The rest of the body was covered over with an exfoliative dermatitis showing great thickening of the skin and a generalized redness. The pruritus was confined to the lower limbs. There was no enlargement of spleen or lymphatic glands; urine, normal; appetite, poor.

MICROSCOPIC EXAMINATION.

My friend, Professor McWeeny, of Dublin, carefully examined sections of the growth, and his report is as follows:

The piece of tissue was sent in formalin, and consisted of a subcutaneous nodule about the size of a pea, covered with skin, which was ulcerated towards one end of the mass. The piece was embedded in paraffin and a series of thin sections cut, stained by various methods and microscopically examined with the following result:

The tissue consists of a mass of round and oval cells very closely packed and so obscuring the details of the original structure that no trace of it is now discernible. The cells consist almost entirely of nucleus, but little protoplasm being visible. The nucleus of some is round, of others oval. They take the nuclear stain rather deeply, as a rule, so that one might almost term the cells with round nuclei "lymphocytes," whilst the oval nuclei look as if they belonged to fibroblasts at an early stage of development. There are, however, no traces of any tendency to formation of fibrous tissue. At no place is there any tendency to necrosis or caseation. Blood vessels are scanty—scarcely to be found at all towards the centre of the cell mass. Scattered through it are patches of somewhat different looking cells, surrounded by a hyaline, structureless investment not unlike a basement-membrane. These cells bear a certain resemblance to altered, so to speak "undifferentiated" cells of the deeper layers of the overlying epidermis. I look upon them (the cell groups) as appearances caused by oblique section of deeply penetrating downgrowths of the epithelium. At one end of the surface a very distinct swelling and proliferation of the epithelium exists, with formation of many anastomosing cylindrical downgrowths, which become fused together so as to form three superposed layers of cubical and columnar cells corresponding to the rete Malpighi, and separated by oedematous tissue more or less infiltrated with round cells. There are one or two masses of laminated appearance resembling cell nests in this neighbourhood, and the aspect of this part of the tissue strongly suggests squamous epithelioma. Careful study of the downgrowths, however, does not confirm this view. The nuclei of the rete Malpighi are in the resting stage, and present no suggestion of mitotic activity. There are no isolated islands of epithelium, and the depth of penetration of the downgrowths is not great enough to support the view that the process is a malignant one. About 1 mm. from this point the epidermis presents a totally different aspect, being raised up into a sort of minute vesicle containing clouds of cocci, prominent amongst which are beautiful long chains of streptococci. There are also some pus cells here and structureless debris. Another millimetre or two farther on the epidermis is partly destroyed by ulceration and covered with a crust of necrotic material (inspissated secretion?), which is simply swarming with cocci, so numerous as to form streaks visible to the naked eye when stained by Gram's method. They lie on the surface and between the layers of the crust. Beyond this again the surface epithelium gradually dies away, being replaced by a layer of granulation tissue abounding in micro-organisms (cocci). This corresponds to the ulcerated part of the nodule.

The cellular tissue which formed the main mass of the nodule seemed quite free from micro-organisms. Not a trace of leprosy or other bacilli could be detected even with the highest powers usually employed. It is conceivable that cultural methods might be more effective. They were, of course, inapplicable in the present case.

I cannot regard the micrococci found on the surface of the ulcer and beneath the up-raised epidermis as responsible for the subcutaneous nodule (from the interior of which they are absent). They are to be looked upon as mere secondary intruders that have settled upon the undermined and devitalized epidermis, and have, no doubt, tended to accentuate the ulcerative process.

The film preparations sent along with the tissue represent the secretion that might be collected from such a surface. They show pus cells, red blood corpuscles, and a most various collection of micro-organisms. It seems clear to me that, taking the microscopical appearances, and the excellent photographs and lantern slides that have been enclosed that this is a beautifully-marked case of mycosis fungoides. There were no areas of anaesthesia, but the tumours were absolutely painless, and no bacilli present showing tuberculosis.

REMARKS.

The four features to which I wish to call attention are:

1. Intense perspirations and exudations of a serous nature from the body. I have seen the counterpane quite stiff in the morning, and a white frost deposit on its surface after a winter's night. Flannel nightgowns after being worn for two days became so stiffened that on washing they tore in pieces and were useless for wear.

