) has signs of scrofulous disease about him. The disease of the sac had been of three years standing; the contents had escaped at different periods, by an abscess opening through the skin. There was, at the time of cauterization (June 30th), regurgitation of purulent matter from the upper, and obstruction of the lower lachrymal punctum. Now (August 4th), the wound is completely healed; and, according to the patient's own account, the tears do not overflow "unless he is out in the dust." The cases thus treated, are generally progressing favourably—they leave the hospital immediately after the operation. The number of cases in which the final result has been observed, is too small for us to give an opinion about it. For the future, we shall confine ourselves to the number, duration, and particularly the results of the cases treated in this manner, unless anything occurs which deviates from Desmarres' experience or manner of operating.

II. Eyelids. Fifty-one operations.

In six cases, for ptosis—in four of these the usual operation of removal of an oval piece of skin was adopted. The disadvantage of this method is the loss of the natural fold between the orbital edge and the globe. In one case in which this operation had been done with an unsatisfactory result, Mr. Bowman applied a new plan,—he everted the lid, and excised the posterior or upper edge of the palpebral cartilage, with about half an inch of the tendon of the levator palpebræ

inserted into it. Before the actual removal of the piece, very fine threads were passed so as to bring together the edges, and thus secure a shortening of the tendon of the levator muscle, to the extent of three-quarters of an inch. It is expected that thus it will be permanently shortened, and be enabled to assist in raising the lid. The upper cul de sac of conjunctiva, is exposed to little movement, and wounds there readily heal. The lid was turned back into its natural position. In another case of partial congenital ptosis, a modification of the last mentioned operation for shortening the levator tendon from within, was adopted; a skin incision was made parallel to, and about six lines from, the edge of the lid: and out of the subjacent tissue, the conjunctiva included, an oval piece was removed; the edges of this subcutaneous loss of substance were united with sutures, and plaster applied to the skin wound.

A peculiar warty-looking growth, causing ptosis, was removed by Mr. Bowman from the upper cul de sac of the conjunctiva. A pendulous growth, in the same situation, was removed, it consisted of organized fibrin, etc., and was modelled into its shape by the movements of the lid; it was caused by a husk, which, on everting the lid, was found embedded in the conjunctiva, where it had been for two months.

Four cases of nævus in children; three, treated by ligature, and one with the concentrated nitric acid; in order to secure the whole of the nævus, in one case, a needle was first passed below it, then at right angles a double thread carried below it again, and each half separately tied beneath the needle first introduced, which was then withdrawn.

Five tumors, two of them sebaceous, situated beneath the orbicularis of the upper lid; the entire removal of their walls was effected. In a similar case, a child, patient of Mr. Wordsworth, the tumor was adherent to the periosteum of the upper orbital edge. A smooth tumor of the size of a pea, and having some appearances of cancer, was removed from the conjunctiva, between the inner canthus and the corneal margin.

A child, patient of Mr. Critchett, the eyeball shrunken, with a deformed upper lid, which consisted of a general enlargement, the greater part of it was removed by two succeeding operations, the necessary skin being preserved so as to raise the lid and prepare the orbit for the reception of a glass eye. These were congenital defects, and rare instances

of a general pathological (?) change of the subcutaneous tissues of the upper lid. A further report will be given.

A case of anchylosymblepharon of both eyes. The adhesions of the lids were divided, and a glass mask, with a hole in its centre, was interposed.

Removal of an oval piece of skin, of the upper lid covering an artificial eye. The same operation was performed for entropium of the lower lid, in five cases. Of both eyes, in one of them. An oval piece of skin was removed with the corresponding portion of the orbicularis. In these cases, the wound appears to heal more quickly, and as accurately, without employing sutures.

Nineteen cases of removal of the palpebral edge, as far as the eyelashes are concerned. Of these, eight were cases of entropium, nine of trichiasis, and two in which the unevenness of the edge of the lid appeared to keep up the vascularity of the cornea, and general irritation.

