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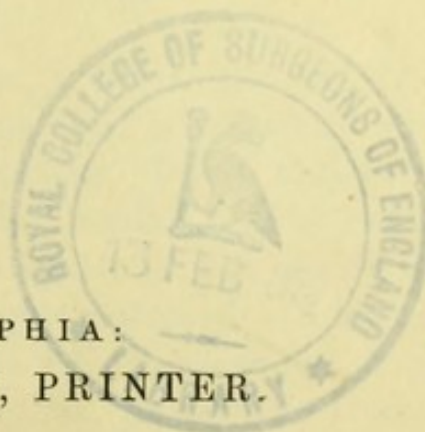
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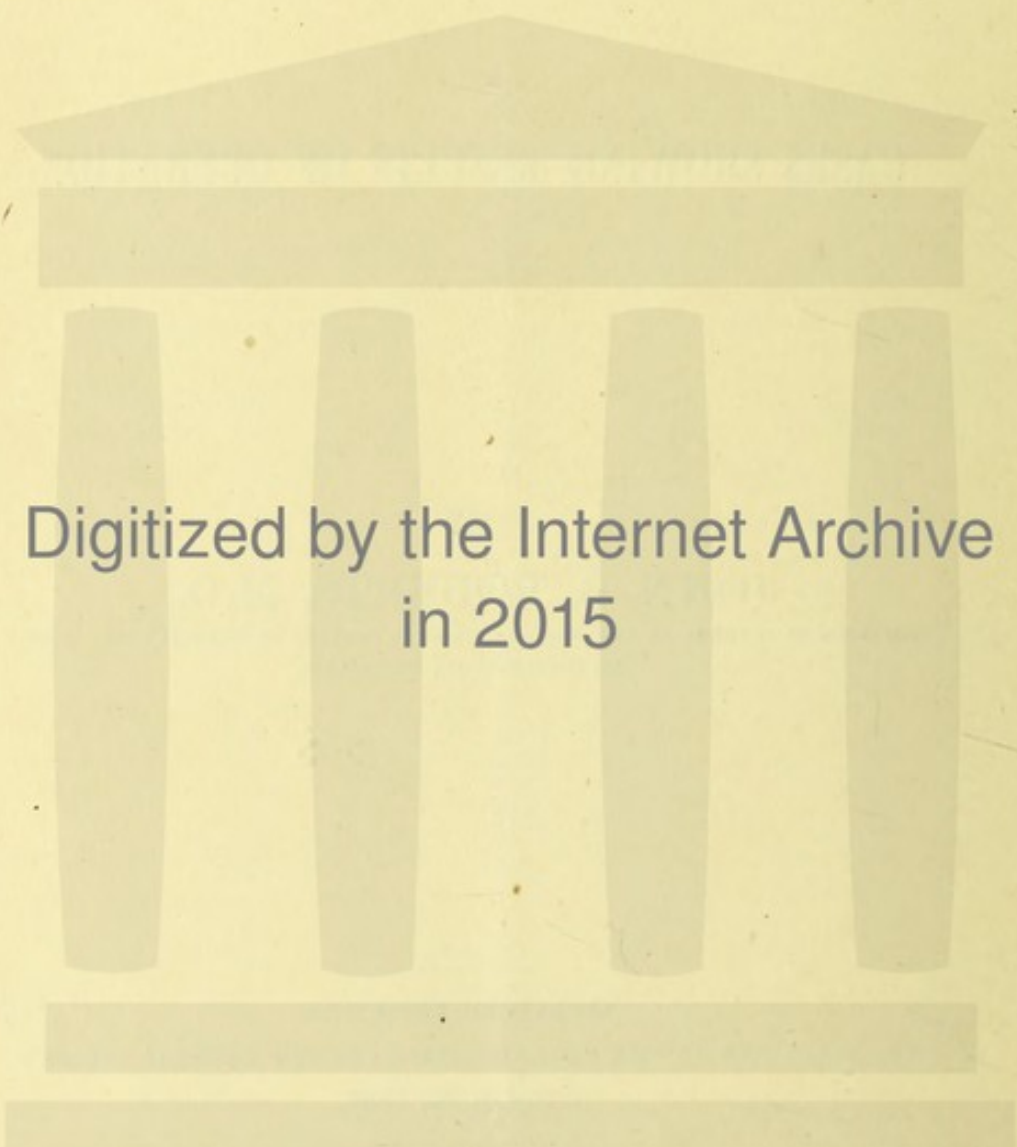
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PROFESSOR OF SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, AND IN
THE PHILADELPHIA POLYCLINIC.