2. The appearance of the patient was repulsive, and the exhalations in the highest degree fetid, notwithstanding the great care taken in dressing the patient with different antiseptic dressings. She occupied a room on the third story, but the odour pervaded the whole house, and it was quite apparent on entering the front door.

3. There was an almost entire absence of itchiness, except on the legs; the face and scalp were never itchy. There was feeling in the tumours, as, on touching with a feather, the patient could always point out the contact spot.

4. These tumours were permanent, the microscopical report shows absence of fibrous tissue.

I need hardly say that with such extensive lesions this patient's life was a short one. This enormous discharging and fetid growth produced cachexia, on which coma supervened, followed by death.

Treatment in these cases is very unsatisfactory. I prescribed up to 15 mins. of Fowler's solution three times a day, for some months, which was exceedingly well borne; the result, nil. I also gave iodide of potash in the later stages, and various antiseptic dressings. I did not use the anti-streptococcus injections, as I considered them useless.

If it had been possible at the time, I should most certainly have tried the x-rays or the high frequency currents. I regret that a necropsy was not allowed.

INJURIES TO THE EYES IN RELATION TO THE WORKMEN'S COMPENSATION ACT.*

By J. JAMESON EVANS, M.D., F.R.C.S.,
Honorary Surgeon, Birmingham and Midland Eye Hospital.

SINCE the Workmen's Compensation Act has been in force, claims for compensation for injuries to the eyes have been numerous. In many cases the advice of a medical man—expert or otherwise—has been requisitioned in order to arrive at a proper estimate of the amount of injury done and, coincidentally, of the compensation due.

Any practitioner may be called upon to render his services on behalf of respondent or applicant, and it is my purpose this evening to consider what may be expected of him under such circumstances.

In the first place he should understand the main principle underlying the Workmen's Compensation Act. The Act was made so that those who receive injuries whilst at work might be compensated for the diminution in their wage-earning capacity resulting from such injuries. It follows, therefore, that the workman is allowed compensation for injury only in the event of that injury having caused a diminution in his wage-earning capacity. If a man loses one eye, and can do his work equally well and can earn the same amount of money as he did with two eyes, he can lay no claim to compensation beyond the half of his weekly wages payable during the time he is away from work. It is also necessary that the expert should have some knowledge of the trades in which the workmen are employed. It is only with the aid of such knowledge that he can form a just estimate of the vision required for the satisfactory performance of the work.

In addition to such extra-professional knowledge, the expert will naturally be expected to be thoroughly acquainted with his own professional work, that is, he must understand the value of the various functions which go to make up perfect vision, and must appreciate the effect of their limitations. It is to the consideration of these limitations that I wish to direct your attention. In the first place, I wish to state that, in my opinion, it is impossible to estimate the amount of loss of earning ability by means of mathematical formulae. Whenever such formulae are used, certain factors are arbitrarily fixed and the whole fabric is therefore indefinite and uncertain. It is therefore preferable to decide each case on its merits, giving due consideration to all that concerns the earning ability of the workman.

The workman's earning ability may be said to be dependent upon—

- I. His vision—in a broad sense.
- II. His knowledge of his craft or trade.
- III. His ability to compete with others in his work.

I.—THE ESSENTIALS OF USEFUL VISION.

Adequate Vision.

Adequate vision, which here includes central visual acuity, visual fields, light and colour senses, and musculature and varies according to the trade in which the workman is employed. It is hardly necessary to point that what is recognized in ophthalmology as full vision (§ Snellen's types) is not demanded for the average workman's occupation. Indeed, such a high standard is seldom demanded of anybody in the strictest of

* Read before the Birmingham Branch of the British Medical Association.

Government services. Roughly speaking we may say that the vision required is something as follows:—

For professional men and skilled workmen (including soldiers, sailors, and post-office employees) ... $\frac{5}{8}$ to $\frac{4}{5}$ or less.
For unskilled workmen ... $\frac{1}{2}$ to $\frac{3}{8}$.

If the patient has only one eye, the minimum would need to be raised somewhat for both classes. In this matter of the limits of useful vision, the specialist must to a large extent exercise his own judgement, as even in the same trade the visual demands on individual members vary considerably. The limits also vary according to the intellect of the individual. One man may be able to do with a vision of $\frac{3}{8}$, what another finds impossible with a vision of $\frac{4}{5}$.