Entropium of the right upper eyelid. A case of Mr. Streatfeild. By a preliminary operation, the palpebral aperture had been enlarged at the outer canthus, so as to give a freer movement to the lids; this having succeeded, an incision was made, about one line from, and along the whole palpebral edge, and then a triangular piece, comprising the whole thickness of the fibro-cartilage was removed; this piece had its base (about one line broad) at the skin, near the edge of the lid, and its apex towards the conjunctiva. The skin incision was brought together with fine sutures. The case when last seen, was much improved; and by this operation, the eyelashes are saved. In another case of entropium, enlargement of both palpebral apertures, preparatory to the above mentioned operation; the soft parts are divided from the outer canthus, to the margin of the orbit; and the conjunctiva and skin of the upper edge of the incision, carefully brought together with sutures. Five other cases of enlargement of the palpebral aperture, three of them entropium, from the irritation of chronic ophthalmia: in two, it was done, by Mr. Streatfeild, with a view of obviating spasmodic contractions of the lids, in one of them it was completely successful; in the second case, the operation was performed subcutaneously.

Ectropium of the upper lid, in two cases, of the lower, in one, and in another instance, of both eyes. Those of the upper lid were both consequent on disease of the frontal bone. In the one, a patient of Mr. Critchett, the cicatrix

everting the lid was divided in a direction parallel to the edge of the orbit, a vertical incision made transversely to this, and two skin flaps formed, which being drawn down, so as to protect the eye, were united with sutures. The case is much improved, and the eye remains protected at present. In the other cases, the lid had been brought down by a former operation, sufficiently to protect the eye. To remove the slight remaining eversion, an inverted V incision was made through the skin, including the cicatrix. The flap being dissected from its apex, towards its base, was rendered moveable, and the cut edges left, by bringing down the triangular flap, were brought together with sutures, into the form of an inverted Y. The lid regained sufficient moveability, to resume its normal position.

The case of ectropium of the lower lid, was treated by removal of an oval piece of the conjunctiva, in the situation of the greatest eversion.

In the fourth case of ectropium, there was complete eversion of both upper, and both lower lids, with a highly granular state of the conjunctiva, and general enlargement of the lids. A large, oval, piece of conjunctiva was removed close to the palpebral edge of both lower lids. A large, triangular piece, comprising the whole thickness of the lids, its base towards the palpebral edge, was removed from the middle portion of both upper lids. There was considerable arterial bleeding from the well-fed granulations. Mr. Hulke united the wounds with a needle, which ends in a wooden handle, and has the eye close to the point. This instrument will be found useful, where the pliability of the parts renders the use of simple needles tedious.

III. Muscles of the Eyeball (*strabismus*). Ninety-eight operations.

Of these ninety-three were for internal strabismus. Two of them had to be operated on after the old plan of dividing all the tissues in front of the sclerotic. These had been unsuccessfully operated on elsewhere, there were numerous adhesions, and considerable inversion of both eyes in these cases. In one case of paralysis of the external rectus, the subconjunctival fascia had to be extensively divided, in order to replace the cornea in the median line.

In one severe case, the right eye had so completely been turned in, the last fifty years, that no part of the cornea was perceptible; the lids moved over a convex, vascular, red surface; on a very careful examination, the outer edge

of the cornea could be discovered behind the caruncle. After complete division of the muscle, etc., the eye was kept out with a thread; the primary result was, severe internal strabismus, the whole of the cornea visible, but there was no perception of light in the eye.

The subconjunctival operation has been shown at this Hospital, to be so successful and easily performed, that it is always preferred to any other. In no case has *external* strabismus resulted, and it may be remarked, that if *more* than the tendon is divided, the eye will nevertheless not become everted, so long as the conjunctiva is spared.

Of the cases of external strabismus. One, a girl, a patient of Mr. Poland, had also protrusion of the eyes; it was remedied by division of both external recti, shortening of the conjunctiva by sutures over both internal recti, and narrowing of both palpebral apertures, by paring the edges of the lids at the outer canthus; the latter measure adopted for the proptosis was completely successful.