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EXTRACTION OF CATARACT, WITH CASES SHOWING RESULTS OF OPERATION.

BY JOHN B. ROBERTS, M.D.,

PROFESSOR OF SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, AND IN THE
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[Read October 23, 1889.]

As ophthalmological subjects are very infrequently presented for the consideration of this Society, I venture to bring forward for discussion the Extraction of Cataract, because it is one of the most important topics with which ophthalmologists have to deal, and because it will be interesting and instructive to me to hear described the methods of operation adopted by other ophthalmic surgeons of this city.

I shall simply give you a brief outline of the steps of the operation in my hands, and report the cases upon which I operated from June 1, 1888, to May 1, 1889. As I was absent during the two summer months, it represents the work of nine months' private practice. Although these cases are not very numerous, being only some twelve or fourteen cataracts in all, they are sufficient to illustrate the points which I desire to bring forward. It must be remembered that they are reports of cases occurring in the ordinary run of my private ophthalmic and surgical practice, and not the voluminous hospital records of one occupying the position of ophthalmologist in a hospital or college.

In preparing the patient for operation, I cleanse the face in the vicinity of the eyes with soap and water, and subsequently with a solution of boric acid or corrosive sublimate. I then wash out the conjunctival sac with a boric acid solution instilled with an ordinary pipette. The instruments are kept in a similar solution of boric acid, which is made without any great accuracy as to strength. A few drops of a four per cent. solution of hydrochlorate of cocaine are dropped into the eye two or three times during the quarter hour preceding

the operation. A few drops of a four-grain solution of atropia are also instilled. Even before the use of cocaine was known, I did not give anæsthetics, because experience has shown me that the operation for the extraction of cataract is not painful if the surgeon, by previous manipulation of the cornea and lids, teaches the patient to hold perfectly quiet. This can be done with almost all patients whom we meet, unless it be some one who is exceedingly nervous. A great deal of the advantage to be derived from this preliminary training depends upon the conduct of the surgeon, who can readily encourage and teach his patient to stand the slight pain due to cataract extraction, if he shows by his own actions that he is sure of himself. A nervous, bustling, fidgety surgeon is incompetent to perform ophthalmic operations.

At the present time it is, of course, needless to subject the patient to even this slight amount of pain, since cocaine anæsthesia is all-sufficient, and exerts no deleterious effect upon the subsequent progress of the case. The steps of the operation, as I perform it, are as follows:

Having grasped the conjunctiva and the inferior rectus with a pair of fixation forceps, I make an upward incision in the cornea with a Graefe, a Beer, or a Jackson knife. I usually prefer the Graefe to the Beer knife. I have not had sufficient experience, as yet, with the Jackson modification to be sure whether I prefer it to the others. I must admit, however, that I have been favorably impressed with its value in making an incision in such a manner as to prevent the escape of the aqueous humor and prolapse of the iris.

The iridectomy which I always make, is accomplished by catching and drawing out the iris with an iridectomy hook in the left hand and cutting it with the Levis spring scissors in the right hand. I do not use the iris forceps for making the iridectomy, unless it happen that, for some reason, a portion of the part excised has not been perfectly detached from the iris. I then use the forceps to catch the ragged edges while making a second attempt at complete division.