Further, the age at which the depreciation of vision takes place has a bearing on the man's capacity for work. Defective vision acquired in early youth may exist without interfering materially with the earning capacity. Such a defect suddenly produced, by accident or otherwise, after the age of 30 or 40 may seriously hamper the workman, and can only be overcome by prolonged and patient practice, and in some cases it may not be entirely overcome at all.

In addition to central visual acuity, the visual fields, the light and colour senses, the musculature of the eyeball must be taken into consideration in estimating the value of economic vision. A pronounced defect of any of these accessory functions may reduce the earning capacity.

Limitation of the field of vision, due to injury, is seldom sufficient in itself to reduce the wage-earning ability. Even where one field is entirely lost, the loss is only about one-sixth of the previous (binocular) field.

Light and colour senses are not likely to require consideration, except in the case of marine or railway employés. Any marked defect of the colour sense is almost invariably associated with serious organic lesion of the optic nerve, retina, or choroid; so that the patient is rendered more or less incapable of work through the primary lesion. The only exception to this rule is the deficient central colour vision (central scotoma for colours), due to tobacco-poisoning. This is quite amenable to treatment, and should hardly be sufficient to maintain a claim for compensation, though it is frequently the determining agent in the depreciation of vision which may follow an injury and its attendant period of ease.

Muscular defects often prove troublesome. If there be a distinct paralysis of one or more muscles the resulting diplopia makes it impossible for the man to use the eye for working purposes. Under the circumstances he must be regarded as having only one eye; for an eye which cannot be used to earn a living must be regarded as blind from an economic point of view. I am, however, quite opposed to Zehender's principle that "full earning ability exists only with full acuity of vision, and any diminution of the highest limits means at the same time a diminution of earning ability." This is not in accordance with everyday experience, whether in occupations requiring higher or lower visual demands.

There is the question as to how far vision can be reduced in one eye without the loss of binocular vision. This must vary in individual cases, and can only be definitely decided by testing for binocular vision. As a general rule, it will be found that a patient who has a vision of $\frac{1}{2}$, or even $\frac{3}{8}$ in his bad eye, gets binocular vision. Binocular vision, to be of sound practical value, must be of that type in which the sense of perspective or solidity is fully appreciated. The presence or absence of this faculty can be tested by means of Hering's drop test. Other tests which are less exacting and perhaps less reliable are the prism test, Berry's stereoscope test, Snellen's letters, and Priestley Smith's "red-white-and-blue" test. The prism test, being the only absolutely objective test, may in some cases turn out to be more reliable than any other. It will be described later.

II.—THE WORKMAN'S TECHNICAL KNOWLEDGE.

This factor in the workman's wage-earning capacity has a greatly-varying value in the estimation of compensation. An unskilled labourer requires little or no special training by way of preliminary education, apprenticeship, etc. People occupied in such trades often voluntarily change their occupation. In the case of the skilled mechanic, on the contrary, technical knowledge is a factor of considerable importance. Injury to the eye may reduce his wage-earning capacity by limiting the quality or quantity of his work, or it may compel him to undertake less remunerative work, or work which is more onerous or distasteful to him. A man may in such a case be able to earn the same money as

previously, but has to work harder or for longer hours. The importance attached to this factor varies considerably with the propensities of the presiding judge.

III.—THE ABILITY TO COMPETE WITH OTHERS.

This factor has a more important bearing on the question of compensation than one might at first imagine. An injured workman may find that his working capacity has in no way been reduced as a result of the accident. This may be the case even when one eye is entirely lost. Still, notwithstanding the patient's entire capacity and desire to resume his former or similar employment, he may find that, for various reasons, such as the prejudices of employers and employed against a workman with any disfigurement of the eyes, this is not open to him, and he has to seek less remunerative work. Further, the injury, whether slight or severe, may set up nervous symptoms which render the pursuit of his previous occupation, and sometimes of any other occupation, difficult or impossible. In the mildest form this may be only a slight nervousness or timidity in resuming work at which the injury was received.

I believe that this is not very uncommon in some workmen who were previously free of all nervousness and are perfectly honest in their statements. Complaints on this score are, however, frequently made in order to avoid returning to work and so be able to draw compensation money. Another form in which physical incapacity for certain occupation may follow eye injuries is due to the ease with which vertigo is induced in some patients who have lost one eye. Others, again, suffer from slight asthenopia and conjunctival congestion with photophobia for some weeks.

