Thesis for the degree of M.D. University of Edinburgh.
(OLD REGULATIONS.)

The radical cure of Entropion and Trichiasis.

by

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Contents.

The radical cure of Entropion and Trichiasis.

When the eyelashes are misplaced or have become distorted so as to rub against the Globe of the eye during each movement of the eyelid, the ill-effects produced are sufficiently serious and far reaching in their consequences, to justify the effort which has been here given to investigate a means to obviate it, which would prove certain and permanent in its effect, and at the same time, would neither create any deformity, nor leave appreciable trace of operative interference, nor evidence of the preexisting abnormal condition.

The following remarks are more specially applicable to the cases, exclusive of those due to spasm, in which the full extent of the margin of the eyelid is the site of this condition, and irrespective of whether it is characterised by the features pertaining to, (a.) trichiasis; where the eyelashes are distorted or irregularly placed on the border of the eyelid, or, (b.) distichiasis; where there is a second rows of them, or, (c.) entropion; where the fault lies in the unduly increased curvature of the eyelid; and as the

causation of these several varieties of the affection has no particular bearing on the method of treatment described at the present moment, it is unnecessary to enter upon the discussion of that part of the subject.

The operations for its correction, of which there are now numerous different forms in general use, may be classified into three principal groups.

1. Those in which the skin or subjacent looser tissue, or both, are subjected to alteration or readjustment.
2. Those in which the essential feature is the splitting of the free margin of the eyelid along its length, and that portion bearing the eyelashes then being displaced or otherwise treated.
3. Those in which the tarsal cartilage of the eyelid becomes the principal site of operative interference.

In the first group, although there is a percentage of success, yet it is usually at the expense of some deformity being produced, more or less marked; the tissues are comparatively elastic and yielding in nature, and at the time of operation some over-effect has to be aimed at, in order to ensure a sufficiently permanent effect, and this in many instances persists, wholly or in degree, or otherwise

remains unmistakably evident in the form of cicatrices, which not unfrequently are apt to mar the personal appearance of the individual.

In the second group, there is also considerable degree of uncertainty as to the result, because in the splitting of the eyelid margin it is possible, and not unusual, to find that the roots of some of the misdirected eyelashes, having remained inadvertently in the inner of the two portions, subsequently grow, giving rise to renewal of the trouble and to need for further attention. In the class of operations where the transplantation of adjacent or more remote tissue forms part of the procedure, there is the additional factor of risk or uncertainty introduced, that the graft which is applied to the denuded surface, may become attached only in part, or even fail altogether in this respect, thus interfering with the ultimate appearance and effect. In both classes of this group, there is furthermore the objection that there are permanent, outwardly visible, traces of the operation, causing some disfigurement, which, and more especially in the female sex, must militate strongly against its being received with general favour.

The third group, that in which the tarsal

cartilage forms the basis of operation, and in which Streatfield was practically the pioneer, may be accepted as the most rational system of operation for the purpose, if regarded from the purely surgical aspect, and it will be found that this is also true when considered subjectively from the patient's point of view.

When there is this inversion of the eyelashes, the eyelid may be conveniently compared to one of the lower limbs of the body, when it presents excessive curved distortion in the linear or perpendicular axis, the tarsal cartilage of the eyelid consequently being represented by the abnormally bent femur of the leg; and exactly in the same way that rectification of this by operative measures, corrects and reestablishes the proper use of the pedal or free extremity of the leg, so, similarly by operation on the tarsus of the eyelid, its free extremity or margin, which bears the injurious eyelashes, is made to assume such a position that they are no longer in contact with the surface of the eyeball, and cease to be harmful.

It is not a new idea to effect readjustment of the posture of these wrongly directed eyelashes

by inducing an alteration in the curvature of the tarsal cartilage of the eyelid. But hitherto there have been certain insuperable difficulties, inherent to the various methods from time to time adopted, which have seriously interfered with the uniform success of the results obtained. The principal one of these deserves special reference, and here again the analogy of mal-curvature of the femur and its rectification, may be used. The solid axial support of the appendage is straightened by removing a wedge-shaped portion from its thickness; this is readily done in the lower limb, but in the eyelid when the same manipulation is attempted in the ordinary way, there is difficulty in <u>Completely</u> dividing the tarsus without at the same time incising the palpebral layer of the Conjunctiva, which lies closely subjacent and is of considerable service for the purposes of nutrition during the process of healing. It is necessary, in order to produce a full and proper effect, that the tarsus be not only grooved but also Completely divided, and that in its entire length, otherwise there is liability for the condition to return, in part at least if not in whole. A further point of note is, that in several of the operations

contained in this third Group, the sutures are placed either in the muscular or in the dermal tissues, both of which are elastic in nature, and do not afford that amount of fixity or purchase, which is so essential in producing a favourable effect here, as well as in fractures elsewhere in the body.

This condition of distorted or ingrowing eyelashes being extremely prevalent amongst the native population of Egypt, it may therefore be regarded as a peculiarly favourable country for establishing the relative efficacy of such corrective measures. In the Kasr-el-Aïni Hospital, Cairo, an average ratio occurrence of 22·5 per cent. of such cases, was found amongst the patients admitted to the Eye-wards during a period of eight consecutive years, from January 1st 1891, to December 31st 1898.