Another case (the result of an operation for internal strabismus), was to have been remedied, after Graefe (*see his paper in the "Archiv."*), by bringing forward the internal rectus. The external rectus, conjunctiva, etc., were divided; an incision was made, parallel to and at the inner edge of the cornea, dividing and dissecting off all the tissues in front of the sclerotic, (following the direction of the internal rectus) so as to make them moveable on it (instead of searching for the muscle, separating and detaching it, etc., as Graefe does). At the time Mr. Dixon suggested the bringing forwards the whole of the portion detached from the sclerotic; with this object a thread drawn twice through the conjunctiva, at the outer edge of the cornea, was passed through the skin of the bridge of the nose, and tied so as to keep the eye inverted for thirty-six hours, after which time, it was removed; the flap of muscle, conjunctiva, etc., having reunited close to the edge of the cornea. Three weeks later, the result was, slight internal strabismus of both eyes. The patient is still under treatment.

If the eye is to be kept turned out, after the operation for internal strabismus, it is done by Mr. Bowman's method. An exceedingly fine thread is drawn through the conjunctiva close to the outer edge of the cornea, and the needle then carried from within outwards, and through the skin at the outer canthus, and the thread secured with plaster on the skin. Or it has been done thus:—strong silk is drawn through

the conjunctiva, close to the corneal edge, enclosing a portion of conjunctiva of about three lines breadth, both ends of the silk are with a needle carried together from the conjunctiva, behind the outer canthus, through the skin outwards; a small roll of plaster is laid between both silk threads, and they are tied over it.

If the eye is to be kept inverted, a single thread is carried from the conjunctiva of the inner canthus, outwards, and fixed to the skin of the nose; or it is secured in this way, without being carried through the inner canthus.

IV. Sclerotic and Cornea. Nine operations.

Staphyloma of the sclerotic. The man, a patient of Mr. Dixon, had had iritis, etc., with adhesions in both eyes; there were several small round staphylomatous enlargements opposite the ciliary processes. The largest was punctured with the broad needle; some clear fluid, afterwards, some blood escaped. The staphyloma appeared much reduced in size, a few days afterwards.

Staphyloma of the cornea. Three cases (in children), which were all removed with the knife. In one case, the most prominent part was excised with scissors: it consisted of lymph, effused, organised, and extended on prolapsed iris. "Conical," cornea, two cases. In the first, a patient of Mr. Bowman; it existed in both eyes, and rendered vision of the left extremely imperfect. Mr. Bowman operated on this eye in a new manner, to form a transverse pupil, and supersede the optical appliances (transverse slit), usually employed in such cases. In the first place, the broad needle was introduced from right to left, about half way between the top of the cone and the outer corneal edge, making an oblique corneal wound: then, the outer pupilary margin of the iris was drawn out with the canula forceps, and left in the oblique wound; the latter being, by its peculiar shape, more fit to keep the iris incarcerated. This having succeeded, and the pupilary margin become adherent to the corneal wound, the same proceeding was adopted on the opposite pupilary edge, and a pupil formed, whose lower margin extends in a straight line from one corneal adhesion to the other; the remainder of it slightly arching upwards. The second case of conical cornea, a patient of Mr. Critchett, a young woman, was treated by extraction of the lens. The operation was more tedious, from its normal close connexion with the capsule, in this case, than in most cases of cataract, where superficial softening facilitates their escape. Mr. Critchett

saw a decided improvement result from the use of bi-concave glasses, in a similar case, where extraction had been performed, which induced him to make this experiment. The slight opacity, at the apex of the staphyloma, did not disappear after the extraction.

One case of removal of the superficial layers of the cornea, opposite the pupil, with the broad needle and forceps; these layers were opaque from a deposit of lead; there was some bleeding from the cut surface of the cornea.