The most severe complications may arise from comparatively slight injuries. These are included under the generic term of "traumatic neuroses," which includes types which are hysterical, neurasthenic, or hysteroneurasthenic. They are difficult cases to cure, and render the patient of little use for work. Those who are anxious to work are easily exhausted and break down under very slight exertion. It is practically impossible to give a definite prognosis in such cases, but once thoroughly established they are apt to go on for months and even years.

BINOCULAR AND MONOCULAR VISION.

Let us consider the position of a man who has admittedly lost the use of one eye. The higher form of binocular vision—which includes the appreciation of solidity and accurate judgement of distances—is a complex act in which the following factors are concerned:

1. The formation of two images on functionally corresponding parts of the two retinæ.
2. Accommodation and convergence.
3. Size, form, and shadow of objects.
4. Aerial perspective.
5. Movements of the head.

Of these factors, the first is the most important in producing the effect of solidity. It is evident that with the loss of one eye the patient's judgement of solidity and distances by this primary and most important means becomes permanently lost. The other factors concerned still remain to him and can be developed to such an extent that the loss of one eye is little, if at all, noticeable or inconvenient to him.

At first sight it might appear that convergence is not available by the one-eyed; this, however, still remains, and a man with one eye converges just as if he had two eyes projecting the retinal field into space along a line proceeding from a point midway between the two eyes as if they were united into one cyclopic eye.

Accommodation and convergence are of considerable importance when near objects are viewed, and in the one-eyed they become of increased value, as the result of a development of the muscular sense or rather of a more sensitive appreciation of the nervous impulses required for the accommodation and convergence for objects at varying distances.

The size, form, shadows, and overlapping of objects and the amount of aerial haze around them are likewise of equal value to the one-eyed as the two-eyed.

Movements of the head, and the production of what is called "monocular stereoscopic parallax" is probably the most important factor in the judgement of distances with one eye. It is a faculty which can be highly developed by practice. After the sudden loss of one eye mistakes in the estimation of distances (by a sound eye) amount to 2 cm. or 3 cm. After some practice—varying in time from one or two months to as many years—and especially if the patient is employed at work in which the judgement of small distances is demanded—for

example, jewellers, dentists, ophthalmologists, the errors are reduced to about $\frac{1}{2}$ cm., which are nearly the same as those made by individuals with two eyes. It is not easy to estimate accurately the capacity of the individual for estimating distances. Hering's drop test is not suitable for the purpose, as such an instantaneous appreciation of distances can only be formed when the primary factor (the formation of double images) is present. Rough tests for the purpose are the pouring of water into a glass, knocking a cork down with a penholder, and lighting a candle with a long taper, etc. Pfalz has invented an instrument which he calls a "stereoscopometer" for the purpose of measuring the capacity for estimating distances. Some such means seems absolutely necessary to estimate how far a patient has recovered his capacity for judging distances—a matter of prime importance in the estimation of the reduction in the wage-earning capacity of many workmen.

The extent to which a patient may recover his power of estimating distances, and the rapidity with which that recovery takes place, varies considerably according to the patient's age at the time of the accident, the suddenness of the loss, and the patient's intelligence. A child, or a man under 20, probably within a few months gets accustomed to his altered circumstances, and is only conscious of his loss in so far as the field of vision is limited, and which demands extra caution in turning towards the blind side, and more extensive movement of the head in aligning with a remaining left eye.

The case is very different with a workman past middle age. He finds great difficulty in judging small distances. He may take two or three years before he recovers the faculty. Some, I believe, never recover it entirely. Such a deficiency, even if only of a year's duration, may be enough to compel the workman to relinquish an exacting but lucrative occupation for a less skilled and a less remunerative one. The suddenness or otherwise of the loss of vision in one eye makes a considerable difference in the degree of inconvenience which results to the patient. A gradual loss is associated with a corresponding development of the monocular faculties, and gives rise to little or no inconvenience. So much is this the case that many patients never discover their loss, or only discover it by accident. A sudden loss, on the contrary, especially in grown-up people, is always associated with a good deal of inconvenience and awkwardness in performing certain acts, such as pouring water into a glass, lighting candles, judging of textures, etc. The workman's intelligence and the assiduousness of his efforts to regain his lost faculties are likewise important factors in the extent and rate of recovery. It is just to expect every man to do all in his power, both by way of using what intelligence he has, and by patient practice, to recover these faculties. It is also legitimate to expect him and the employer to take every precaution—for example, by wearing protecting goggles and having the machinery guarded—to avoid the recurrence of the accident which deprived him of his eye. If these precautions are effectual he can hardly be expected to be exempted from resuming work which, though otherwise risky and difficult at first, can by these means be safely and efficiently performed after a month or two.

