Practical observations on the removal of every species and variety of cataract, by hyalonyxis, or vitreous operation : illustrated by cases; with critical and general remarks on the other methods employed / by John Bowen.

PRACTICAL OBSERVATIONS

ON

CATARACT,

AND

ITS REMOVAL BY HYALONYXIS.

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REMOVAL OF EVERY SPECIES AND VARIETY OF

CATARACT,

BY

HYALONYXIS,

OR VITREOUS OPERATION,

ILLUSTRATED BY CASES;

WITH CRITICAL AND GENERAL REMARKS ON THE OTHER METHODS EMPLOYED.

BY

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1824.

To the Professors and Students of the University of Naples.

Gentlemen,

I should altogether prove myself unworthy of your great attention and politeness to me, during my residence in Naples, were I not to fulfil my promise to you in publishing the new method of operating in Cataracts; the matter has been taken from notes, and rather hastily composed: from you, however, who have witnessed the operation and its effects, I flatter myself I shall receive every indulgence. If my humble efforts should contribute to your future success, it will be to me, one of the most pleasing gratifications in life. That you may long enjoy those advantages you possess, and that your University may always have the support of such talent and men, as at present preside over it, is the sincere wish of

Your obedient humble Servant,

And sincere Friend,

JOHN BOWEN.

London, 15 *Nov.* 1823.

PREFACE.

The following sheets are presented to the public rather prematurely; it having been the intention of the Author to have published with them Observations on Erysipelas, and Elephantiasis, in which this latter deformity is speedily removed; a disease hitherto considered as incurable, and the *opprobrium medicinæ*. Several circumstances however induce him to offer it in its imperfect form, as far as is connected with style and composition. The facts are its only merits; the operation has in itself originality, simplicity and success, applicable in every species and variety of Cataract which occurs. The cases have been marked and attended with that vigilance, which has been necessary in a foreign country; the loss (if it may be termed a loss, when a patient is operated upon with amaurosis) has been one in thirty-one individuals; so that thirty, out of thirty-one patients, have been restored to sight by the operation of Hyalonyxis. It is an operation that may be performed

without apprehension, and repeated without fear.

Inflammation is a rare occurrence, provided the patient has the advantages of the medical treatment laid down, and on which the success of many cases must depend.

It is presumed, no man would attempt the operation, without having a clear and distinct idea of the structure of the eye. Anatomy forms the basis of all medical and surgical science; and on the knowledge of which the success of our practice must principally depend.

It would be an endless task to give an account of one hundred and sixty cases, which were operated on by the Author, during his residence in Italy, the last four years. He has however selected such as appear of interest, or that may throw any new light on our physiological and pathological knowledge.

The Author has spent the last seven years on the continent, where he has enjoyed all the advantages of cultivating friendships and acquaintances with some of the most celebrated men in his own profession. He has seen their practice, compared it with that of London, Edinburgh, etc., where he spent some years. He hopes therefore that his experience and advantages entitle him to speak confidently, and to

recommend an operation for the good of mankind, more successful in its event than any hitherto known.

A term less technical would have been desirable, but it has been adopted in conformity to the Germans, who make use of Keratonyxis, (Κέρας, cornea, νύσσω, I pierce,) to express the removal of the lens by puncture of the cornea, etc. Upon the same principle he has composed a word to express the operation by the vitreous humour; more particularly however to distinguish it from any other performed, and has therefore given it the name of Hyalonyxis; which, he hopes, will be found an appropriate term; from ὕαλος, glass (the vitreous humour takes its name from its resemblance to glass), νύσσω, I pierce.

It is true, that in the common operation of couching and absorption, the vitreous humour is also wounded. The name is of little importance, as long as it has reference to the subject; if we termed it posterior lenticular operation, or posterior capsular, they would be objectionable from their length, therefore the author has adopted the term Hyalonyxis.

One very essential circumstance has induced him to describe the operation at this period, is a wish that it should succeed equally in the hands of others, as it has done in his own. He is

aware of its having been adopted in many parts of Italy, but not with that accuracy necessary; and lately at one of the universities, by accident, he saw a manuscript just going to the press, in which this operation was described; fortunately he was on the spot to correct a very essential error in it. To prevent therefore similar occurrences, which might prove a serious evil to those who are to undergo the operation, and a mortifying disappointment to the one who performs; he thinks it his duty to give immediate publicity to the subject.

Paris, October 1823.

The Author hopes the public will excuse any typographical errors which may be found in this work, as his distance from the press precluded him from correcting it.

Fig. 1.

Fig. 3

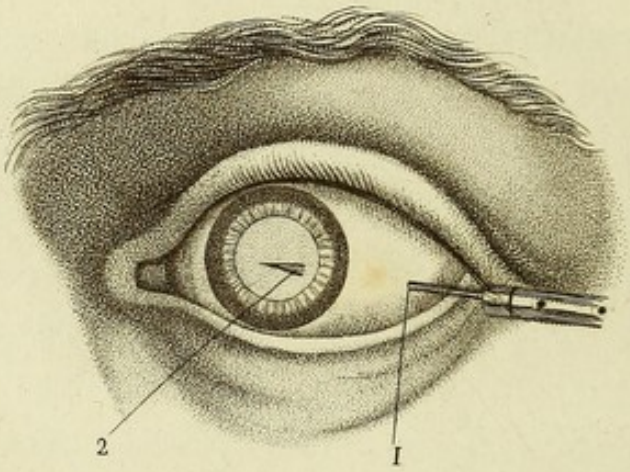

Fig. 2.

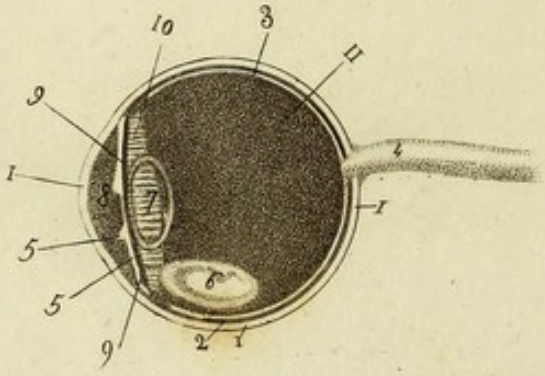

Fig. 4.

EXPLANATION OF THE PLATE.

FIG 1. The profile of the instrument to shew its curvature.

FIG. 2. The concave view, by which the extent of its surface is seen.

FIG. 3. The most favourable position of the eye for the operation; the pupil appears dilated with the belladonna.

1. The point where the needle penetrates the coats three lines from the transparent cornea.
2. The point of the instrument in the anterior chamber; its convex surface corresponding with the iris.

FIG. 4. A vertical section of the human eye, as a man stands erect, therefore in its natural position.

1. The contour of the sclerotic and cornea.
2. ——————— choroid coat.
3. ——————— retina.
4. Optic nerve, as it enters the eye.
5. Iris and inferior limit of the pupil.
6. Situation of a solid lens in the vitreous humour after the operation, removed from the axis of vision.
7. The dotted line or points enclosing the number forming an ellipsis is the situation of the lens prior to its removal; the ciliary processes are seen in a striated form below the figure.
8. Anterior chamber.
9. The posterior chamber, the dark line, visible between 7 and 8; the space is so small as not to admit an instrument between the iris and the anterior part of the lens, without wounding the ciliary processes or iris.
10. Ciliary processes.
11. Vitreous humour, an insensible substance.

PRACTICAL OBSERVATIONS

ON

CATARACT,

AND ITS REMOVAL BY HYALONYXIS (1),

OR VITREOUS OPERATION,

ILLUSTRATED BY CASES.

The subject of cataract and the different methods employed for its removal, with diseases of the eye in general, has of late more than ordinarily occupied the attention of medical men. This is lately more particularly exemplified in England, where formerly it was so much neglected; the practice at one time being confined to a few men, who resided only in capital towns.

In a late visit I made to that country, it was gratifying to see a number of eye institutions

(1) Hyalonyxis, from Ὕαλος, glass, and νύσσω, I pierce.—Refer to Preface.

suddenly raised, and supported by voluntary contributions, both in the metropolis and in the provincial towns, for the treatment and exclusive relief of the blind. Thus the ophthalmic art seems to extend itself; and in a few years more both physicians and surgeons will be considered as deficient in their profession, without having a knowledge of this branch. In fact, the majority of diseases affecting the eye are medical; the constitutional treatment forms the more noble and philosophical part; and were I to make any distinction, I should say, they fall more particularly under the treatment of the physician than the surgeon. We find this organ affected with rheumatism, syphilis, fungus, paralysis, and all other diseases peculiar to membranous, muscular, cellular and vascular parts: of late we have been indebted to several writers, who stand high in the profession, for many valuable facts and improvements.