Laceration of the capsule is done by making a T-shaped incision with a cystotome. Usually I make the horizontal cut of the T across the upper edge of the capsule as a first step, and subsequently make a median vertical slit by another movement. I have, however, on more than one occasion, slit the capsule with a single vertical stroke of the cystotome. The lens is then extruded by pressure upon the sclerotic and cornea, with the finger above and a tortoise-shell scoop below the incision. The finger makes the pressure from the outside of the upper lid. If there is any difficulty, as there often is, in evacuating the soft

cortical material or nucleus, I introduce the spoon and extract these remnants. In the event of it being the nucleus which is not properly detached, I often use the wire loop to make traction upon it.

After a few minutes have elapsed to allow reaccumulation of the aqueous humor, I let the patient sit up with his back to the light, and place before the eye which has been operated upon a convex lens of about nine dioptries, in order that I may prove to him that vision has been restored. By allowing the patient to look about the room and to count my fingers, I give him confidence in the result of the operation; and it greatly encourages him during the stages of convalescence to know that he has actually seen with the eye previously blind.

After instilling a few drops of atropia solution, I seal the eye by means of two or three small strips of ordinary rubber plaster upon the upper lid. These strips of plaster are cut in the shape of a semi-ellipse, and are made to fit the upper lid, but under no circumstances are they to overlap the lower lid. In this manner the upper lid is made stiff, and acts as a splint to the wounded cornea. I have never used any other means of dressing after cataract extraction, nor have I ever seen any other method used in the practice of Dr. Levis during the last fifteen or sixteen years.

The advantage of this method is that the eye is not heated, and tears and mucus can drain from between the lids, and atropia solution can be introduced into the conjunctival sac every morning or evening, as the surgeon may deem proper. Before the operation I cut off the eye-lashes of the upper and lower lids, to prevent the eye becoming sealed by dried secretion upon the lashes, which gives the patient pain, and has a deleterious effect upon the eye by interfering with the free flow of tears and mucus.

This method of dressing after the extraction of cataract is preferable, I am sure, to the one frequently employed, but which ought to be obsolete, namely, that which covers the eye with a mass of cotton, thus damming up the secretions and causing irritation and congestion. The effect of covering the eye can readily be seen by closing one's own eye with cotton and a bandage for twenty-four or thirty-six hours.

As a rule, I close only the eye which has been operated upon. I do not restrict the patient to a dark room, nor do I confine him to bed.

Inspection of the cases below will show, I think, that no ill effects are produced by making the patient comfortable in this way. The habit adopted by so many, of sealing both eyes and keeping the patient in absolute darkness for ten days or two weeks is a relic of

traditional surgery, and adds greatly to the discomfort of the patient. If the surgeon assures him that the operation is not painful, and that he will not be confined to a darkened room, the patient will be much more likely to submit to an early operation, and with a lighter heart.

I have brought forward these points as to the method which I have adopted in order to elicit discussion from the members of the Society. I think that the results of the cases appended will show that my patients get well more quickly after this manner of operation and subsequent treatment than by other methods. I have often been surprised at the low amount of vision which seems to satisfy some operators. If I have an uncomplicated senile cataract to deal with, I look forward with almost perfect confidence to a restoration of vision of at least two-thirds of the normal.

Occasionally it is necessary to do a secondary needle operation, to get rid of the thin veil-like secondary cataract due to the posterior capsule and to shreds of lymph. I am convinced that the bad results which frequently occur after cataract extraction are due not so much to the seriousness of the operation as to want of proper manipulative skill on the part of the operator, and to errors in the methods of dressing the wound.

CASE I.—J. H., aged fifty-six, left eye; extracted, June 1, 1888, hard lens by upward incision and iridectomy. Covered both eyes with plaster in the ordinary manner. The eyes were kept sealed for four or five days, when the right eye was uncovered and the patient was allowed to go about the room. At the end of about ten days I uncovered permanently the eye which had been operated upon, and in two weeks the patient was allowed to come to my office wearing only a pair of dark glasses.