Case of a sailor, patient of Mr. Poland, where the iris was hidden by a deep yellow substance, filling the anterior chamber—the eye otherwise appearing normal. It followed a blow fifteen years ago, and was thought to be fluid. On opening the anterior chamber with the broad needle, a very little fluid, which consisted of decomposed blood, escaped; the yellow covering of the iris could not be removed.

Removal of a congenital overgrowth of the sclerotic at the edge of the cornea.

V. Iris. Forty-three operations.

Cyst of the iris; two cases. Mr. Dixon commenced the treatment by lacerating the anterior wall of the cyst, entering through the cornea. Mr. Bowman, in the second case, opened the posterior wall, entering by the sclerotic.

One case, where a foreign body, which had pierced the cornea and iris at their lower part, could be seen lodged in the iris, and projecting into the anterior chamber. A small corneal incision was made, and the canula forceps introduced: but, immediately the attempt was made to seize it, it disappeared behind the iris, where it is left.

Prolapse of the iris, in four cases: in three it was opened with scissors; in the fourth it followed extraction, and was very considerable; the eyelids being kept open with the spring speculum, an oval piece was removed with a pair of small iris scissors, and so much of the vitreous as escaped was also snipped off. Such a prolapse keeps up chronic ophthalmia, and the sooner it is removed the better.

Three operations for the relief of what is called "acute glaucoma." One case, of Mr. Bowman's, of excision of a piece of iris; in another case, one-fourth at its outer part was removed. In the third case, a patient of Mr. Critchett, this operation, introduced by Graefe, has been followed by a very satisfactory result. The man injured the left eye three years ago; immediate loss of vision, and final softening and squaring of the globe, were the result of the accident. In six weeks,

when the inflammation in the left eye had subsided, a black speck spontaneously appeared in the right, which, within three months diffused into a general mist; six months later, an inflammation appeared, which, continuing for six weeks, ended with considerable impairment of vision. Three similar painful inflammatory attacks ensued, before the patient came to the hospital. The conjunctiva was then very vascular, the cornea slightly hazy, the iris of a dull grayish blue colour, the pupil large and immoveable, the area of the pupil of a dull grayish hue, as if occupied by some disk-shaped exudation, the eyeball very hard and painful. The patient only saw the shape of large objects. Mr. Critchett, after having removed the left globe, opened the right cornea at the outer edge, with a broad needle, and with the blunt hook drew out a considerable portion (one-third) of the iris, leaving it in the corneal wound. The grayish hue, in the area of the pupil, proved to be some kind of membranous exudation, thrown out there. As soon as the aqueous escaped, it folded up, and moved on the inner anterior aspect of the iris. Mr. Critchett considers that the inflammation of the eye is accompanied by so much secretion, of which the pressure is injurious, that by drawing out the iris, a kind of filter is made, and afterwards a capability of yielding is given and allows for the injurious abundance of fluid in the eye, whenever in the course of inflammation it would be sufficient to press upon the contents of the globe. After ten days the conjunctiva was much less vascular, the cornea transparent, the iris of normal colour, and the area of the pupil black. He had no pain, and could tell the time by a small watch. The patient, before he came to this hospital, had been treated with calomel and opium; and there is little doubt, that, if no surgical means had been adopted, vision would have been lost. This kind of treatment being new, I have purposely enlarged upon it; for such cases are not unfrequent, and have been almost hopeless.

Artificial pupil has been made in twenty-five cases. In one case the pupil was formed by simply dividing the iris with a broad needle. In two cases there was dense opacity of the cornea, at its upper part, with complete adhesion of the iris to it: in each case a portion of the iris, at its lower and outer edge, was drawn out; in one case it was left in the corneal wound, in the other it was snipped off. In six cases there existed a large central corneal opacity, and a large pupilary opening was made. If not prevented by the morbid state of the cornea, the artificial pupil was made down-

wards and outwards. The corneal opening was made with the broad needle, and the iris drawn out with the canula forceps, common iris forceps, blunt hook, or needle-hook.