Having therefore called your attention generally to one of the most noble organs of sense,

the loss of which renders man both an incumbrance to society and no less a burden to himself: a celebrated philosopher remarks; «how much more noble is that faculty by which we can find our way in the pathless ocean, traverse the globe, determine its figure and dimensions, delineate every region of it; by which we can measure the planatory orbs, and make discoveries in the fixed stars! Again, how admirable is that organ by which we can perceive the temper and dispositions, the passions and affections of our fellow creatures; and when the tongue is taught most artfully to lie and dissemble, the hypocrisy is discovered in the countenance! we are often able to detect what is crooked in the mind as well as in the body.»

Notwithstanding the operation for the removal of cataract has been performed for so many ages, it is remarkable that not *one* fixed and determined method of operating has been adopted as a guide to the young surgeon or general practitioner. We find one professor an advocate for

extraction; another for *depression;* a third for *keratonyxis;* a fourth for disturbing the lens and allowing it to absorb *in situ.* This last method is now much practised in London; that is by puncturing a line and a half from the transparent cornea, as in the common method of depression; disturbing the lens with the needle, without carrying any portion of it into the vitreous humour. Those in the habit of operating much act agreeably to circumstances; solid cataracts they extract, soft and fluid they disturb.

Such a variety of methods, adopted agreeably to the circumstances of the case, and the difficulty a young practitioner has to distinguish the quality of cataract, must render this subject always more or less complicated, even to those who are accustomed to observe diseases of the eye; for it not unfrequently happens, that the density of the lens in the same individual will be found different, although corresponding in appearance and colour. It becomes therefore a great desideratum to point out some general me-

thod of removing the diseased lens, by which we can indiscriminately act in all cases, whether the cataract be *fluid*, *soft*, *hard*, *lenticular*, or *capsular*; in short, to remove any opake body which may exist between the aqueous and vitreous humours. It is now proved beyond all doubt that, whatever the condition of the cataract may be, absorption will take place in either of those humours, provided the operation is conducted in the manner hereafter to be described.

It is now nearly fifteen years since I commenced operating in cataractous cases, and of treating diseases of the eye in common with every other organ of the body, and have no reason to regret having done so: on the contrary, I flatter myself with having relieved many thousand individuals, who would have searched in vain for an oculist, and where the success of whose cases must have depended upon the knowledge and skill of the attending medical man of the country. What then must be the feelings of the surgeon or physician, who is called upon

to administer aid to his fellow creatures labouring under blindness or some disease of the eye, who finds himself totally ignorant of this branch of his profession? Oculists have alarmed men in general practice from pursuing this branch; and many men have erroneously fancied, that to operate requires more address or some extraordinary art of which but few are supposed to possess (1): nothing can be more preposterous, and at the same time so injurious to the public at large. By far the greater number of professional men are destined to practise in provincial towns, or abroad, remote from any capital, and are called upon to treat diseases of the eye in common with every other. If therefore ignorant of this branch of their profession, both rich and poor equally fall a sacrifice in their hands. I cannot avoid stating, that the subdivision of surgery, which has so long existed, and which happily in Great-Britain is now nearly done

(1) That it is one of the most delicate operations in surgery cannot be denied; but a knowledge of anatomy, united with a steady hand, subdues every difficulty.

away with, has been productive of the most lamentable circumstances in human life. Every man of reflection must admit that the mechanical or operative part is the least; and that many diseases of the eye owe their origin to constitutional causes, which require the care of the physician, and not the mere operative surgeon. I am decidedly therefore of Scarpa's opinion: « when we take a view of the improvements which have been introduced into this branch, we shall find that they have been almost exclusively confined to those, who with extensive opportunities of investigating the morbid affections of the eye, have united an enlarged knowledge of other diseases. »

Causes.

With the exception perhaps of Egypt, diseases of the eye are more common in Italy than in any other country: this must appear very striking indeed to every traveller from the northern part of Europe, particularly after passing the Appenines. Florence offers the first example, and the inhabitants are literally known and distinguished

by the appellation of the *Fiorentini Ciechi*, or Blind Florentines (1); throughout Tuscany diseases of the eye prevail to a great extent; in Siena, where I resided above twelve months, the proportion of eye cases to other diseases was as one to eight; in Rome, one to fifteen. I am here stating what I met in my own practice.

I am inclined to believe that wherever sulphu-

(1) During my residence in Florence (the months of May, June, and July last), I saw above four hundred individuals affected with Egyptian ophthalmia, which I demonstrated to Dr. Down, the resident English physician of that city, who saw some of the cases; and unless some very active measures are adopted by the government, the disease will progressively increase; no man is safe, from the grand duke down to the pauper. It is extremely contagious; the matter is communicated frequently by flies; many cases I traced amongst catholics to the holy water in churches, which is made use of by unfortunate people, labouring under the disease, as a wash or lotion, on entering, conceiving it to be a specific. Therefore, those who enter and dip the finger in the water, and accidentally apply the matter to the eye, contract this formidable malady. I believe this ophthalmia, commonly called Egyptian, is generated in the country, and existed long before the French army visited Egypt. It is however highly contagious, and nothing short of the vigilance of the Tuscan government will arrest its progress.

reous matter is found largely diffused in nature, consequently entering into the composition of all animal and vegetable substances, may be one of the causes. This opinion seems further confirmed by facts; for if we examine the inhabitants of Naples, the towns near Mount Vesuvius, the whole of Sicily, we shall find the blind proportionably greater where volcanic matter predominates; and from this cause the government or municipalities in the kingdom of Naples most laudibly contribute for the purpose of supporting or aiding gentlemen in their studies, particularly for the acquirement of knowledge of diseases of the eye. I cannot here omit mentioning the zeal and intelligence of one of the number, professor Condorelli of Syracuse, who assisted me in several operations of cataract during my residence in Naples; and whose general professional knowledge and humanity must acquire him the esteem and respect of all his fellow citizens.

Many causes producing cataracts are assigned:

persons exposed to strong fires, glass-men, forge-men, rooms illuminated by reflected light, exposure of the head and eyes to the rays of the sun, hereditary disposition: the drinking of spirituous and vinous liquors, appear from my own observations to be a more frequent cause than all the others combined. In all countries where wine is cheap, and forms the common beverage, cataracts are common; determination to the head, and inflammation from whatever cause, particularly by external injury, is every day too visible in practice, and forms one of the most leading causes with which we are acquainted.

The heat of the sun with his powerful rays are stated to be powerful agents. This does not appear from my own observations, during a residence of nearly four years in the West Indies, where the temperature is never below 75° Fahrenheit, with a bright sun, and consequently clear sky, and not unfrequently four or six months without rain. I therefore think that light and

heat have less influence than has been generally imagined in producing cataracts.

Cataracts ripe or fit for Operation.

It has long been sanctioned by practice to wait until cataracts are ripe (*matura*), occasionally from the principle that either external or internal remedies may remove the opacity, and thereby prevent an operation, but more generally from prejudice.

Where cataracts or opacities are distinctly traced to constitutional causes, such a system may be very proper; but opacity of the lens may be distinctly considered as a local disease; and nothing short of its removal by an instrument can effectually relieve the individual.

I have rarely seen instances or examples of patients being relieved from applications either externally or internally, though I have used mercury, employed æther, etc., so much extolled by

the late Mr. Ware, in cataracts arising from blows; and therefore I regard the whole as a loss of time. It is to be perfectly understood, I speak of opacity of the lens, unconnected with amaurosis. In the latter case an operation would be useless, without previously relieving the organic affection.

I have operated in forty or more cases where the opacity was not complete, or what surgeons would say was not ripe: where no inflammation or *lentitis* exists there can be no objection. The opacity of the lens usually commences at the most central part, and gradually extends itself to its circumference; or an obscurity pervades the whole of the lens from the commencement of the disease, without however depriving the individual of entire sight. Thus a professor is frequently consulted in cases where the patient has not altogether lost his vision; the rays of light still pass imperfectly to the retina, and perhaps would require some months more before the opacity was complete.

The question then is, does any injury arise from an operation where the patient is half blind? This question is of the highest importance in practice; for men are frequently thrown into situations where they are obliged to operate. It has occurred often to myself to have been consulted by unfortunate individuals amongst the lower class, in situations distant from any place where they could obtain relief, and where there was little probability of again visiting the neighbourhood. Would you abandon an unfortunate creature, because the whole of the lens was not opake? Nothing can be so essentially wrong both in practice and humanity; and the only excuse we can offer is the apprehension of its not succeeding: which idea has existed and been sanctioned by ancient custom, to the great inconvenience and injury of the unfortunate individual. The earlier an operation is performed the more perfect is vision; for the retina, long unaccustomed to the stimulus of light, must inevitably lose more or less its sensibility.