In this case the point of a Beer's knife used seemed too dull to make the counter-puncture well, so it was withdrawn and another knife substituted. It was necessary to enlarge the incision in order to deliver the lens satisfactorily. On July 31st he was ordered $+12$ sphr. D. $\odot +3$ cyl. ax. $20^\circ = V. \frac{15}{XX}$. The cylinder was rejected and $+12$ sphr. D. gave $V. \frac{20}{XXX}$,

whereas with the cylinder V. only $\frac{20}{XL}$. Some opaque lymph stretches across the lower part of pupil.

CASE II.—Mr. A., aged seventy-four. On June 13, 1888, extracted senile cataract from right eye by means of an upward incision with iridectomy. The incision was made with a Beer's knife; lens was very large, with soft cortical material. Both eyes sealed with plaster. Patient that same day walked about the room and tried to open the well eye sufficiently to see about the room, although it was sealed; and had tied a handkerchief over the eye operated upon. The next morning after the operation, despite my injunctions to remain in bed, because of his stupidity and the great difficulty of

controlling his movements, he got out of bed and fell upon the floor, sustaining, of course, a severe jar. He then staid in bed for several days, after which time he was allowed to be up and about the house. He went home at the end of two weeks with considerable iritis, the result, undoubtedly, of his obstinacy in declining to obey orders during the after-treatment. He has never returned to have me test his vision, but I am inclined to think the result could not have been a good one.

A recent letter from his son tells me he has gotten along very well, but gives no account of the amount of vision.

CASE III.—Mrs. P., aged seventy-eight. June 13, 1888. Left eye; marked entropium of the lower lid. Extracted by upward incision, using Graefe's knife; iridectomy. The outer canthus was slit at the same time and the lower lid was stitched fast to the cheek by a silk suture to keep the lid turned out. Chronic conjunctivitis existed. The nucleus was very hard and yellow, and the cortical material almost fluid when I split the capsule. I kept both eyes sealed for two days, when the right eye was uncovered. The plaster was upon the eye which had been operated upon for eight days. After the patient was discharged from treatment for the immediate results of the operation, I did not see her until September 21st, when there was some lymph in the pupillary area, of a thin veil-like character, but with a + 9 D. she was able to see large type. The patient was old and ignorant and somewhat childish, hence it was difficult to get an accurate estimate of the amount of vision. It was, however, good.

CASE IV.—L. H., aged nine, congenital cataract. In 1887 I operated upon this patient's left eye with the intention of extracting the lens because the anterior capsule was evidently very much thickened and opaque. The patient was taken away from this city to her home on account of sickness in the family, a few days after the operation. She returned in June, 1888, with no vision in the left eye and with the iris bound down by inflammatory adhesions, making an irregular slit-like pupil which was occluded by organized lymph.

On the 13th of June, I made a needle operation upon the right eye, which I had twice needled a short time previously. I then gave her ether and made an iridectomy on the left eye. Prescribed + 11 D., with which child could see pretty well. As she had no education and was congenitally blind, it was impossible accurately to record vision.

CASE V.—R. B., male, aged about thirty-five years, was operated upon in November, 1887, for soft cataract of the left eye. Iridectomy was done upward and the capsule opened by a single vertical slit with a cystotome, whereupon the entire lens material, which was fluid and of the color of milk, escaped in the anterior chamber, from which it was removed by suction. Both eyes of the patient were sealed by plaster in the usual way. He made a very prompt recovery. He was given + 4½ focal for distance, and + 2½ focal for reading. At this time no accurate measure of his vision was taken, because he returned home before the irritation had entirely subsided. A year later he returned and was given + 13 D. for distance, which gave him $\frac{20}{\text{LX}}$ (?) and + 18 D. for reading, with which he read well.

In February, 1889, he returned, saying his vision in the left eye had failed.

At that time it was found that + 13 D. gave only $\frac{10}{CC}$; and that he was unable to read small type with any lens. His right eye had also by this time become cataractous. April 30, 1889, with two needles tore hole in centre of capsule. May 8, 1889, + 13 D. $\frac{6}{X}$ (?)