After severally trying and gradually eliminating other methods, it became possible to advance to the stage in which a series of successive and unselected cases of this affection, could be submitted to one special form of treatment, with the ultimate view of controlling the results by observations made at a more remote date. This series of

operations in instances where the condition was a total one, was begun in February, 1894, and a subsequent examination made of all which had been thus dealt with during the following three years — until February, 1897, in order to ascertain the permanency of the result. The operation is therefore not merely a theoretical suggestion for improvement on other methods, but is founded on an earnest endeavour to overcome the inherent difficulties already existing, by the application of the ordinary principles of practice employed successfully in other parts of the body. The principal features of objection found in other methods have been thus overcome, so that it is possible to effect:—

1. Complete and thorough division of the tarsal cartilage in its continuity, without in any degree risking interference with nutrition of the separated distal portion.
2. Rigid fixity of the parts is maintained during the process of union and healing.
3. No visible outward trace of operative interference is subsequently evident, and not the slightest deformity is produced, or evidence left of the preexisting abnormal state.

This operation was performed in the Eye. Depart^{t} of the Kasr-el-Aïni Hospital, (Egyptian Government,) Cairo, on a total series of 374 individuals during a period of three years between the dates of February. 19th, 1894, and February 18th 1897, and the operation was regularly continued after this. The patients were, at the time, discharged as "cured" from the hospital, but a house-to-house visitation of 201 of the cases — those living in Cairo, was made later, between December. 1897 and May, 1898, to ascertain the ultimate result. The remaining 173 persons comprised in the total of 374, were scattered in the provinces throughout Egypt, some being at a very considerable distance away, which would have made the attempt at any such controlling inspection very difficult and possibly incomplete, whereas in Cairo, through the courtesy and with the authority of the late Mohamed Maher Pasha, Governor of the city, it was comparatively simple and at the same time thorough; on page 25, the results thus found are tabulated.

Only 25 of all these 201 cases who were resident in Cairo at the time of operation, were not discovered; 4 of them had died in the

interval, I had run away from his relatives, and 20 others could not be traced at the addresses which they had given.

Of the 176 patients thus followed to their homes, representing 289 eyes operated upon, there was a permanently successful result found in all of them, with the exception of four individuals (five eyes.) in which there was a return of the original condition. There is unfortunately no hope of being able to repeat this series of observations with any degree of completeness at some still later date, which might serve for more ample comparison, as a visit to Egypt in the end of last year (1902.) showed that the native population of Cairo had become greatly thinned; due partly to the ravages of the cholera epidemic through which it had just recently passed, and also, in almost equal measure, to the general dispersion of many of the inhabitants through fear and other associated causes, to other towns and localities elsewhere.

With regard to the occurrence of these failures, a summary of which appears on page 34, it is difficult to assign any special reason except merely conjectural causes, such as attacks

of conjunctival inflammation in the intervening period, or inadvertent extraneous influences, such as premature curiosity, or meddling with the part, etc. The constant pressure for admission of serious cases to the beds which were available in the eyewards of the hospital, rendered it impossible to detain them longer, beyond the time necessary for the sutures to be removed and the parts healed; also, as much reliance cannot be placed on the exact accuracy of any general statement made by the natives of that class, without other material confirmation in support, it would have been futile to seek for information from them, after such a lapse of time, which might have helped to elucidate this.

A brief description of the method now specially referred to, for treating these cases, was presented to the Annual Meeting, in 1895, of the "British Medical Association" in London. Further perfection has been attained in it, and the grounds of minor but unimportant criticism then advanced, have been removed.

The details of the technique in the operation are few and simple, and if correctly followed,

the result is a sure one; and within a comparatively short time it is almost impossible for the casual, even though trained, observer to detect anything abnormal, which would indicate either the previous condition or the fact of its having been treated.

The operation consists in completely dividing the tarsal cartilage on the inner or conjunctival aspect of the eyelid, and by a further incision, removing a linear wedge-shaped, or triangular, strip of the whole thickness of its horizontal length; the more distal portion, which is thus separated and bears the eyelashes, is then caused to assume its new position, in which it is retained, during union and healing, by sutures, and by what may be virtually regarded as a wire-splint.

There is no interference with the nutrition of the parts during the process of repair, which takes place rapidly, as both the skin and muscular tissue, which remain intact in the eyelid, amply suffice for the purpose. The general effect is perfect in practically all of the cases, and the existence of the previous condition can only be detected if the eyelid is everted, when a faint and fine line can sometimes be seen parallel to the

palpebral margin, of a light shade as noticed in contrast with the pinker conjunctiva, which affords the polished covering to the smoothly even surface thus exposed.

The instruments used in the operation are,

1. A scalpel, which is best when shaped like an ordinary triangular cataract knife, but which has its point well rounded in outline and sharp for cutting (Fig. 5.).
2. A horn eyelid-spatula.
3. A pair of strong double fixation-forceps.
4. A needle-holding forceps.
5. A very small double-eyed curved needle for wire, and some fine and softened silver-wire, (of no 1 size.)

The following is a description of the operation in greater detail:—

The operator, who has one assistant besides the anaesthetist, stands behind the head of the patient who is placed lying on the table. The horn spatula is introduced into the conjunctival fornix underneath the upper eyelid, which has been previously everted, and the point of the scalpel is then placed against the exposed palpebral surface, close to its left extremity and

about 3 millimetres from the free margin, the handle of the knife being held at an inclination downwards, towards the chin, at an angle of about 40° out of the perpendicular; it is then drawn with a firm and rapid, penetrating, even sweep along the eyelid, keeping parallel to the free ciliary border, until the opposite end is reached; this incision should completely divide the tarsus into two portions. With the parts still in the same position, the incision is repeated once more in the precisely identical place, similar way, and to an equal extent, but with the handle of the knife now raised, so as to become perpendicular to the exposed under surface of the eyelid which is the site of operation; by this means, a narrow, linear, wedge-shaped piece of tissue is separated from the whole length of the upper, or larger, proximal portion of the recently divided tarsus, which, however, in the reversed position of parts, owing to eversion of the eyelid, actually for the moment occupies the lower position. (Fig. 1.) This strip of the tarsus is then easily removed from the wound, the gap which results being shown in Fig. 2.