I beg to be understood here, that I do not recommend the operation generally before the opacity of the lens is complete: I wish only to remove that absurd prejudice which exists. It is decidedly more advantageous and satisfactory to a medical man to perform on one who is totally blind, than on another who sees a little. All that I wish to impress upon the mind of the operator is, that the latter is not objectionable, when necessity requires it. I am aware I shall meet with criticism from my fellow brethren in the profession from so great a deviation; it has however resulted from facts, and not from theory; and the principle will bear me out equally in cases of opacity affecting one eye only.

It is remarkable even in the present day, that men, eminent in the profession, should defer operating when one eye only is affected; apprehending an injury to the other from an operation. I can positively state from my own practice, never to have seen a single individual instance, where the sound eye suffered in the

slightest degree from the removal of the cataract in the other (1). On the contrary, it is my decided opinion, that a diseased lens cannot be too soon removed, when affecting one organ only; being convinced, many a man would have prevented a cataractous companion by an early operation of the first formed: for the sympathy existing between those organs, and by similar parts of each, are remarkable. Diseases are commonly transmitted from one to the other, which may be accounted for, from their peculiar anatomical arrangement; the optic nerves being intimately interwoven with each other.

« This sympathy of the eye, » says Wardrobe, « has not escaped common observation; and there is a disease, frequent in the eye of the horse, having the appearance of a specific inflammation, which usually affects one eye, and then the other; almost sooner or later destroying vision.

(1) I have lately operated at least in twenty cases under such circumstances.

« It is known among some farriers, that if the eye, first affected with this disease, suppurate and sink in the orbit, the disease does not attack the other eye, or subsides if it had commenced in it. Thus they have adopted a method of destroying altogether the diseased eye, in order to save the other; which is rudely done by putting lime between the eyelids, or thrusting a nail into the cavity of the eyeball, so as to excite violent inflammation and suppuration. »

It is needless to add, that without having recourse to such barbarous practice, the same effects would be produced by simple incision of the cornea, and evacuating the contents of the globe.

I met with a very striking case in Rome, in a gentleman, Padre Bora, one of the heads of the Nazarene college, on whom I operated for a cataract of six or seven years standing, in the right eye: the opacity on the left had commenced: the result was, that he not only acquired an admirable sight in the eye operated upon; but the

opacity in the other totally disappeared without any operation. A more striking and satisfactory case of sympathy could not exist, and justifies the observations we have already made. A similar case is mentioned by St. Ives, where the opacity or cataract disappeared in one eye, from the removal or extraction of the cataract in the other, which had been produced by external injury.

Richter, one of the most celebrated surgeons and operators at Gottinghen, and indeed, we may add, of Germany, remarks: « *An non caveri possit jactura integri oculi tempestive extrahendo cataractam prioris?* (*Obs. Chir. Fascic.* I.) He adverts to the case related by St. Ives, where a man was wounded in the right eye by a small shot, and shortly afterwards had a cataract in it; he then became gradually blind in the left, but soon recovered his sight in it, after the cataract had been extracted from the right one(1).

(1) Cooper's admirable Dictionary on practical Surgery, last edition, page 297.

Another reason, assigned by Richter, for disregarding the precept of waiting until a cataract forms in the other, is, that the existing one, which is at this moment, perhaps, in the most favourable state for the operation, may soon change for the worse (for instance, it may contract such adhesions to the iris), as either to destroy all prospect of relief, or, at most, afford but a very precarious and discouraging one.»

The observations however of Mr. Hey, of Leeds, and many cases that have fallen under my own immediate care, prove that the adhesions to the iris, although difficult, are removed by repeated operations, and therefore are not irremediable. In the case of count Zelli, to which the reader will refer, it will be found, that absorption will take place from wounding the solid lens with the instrument, although the cataract remains united to the iris, and the patient will derive every benefit from the operation; not however by Richter's operation of extraction, which in such cases would inevitably ruin

the individual. The conclusion therefore of my own experience is, to operate in all cases where the cataract is formed in one eye only, and not to wait an indefinite period for its companion; which by a timely and early operation may altogether be prevented.

Many advance, as a reason for not operating when only one eye is effected, that the sound eye is sufficient for all the purposes of life, and the eye would have a different focus from the other; this is certainly true; and in the case of Padre Bora, above alluded to, there is a living instance, amongst others, of the fact, who wears glasses of a different focus; and what perhaps is still more remarkable, he is obliged to use a concave glass for the eye operated on, less concave of course than the other, having been short-sighted from an early age or myope. The use of glasses however of different focus is of little importance, compared to the probability, and almost certainty, of one day or other being obliged to submit to two operations, instead of

one, and of being deprived for a time of one of the great blessings we enjoy in life.

Treatment prior to the Operation.

I conceive both the preparative and after treatment to be of considerable importance, and on which depends frequently the success of your cases. In no instance should the operation be performed without first removing all local and general irritation. If the patient be in perfect health it will be highly necessary to administer three or four saline purgatives, with a strict adherence to the antiphlogistic plan, a week prior to the operation: unfortunately this is not attended to in all countries, and I have too often been an eye-witness of the melancholy effects of such negligence. In short, the depleting plan should be strictly adopted and followed up, from the period the patient takes his first purgative to the fifth or sixth day after the operation. In cases accompanied with amaurosis, determination of blood to the head, pain and weight

over the eyebrows, a band as it were across the forehead; the latter dependent in nineteen out of twenty cases on constipation of the bowels; the purgative plan is the only one to relieve your patient, and the only means of preventing inflammation and ensuring the success of your operation. It is to be understood, I speak of cases where the retina is still sensible to the rays of light, otherwise an operation or the removal of the diseased lens would be useless. The purgatives I have employed in such cases are usually composed as follows:

℔ Extract. colocynth. c. ʒ j.
Submuriat. hydrog. . ϑ j.
Mucilas g. arab. . pil. xx (1).

Two or three of these pills should be given the patient every other night, and the intermediate nights five grains of the blue pill; this treatment in general will be found sufficiently active to remove all vascular congestion about the head;

(1) This preparation, although falling under the class of drastic, is extremely mild in its operation, and in such doses by no means corresponds with the idea entertained in France of its effects.

the abdominal obstructions and pains will of course be relieved.

I have rarely ordered blood-letting prior to an operation, but have invariably defefred removing the cataract until the circulation became equalised, and as an auxiliary means have ordered the pediluvium at bed-time, with two table spoonsful of mustard immersed in it as an additional stimulant; this with other treatment agreeably to circumstances. when there is constitutional and even organic affection suspected, changes frequently the condition of the patient both in health and vision. Although the latter in some cases may be imperfect, upon the whole the patient gains considerably by the operation (1).

I must howvever counsel the young practitioner never to attempt an operation in an amaurotic disposition without well preparing his patient: there are always inflammatory symptoms to be

(1) Refer to the case of count Zelli of Viterbo, page 102.

dreaded, and without such precautions, run to a height that destroys all prospect of relief. I have seen many lamentable instances of this nature, and have avoided them in my own practice, by delaying the operation until all local and general irritation has been thoroughly removed by medical and other treatment, as enumerated above.

In hysteric cases you would act agreeably to circumstances; I have never met with any case of that description troublesome; those have depended principally upon derangement of the stomach and bowels. Any obstruction in the abdominal viscera must always be considered unfavourable to an operation: therefore any torpor in the liver, or want of action in the intestines, must first be removed before it is attempted. I cannot avoid stating that the medical treatment is too generally neglected, and to which we may attribute frequently the want of success, or failure of the operation.

The communication between the sixth pair

with the great sympathetic may explain many of the phenomena that take place in diseases of the eye; which in a pathological point of view are extremely interesting, and lead to important improvements in the treatment. «This connexion makes it probable that these nerves send branches to the globe of the eye. Petit found, that when the *par vagum* was divided in animals, the eye of that side lost its lustre, and the pupil enlarged. Hence wounds and impressions of the great sympathetic nerve, whether in the neck, chest or abdomen, occasion convulsions of the eyes, and even blindness; and children, who have worms, have often dilated pupils and other amaurotic symptoms (1).»

In the common operation of cataract therefore the attention to the state of the bowels is of the greatest consequence.

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(1) Wardrobe's Morbid Anatomy of the Eye, vol. II. p. 142.

The diversity of instruments, employed and invented for the removal, are more numerous than the operation itself. To a surgeon, in the habit of operating, it can be of little importance what instrument he uses; that which inflicts the least injury is however to be preferred; and, to the junior men in the profession, I think the instrument is of considerable consequence. The one I employ is the most simple I know, and does less injury in its puncture than any other, with the exception of my friend professor Assalini's, of Naples, who showed me a common sewing needle of six lines in length, fixed in a pen, with which he had operated on two cases in Hungary, not having a couching needle with him at the time. Professor Scarpa's needle is in general use on the continent, and the enormous length of eighteen lines, considerably curved; the concavity of which consists of two oblique planes, and forming an elevated line in the middle; it has therefore nearly a triangular point, which necessarily must produce a larger and more irritating wound in the

coats of the eye than is essential to the operation. Indeed professor Scarpa, whom I had the pleasure of seeing a few months ago at Pavia, was perfectly aware of this circumstance; but was obliged to order it of that form, in order to give solidity and strength to the point; which he would not have done, had he had good mechanics in the country. The length of the needle is extremely inconvenient during the operation, independent of other objections.