CASE VI.—G. W. D., aged about seventy-two, senile cataract of the left eye. I did preliminary iridectomy on September 8th, and rubbed the anterior capsule with the curette. Some hemorrhage occurred; I closed both eyes in the usual way, removing the plaster from the well eye at the end of twenty-four hours. The cataract being ready for operation, it was extracted January 12, 1889, in the ordinary manner. I covered one eye with plaster, which, however, was removed on the seventh day. On the twelfth day he was given + 9 D., V. = $\frac{3}{LX}$. Subsequently, with + 12 D. s. \bigcirc 90 cyl. ax. 170°, V. = $\frac{6}{XV}$. With the proper correction he was able to read ordinary print well.

When I saw him in September last vision had decreased to $\frac{6}{XXXV}$, with correction. I was doubtful whether this was due to a retinal change consequent upon a long-standing Bright's disease, or to other cause. Careful ophthalmic examination convinced me that it was due to a simple wrinkling of the posterior capsule, which was, however, *perfectly* transparent. I did a needle operation on October 2d; and on October 28th, V. with same correction = $\frac{6}{XV}$ (?); with reading correction he can read Jaeger No. 5.

CASE VII.—Same patient as Case V., but other eye. April 9, 1889. R. B., aged about thirty-six years. Right eye. I expected to find soft cataract, but upon attempting suction found the lens moderately hard. I, therefore, did iridectomy and removed the lens, by traction instruments, in several pieces. I sealed one eye only, but on account of the patient being very nervous, possibly due to his drinking habits, I was obliged to give him potassium bromide and chloral. Ten days after I took the plaster off the eye and used a lens in front of the eye which had been operated upon.

May 5, 1889, + 13 D., V. $\frac{6}{XXX}$. Some lymph and capsule in pupillary area.

31st: V. with + 13 = $\frac{6}{XV}$.

CASE VIII.—Same patient as Case I., but other eye. J. H., aged fifty-six, operated upon April 9, 1889. The lens was not entirely opaque, as he could still see to count his fingers. I first intended to do preliminary iridectomy and massage of lens, but finally concluded to extract, as the patient was anxious to return quickly to work. I extracted a rather soft lens by traction instruments after upper incision and iridectomy, the extraction being in pieces. I closed one eye only. On the ninth day the patient fell upon the floor while trying to sit down upon the side of his bed. He, as well as the patient previously reported, was allowed to go about the room after the first day. He would not have been kept in bed at all if it had not been for the

fact that the lens being soft the extraction had to be done in pieces, and there was considerable manipulation of the eye. The Jackson cataract knife was used. There was rather more conjunctival flap than was expected, because of my unfamiliarity with this form of knife.

April 22, 1889. Plaster off.

May 8, 1889. Severe attack of malarial neuralgia in eye and brow. In bed several days. Quinine grs. xvj to xx daily. V. with + 13 D. = $\frac{6}{VII}$ (?).

22d. O. D. $\frac{1}{LX} + 13 D = \frac{6}{X}$. Reads Jaeger type No. 3 with + 18 D.

CASE IX.—S. C., aged seventy-eight, a gentleman recently returned from London, whom I had seen eighteen months ago, during the incipient stage. I operated upon him April 16, 1889, for well-marked hard cataract of the left eye. Iridectomy was done upward, as usual, after the incision had been made with a Jackson knife. The incision was a little further from the sclerotic than would have been the case had an ordinary knife been used. I was unaccustomed to the Jackson knife. On account of the difficulty of keeping the patient perfectly still, and because of the unusual manipulations required by the awkward position of the incision, I covered both eyes with plaster for a day or two. The day after the operation the patient had a violent fit of coughing, but, fortunately, it did no harm. While dressing the eyes, two days after the operation, the patient opened the eye and looked about the room, without, however, any damage being done.

24th. To-day, eight days after the operation, the eyes seem in good condition.