The eyelid is now returned to its proper

Operation : (Diagrammatic.)

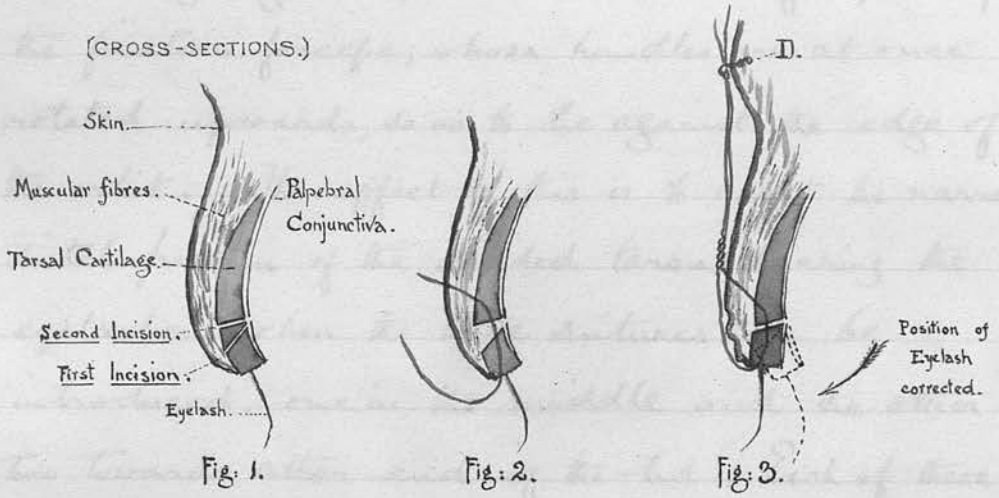

Fig: 1. Fig: 2. Fig: 3.

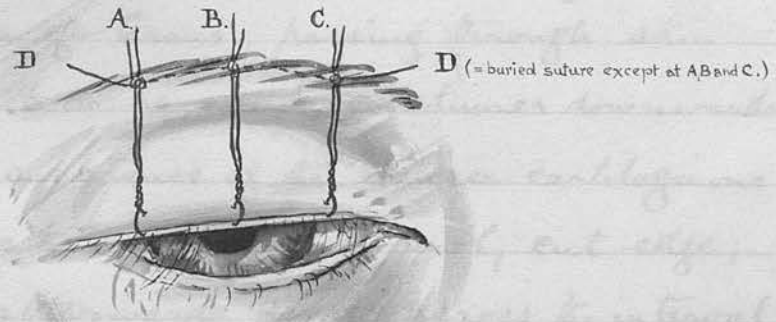

Fig: 4.

Figure :-

1. Position of first and second incisions.
2. Tissue removed and suture introduced.
3. Parts in place and sutures secured.
4. Vertical sutures fastened to horizontal one.
5. Scalpel with rounded cutting-point.

Fig: 5.

position and the spatula is still retained; the slight haemorrhage generally soon ceases, or, when necessary, it can be easily controlled.
The margin of the eyelid must then be grasped by the fixation forceps, whose handles are at once rotated upwards, so as to lie against the edge of the orbit. The effect of this is to evert the narrow distal portion of the divided tarsus bearing the eyelashes, when the wire sutures can be introduced, one in the middle and the other two towards either end of the lid. Each of these stitches is made to enter the front surface of the upper portion of tarsus, passing through skin and muscle to do so, and continues downwards through the substance of the denser cartilaginous tissue, so as to emerge on its newly cut edge; the needle afterwards passes across the interval, and enters the corresponding cut surface of the distal separated portion, which is apposed to it, to be finally brought out on the free border of the eyelid. (Fig. 2.) One needle will carry enough wire to serve for the three sutures, and when they are all in place, the several pairs of ends are secured by twisting them firmly together at their respective places, so as to maintain the parts

in the desired position, without exerting any undue tension which might cause constriction. The forceps are removed, and the needle, with a further supply of the silver wire, is passed along in the tissue of the eyebrow from one end as far as the centre, at each of which points the double ends of two of the previously mentioned sutures are fastened to it by twisting, (Fig. 3.); which results in the eyelid being kept at rest in an approximately normal position: the needle is introduced once again, close to its point of exit at the centre, and emerges at the other extremity of the eyebrow, where the third and remaining suture is in turn attached to it, (Fig. 4.)

The operation, which can be quickly performed, only occupies about four minutes. No other dressing than a dusting of Bismuth Subgallate, mixed with Boric Acid, in powder, is really needed, although often for aesthetic or protective purposes, a light pad of cotton-wool and a turn of bandage may be loosely applied; but no pressure with this should be exerted, so that the part of the wire sutures which is exposed, may not be disturbed or be bent out of shape. The area which is involved must be kept scrupulously clean, and

if any oedema, more than temporary, arises, which is not in the least usual, the administration of a purge alone, or combined with the local application of a simple compress, will speedily cause it to subside. The stitches are removed about the seventh day, which is done by first dividing the three opposed vertical strands of wire which lead up to the eyebrow; the transverse eyebrow suture is then cut on each side of the central point where it was twisted, this releases its lateral halves thus formed, which are withdrawn from either end of the eyebrow; it only remains to cut through each of the three loops embracing the eyelid margin, and the wire being so soft, is easily removed by simple traction. The traces of operation quickly disappear, and in about one week after removal of the stitches, difficulty begins to be experienced in realising, except on closest examination, that the eyelid has been subjected so recently to such treatment.