The human eye may be considered about nine lines and a half in diameter, passing transversely across, three lines and a half distant from the transparent cornea.

The needle I employ is one line less than the diameter of the globe; so that a young operator, penetrating the sclerotic three lines distant from the transparent cornea, which is the distance recommended for hyalonyxis or posterior capsular operation, hereafter to be described, can be under no alarm; for admitting he carried

his instrument as far as the handle, the opposite side could not be injured; he is far removed from the iris and ciliary processes, the parts most sensible and liable to inflammation when wounded; the too frequent causes of failure. In fact, he can do no mischief with his instrument in this situation.

The instrument is lancet or sharp pointed, more slender than Scarpa's, and from being so much shorter has sufficient firmness, inflicting of course less injury, has two cutting edges near its extremity, which assists the operator in cutting and detaching any adhesions, slightly convex, but enters the sclerotic with the same facility as a straight needle; the diameter is uniformly the same from the cutting edge to the handle; so that when you have punctured the sclerotic, etc., you advance and retire as you wish, and without any loss of vitreous humour, which the late Mr. Hey, of Leeds, seemed to be apprehensive of. To guard against which, he recommended his wedge-shaped needle, which I

found extremely inconvenient during the operation; for if you wish to advance, you are obliged to press the instrument forwards; so that the eye revolves towards the nose. Whereas the operator will find it much more to his advantage in facilitating his operation, to advance and retire at pleasure, without changing the position of the eye. The shortness of the needle gives the operator a quick command of its point, and he can use it with greater confidence than a needle of double its length. The needle is shorter than any in use in the present day; but it must be recollected, that in the operation for the removal of the lens, there are not more than five lines of the instrument in the globe; so that there still remains three lines and a half of the needle unemployed.

I have subjoined two sketches of the needle: the profile to shew its convexity, and its concave view to see the extent of its surface.

The scale or inch known in every part of Eu-

rope, excepting England, is divided into twelve lines; so that, in speaking of lines, we refer to this measure.

The most favorable position for the patient and operator is sitting; though, in Paris, I have seen Mr. Dupuytren at the Hotel-Dieu, one of the most eminent surgeons in France, operate, allowing the patient to remain in bed. Professor Assalini prefers a standing position, with the head of the patient against a wall, which in truth, he says, is « immoveable: » in this instance you operate without an assistant.

For my own part I prefer a chair, with the patient before me on a low seat, so that his head does not reach higher than the superior part of the sternum: the assistant has an elevated seat behind, with the head of the patient reclining on a pillow on the lower part of his abdomen; the eye-lashes are raised with one or two of his fingers, and pressed against the superciliary ridge of the *os frontis*, taking care to avoid all pres-

sure of the globe of the eye; which is considerably more painful and disagreeable to the patient than the operation itself. Patients have frequently told me, they have suffered more from the pressure of the assistant's fingers, than from any movement or entrance of the instrument.

I cannot avoid here thanking professor Andreoli for his kind and able ssistance to me in thirty or forty cases of cataract, in which he was so obliging to assist me in Rome, by which this inconvenience was avoided: a clumsy assistant will frequently produce great irritation; and it not unfrequently occurs, where the assistant is anxious or timid, that he frequently loses altogether his hold, or rather the lashes escape from his fingers: the only disagreeable circumstance is, that the operation is prolonged; the instrument remains in the globe without movement, firm in the operator's hand, who with the other hand takes a fine piece of linen and wipes away the tears; the lid is again raised,

and you finish your operation. In all these little accidents the operator should never feel embarrassed; rather encourage his assistant than frighten him.

The low position gives the surgeon a full command of his patient: the arm of the surgeon, from not being elevated, feels no fatigue; but rests during the several operations on the cheek of the patient: this is of some importance where the operator has from seven to ten cases the same morning; which has frequently occurred to myself in Italy. For if the arm were elevated agreeably to Assalini's plan, he would be unable to continue his operations with a steady hand: a circumstance highly indispensable to the success of his operation.

The operations for the removal of the cataract, as we before observed, are four in number; namely, *extraction* or incision of the cornea with the knife, by which the globe of the eye is laid open and the lens extracted. *Depression,*

couching, or *reclination* or removal of the lens into the vitreous humour. *Absorption,* or introduction of the needle through the sclerotic, as in couching, disturbing the lens and allowing it to absorb *in situ.* *Keratonyxis,* or anterior operation; the introduction of the needle through the cornea; the point of which is to be conveyed through the pupil, in order to break the lens, etc., into fragments.

Each of these has its partisans; the superiority of which has long been a subject of discussion; and it appears to me, the parties are as far distant from reconciliation as ever.

I shall leave them to settle this matter, being totally unable to decide; I have performed each of them, and have frequently met with disappointments. It is not my intention here to enter into the merits or demerits of either of those operations; but when we have so many methods to effect the same object, and men of science are at a variance which to make choice

of, it is but natural to conclude there is some imperfection in the art; indeed the disappointments of the most zealous and expert operators have changed their methods.

Extraction when performed with success is a neat operation, but in the event of accident, which the most expert cannot always prevent, the patient is irremediably lost (1): an unsuccessful operation is irreparable. Couching or depression is equally as uncertain, when performed agreeably to the present established rules (2). In depression you are instructed, both in public lectures and in modern works, to effect what is impracticable; even the celebrated Scarpa, to whom society is so much indebted, has committed the same error, which has been handed

(1) I recollect, some years since, seeing a very celebrated operator perform in London. His incision was made with great precision; a violent spasm of the muscles of the ball took place, and the lens with the whole of the vitreous humour escaped. It was a lesson I never forgot.

(2) It has however this advantage, that it can be repeated twice, thrice, nay six times, and ultimately succeed.

down to us and established in the different schools.

In the operation of depression you are directed to make your puncture a line or a line and a half from the transparent cornea, and to carry your instrument into the posterior chamber. Scarpa says, « the needle now described penetrates the eyeball with the same facility as a straight one of an equal degree of firmness. When it is cautiously pushed forwards, and is placed between the iris and the anterior convexity of the capsule of the crystalline, it is situated with its convexity towards the iris, and its point in the opposite direction, towards the capsule and opake lens (1); which it easily and deeply pierces, by the smallest motion from before, backwards, without the lens having been previously removed from the pupil. With this instrument the surgeon readily succeeds in lacerating the anterior convexity of the capsule

(1) Briggs' Translation of Scarpa, page 334.

extensively, in deeply and firmly piercing the opake lens, conducting it out of the axis of vision, and lodging it securely in the vitreous humour.» In several other parts of Scarpa's work the same idea prevails, of passing the needle between the posterior surface of the iris and capsule.

When experiments are performed on dead bodies, or on eyes that have been immersed some time in water, it will be found totally and utterly impracticable to pass even a straight fine needle into the posterior chamber, without wounding the iris and lacerating the anterior capsule: the space is too small; the posterior chamber may literally be said to beim aginary; for when the eye is frozen, a thin pellicle of ice finer than bank paper will be perceptible: this unfortunate anatomical error leads to one of considerable practical importance, and to which we may attribute many of the failures of operation by couching: the needle is introduced, and, unless the capsule be opake, is in eight out of

ten cases left behind. The fear the operator has of wounding the iris removes his instrument too far distant from the capsule; the lens is depressed, and the transparent capsule remains, which sooner or later becomes opake.

Notwithstanding such frequent occurrence, it is singular the defect of the operation should never have been discovered, and which can only be referred to an inaccurate knowledge of the anatomy of the eye. Scarpa seems to be aware of the difficulty or uncertainty of removing the anterior capsule; for in another part of his work he says: « To be more explicit, the most common cause of failure in the operation for the cataract, whatever be the method of performing it, is not owing to the crystalline lens, however dense it may be; but to the capsule of the lens; and more particularly to its anterior convexity.

« It is to be wished, that the art of surgery were in possession of some easy and efficacious

means, by which the surgeon in every method of operating might be able to separate with exactness, together with the opake crystalline, the entire capsule of the lens from the zona ciliaris, to which it is attached; an event which occasionally happens from a happy, but unforeseen, combination of circumstances. But this fortunate occurrence is very rare; as the zona ciliaris most frequently connects the capsule of the crystalline lens so closely to the vitreous humour around the annulus petit, that, even in dissecting the eye, it is impossible to separate the capsule from the vitreous humour without considerable laceration.»

Now this great desideratum, so much wished for by Scarpa, is effected in the most simple manner; and which will be described when speaking of the operation.