In ten cases the drawn out piece of iris was cut off with scissors; in six it was left in the corneal wound.

Eight cases of detaching (of so-called) adhesions of the iris to the capsule of the lens. (According to some pathological dissections, there are cases where the pupil is blocked up by pigment in its area, which is deposited on a membrane, the organized product of inflammation, which is attached to the posterior surface of the iris, and its pupilary edge, and stretches across the area of the pupil. In the dissected eyes it appeared to press on the lens capsule, but was not adherent to it.) In all the cases the iritis had subsided. The organized exudation thrown out in the area of the pupil, and more or less at the posterior surface of the iris, causes, by bands stretching from it to the pupilary edge, and the posterior surface of the iris, the irregularity of the pupil. Under the continued action of light, the pupil contracts as much as the bands will allow, and it is not improbable, that they continually opposing the iris contractions take some share in the relapses of iritis. The posterior surface of the exudation is glued to the lens capsule: the extent of this, the number, strength, elasticity, etc., of the adhesions, depend on the nature of the exudation itself. The operative treatment has shown the facility with which in many cases these pupilary adhesions may be detached from the exudation thrown out on the capsule, and also the exudation from the capsule itself. Mr. Streatfeild has, as I believe, first performed this operation at the hospital. In the first case a very small portion of the pupil at its upper and outer part was not blocked up, as was seen after dilatation with atropine. The cornea was opened with a broad needle, and the flat blunt edged spatula introduced, through this remainder of the pupil, and behind the deposit, which, without injuring the lens, was lifted away from its anterior surface. At another time the membrane was divided with the canula scissors. In the other cases, he made a small corneal incision with the broad needle, and, with the canula scissors divided, or, with the blunt hook detached, the adhesions; or, with the cataract spatula, lifted them away from the capsule, by bringing the instrument between both, and gliding it up and down, and then divided the membrane or band. In cases where the whole of the pupilary edge was adherent, Mr.

Streatfeild introduced a cataract needle at the pupilary edge through the adhesion, and then used the blunt hook for detachment of the remainder; no case was followed by an unfavourable result; in one case, a man, who could only distinguish dark from light objects, read the smallest print after the operation, in another there was much improvement. The detachment of these adhesions, considering the transparency and elasticity of the capsule, may serve in many cases as a preparatory step for artificial pupil, extraction, etc. In none of Mr. Streatfeild's cases has the lens capsule been injured.

VI. Lens, and "False Membrane." 179 operations.

Of these 125 were of the lens itself. In one case of traumatic cataract, a central piece was taken out of the lens with the canula forceps, by entering the eye through the sclerotic, close to the corneal edge. In another case,—a patient of Mr. Streatfeild, Luxation by injury, of the previously cataractous lens, enclosed in its capsule, under the conjunctiva,—the patient had useful vision after its removal.

Extraction of cataract has been performed in seventy-seven cases; an upper corneal section is usually made. Three of them were the immediate result of accidents. In two cases the corneal section had to be enlarged with the blunt-pointed knife. In two, the iris was wounded, after which, in one of them, it contracted forcibly, and hindered the easy escape of the lens; in this, and in four other cases, there was an escape of the vitreous. In one case, when the curette was used, the capsule was found to be abnormally tough, and when it was entered, the lens, resembling very soft wax, broke into a superior and inferior half, which had to be taken out separately. In a case of hydrophthalmos of both eyes, extraction was tried, with the view of admitting more light to the eye. During the escape of the lenticular matter and the aqueous, their place was occupied by blood, and as none of the tissues but cornea and lens had been touched, the bleeding was attributed to the loss of pressure from within the globe. Extraction of the lens has been performed in ten cases, in which the pupil was obstructed by products of inflammation. In one, the corneal section had, on account of the patient's struggling, to be completed under chloroform; the pupil was entirely closed by exudation; the patient had suffered much pain, and the conjunctiva was inflamed. After breaking through the pupilary occlusion