In only a few cases where there is an extreme degree of phimosis, or persistent spasm of the palpebral aperture, is it found necessary to divide the outer canthus of the eyelids as well, at the time of operation; but this does not in any way

complicate the routine of the operation or necessitate its modification.

The operation has been described as it affects the upper eyelid, but it is of equal service when the lower eyelid is the one which is affected; the only difference being that the buried transverse suture must be placed in the tissues at the centre of the surface of the cheek, which, in such instance, serves as the point of fixation instead of the eyebrow.

The question not unnaturally arises, whether this method of operation is also applicable to those cases in which the condition is a partial one, instead of being total? When it is either the outer, or the inner, half alone of the eyelid which is involved, then this form of operation may be successfully applied to that portion of the eyelid; the only precaution necessary being that the incisions must extend somewhat beyond the limit of the site of the affected eyelashes, so that the whole of the implicated portion of the border of the eyelid can be readily and fully everted. When, however, the partial condition occupies the central part of the eyelid, then there is nothing to gain by not extending

the incisions to each end of the tarsus, as is done when the condition is a complete one. This could be done equally as well in those cases where the partial condition is lateral, only that to do so, it would, whilst rectifying the affected portion, at the same time produce an over-effect, and give an unnatural appearance to that half of the eyelid border which had been previously normal, and the general result would become an unpleasing one.

In those cases where only one, or a few, individual and separated eyelashes are at fault, this operation is not called for, as a simple and equally satisfactory procedure proves sufficient. This consists in making a small vertical incision through the skin surface, on the very edge of the eyelid, exactly over the root of the offending eyelash, which it exposes; this is then carefully excised and the small wound is closed by a fine silk suture. No dressing other than a temporary one, needs to be applied, the slight wound heals by first intention and leaves scarcely any scar perceptible. This is expeditious, need not be painful, and is very certain in the good results which

it at all times yields.

Statistics.

Cases of

Total Trichiasis, or Distichiasis and Entropion, occurring in patients, resident in Cairo, who were operated on in the Ophthalmic Department of Kasr-el-Aïni Hospital (Egyptian Government) Cairo, during a period of three years, between the dates of February 19th 1894, and February. 18th 1897.

An inspection of these, from house to house, was subsequently made, through the courtesy and under the authority of His Excellency, the late Mohamed Maher Pasha, Governor of Cairo, to observe the ultimate results. A total of 176 cases, (or 291 eyes) was thus visited and examined, and a successful result found in them all, with the exception of four individuals, representing five eyes, in which only there was return of the condition.

(N.B. For the sake of clearness in the following lists, no entry has been made in the last column against those cases which showed a successful result; remarks are only written where it was the contrary.)

The controlling examination was made in the

Abdin District.	during	February and May. 1898.
Bab-el-Sharieh District.	"	December, 1897. May. 1898.
Boolak District.	"	January, February, March. 1898.
Darb-el-Ahmar District.	"	January. 1898.
El-Waily District.	"	February, 1898.
Ezbekiah District.	"	March. April. 1898.
Gamalieh District.	"	May, 1898.
Khalifa District.	"	December, 1897.
Masr-el-Ateeka District.	"	December, 1897. February. 1898.
Mooski District.	"	February. May. 1898.
Saïda District.	"	December, 1897.
Shoobra District.	"	December, 1897.

176 cases examined :— (= 291 eyes operated.)

individuals. { 172 (= 286 eyes,) successful.
{ 4 (= 5 eyes,) not successful.

25 cases were not found.

201 Total resident in Cairo. operated on.

173 Living elsewhere in Egypt. " "

374 Total cases of trichiasis, entropion (complete) operated on between Feb. 19th 1894 and Feb. 18th 1897.

(Note. R. = right eye. L. = left eye.)

Registd Hospl No.	Name.	Age.	Sex.	Date of Operation.	Eye.	Result of Observation.
	Abdin District of Cairo.					
468	Khadra Ibrahim	35	F	27 Feb. 96	R L	(All successful
664	Ibrahim Amir	40	M	27 Mar. 96	R L	unless otherwise
3132	Ahmed Mohamed Hassan	40	M	29 Octr 95	R L	stated.)
3428	Ali Mohamed Saleh	45	M	26 Novr 95	R	
1291	Warda Zohari	25	F	13 May 94	R L	
1096	Fatma Mohamed	28	F	29 April "	R L	
1119	Salem Mohamed	40	F	" " "	R L	
390	Mohamed Said	48	M	4 Mar. "	L	
473	Khadiga Mohamed	27	F	21 Feb. "	R L	
3472	Salem Ali	30	M	20 Oct. "	R L	
2118	Abdullah Hassan	25	M	12 July "	R L	
2120	Shafika Mohamed	15	F	14 " "	R L	
754	Ali Hassayn	48	M	4 April 95	L	
192	Mohamed Harb	-	M	- "	R	
558	Fatma Khalifa	30	F	3 Mar. 94	R L	
3200	Khadra Osman	-	F	- 96	R	
770	Hassan Abderahman	-	M	- 94	-	Not found.
1207	Hussayn Hussayn	59	M	24 Nov. 97	R	
3816	Hussayn Ali	50	M	21 July 94	R L	
1775	Hussayn Ahmed	30	M	27 Oct. 96	R L	
2793	Moosa Ismaïl	25	M	31 Dec "	R L	
3471	Mohamed Ibrahim	30	M	13 Feb. "	R	