Independent of the impracticability of passing your needle into the posterior chamber, the point or distance where you make your puncture is

decidedly the most sensible part of the eye, and the part most susceptible of inflammation. If you pass your needle through the sclerotic, a line or a line and a half from the transparent cornea, you penetrate the tunica conjunctiva choroid vitreous humour and ciliary processes, before the needle reaches the cataract; you wound the most sensible part of the eye, namely, the ciliary processes; and not unfrequently has it happened, that operators would wish to be so exact to carry their instrument precisely into the posterior chamber, that they have lacerated and removed the iris from the ciliary ligament in their attempt, so as to destroy nearly all future prospect of giving perfect vision. If you pass from one to two lines from the transparent cornea, you must unavoidably wound the ciliary processes; which are said by professor Beer to be followed by blindness, and an extraordinary dilation of the pupil. « It is a well established fact, that a wound of the frontal branch of the fifth pair of nerves is generally followed by complete blindness, with a great dilation of the

pupil; and from whatever cause the blindness may in such cases be produced, the connexion between the ciliary nerves and the frontal branch of the fifth pair might lead us to expect, that a wound of the ciliary nerves themselves would have like influence on the retina.

« I have observed several cases of wounds which penetrated the interior portion of the sclerotic coat, followed by a complete amaurosis, accompanied with a pupil very much dilated. In such cases it is probable that the ciliary processes were injured; affording an additional proof of the accuracy of Beer's observations, on the danger of such wounds in operations of the eye (1). »

The impossibility of introducing the needle into the posterior chamber, and consequently the difficulty of removing the anterior capsule from the axis of vision by the operation in general

(1) Wardrobe's Morbid Anatomy of the Eye.

practice, the wounding of the ciliary body, etc., has long since deterred me from persisting in a system so pregnant with danger, and so uncertain in its event; for it must be allowed by the most expert operators, that hitherto, however favourable the case, every man has looked forwards with anxiety to the success of his operation, in whatever manner he has performed: to say the truth, they are all objectionable.

I have therefore adopted and extensively carried into practice another method, which I have denominated *hyalonyxis,* or posterior capsular operation; which is both simple and easy in its execution, satisfactory in its effects, and by which every inconvenience, we have enumerated above, is avoided.

I have within the last three years, in Italy, operated on one hundred and sixty cases, and can declare, never to have seen one single example of secondary membranous cataract after the operation, nor an individual case of amaurosis re-

sulting from it. The sequel will therefore prove that the wound of the retina, so much dreaded by operators, is of trivial importance, being rarely attacked with inflammation, at least from puncture; indeed, parts most supplied with nerves are little susceptible of inflammation; thus we find the tongue rarely or ever inflamed.

The retina has its sensibility, *sui generis,* to an extreme, which is evident from the effects of the rays of light; so has the tongue to taste, and the fingers to every thing tangible: to conclude, so great a body of facts known, and the operations conducted in the presence of between five and six hundred medical men of all nations, at different periods, both in private and public practice, must convince the most strenuous advocate either in favour of extraction, depression or keratonyxis, that hyalonyxis, or posterior capsular operation, has the most decided advantages and superiority over any that has been offered to the public; and that inflammation, so much dreaded, the consequence of all the operations

hitherto in practice, rarely takes place: if the medical treatment be strictly attended to, not one in fifty cases will require the lancet after the operation.

Three or four hours previous to the operation, the patient should have the eyebrows rubbed with some of the extract of belladonna, which should be formed into a sort of ointment, which is easily effected by adding to the extract a little boiling water; this will produce a sufficient dilation of the pupil necessary for the operation.

Hyalonyxis, or vitreous Operation.

The patient being seated, so that the superior part of the head does not reach higher than the superior part of the sternum of the operator, he takes his needle, previously besmeared with oil, as a pencil or writing pen, placing the weight of his hand on the cheek of the patient; this produces two very considerable advantages: first,

it steadies the hand; second, in the event of the patient's moving, the hand preserves its relative position with respect to the eye, so that any movement of the patient's head can be of no importance to the surgeon. The patient being directed to turn the eye towards the nose, the needle, with its convex (1) surface forwards, corresponding with the iris, is boldly introduced into the globe of the eye through the sclerotic, three lines or three and a half from the transparent cornea, and a line below the transverse diameter of the pupil, to avoid wounding the ciliary artery; which pursues its course to the iris between the sclerotic and choroid coats, along the middle of the external convexity of the eyeball; if introduced at or below this point, you avoid all effusion of blood. The instrument passes into the vitreous humour, posterior to the lens and its capsules; the point of the needle is then brought

(1) To avoid still more the wounding of the ciliary nerve or artery, the needle may be introduced with its cutting edge corresponding with the iris; and after having entered the eye, to be turned round with its convex surface forwards, and continued as we have here described.

forwards, from inclining the handle to the temple, and penetrates the posterior capsule.

Should the lens be soft or fluid, the needle passes through its centre on its passage to the anterior chamber; if solid, the instrument should be directed to its superior part, and by gently elevating the handle, the lens will be sufficiently depressed to allow the instrument to pass between it and the ciliary processes; it is then carried through the anterior capsule and pupil (which latter has been previously dilated with the belladonna) into the anterior chamber, without any risk or danger of wounding either ciliary ligament, iris, or ciliary processes. The object the operator has in view is the laceration and removal of a large portion of the anterior capsule, that is to say, of greater extent and diameter than the pupil in its natural, most dilated state; this is effected by three or four circular movements of the point of the needle, which should invariably be done. If the capsule be transparent, the inexperienced operator

will scarcely be sensible of effecting any good, or change, by this circular movement of the needle.

The correspondence in transparency and colour of the capsule to the aqueous humour is so similar, and the former so delicate, that no resistance of the needle is sensible to the fingers, when in reality the point is breaking down and removing from the axis of vision the membrane, so frequently the cause of secondary cataract.

When the capsule is opake the effects of the needle are of course evident; the transparent or opake portions should be conducted backwards and downwards with the lens, and buried in the vitreous humour, below the margin of the iris, and as much as possible removed from the front of the pupil. On retiring or withdrawing your instrument, a circular movement is similarly made with the point, for the purpose of removing every portion of the pos-

terior capsule, which is also liable to opacity; so that a communication is completely established between the aqueous and vitreous humours: the anterior capsule, lens, and posterior capsule are now removed, so that the utter and total impossibility of secondary membranous cataract forming must be evident.

Such is the operation for a solid cataract enveloped by its capsule; but the lens we usually meet with, at least seven in ten cases, is either fluid, semisolid, or curdy. When the instrument therefore penetrates the anterior capsule, and the operator commences his delicate circular movement, the aqueous humour becomes clouded or discoloured, which is the passage of parts of the diseased lens into the anterior chamber, where its absorption is more rapid than in the vitreous humour.

The views of the operator are the same; instead of quickly finishing the operation, the solid particles of the lens should be removed

by several movements of the needle, as much as possible from the axis of vision, either by depressing them into the vitreous humour, or bringing them into the anterior chamber. The free movements of the needle, and the removal of the capsules into the vitreous or aqueous humour, as we have above described, ensure the success of the operation.

The great desideratum in all fluid cataracts is the laceration and removal of the capsules from the axis of vision; for in all cases, when a free communication is once established between the aqueous and vitreous humours, absorption goes on, and your cure is almost certain.

We have now described the removal of the lens in two different states; there only remain some observations on the third.

I have occasionally met with the lens united firmly to both capsules, forming as it were one body. These cataracts, from their size and ap-

pearance, are easily distinguished from what Scarpa very properly terms primary membranous cataracts; which is the wasting of the crystalline within its capsule, which appears contracted and more opake in its centre than common cataract. The most correct account, however, we have of this variety is from the late Mr. Saunders, of London, published by his friend and colleague, doctor Farre, an eminent physician. Those cataracts are for the most part congenital, and, although Scarpa represents them as rare, are not uncommonly met with in children. When the lens in these cases is absorbed, the anterior lamella of the capsule unites itself to the posterior, until they form one membrane, which is white, opake and elastic; this membrane is absorbed after puncture with the needle and partial laceration. A most interesting account of congenital cataracts is given by Mr. Saunders, with their removal in children.

I am not aware of any author who has made

any remarks or mention of the lens and capsules forming one solid body; but it is a circumstance of great practical importance; we not unfrequently see the lens in this state dislocated, or quit its bed, and tumble into the anterior chamber, where it remains without being absorbed.

I recollect the case of a gentleman, in Rome (indeed they are not uncommon), who had *gutta serena* with an opake lens, which entered into the anterior chamber and returned to its natural situation, agreeably to the different movements of the head: when he stooped or lay on his face, the lens, from its specific gravity, immediately found its way into the anterior chamber, and *vice versâ*, without ever having diminished in size.