Comparative Value of the Eye Lost.—Some authorities hold that there is no difference in the comparative value of the eye lost. Personally, I am inclined to think that the right eye is more serviceable than the left to a right-handed man. After the loss of one eye the value of the remaining eye is immeasurably increased, for its loss would mean total blindness—a condition which has a deep significance beyond total incapacity for work. This fact in itself may reduce the earning capacity of a workman in more ways than one. The man may be so afraid of losing his eye that he will shun risky though highly remunerative work and confine himself to safe but unskilled and badly-paid labour. He may also be so much afraid of "straining" the eye that he is disposed to limit the amount of work in order to "save" the eye.

Employers and insurance companies regard the remaining eye as of such increased value that they are loth to accept the workman for any work which is associated with any risk of injury to the eye.

SYMPATHETIC OPHTHALMIA.

One more consideration in the estimation of compensation is the possibility and probability of sympathetic ophthalmia. No one can with certainty tell whether an injured eye is going to set up sympathetic ophthalmia or not. But the surgeon has been taught by experience to regard some forms of injury

and inflammation as peculiarly liable to set up sympathetic inflammation, and can warn the patient accordingly. It is well for the surgeon in all cases to protect himself by placing the responsibility of retaining a doubtful or dangerous eye on the patient or his guardian. At the Eye Hospital we have printed forms for this purpose. If a patient refuses to have a dangerous eye removed on the advice of one or more experienced ophthalmic surgeons, I doubt if he can legitimately claim for the loss of more than one eye, as the timely removal of the injured eye would have left him with one eye in its primary condition. If he retains a dangerous eye through ignorance of the danger or through ill-judged though qualified advice, the case is different, and I suppose the employer must suffer the consequences. In any case it is a matter which would probably be decided in court.

Simulation.

Simulation has not been very unusual since the Workmen's Compensation Act has been in force. It may assume the form of simulated complete or partial blindness, in one or both eyes, after an accident; or an old or recent disease of the eye or its appendages may be ascribed to an accident; or the subjective effects of slight injuries may be exaggerated or even deliberately aggravated and prolonged so as to avoid work and continue drawing compensation money. Assumed blindness (amaurosis) in one eye is easily detected by a careful examination of fundus and media and the reaction of the pupils. It is well also to prove the existence of binocular vision by means of one or more of the tests already mentioned—namely, Hering's drop test, Snellen's letters, or the prism test. The latter, being purely objective, is preferable in these cases. It is carried out by placing a fairly strong prism—say 6°—before the affected eye. If binocular vision exists the eye will move inwards to avoid diplopia, and when the prism is removed the eye will be seen to move out again, and resume its primary position. It is well to repeat the experiment with the prism over the other eye. As a rule, it is enough to place a +10 D lens before the sound eye, and a plane or correcting glass before the supposed blind one, and to casually ask the patient to read the test types, taking care that he does not find out which eye he is using by shutting the affected eye. It is seldom that he does not fall into the trap and read all he can, thinking that he is using the sound eye. If these methods do not disclose the simulation, some of the other numerous tests must be tried.

Exaggeration of really existing defects of vision is not so easy to demonstrate; as a rule, it is disclosed by the simple method last mentioned. It is seldom that the patient does not betray himself in some way or another during an examination: and when the appearances of the media and fundus and the exclusion of organic or functional disease indicate the probability of at least moderate vision, the patient's statement that his sight is very bad should be regarded with much suspicion, and should lead one to make repeated and varied tests for distant and near vision.

It must be remembered that vision may be really reduced as the result of tobacco poisoning. This is somewhat liable to occur in this class of patient, owing to the fact that, having nothing to do, they consume more tobacco and probably more beer, and eliminate the poisonous products less freely than they do when at work. These cases are characterized by the symptoms and signs of tobacco amblyopia.