Regist.d Hosp.l No.	Name.	Age.	Sex	Date of Operation	Eye.	Result of Observation.
	Bab-el-Sharieh District of Cairo.					
2238	Ahmed Ahmed Kassar.	55	M	8 Aug. 94	L	
1181	Ibrahim Hassan.	35	M	1 May "	R L	
4229	Mahmoud Ahmed	24	M	2 Jan 95	R L	
3383	Rizk Radwan.	70	M	20 Oct. 94	R L	
2810	Fatma Haggag.	-	F	-	R	
1933	Mohamed Abdul Aziz.	42	M	4 Aug 96	R L	
2123	Bamba Hassan.	43	F	19 " "	R L	
3201	Fatma Ahmed.	45	F	30 Nov. "	R L	
162	Zeynab Sid Ahmed.	40	F	23 Jan. 97	R L	
2838	Salha Hussayn.	45	F	28 Oct. 96	R	
	Boolak District of Cairo.					
1013	Ibrahim Mohamed	35	M	21 April 96	R L	
663	Ibrahim Soda	-	M	-	-	Not found.
166	Said Hafiz	25	M	4 Feb. 96	R L	
79	Mabrook Hegazi	40	M	30 Jan. "	R L	Dead.
1880	Mahmoud Hussayn	25	M	16 July 95	R L	(Blepharitis marg.)
2761	Safia Hassan	35	F	25 Sept. "	R L	
3573	Mohamed Ibrahim	38	M	21 Dec. "	L	Dead.
3054	Om Hassan Hussayn	40	F	30 Oct "	L	
1426	Zebrab Hassan	40	F	27 May 94	L	
1390	Hamed Ahmed	12	M	26 " "	R L	(Blepharitis)
1055	Saleh Hussayn	40	F	19 April "	R L	

Regist^{d} Hosp^{l} No.	Name.	Age.	Sex.	Date of Operation.	Eye.	Result of Observation.
	Boolak District. (continued.)					
555	Toolba Mohamed	35	M	19 Mar. 94	R	
3479	Jusef Ahmed	45	M	20 Oct "	L	
3186	Mohamed Abdon		F	— "	—	Not found.
3292	Stayta Jusef	30	F	8 Oct "	R L	
2844	Ahmed Amre	28	M	3 Sept "	R L	
2738	Isha Abdon	32	F	27 Aug "	R L	
2604	Amna Ali	27	F	20 " "	R L	
2260	Zenab Hassan	25	F	21 July "	R L	(Hypertrophy of lids)
385	Zenab Hassan	30	F	19 Feb "	R L	Dead.
1679	Hamida Mohamed	26	F	6 June "	R L	
1219	Imam Hassan		M	14 May 95	—	Not found.
1169	Saida Ali Senoosi		F	-	—	Not found.
221	Hassan Zeidan	60	M	7 Feb. 95	R L	
747	Hanem Abdul Aziz	30	F	17 April "	R L	
1508	Nebiha Hussayn	40	F	19 June "	R L	
1801	Mona Ali		M	96	-	Not found.
2053	Mohamed Radwan	40	M	13 Aug "	R L	
2402	Asma Osman	40	F	16 Sept. "	R L	
2488	Nazla Abdul Aziz	30	F	23 " "	R L	
2548	Saida Ahmed	60	F	12 Oct. "	R L	
3316	Ibrahim Ibrahim	45	M	15 Dec "	R L	
3326	Selim El Sadini	35	M	" " "	L	

Regist^d Hosp^l No	Name	Age	Sex	Date of Operation	Eye	Result of Observation
	Boolak District (continued)					
3467	Ibrahim Joda	20	M	31 Dec. 96	R L	
3477	Khadra Khaleel	24	F	28 " "	R L	
844	Mohamed Ali	10	M	13 Jan 97	R	
1113	Mohamed Ibrahim	50	M	14 " "	R L	
1143	Saleh Saleh	48	M	21 " "	L	Dead
361	Osman Mustafa	36	M	13 Feb "	R	

Darb-el-Ahmar District of Cairo

Regist^d Hosp^l No	Name	Age	Sex	Date of Operation	Eye	Result of Observation
1012	Galileh Abdul Rahim	-	F	- 96	L	
1144	Fatma Mustafa	40	F	26 Jan "	R L	
2339	Osman Ahmed		M	95	L	
2793	Mohamed Rashed		M	- "	-	Not found
3559	Hassan Abdul Monim	9	M	28 Dec "	R L	
3485	Mustafa Jakoub	28	M	4 Nov. 94	L	
1762	Isha Goma	28	F	11 June -	R L	
1199	Sharifa Mohamed	34	F	9 May 95	R L	Total Trichiasis L.E.
987	Hasibeh Mohamed	30	F	1 " "	R	
1057	Mohamed El Said		M	"	R L	
3491	Nebieh Mansoor	28	F	4 Nov. 94	R L	
3255	Wasileh Hassan	45	F	2 Oct "	R L	
2268	Mohamed Said	23	M	23 July "	R L	
1549	Ali Ali Azkalani	30	M	7 June "	R L	
2870	Ibrahim El Said		M	- "	-	Not found