I conceive, that in those cases the capsules separate by some diseased action from their surrounding connexions, the anterior capsule from the zona ciliaris, and the posterior from the

hyaloid membrane. The lens, which we shall hereafter prove, although united and covered by its capsule, is acted upon by the lymphatic vessels, and soon disappears, either in the aqueous or vitreous humours, when the substance of it is simply punctured by the instrument, as in the case of count Zelli, where it still remained partially and strongly adhered to the iris; consequently we can draw no other inference than its envelopement by its capsules, in the instances we have above remarked, which prevent its dissolution and ultimate absorption(1); the capsules in those cases form a covering, and protect it from the action of the surrounding fluid. I do not offer this as a pathological fact; but in practice, where you meet with a cataract of this description, and do not carefully puncture it, it will remain undiminished in bulk, either in the aqueous or vitreous humour. It is not improbable that this circumstance led professor Beer to the conclusion, that solid cataracts were not

(1) Case of count Zelli of Viterbo,, page 102.

absorbed, and therefore he considered extraction as the only successful method of removing them.

We now require no examples to prove that solid cataracts are acted upon by the lymphatics in the vitreous humour; every day furnishes us with facts, and without any precaution on the part of the operator.

If the lens be solid and not attached to its capsules, absorption inevitably takes place; on the contrary, if the lens and capsules form one body, which circumstance is not commonly met with, and is depressed, without puncturing with the point of the needle, it will remain in the vitreous or aqueous humour, a solid and opake body, perhaps for years. It appears to me, the error of professor Beer, and other authors, has arisen from drawing too hastily a general conclusion, and not making that distinction which exists between these cataracts.

Under any circumstances, and in all variety of

cases, the movements of the instrument should be made by the young operator, as if the capsules were in their natural positions; these precautions may often be unnecessary; a simple movement however of the instrument does no harm; and which will always prevent accidents.

To avoid any disappointment, where there is a suspicion of the lens and capsules being closely united, the puncture of its body should never be neglected, which is done either at the time of depressing the lens, or after its removal into the vitreous humour.

Diagnosis.

A classification of cataracts can be of no importance to the operator in hyalonyxis, as far as regards the mechanical part or removal of the opake body; and I must confess, the diagnosis of systematic writers is somewhat tedious and perplexing, particularly to a young man. A classification of cataracts, professor Beer re-

marks, founded upon their consistence, is of great consequence, for on it depends the choice of the method for removing it. As we have however adopted one method for its removal in all cases, I have thought proper to divide cataracts into five different species:

1. The most common, is fluid or semisolid opake lens, with transparent or opake capsules.

2. Solid lens, without adhesion to its capsules.

3. Solid lens, adhering and forming with its capsule one body.

4. Primary membranous cataracts, opake capsules, with lens wasted.

5. Spurious, or lymph-cataract, the effects of inflammation in the iris, capsule of the lens, and perhaps the lens itself.

These are all the varieties of cataract we usually meet with, but, as I before observed, the method we employ is applicable in all cases, and in all varieties; that is to say, the removal of any opake body between the aqueous and vitreous humours. In every species the movements of the instrument must be the same, to

ensure the safety and success of your patient's case.

Those, who wish to follow systematic writers in all their varieties, may consult Beer, Richter, etc., where they will find varieties without end:

1. Lenticular.
2. Capsular.
3. Anterior capsular.
4. Posterior capsular.
5. Cataracta Mergagniana.
6. Capsulo-lenticular.
7. Marbled capsulo-lenticular.
8. Stellated capsulo-lenticular.
9. Window or lattice capsulo-lenticular-cataract.
10. Central capsulo-lenticular-cataract.
11. Dotted capsulo-lenticular.
12. Half cataract, or cataracta capsulo-lenticularis dididiata.
13. Encysted.
14. Pyramidal.
15. Gypsum cataract.
16. Purulent cataract.
17. Bar cataract.—Cataracte barrée.

18. Lymph cataract.
19. Blood cataract, effusion from blows or inflammation.
20. Dendritic or arborescent.
21. Milky or fluid cataract.
22. Soft or caseous.
23. Firm or hard.
24. Secondary cataract.

I forbear giving a definition of the above, which are all removed by one and the same operation; and one circumstance presents itself here worthy of notice, that in all those varieties, whatever operation may be adopted, the whole of the lens and capsule must be condemned in the attempt to destroy any partial opacity: the superiority of the different methods to effect this purpose, has given rise to endless discussions: the diagnosis has therefore been considered an important point. Now the difficulty of distinguishing between caseous, fluid, and solid cataracts, is such, that in the same individual they will be found totally of a different consistence, though corresponding both in colour and appearance.

The last individual I operated on, Nippetelli, of Florence, about four months ago, is one amongst many examples I could cite: if the success of this man's case depended on the diagnosis, he must inevitably have lost one eye; for the first, or left, eye operated on was nearly fluid, and the right, which was operated on twenty days afterwards, was completely solid (1).

When the anterior capsule is opake, it prevents the surgeon from forming any correct and certain opinion as to the state of the lens, if it preserve its natural size; therefore, if the success of cases are to depend on any method adopted to its consistence, I fear operators will often meet with disappointments. In hyalonyxis however it is a matter of no importance; were I to have my choice, I should always prefer solid cataracts, which are removed from the axis of vision, and remain to be absorbed in the vitreous humour, without preventing the pa-

(1) No man in the world could have distinguished the difference in this case; and fortunately, now, it is of no importance in practice.

tient immediately enjoying all the advantages of the operation; whereas in semisolid and curdy cataracts, you have to wait for the absorption of all the small portions, which are often in front of the pupil.

In the last case to which I allude, this patient had all the advantages immediately from the removal of the solid cataract, and had a more perfect vision than from the first operated on, although performed twenty days previously; absorption was however going on rapidly when I left him, and he had resumed his occupation in life. We may therefore regard the diagnosis as uncertain, and which will be evident from reading the frequent disappointments in the prognosis, etc., of professor Beer, and others.

Prognosis.

« Notwithstanding the perfection to which the operation, with all its different modifications, is really brought, its performance will not

always re-establish vision; nay, says Beer, it is frequently counterindicated; and, even in favourable cases, the result of the operation is exposed to so many contingencies, that it is rather a matter of surprise, that, on the whole, so much success should attend it, as is found to happen. When an operation for a cataract is done apparently under favourable circumstances, and its event is unexpectedly very incomplete, or quite unsuccessful, surgeons in vain ascribe the failure to the method of operating, which they have hitherto adopted, and uselessly abandon it for another; because none of these methods, including that which is preferred, brought to the highest state of perfection possible, can be applicable to all cataracts. But, says Beer, the reason of the ill success is generally rather owing to the operation not having been indicated, or to a mode of operating, not well calculated for the particular case, having been selected. He ridicules the idea of adhering exclusively to any one plan of operating; and whenever the question is put to him, what is

his own plan? he answers, that his custom is to operate in the manner which appears to him to be best adapted to each particular case, about which he is consulted. A surgeon should be able to distinguish, first, the cases of cataract, in which an operation may be done with the best chance of success; secondly, the examples in which the prognosis is more or less doubtful; and lastly, the cases in which there is a great probability, or an absolute certainty of the operation failing, in which last circumstance the practice is prohibited. According to Beer, the result of an operation will probably be favourable: 1. When the cataract is a genuine local complaint, perfectly free from every species of complication. 2. When the conformation of the eye and surrounding parts is such, as to allow whatever method of operating may be most advantageous for the particular case, to be done without difficulty. 3. When the patient is intelligent enough to behave himself in a manner, which will not disturb the precision and safety of the requisite proceedings in the ope-

rations, or the subsequent treatment. 4. When the operator, not only possesses all requisite medical and surgical knowledge in general, but is capable of judging correctly, what method of operating suits the particular case; and when besides he has derived from nature and acquirements such mental and corporeal qualities, as are essential to a skilful operator on the eye; viz. an acute eye-sight, a steady but light skilful hand, excellently qualified for mechanical artifice in general; long, pliant fingers; a delicate touch; a certain tenderness in the scientific treatment of this particular organ; complete fearlessness; invincible presence of mind; and proper circumspection. 5. When the requisite instruments are not too complicated; but well adapted to the purpose, and in right order. 6. When the domestic condition of the patient is such as not to occasion any particular disadvantages during, or after the operation. Yet, says Beer, even with this fortunate combination of circumstances, uniform success must not be expected after operations for cataracts; for a

patient, whose sight is quite prevented by this disease, and who previously to its origin, was already far-sighted, will be still more so after the removal of the diseased lens, and in order to see distinctly the most common objects which are near, he will be obliged constantly to employ suitable glasses. An individual of this description, though the operation be done with great success, is apt not to be satisfied. But such patients as were short-sighted previously to the formation of their cataracts, are more pleased with the restoration of vision; as before the operation, their eye-sight was much less than what it is now, and in general they can lay aside the glasses, which they formerly made use of, without having occasion for any others. Lastly, as Beer remarks, although patients who, before the origin of their cataracts, were neither far nor short-sighted, are sensible of the important benefit of an operation, inasmuch as they now plainly discern all objects again, yet they are usually obliged to employ spectacles in reading, writing, or doing any kind of fine work.