In cases where defective vision due to disease is ascribed to an injury, the surgeon will generally be quite able to decide, from the appearance of the lesion and general symptoms, how much is due to the disease and how much to the injury. Cases of traumatic neuroses, however, present many difficulties.

The natural recovery from an injury may be delayed by the introduction of foreign bodies into the conjunctival sac. In such a case the patient should be carefully though unobtrusively watched and the contents of the conjunctival sac periodically examined for evidence of soot, tobacco, bits of shell, etc. This tendency to simulation on the part of the patient is undoubtedly due to the fact that, since the passing of the Workmen's Compensation Act, the workman expects compensation for all injuries.

When he realizes that he can only get this compensation by proving a reduction in his wage-earning capacity, he tries to make a case for himself by simulating. This state of affairs could be overcome by the granting of a reasonable sum of money as compensation for any actual loss or disfigurement which the patient has suffered apart from any diminution in earning capacity. When no such loss has

occurred the patient should be compelled to resume work. It would be necessary for this purpose to have a certificate from an ophthalmic surgeon—probably from two surgeons, one representing the workman and the other the employer. There should be no difficulty on the part of the two medical men in coming to an agreement on such a matter.

THE POSITION OF THE EXPERT.

In conclusion, I wish to draw your attention to the position of the expert with regard to fees in these cases. If a surgeon examines and reports on a patient on behalf of applicant or respondent, he may be called upon to give evidence at court on subpoena, and at the usual rate of a guinea a day at county court and half a guinea at police courts. To get any more, a private arrangement must be made with the party who desires the evidence. Should they refuse to make such an arrangement, it is in the expert's power to refuse to make the preliminary examination, or to accept the ordinary fees to medical witnesses allowed by the court.

ON REMOVAL OF THE CRYSTALLINE LENS IN HIGH DEGREES OF MYOPIA, AS ILLUSTRATED IN SIXTY CASES.*

By SIMEON SNELL, F.R.C.S. EDIN.,

Ophthalmic Surgeon, Royal Infirmary, Sheffield; and Professor of Ophthalmology, University College, Sheffield.

Four years ago I contributed a paper to the discussion on the operative treatment of high myopia before the Ophthalmological Society, and which is published in the *Transactions* of that Society. I there dealt with twenty operations. Since then I have increased the number in which I have removed the crystalline lens to about sixty, and it is the experience thus gained that I purpose bringing before your notice to-day.

The deplorable results associated not infrequently with high degrees of short sight are well known. The inconveniences attendant on the use of the necessarily powerful glasses are great. Without their aid, those unfortunately afflicted with high myopia are well-nigh blind, and not infrequently having removed and deposited their glasses they are with difficulty able to find them again. To relieve such cases as here depicted the removal of the crystalline lens has been suggested and performed with success in this country and abroad during the last few years.

Donders regarded the cure of myopia as belonging to the *pia vota*. Before his day the removal of the lens had been suggested, but, writing in 1864, Donders treated the proposal with ridicule, and insisted that such a momentous undertaking "would exhibit culpable rashness." The forty years which have elapsed since Donders wrote these words have witnessed many changes in ophthalmic surgery. Asepticism, which has enabled so many operations to be accomplished with safety in general surgery, has extended its benefits, if in a less degree, to the operative surgery of the eye, and the attendant risks in careful and skilful hands are much less now than formerly.

Within defined limits the removal of the crystalline lens for high degrees of myopia may now, I believe, be regarded as a recognized and valuable method of treatment. By its means the myopia will be either entirely obliterated and the eye become emmetropic or a varying degree of low myopia or a low degree of hypermetropia will result, according to the original degree of shortsight.

A consideration of my cases will bring into view several points which should be noticed. The number of patients operated upon has been 40, the number of eyes 59. It may often be well to be content with only treating one eye, and my rule has been to take the worst eye. Frequently, however, my experience is that after having undergone operation on one eye the patient has been so pleased with the result that urgent application is made for the other to be similarly treated. Domestic servants are numbered among those who have returned after one eye has been operated upon and have been desirous to have the second one done. I am always more willing to accede to such wishes in young adults. In one instance, however, a married woman, Mrs. D., aged 48, I treated both eyes four years ago with most gratifying results.

The number of operations reviewed in this article is 59.