Eleven days after the operation the dressing was permanently removed and a pair of spectacles with an opaque glass substituted. Two days later he left the city. During the journey from Philadelphia I had his eye sealed temporarily. On May 7th, + 10 D. gave V. = $\frac{6}{XLV}$ (?).

He is now wearing + 10 D. for distance, and + 13 D. for reading. The posterior capsule is opaque, and may require needling.

CASE X.—A childish old woman, aged eighty-two. Left eye showed evidences of anterior synechiæ from old iritis. The hard cataractous lens was extracted by upward incision, and iridectomy, January 10, 1889. The other eye was totally blind from old inflammatory trouble. On account of the patient's imbecility it was impossible to restrain her during the necessary manipulation; it, therefore, became necessary to administer ether. The operation was satisfactory and the eye was closed in the usual way with plaster. During the first twenty-four hours, however, the patient tore the dressing from her eye. After that time an effort was made to restrain her by tying her hands. Even then she succeeded in displacing the dressing by rubbing her head in the pillow. As a result of this, at the end of forty-eight hours severe iritis occurred, and it became necessary to allow her to go home without further treatment. Owing to the iritis causing a mass of lymph in the pupillary space, the patient became irremediably blind.

CASE XI.—Thos. C., aged seventy-nine. Double cataract. Operation January 10, 1889. In one eye, as evidenced by anterior synechiæ, there had been a former iritis. The patient had been absolutely blind for six years.

The cataractous lenses were both extracted by upward incision and iridectomy. The eyes were closed in the usual manner by strips of plaster. All the dressings were removed and dark glasses used at the end of the eighth day. On the twentieth day he was ordered + 10 D. spectacles, as the inflammation had not sufficiently subsided to prescribe glasses with any accuracy. A few weeks afterward I examined him again and prescribed for the right eye + 12 D., $V. = \frac{6}{XXV}$; for the left eye + 10 D., $V. = \frac{3}{LXXX}$. In both eyes

there was some evidence of lymph shreds in the pupillary area. With + 18 D. on both eyes he could read a newspaper without difficulty.

CASE XII.—A Frenchwoman, aged thirty-six, had cataract of the left eye, which was apparently soft from its color as seen through the pupil. I expected to do the suction operation, but when, in January, 1889, I split the anterior capsule with a cystotome, it became evident that the opacity was entirely in the anterior capsule, as she instantly saw the light perfectly through the slit made by the instrument. One eye only was sealed and the patient was allowed to go about her ordinary duties. The lens soon became opaque from contact with the aqueous humor. It was a number of weeks before the flocculent masses of the lens material were absorbed; during all of which time she attended to her duties. The eye, however, was kept under the influence of atropia. After a few days the plaster was taken from the eye operated upon and she simply wore dark glasses to exclude the light.

On April 13th + 12 D. gave $V. = \frac{6}{XXXVI}$. The pupil was still dilated by

atropia. There was a thin veil occluding the pupil, evidently opaque posterior capsule. As the operation was done merely to relieve the defect produced by the unsightly white color of the pupil, no further attempts were made to improve the vision, as the right eye was used for all ordinary purposes.

CASE XIII.—January 23, 1889. Mrs. K., aged thirty-two years. Soft cataract and external strabismus in an organ defective since childhood. As the lens was soft it was sucked out in the ordinary manner by the suction apparatus. One eye alone was covered by plaster. On the seventh day she was out, and on the eighth day she came to my office with the left eye still covered. On February 10th I took the plaster off, and subsequently, when the irritation had subsided, I cut the external rectus and advanced the tendon of the internal rectus. The irritability of the eye remained for several weeks; and when she went home there was a thin veil-like occlusion, due to the posterior capsule. The eye had never been of use, and the operation was only done for cosmetic effect; hence no useful vision was to be expected. When she went home + 6 D. was put in front of the right eye to magnify the small palpebral opening and globe. The refraction of the other eye was corrected by a cylindrical lens.