« On the other hand, the result of an operation Beer considers always more or less doubtful: 1. When the cataract is only locally complicated, as, for instance, with pterygium, which may not form any absolute reason against the experiment. 2. When the conformation of the eye and surrounding parts causes several hinderances to the operator; as is the case when the eye is small, and deep in the orbit, and the fissure of the eyelids very narrow. 3. When the patient is either very stupid and obstinate, rough mannered, particularly timid, or badly fed. 4. When the surgeon knows how to operate only in one way, in which, perhaps, he has also not had sufficient experience, and when possibly he is also deficient in the qualities specified above, as essential to a good operator on the eyes. 5. When the instruments are bad. 6. When in the patient's domestic affairs there are any circumstances which cannot be removed, and are likely to have a bad effect upon the operation, as an unwholesome, damp room, great uncleanliness, etc. 7. When the origin of the cataract was attended with

repeated or tedious headach, though this may have subsided a long while. 8. When the patient is particularly subject to catarrhal and rheumatic complaints, especially affecting the eyes. 9. When the patient has often had, or still labours under an attack of erysipelas, notwithstanding the parts inflamed be remote from the eye. 10. When the patient's skin is peculiarly irritable. 11. When in his childhood or youth he has been frequently afflicted with convulsions, or epileptic fits, though these complaints may have ceased many years. 12. When there is the least tendency to certain constitutional diseases, scrophula, gout, syphilis, etc. Gout, however, does not always make an operation fail, as we learn from Mr. Travers, who in three cases extracted the cataract from gouty subjects; and, though a smart attack of the disease followed the operation, the eyes were unaffected, and the sight was well recovered. (*Synopsis of the Diseases of the Eye, p.* 297.) 13. When the patient's habit is bad, though not affected with any definite disorder. 14. When the patient in his youth has

often been troubled with attacks of ophthalmy. 15. When he cannot perceive the different degrees of light, and correctly describe them, while nothing to account for this state can be detected in the eye itself. 16. The result of an operation is always very doubtful, when there is the slightest tendency to hysteria, or hypochondriasis. 17. When the patient is subject to violent mental emotions, mania, etc. 18. When the eye to be operated upon can still discern things, however feebly, a state, which generally produces an involuntary resistance to the necessary measures in the operation, 19. When the cataract is the consequence of a wound, though free from complication. 20. When the patient is in the state of pregnancy. 21. When one eye has been already destroyed by suppuration. 22. And lastly, when one eye has already been operated upon without success by a man, whose professional judgement, skill, and caution are unquestionable.

« According to Beer, the result of the operation will be more or less unfavourable: 1. When the

patient is affected with gutta, or acne rosacea, not the effect of hard drinking, but rather of scurvy. 2. When evident traces of some general disease of the constitution are present. 3. When the patient has been ill, and is only yet convalescent. 4. When any other disease, though not constitutional, is present. 5. When the cataract is adherent for a considerable extent to the uvea, or an incurable, though not very severe chronic inflammatory affection of the eyelids, or eyeball, prevails, as for instance, an habitual inflammation of the Meibomian glands; ectropium of the lower eyelid; the remains of a pannus; or a strong aversion to light. Lastly, as Beer observes, every operation must fail, when the cataract is manifestly joined with complete amaurosis, a dissolution of the vitreous humour, dropsy, or atrophy of the eye, some species of ophthalmy, glaucoma, or a general varicose affection of the blood-vessels of the eye.

«The capacity of distinguishing light from darkness, and in a shady place, where the pupil

not too much contracted, of perceiving bright colours and the shadows of objects, is, as Scarpa has particularly noticed, a very important desideratum in every case selected for operation. The power of distinguishing light from darkness, is even more satisfactory than motion of the iris. I saw many years ago, in St. Bartholomew's and the York hospitals, several cases of complete gutta serena in both eyes, in which there was the freest contraction and dilation of the pupils. Had such patients been also afflicted with cataract (a complication by no means unfrequent), and a surgeon, induced by the moveable state of the iris, had undertaken an operation, it must of course have proved unavailing, since the rays of light could only have been transmitted to an insensible retina. Richter and Wenzel make mention of these peculiarities, and the latter refers the phenomenon to the iris deriving its nerves wholly from the lenticular ganglion, while the immediate organ of sight is constituted entirely by another distinct nerve. Hence, motion of the iris is not an in-

fallible criterion, according to several authors, (*Wathen*) that the retina is endued with sensibility. Relating to this subject, Mr. Lucas has made a curious remark: he attended in conjunction with Hey and Jones, five children of a clergyman at Leaven, near Beverley, who were all born blind. He writes, « None of them can distinguish light from darkness, and although the pupil is in common neither too much dilated nor contracted, and has motions, yet these do not seem to depend upon the usual causes, but are irregular. » (*Med. Obs. and Inq. vol.* 6.) The reciprocal sympathy between the two organs of sight is so active, that no one solicitous to acquire either physiological or pathological knowledge respecting them, ought for a moment to forget it. Hence in the examination of cataracts, it is of the highest importance to keep one eye entirely secluded from the light, while the surgeon is investigating the state of the iris in the other; for the impression of the rays of light upon one eye sensible to this stimulus, is known to be often sufficient to pro-

duce corresponding motions of the iris in the opposite one, although in the state of perfect amaurosis. In other examples of cataract, the pupil may be quite motionless, and yet sight shall be restored after the performance of an operation. (*Wenzel*) There are two circumstances however, which may prevent us from ascertaining, whether the retina is sensible to light or not: the first is, a circular adhesion of the crystalline capsule to the iris. Here Richter thought, that some opinion might be formed of the nature of this case, by observing the distance between the cataract and pupil: inferring, that when the space between the pupil and opake lens was inconsiderable, such an adhesion had happened; and, when the cataract did not seem particularly close to the pupil, and yet the patient could not discern light from darkness, that it was complicated with amaurosis. The second circumstance sometimes utterly preventing the ingress of any light to the healthy retina, is the round bulky form of the cataract. But, although the power of distinguishing light from dark-

ness is more satisfactory than motion of the iris, it is not an unequivocal test of the retina being perfectly free from disease. While the gutta serena is incomplete the patient can yet distinguish light, and the shadows of objects. Dilation of the pupil is also a deceitful criterion of the complication of gutta serena with the cataract. When the cataract is large, or adherent to the iris, the pupil is frequently much dilated, however natural and sound the state of the optic nerve may be: the pupil often continues quite undilated in a perfect gutta serena. (*Richter*). From all this it must be manifest, first, That the irregularity and inconstancy of the symptoms of gutta serena, together with the possibility of particular states of the cataract rendering the patient utterly unconscious of the stimulus of light, make it necessary for the surgeon to be particularly attentive to the appearance, and to the history of the origin and progress of the disease, in order to understand the real condition of certain cases. Second, that when the patient can distinguish light from darkness,

though the iris may be motionless, there is good ground for trying an operation. Possibly, in this circumstance, an incipient *amaurosis* may exist, but the *chance of* the defect of the iris arising from other causes; the *certainty*, that the opake body *must* be removed from the axis of sight, (even if the diseases of the retina be cured,) ere sight can be restored; and the *improbability*, that an operation to cure the cataract, will render the other complaint at all less remediable; fully justify the attempt. Frequently the patient has a full formed cataract in one eye, which presents the signs of amaurosis, while an incipient cataract, or one as much advanced, exists in the other, which at present is free from these symptoms: in this case (says Mr. Travers,) the cataract of the latter should be removed without delay. (*Synopsis, etc., p.* 314.) The concurrent testimony of almost all writers upon the subject tends to prove, that the restoration of sight has sometimes been effected in the most hopeless cases, and I am therefore of opinion with Mr. Lucas, that in all doubtful cases an operation should

be tried as a remedy, by no means violent or hazardous. (*Med. Obs. and Enquiries, vol.* 6. *p.* 275 (1). »

The operation of hyalonyxis is performed with greater quickness and facility than the common operation of couching, and never attended with pain to the individual: the instrument has more room for its movements, and is not entangled with those parts of the eye susceptible to inflammation: we are far removed from the ciliary ligament, iris, and ciliary processes, which seldom escape being wounded in the operation of depression or couching; and from which I have seen many men suffer with pains in the temple, head, etc., for years after. In the operation of hyalonyxis, on the contrary, the instrument traverses those parts which are insensible in the interior of the eye; namely, the vitreous humour, lens and aqueous humour; and in one hundred and sixty cases, which I have lately per-

(1) Cooper's Dictionary, page 294, last edit.

formed agreeably to this method, I only recollect to have ordered general blood-letting in three cases; and *never* to have seen one single example of secondary membranous cataract. This latter accident has not only been prevented by the constant and invariable rule of introducing the needle into the anterior chamber, and consequent laceration of that portion of the anterior capsule opposite the pupil; but to the free laceration and removal of the posterior capsule, a more frequent occurrence of secondary membranous cataract than authors allow.