Regist'd Hosp'l No.	Name.	Age.	Sex.	Date of Operation.	Eye.	Result of Observation.
	Darb-el-Ahmar District. (continued.)					
1455	Habeeb Sakran	35	F	1 June 96	L	
1878	Jusef Ahmed	28	M	30 July "	R L	
2532	Mohamed Ahmed		M	—	-	Not found.
3194	Mohamed Bardini	25	M	3 Dec.	R L	
3258	Zenab Ahmed	30	F	7 "	R L	
3318	Hanafi Said	-	M	12 "	R	
28	Mohamed Bayoumi	25	M	7 Jan 97	R	
51	Rizqa Hussayn	8	F	11 " "	R L	
	El-Waily District of Cairo.					
1608	Ali Saleh Fathé.	12	M	9 June 94	L	
1887	Salama Ahmed	30	F	23 " "	R L	
1987	Hindawi Abdul Aal	45	M	30 July 95	R L	
1567	Fatma Mohamed	25	F	30 May 94	R L	
2117	Ibrahim Mohamed	70	M	18 July "	L	
	Ezbekieh District of Cairo.					
1835	Hassanayn Ahmed		M	95		Not found.
1807	Hussayn Ahmed		M	"		Not found.
2473	Mohamed Abdul Khalk		M	"		Not found.
2162	Ali Ibrahim	40	M	13 Aug 95	R L	
2443	Isha Khalil	12	F	4 Sept "	R L	
3427	Ahmed Abdul Said	20	M	10 Dec "	L	
1758	Malaqa Ibrahim	35	F	3 July "	R L	

Regist^{d} Hosp^{l} No.	Name.	Age.	Sex	Date of Operation.	Eye.	Result of Observation.
	Ezbekieh District. (continued.)					
1213	Mohamed Hussayn.		M	94	–	Not found.
1289	Daleh Mohamed.	40	F	12 May 94	R	
588	Fatma Jusef.	45	F	17 Mar. "	R L	
653	Mariam Aateeya.	16	F	10 " "	R L	
4018	Derwish Mustafa.	35	M	8 Dec. "	R L	
3046	Nefeesa Mohamed.	38	F	16 Sept "	R L	
2949	Nazla Ali Mohamed.	40	F	10 " "	R L	
3036	Zenab El Said Hassan.	45	F	15 " "	R L	Not found.
2161	Habeeb Mahmoud.	13	F	14 July. "	R L	
1852	Khalil Issa.	25	M	23 June. "	R L	
414	Ahmed Darket.	35	M	21 Feb. 95	R	
258	Zenab Mohamed.	25	F	21 Feb "	R L	
1075	Hussayn Mutwali.	30	M	9 May "	R L	
1920	Mohamed Hussayn.	45	M	30 July 96	R L	
2378	Abdon Mohamed.	25	M	16 Sept. "	L	
2672	Mohamed Ali.	51	M	13 Oct. "	R	
2851	Ali Matar.	60	M	10 Nov. "	R L	
174	Omar Hassan.	25	M	30 Jan. 97	R L	(2,3) Total Trichiasis.
324	Ferhana Alam.	23	F	18 Feb. "	R L	
	Gamalieh District of Cairo					
2907	Ibrahim Ali	–	M	– 94	L	
1584	Zenab Serour	32	F	30 May 94	R L	

Registd Hospl No.	Name.	Age.	Sex.	Date of Operation.	Eye.	Result of Observation.
	Gamalieh District. (continued.)					
1032	Fathel Bab Ahmed	45	M	18 April 94	R L	
642	Hoosna Mustäfa	30	F	10 Mar "	R L	
3607	Wagna Mohamed	28	F	4 Nov "	R L	
3820	Mobarka Aawees	40	F	24 " "	L	
3990	Nefeesa Ibrahim	30	F	8 Dec. -	R L	
24714	Khalil Abdulrahman	75	M	24 Sept. 95	R L	
1815	Mohamed Ahmed	45	M	9 July "	R L	
1908	Zenab Mohamed	17	F	3 July "	R	
1524	Mohamed Said	35	M	6 June 96	R L	
2189	Ahmed El Laesi	22	M	27 Aug "	L	
2778	Mohamed Dani	30	M	27 Oct "	R	
3122	Zenab Fedawi	35	F	23 Nov. "	R L	
	Khalifa District of Cairo.					
240	Abdul Jawad Awiz	-	M	13 Feb. 96	R L	
2217	Nefeesa Farag	9	F	28 Aug. 95	L	
2590	Hassan Radwan	30	M	17 Sept "	R L	
2648	Mohamed Ali Mohamed	55	M	17 " "	R L	
1919	Mohamed Ibrahim	34	M	26 June 94	R L	(Marginal blepharitis)
1081	Saida Goomah	30	F	21 April -	R L	
780	Mourad Ali		M	-		"Disappeared"
3554	Said Soliman	15	M	4 Nov. 94	L	
2614	Hassan Mahmoud Agha		M	-		Not found.

Regist.d Hosp.l No.	Name.	Age.	Sex.	Date of Operation.	Eye.	Result of Observation.
	Khalifa District. (continued.)					
2035	Asma Mohameda.	-	F	94		Not found
1800	Mohamed Matooqf.	23	M	23 July 96	L	
1823	Zenab Disooqi.	—	F	- — "	L	
3196	Ahmed Rewas.	40	M	10 Dec "	L	
3495	Fatma Saleh.	18	F	30 " "	R	
	Masr-el-Ateeka District.					
2917	Ali Ahmed		M	— 95		Not found
307	Gomah Mohamed	60	M	13 Feb. 96	R L	Not found.
2095	Sheifa Aessa	28	F	-		Not found.
1585	Fatma Mohamed	28	F	30 May 94	R L	
2886	Ali Ahmed	35	M	5 Sept. "	R L	
1790	Shamaa Maghrabi	30	M	22 July 96	L	
222	Mahmoud Fadli	30	M	23 Feb. 97	L	
	Mooski District of Cairo.					
2222	Zakito Skanardi	.	M	. 95	R L	
1165	Eid Soliman	-	M	94	R	
3310	Fatma Mustafa	11	F	8 Oct "	R L	
2228	Hoosna Shafi	30	F	6 Aug "	R L	
3095	Aotif Goorgi	45	M	19 Nov. 96	R	
3123	Jusef Mohamed	34	M	26 - "	R L	Total Trichiasis L.E. (4)
	Saïda District of Cairo.					
933	Daleh Mohamed	50	M	16 April 96	R L	