with the curette, clear lenticular matter was scooped out. In another case, a patient of Mr. Bowman's, a young man, had strumous deposits in both pupils, with adhesions of the iris, the conjunctiva slightly reddened. He could not see to find his way about. In the right eye, a small corneal section was made; the deposit in the pupil opened out with two needles, and clear lenticular matter removed. A week afterwards, the left eye was operated on by making a complete corneal section, lacerating the strumous deposit, and removing the lenticular matter with the curette and a sharp hook; part of the deposit adherent to the pupilary margin, and still obstructing the pupil, was fixed with the sharp hook, and, this not answering the purpose, with the canula forceps, and excised with the canula scissors. Three weeks later, both pupils being blocked up by lymph, both eyes were again operated on by division of the lymph with the broad needle, enlarging the corneal wound on withdrawing the needle, for the introduction of the canula scissors, and, further dividing the lymph with them; and the piece still being connected slightly with the iris, was drawn out with the canula forceps. The patient could then count fingers with either eye. Two other cases, where the pupil was entirely closed by the sequelæ of iritis: in the one an entire, in the other, a small corneal section, was made. In the one, the deposit in the pupil was divided with the iris scissors; and the lens, with part of its capsule, drawn out with the curette. In the other case, the pupil was first entered at its outer part, and the corneal wound enlarged on withdrawing the knife; then, with the broad needle, the pupilary incision was extended, and with the canula scissors continued so as to excise a disk-shaped piece of the pupilary deposit; this was drawn out with the canula forceps, and then the lens removed with a cataract needle. The patient could see after the operation. In these cases, each instrument has been used, where it best answered the purpose, and, it should be also remarked, that the iris, changed in its mechanical properties by the previous inflammation, retains, as a fixed curtain, its position, during the operation. In thirty cases, the needle operation has been adopted; of these, seventeen were congenital cataracts. In one of them, a patient of Mr. Wordsworth, while the needle was in the left lens, the boy made a sudden movement, and, after steadying the head, there was a clear black space in the situation of the cataract. It is supposed that the needle transfixed

the lens, and entered the vitreous humour, and that, on the withdrawal of the instrument, it gave the black appearance to the pupil by bulging and distending the rent in the soft cataract. In two of these cases, two needles were used.

Of the cases, not congenital, one was an old man subject to rheumatism, who had been before successfully operated on with the needle. Two others were of the ages of forty-two and fifty-three respectively. In eight cases, "linear" extraction has been performed; in one of them, Mr. Dixon operated on both eyes at the same time; the lenses were thoroughly broken up, and the corneal wound enlarged with the broad needle; part of the lenticular matter was carried away by the escaping aqueous, and part had to be scooped out. It is of importance in these cases not to wound the posterior capsule, which, if wounded, allows the vitreous to advance into the pupil, and press the fragments of lens against the ciliary processes, setting up irritation of the eye.

Of the fifty-four cases of "false membrane" in the area of the pupil, most of them were operated on with two needles, some with one only, and in three cases the broad needle was used. In one of them, the grayish membrane was drawn out with the canula forceps. The sooner these films are operated on, the more easily they are torn through: if shreds of them hang into the area of the pupil, they, having only one attachment, shrink. In three cases, after needle operation, part of the lens remaining had assumed a membranous, well defined appearance; in these cases, a corneal section was made, the remainder of the lens seized with the canula forceps, and drawn out. In one of them, in which the atropine had been applied an hour and a half beforehand, and the pupil was widely dilated, it was necessary to postpone part of the operation in consequence of its contracting suddenly and closely, the moment the aqueous had escaped.

VII. Excision of the Eyeball. Thirty operations.

In the first place, the conjunctiva is divided around the cornea, then the tendons of the muscles at their ocular insertions, and lastly, the optic nerve. The operation, as a rule, lasts from three to five minutes; and the patients leave the hospital in a few days; many of them being able to wear an artificial eye the third day after the operation. The necessary instruments are, a spring speculum, forceps, curved scissors, and strabismus hook. This, and some future reports, will contain a short account of the cases. For, as it is

impossible, at present to draw limits for the indication of the operation, it is desirable to specify those cases in which extirpation has been performed. The eighteen cases of last occurrence are here given; the diseases and immediate results.