* Prepared for a meeting of the Yorkshire Branch of the British Medical Association.

There were 40 patients; in 21 only one eye was treated and in 19 both eyes were operated upon. Of the 40 patients, 11 were males and 29 were females. Of those who underwent operation in both eyes 13 were females and 6 were males.

One patient was aged 48, but this was the only instance over 40. Of the others, one was 37, another 35, and two 32. Those between 20 and 30 numbered eighteen, as follows: three aged 30, one aged 29, four aged 28, two aged 27, three aged 26, one aged 25, one aged 23, two aged 22, and one aged 21. Under 20 there were seventeen, namely: two aged 19, five aged 18, one aged 17, three aged 15, one aged 14, one aged 13, two aged 11, one aged 10, and one aged 9.

Of the instances in which the degree of myopia is accurately recorded I find that 28 operations were performed on eyes with 20 D and above, namely, 15 for 20 D, 1 for 21 D, 2 for 22 D, 1 for 23 D, 1 for 24 D, 2 for 25 D, 3 for 26 D, 1 for 27 D, and 2 for 28 D. The lowest degree for which removal of the lens was performed was 10 D, and this in one instance only. There was 1 eye for 11 D, 2 for 12 D, 2 for 13 D, 3 for 14 D, 1 for 15 D, 3 for 16 D, 10 for 18 D, and 1 for 19 D. The number, therefore, between the eyes of 10 and 19 D inclusive was 24. It will thus be seen that practically all the operations have been performed on eyes having 12 D and more degrees of myopia, the two exceptions being 10 D and 11 D respectively. Moreover, the greatest number of operations have been for 18 D and upwards, 18 D being the degree in 10 eyes and 20 D in 15.

If the operation be limited, as I believe it should be, usually, to cases with a myopia of 14 D and upwards the total number of suitable cases presenting themselves must always be a comparatively small one. In this connexion I have taken from the casebooks of my private practice the degrees of myopia in 3,162 consecutive patients or 6,324 eyes, a number which should give a fair idea of the proportion of the different degrees of myopia. The cases were roughly divided into those above 10 D and those of 10 D and under. If the division had been made at a higher degree of myopia, which, strictly speaking, it should have been, as, save in exceptional instances, the operation would not be performed for less than 13 D or 14 D, the total number of instances suitable for operation as far as the degree of myopia is concerned would be decidedly less.

Of these 3,162 patients I find that in 1,159 the degree of myopia was equal in each eye. In 2,003 the eyes were unequal in refraction; that is to say, that while myopia was present in one eye it was so to a higher degree in one eye than the other, or in some the second eye may have been emmetropic or hypermetropic, but the greater number would be myopic. Of these 2,003 eyes the degree of myopia was higher in the right eye in 1,029, and in the left in 974. Of the total number of eyes under review, namely, 6,324, there were 320 in which the degree was more than 10 D, or a trifle over 5 per cent. The record of my infirmary patients would, I expect, show a larger percentage of the high degrees of myopia, as those with the low degrees less frequently seek advice there than is the case in private practice.

Extraction was deemed unsuitable, and in no instance has it been adopted. In each case the transparent lens has been needled, and at the end of a week, sometimes more or less, when the lens substance has become sufficiently broken up, an incision with a broad needle has been made a little distance inside the periphery of the cornea, and the softened lens has been allowed to escape, or has been coaxed out with the aid of a curette. The pupil has previously been dilated with atropine, and by keeping the situation of the corneal wound inside the limit to which it dilates, the danger of entanglement of the iris in the wound is materially lessened. This operation is similar, of course, to that frequently performed for zonular and other forms of cataract. In all cases a watch must be kept for increased tension, which is liable occasionally to be set up by the swelling of the lens. In a few of my cases glaucoma has in this way supervened. Removal of the broken-up lens was, however, promptly performed, and was followed by immediate subsidence of the pain and sickness, and with excellent visual results.

When operating endeavour is, of course, made to remove as much of the softened lens matter as will escape without undue pressure on the globe. What remains, however, will undergo absorption, but a further needling may be required. Needling may also be necessary for opaque capsule and it is therefore important to bear in mind that treatment in some cases may be somewhat prolonged. In one of my early instances I was perhaps hardly sufficiently alive to the importance of this and operated rather against time, as the patient was leaving England.