Regist'd Hosp'l No.	Name.	Age.	Sex	Date of Operation.	Eye.	Result of Observation.
	Saïda District. (continued.)					
2012	Hassan Salem.	55	M	30 July 95	R L	
2061	Abdul Khalik Rifai.	65	M	6 Aug "	R L	
3701	Zenab Mohamed.	35	F	30 Dec. "	R L	
1200	Tahra Ali.	38	M	3 May 94	R L	
1094	Kamleh Jusef.	12	F	1 " "	R L	
955	Fatma Massoud.	28	F	29 April "	R	
772	Zohra Mustafa.	30	F	24 March "	R	
357	Isha Ismail.	32	F	19 Feb. "	R L	
3553	Barakat Jusef.	50	M	4 Nov. "	R	
3904	Howa Abdulla.	35	F	18 Dec. "	R	
2162	Zenoba Mohamed.	30	F	11 July "	R L	
1642	Mohamed Kamel.	10	M	2 June "	R L	
1871	Ali Mobariz.	30	M	23 " "	R L	
1921	Rayah Khamees.	23	F	26 " "	R L	
1241	Mohamed Abou Zid.	50	M	14 May 95	R L	
323	Ameena Hassan.	50	F	21 Feb. "	R	
87	Eid Chaled.	25	M	24 Jan "	L	
1031	Mahmoud Fehmi.	20	M	21 April 96	L	
1088	Shaban Mohamed.	21	M	26 " "	L	(Blepharitis.)
1215	Mohamed Aeesa.	40	M	7 May "	L	
1542	Ameena Mahmoud.		F	- 96		Not found.
1680	Mohamed El Saïd.	35	M	1 July 96	R L	

Registd Hosp! No.	Name.	Age.	Sex	Date of Operation.	Eye.	Result of Observation.
	Saïda District. (continued.)					
1660	Hassan Jusef	45	M	15 July 96	R L	
2109	Zenab Saoodi	25	F	19 Aug. "	R L	
2139	John Said.	25	M	23 "	R	
2141	Mohamed Ibrahim	22	M	20 "	R L	
2535	Jusef Sadik	47	M	29 Sept "	R L	Total Trichiasis (5) R.E.
2529	Ahmed Ismail	48	M	29 " "	R L	
2695	Haleema Soodaneeya	35	F	14 Oct "	L	
2867	Hoosna Mohamed	30	F	31 " "	R	
3018	Fatma Mohamed	20	F	14 Nov. "	R	
3042	Abdul Khalk Ali	30	M	26 " "	R L	
3082	Hassan Ali	10	M	22 " "	R L	
	Shoobra District of Cairo.					
2838	Salha Hassayn	45	F	28 Oct. 96	R	

Summary of the unsuccessful cases.

1199	Sherifa Mohamed, Darb el Ghmmar Distt.	34	F	9 May. 95	R (L)	Recurrence L.E.
2535	Jusef Sadik. Saïda District.	47	M	29 Sept. 96	(R) L	" R.E.
3123	Jusef Mohamed. Manski District.	34	M	26 Nov. "	R (L)	" L.E.
174	Oman Hassan. Ezbekieh District.	25	M	30 Jan. 97	(R) (L)	" R.E. L.E.

Bibliography.

(Author.)

Anagnostakis.

'Remarques pratiques sur le traitement du trichiasis.'

Annales d'Oculistique. Brussels. 1857.

Arlt.

Ueber Trichiasis und Entropium.

Vierteljahrschrift für d. praktische Heilk.

Prag. vol. III. p. 46.

Augstein.

Zur Operation der Trichiasis.

Centralblatt für praktische Augenheilkunde

December. 1895.

Berlin.

Eine einfache Entropium Operation.

Zeitschrift für vergleich. Augenheilk

Wiesbaden. 1888-89. VI. p. 81.

Branchu.

De la transplantation du sol ciliaire dans le

Trichiasis et l'Entropion. 1885.

Burchardt.

Zur Operation der Trichiasis

Centralblatt fur Augenheilkunde.

Leipzig. 1887. XI p. 289.

Burow.

Bemerkungen zur Operation des Entropium und der Distichiasis.

Berlin. Klinische Wochenschrift. 1873. p. 295.

Chevallereau.

L'operatoire d'entropion granuleux.

Societé d'ophtalmologie de Paris. Oct. 1895.

Clot Bey.

Trichiasis et Entropion

Bull^n. Societé de Chirurgie de Paris.

1860. VI. X. p. 142.

Eversbusch.

Zur therapie des Entropium. Bonn. 1877.

Feuer.

Operation du Trichiasis. Szemészet. 1900.

Galezowski.

Sur un nouveau procédé operatoire du trichiasis au moyen du thermo-cautère.

Recueil d'ophtalm^e Paris. 1877. IV. p. 269.

Gräfe. (C.F.)