1. H. H., aged nineteen. Perforating wound of cornea, iris, and lens. Loss of vision. The enlargement, inflammation, and pain increasing; the sclerotic was opened at its most bulging part, giving escape to a quantity of pus. The relief being only temporary, excision was performed.

2. A. J., aged fifty-five. Ten years ago a dimness came gradually over the right eye, and one year later was followed by repeated attacks of inflammation, with severe pain. Within the last two years, the same dimness attacked the left eye, with occasional pain in it.

3. E. F., aged fifty-eight. Loss of vision by purulent ophthalmia; and for three months past, repeated painful attacks of inflammation. Inability to use the sound eye, on account of the state of the diseased one.

4. M. A. B., aged thirty-five. Analogous to Case 2. Repeated attacks of inflammation.

5. J. R., aged forty-six. Injury of the left eye two years ago. Irritation set up in the right eye, on account of which, he had to give up his work.

6. C. P., aged twenty-four. Ophthalmitis, with severe pain, an enlarged globe, and loss of vision.

7. M. J., aged fifty-three. Sudden loss of vision in the right eye three years ago; pain in it lately, with dimness and pain in the left eye.

8. J. D., aged thirty. The right eye painful, vision dull. The left eye had been inflamed six years ago; the inflammation continued for three months, and ended with partial loss of vision. Six weeks ago, inflammation recommenced, with severe continuous pain.

9. G. T., aged thirty-eight. Analogous to Case 1.

10. G. R., aged thirty-two. Left eye; loss of vision by purulent ophthalmia. The cornea uneven, ulcerating at several places, and perforated. The conjunctiva highly granular; the globe soft. Severe pain in the eye, from which the patient has been suffering for one year and a half.

11. L. H., aged seventy-eight. Left eye; general ophthalmia, with perforation of the cornea; total prolapse of the iris, severe pain and inability to use the sound right eye.

12. W. W., aged thirty-four. Left eye; immediate loss of vision by an injury three years ago; six weeks afterwards a black speck appeared before the right eye, which before three months became a general mist; six months later the eye spontaneously inflamed, the inflammation continued for six weeks; the eye recovered vision partially, and since then three other attacks of inflammation had occurred in it, all accompanied with pain, and reducing vision to mere perception of light.

13. K., aged forty. Left eye; loss of vision by an injury. Globe lost (see iris case of Mr. Critchett).

14. A., aged twenty-one. Right eye; loss of vision eleven years ago, by an arrow wounding the eye. Globe lost.

15. M. P., aged fifty-one. Spontaneous loss of vision in the right eye, nine years ago. Four years ago it inflamed without any apparent cause. The inflammation, with severe pain in the eye, and over the corresponding side of the head, continuing more or less. The left eye followed the same course in a less degree; with it, the patient could recognize large objects. The eye, since the removal of the right one, is not painful, and vision in it has improved.

16. X. The eye had been damaged by purulent ophthalmia during childhood. Cornea opaque and ulcerating. Three small staphylomatous enlargements of the sclerotic at its upper part. Squaring by muscular pressure.

17. Y. Opacity of cornea, after purulent ophthalmia during childhood; since then, during ill health, several attacks of inflammation, of which the last, accompanied by severe pain, has continued six months. No perception of light.

18. Z. Twenty years ago, a piece of a percussion cap, entered the eye, and after the ensuing inflammation, it shrunk to a small irregular mass. The stump was removed on account of the pain, which recurred periodically, sympathetic affection of the other eye, and the age of the patient. The foreign body could not be found. The eye affords a very good example of the formation of a bony shell at the place of the capillary layer of the choroid.