Trichiasis bulbi.

Jahrbuch der Chir. und Augenheilkunde.

Berlin. 1822. IV. p. 134.

Herbert.

The wedge operation for Entropion and trichiasis.

Lancet. 1900. II. p. 1269.

Hotz.

A new operation for entropion and trichiasis.

Archives of Ophthalmology. New York. 1879.

Vol. VIII. page. 249.

Jäsche.

Ein neues Verfahren bei der Operation des Trichiasis und des Entropium.

St. Petersburg med. Zeitschrift. 1865

Vol. VIII. page. 230.

Lagleyze.

Procédé d'opération de l'Entropion et le trichiasis.

Archives d'ophtalmologie. Oct. 1895.

Lakah.

De l'operation du trichiasis.

Société d'ophtalmologie de Paris July 1898.

Maher.

The operation for trichiasis following cicatricial entropion.

Archives of Ophthalmology. New York. 1897.

Vol. XXVI. page. 340.

Malgat.

Entropion et trichiasis consecutif. de la paupière inférieure chez le vieillard.

Recueil d'ophtalmologie. 1899. (August) p. 455.

van Millingen.

The tarsochailoplastic operation for the cure of trichiasis.

Ophthalmic Review. London. 1887. Vol VI. page 309.

Nowkunski.

Operation du trichiasis.

Société d'ophtalmologie de St. Petersbourg. Nos. 1900.

Panas.

Operation du trichiasis.

Medicine Moderne. Paris. 1891. vol. II. p. 709.

Pechin.

Traitement operatoire de l'entropion cicatricial.

Archives d'ophtalmologie. May. 1896.

Peschel.

Ein neues Verfahren bei der Operation des Trichiasis.

Klinische Monatsblaetter fur Augenheilkunde.

Dec. 1898. page 426.

Pope.

Cure of certain cases of entropion and trichiasis.

Archives of Ophthalmology. New York 1869. vol. I. p. 10.

Poplawski.

Entropion et Trichiasis.

Gazetta Lekarska. No 4. 1894.

Querenghi.

Du traitement de l'entropion et du trichiasis par la cauterisation linéaire horizontale des paupières.

Annales d'Oculistique, 1898. vol. CXX. p. 241.

Robertson - (D. Argyll)

Treatment of Trichiasis.

Medico-Chirurgical Society - Edinburgh. March. 1874.

Robertson. (D. Argyll)

Operation of repositio ciliorum.

Edinburgh Medical Journal. 1874. vol XX. p. 988.

Santos Fernandez.

Trichiasis et distichiasis.

Archives d'ophtalmologie. fev. 1894.

Scott.

The radical operative treatment of trichiasis.

Ophthalmic Review - London. Sept. 1895.

Schroeder and Natanson.

Ueber Thierische Hauttransplantationen in der Augenchirurgie - Blepharoplastik und Trichiasis - Operationen.

St. Petersburg Med. Wochenschrift - 1891.

Snellen. (H.)

Ueber eine Operations methode des Entropion.

Wien medicinisch. Wochenschrift 1860. X. p. 421.

Snellen. (H.)

Modifications à l'opération de l'entropion.

Congrès internationale d'ophtalmologie. Paris, II, p. 236.

Stellwag von Carion.

Ein neues Verfahren gegen einwärts gekehrte Wimpern.

Allgem. Wien. medicinisch. Zeitung. 1883, XXVIII. p. 527.

Story. (JB.)

Operation for trichiasis and entropium.

Ophthalmic Review. London. 1883. II. p. 37.

Story. (J.B.)

Operative treatment of trichiasis and entropium.

Ophthalmic Review. London. Dec. 1895.

Streatfield.

On grooving the front of Cartilage of the lid in cases of entropion and trichiasis.

Ophthalmic Hospital Reports. London. 1858. vol. I. p. 121.

Thiébaut.

Traitement du trichiasis.

La Clinique ophtalmologique. Oct. 1897.

Thier.

Zur Operation der Trichiasis.

Centralblatt für praktisch. Augenh. Leipzig 1895. XIX. p. 200.

Trantas.

Procédé operatoire du trichiasis avec entropion.

Recueil d'ophtalmologie. Dec. 1895.

True and Villard.

Trichiasis.

Société française d'ophtalmologie. May. 1896.

Vialet.

Un nouveau Procédé de greffe Cutanée en Ophtalmologie. La Méthode de Thiersch et ses indications en Chirurgie Oculaire.

Annales d'Oculistique. 1889.

Vieusse.

Du traitement du trichiasis au moyen de cautérisations faites sur la paupière avec le thermocautère.

Recueil d'ophtalmologie. 1885. VII. p. 198.

Vossius. (A.)

Zur Operation der Trichiasis.

Berl. ü. d. Versamml. d. ophth. Gesellsch.

Stuttgart. 1887.

Waldhauer.

Zur Operation der Trichiasis und Entropium.

Klinische Monatsblaetter für Augenheilkunde.

Nov. 1897. and Feb. 1898.

Warlomont.

De l'operation du trichiasis.

Annales d'Oculistique. Brussels. 1879. LXXXI. p.146.

Watson. (W. Spencer)

On the treatment of trichiasis and distichiasis

by a plastic operation.

Medical Times and Gazette. London. 1874. II. p. 546.

Watson. (W. Spencer)

A new operation for trichiasis and distichiasis.

Transactions Ophthalmological Society. U.K. 1894.

XIV. p. 17.

Wylie. (D.B.)

Skin-grafting in trichiasis.

Memphis Medical Monthly. U.S.A. 1889. IX. p. 481.