The eyes, examined on the day of operation, with the history of the cases, microscopical reports of the globes excised, and sections, are preserved at the hospital, and are open to inspection.

The facility with which excision is performed, its great freedom from risk, and the adaptability of an artificial eye, ought to make us consider a disorganized eye, which is the

seat of pain or annoyance, as a foreign body, whose removal the sooner it is accomplished the better. If not painful at the time, it is a deformity, and is liable at any time of ill-health to become the seat of inflammation, and affect sympathetically the opposite organ. It is not only unwise but incorrect to bring before the patients' imagination, the idea of "taking the eye out"; and, omitting the scientific advantages of excising; medical men must soon learn to value the operation. Besides these operations, performed in the operating theatre of the hospital; a much larger number of minor cases operated on in the out-patients' room have occurred.

REPORT

OF RECENT GIFTS TO THE ROYAL LONDON OPHTHALMIC HOSPITAL LIBRARY AND MUSEUM, FOR THE QUARTER ENDING 25TH SEPTEMBER, 1857.

By Dr. Bader, *Curator and Registrar.*

TO THE LIBRARY.

By Mr. Churchill,

Dalrymple's Pathology of the Human Eye.

By Mr. Poland,

1. Saunders on Diseases of the Eye.
2. Pickford on Conical Cornea.
3. Cleobury on Operations on the Eyes.
4. Vetch on Egyptian Ophthalmia.
5. Morgan on Diseases of the Eye.
6. Slade on Ophthalmia.
7. Ware's Ophthalmy and Psorophthalmy.
8. Guthrie on Cataract.
9. Watson on Diseases of the Human Eye.
10. Guthrie's Operative Surgery of the Eye.
11. Stevenson on Amaurosis.
12. Edmonstone on Ophthalmia.
13. Monteath on Diseases of the Human Eye.
14. Fricke, Welbank, and Beer on Diseases of the Eye.
15. Ware on Epiphora and Fistula Lachrymalis.
16. Guthrie on Artificial Pupil.
17. Wardrop's Morbid Anatomy of the Eye.
18. Adams on Ectropium, Artificial Pupil and Cataract.
19. Adams on Depression, and other Operations.

20. Neill on the Cure of Cataract.
21. Porterfield's Treatise on the Eye and on Vision.
22. Scarpa on the Principal Diseases of the Eye.
23. Travers' Lectures on Diseases of the Eye. M.S.
24. Le Cat's Physical Essay on the Senses.
25. Chandler's Treatise on Diseases of the Eye.
26. Warner's Description of the Human Eye.
27. Fearn's Laws of Cerebral Vision.
28. Travers on Diseases of the Eye.
29. Von Walther and Von Ammon's Journal der Chirurgie and Augenheilkunde.
30. Wenzel's Manuel de l'Oculiste.
31. Chelius' Handbuch der Augenheilkunde.
32. Chelius' Traité Pratique d'Ophthalmologie.
33. Scarpa's Malattie degli Occhi.
34. Von Walther's Sehre von den Augenkrankheiten.
35. Beer's Sehre von den Augenkrankheiten.
36. Adams on Amaurosis.
37. Stevenson on Cataract.
38. Stevenson on Morbid Sensibility of the Eye.

By Mr. Bowman,
Bowman on the Parts concerned in the Operations on the Eye, etc.

TO THE MUSEUM.

By Mr. Holthouse,
Portion of an Eyeball.

By Mr. Critchett,
1. An Eyeball. Register, No. 28.
2. Ditto ditto No. 31.
3. Ditto ditto No. 36.

By Dr. Bullen,
An Eyeball (ossification within choroid). Register, No. 47.

By Mr. Hutchinson,
An Eyeball (anterior staphyloma). Register, No. 46.

P.S.—The Medical Officers would be much obliged to any of the Profession who, in aid of the Museum of the Hospital, would send eyes they may hereafter remove, addressed to the Curator, who will be happy to return a report of their minute examination.

N.B.—The eyeball should be put in pure glycerine, immediately after removal.

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