Wenzel asserts, that an opacity of the posterior layer of the capsule takes place much oftener after depression, than extraction. I quote this passage merely to prove, that he was sensible of its frequent or occasional occurrence. In couching or depression it is difficult to say, why it does not more generally take place.

The following, perhaps, are the most modern and perfect rules laid down for the operation of

couching; in which the imperfection of the method must be very visible.

« The couching needle (if the curved one be used) is to be held with its convexity forward; its point backward; and its handle parallel to the patient's temple. The surgeon, having directed the patient to turn the eye towards the nose, is to introduce the instrument boldly through the sclerotic coat, at the distance of at least one line and a half from the margin of the cornea, for fear of injuring the ciliary processes. Most authors advise the puncture to be made at about one line, and some even at the minute distance of 1-16th of an inch (*Hey*) from the union of the cornea with the sclerotica; but as the ciliary processes ought invariably to be avoided, and there is no real cause to dread wounding the aponeurosis of the abductor muscle, as some have conceived, the propriety of puncturing the globe of the eye, at the distance of one line and a half, or two, from the margin of the cornea, as advised by Petit, Platner, Bertrandi, Beer, etc.,

must be sufficiently manifest. Nor is it a matter of indifference, at what height the needle is introduced, if it be desirable to avoid, as much as possible, effusion of blood in the operation. Anatomy reveals to us, that the long ciliary artery pursues its course to the iris, along the middle of the external convexity of the eyeball, between the sclerotic and choroid coats; and hence, in order to avoid this vessel, it is prudent to introduce the instrument a full line below the transverse diameter of the pupil, as Dudell, Guntz, Bertrandi, Beer, Scarpa, etc., have directed. If the couching needle were introduced higher, than the track of the long ciliary artery, it would be inconvenient for the depression of the cataract. The exact place, where the point of the needle should next be guided, is, no doubt, between the cataract and ciliary processes, in front of the opake lens and its capsule: but, as I conceive, the attempt to hit this delicate invisible mark borders upon impossibility, and, with a straight pointed needle, might even endanger the iris, I cannot refrain from expressing my dis-

sent to the common method of passing a couching needle at once in front of the cataract. On the contrary, it seems safer to direct the extremity of the instrument immediately over the opake lens, and, in the first instance, to depress it a little downward, by means of the convex flat surface of the end of the needle, in order to make room for the safe conveyance of the instrument, between the cataract and corpus ciliare, in front of the diseased crystalline and its capsule; taking care, in this latter step of the operation, to keep the marked side of the handle forward, by which means the point of the needle will be in an opposite direction to the iris, and will come into contact with the diseased body, and the membrane binding it down in the fossula of the vitreous humour. When this has been done, and the case is a firm cataract, the instrument will be visible through the pupil; and now we are to push its point transversely, as near as possible the margin of the lens, on the side next the internal angle of the eye, taking strict care to keep it continually turned back-

ward. The operator is then to incline the handle of the instrument towards himself, whereby its point will be directed through the capsule, into the substance of the opake lens; and, on making a movement of the needle, describing the segment of a circle, at the same instant inclining it downward and backward, he will lacerate the former, and convey it, in the generality of cases, with the latter, deeply into the vitreous humour. Beer, as I have explained, gives the preference to a spear-pointed straight needle, one flat surface of which, at the period of its first introduction into the eye, is turned upwards; the other, downwards; one edge, directed towards the nasal, the other, towards the temporal canthus; and the point towards the centre of the eyeball. Beer prefers this mode of proceeding, in order to avoid moving the lens too soon out of its natural situation, whereby the subsequent manœuvres of depression or reclination, he thinks, would be rendered very uncertain and incomplete. He also recommends the surgeon to support his hand in some measure on the pa-

tient's cheek, by means of the little finger, so as to have it in his power to check the too sudden and deep entrance of the instrument into the eye, liable to happen when the broadest part of the spear-point has passed through the sclerotica. (*Lehre, etc., b.* 2, *p.* 354.) It happened, unfortunately for the credit of the operation of depression, that Petit admonished surgeons to beware of wounding the anterior layer of the crystalline capsule: he had an idea, that, when this caution was observed, the vitreous humour would afterwards fill up the space, previously occupied by the lens, and that thus the refracting powers of the eye might become as strong as in the natural state, and the necessity for using spectacles be considerably obviated. But, we are now apprized, that leaving this very membrane, from which Petit anticipated such great utility, even were it practicable to leave it constantly uninjured in its natural situation, would be one of the worst inculcations that could possibly be established; for in many cases where extraction proves fruitless, in some where depression fails,

the want of success is owing to a subsequent opacity of the crystalline capsule; in short, blindness is reproduced by the secondary membranous cataract. It seems more than probable, that, in some of the instances, where the opake lens has been said to have risen again, nothing more has happened than the disease in question. Therefore, notwithstanding the whole capsule in the majority of cases may be depressed with the lens out of the axis of vision, as it is not a constant occurrence, I cannot too strongly enforce the propriety of extirpating, as it were, every source and seat of the cataract in the same operation, and, in imitation of the celebrated Scarpa, who is entitled to the honour of having first pointed out the great importance of this practice, I shall presume to recommend, as a general rule in couching, always to lacerate the front layer of the capsule, whether in an opake or transparent state. The capsule of the crystalline lens may retain its usual transparency, while the lens itself is in an opake state. In this case, an inexperienced operator might, from the black-

ness of the pupil, suppose, not only that he had removed the lens, but also the capsule from the axis of sight; and having depressed the cataract, he might unintentionally leave this membrane entire in its natural situation. Therefore, if there should be any reason for suspecting, that the anterior layer of the capsule has escaped laceration; if, in other words, the resistance made to moving the convexity of the instrument forward, towards the pupil, should give rise to such a suspicion; for the sake of removing all doubt, it is proper to communicate to the needle a gentle rotatory motion, by which its point will be turned forward, and disengaged, through the transparent capsule, opposite the pupil: then by repeating a few movements downward and backward, it will be so freely rent with the needle as to occasion no future trouble. If a straight, slender, spear-pointed needle be used, like that of Beer, and the second stage of the operation be completed by the introduction of the extremity of the instrument into the posterior chamber, then according to the directions given

by the same writer, when depression is indicated, the needle is to be immediately carried to the uppermost part of the cataract, with its point directed somewhat obliquely downwards; and with that surface, which in the first instance was applied to the front of the lens, now placed upon its superior edge; then the opake body is to be pushed rather obliquely, downwards and outwards, so far below the pupil, that it can no longer be distinguished. After this has been done, the needle is to be gently raised, in order to see whether the cataract will continue depressed, and, if it be found to do so, the needle is to be withdrawn in the same direction in which it was introduced. On the other hand, says Beer, when reclination is to be practised, the needle, after being applied to the front surface of the cataract, is not to be moved further out of the position of the second stage of the operation, but its handle is merely to be raised diagonally forwards, whereby the cataract will be pressed downwards and outwards to the bottom of the vitreous humour, and turned in the manner already

specified. Beer has delivered what appears to me one valuable piece of advice for operators on the eye with the needle: whether depression, or reclination, is to be done, says he, a surgeon can only use this instrument without injurious consequences on the principle of a lever; and every attempt to press with the whole length of the instrument is not only ineffectual, with respect to the progress of the operation, but so hurtful to the eye, that bad effects must follow, as may be readily conceived, when it is recollected how violently the ciliary nerves must be stretched (1).»

All the movements of the needle, above described, for the removal of the anterior capsule when transparent, will in most cases be found ineffectual. I have the recollection of many cases, where those directions were never lost sight of; but, unfortunately, found practice not corresponding with theory. When the capsule

(1) Cooper's Dictionary of Practical Surgery, page 305.

is transparent, it may be regarded altogether as the effect of a fortunate accident, when removed: unless the needle pass into the anterior chamber, and those movements are made which have already been described in hyalonyxis the anterior capsule is in eight out of ten cases left behind in couching. It was indeed the frequent disappointments in the early part of my life, which induced me to adopt this method, and the more recent conviction of the necessity of removing the posterior capsule. In the operation of couching, the inferior portion of the posterior capsule is only lacerated, for the lens is conducted backwards and downwards.

I am confirmed, by long and extensive experience, that the posterior capsule is frequently the seat of secondary membranous cataract, which has been often attributed to the anterior. The early practice I adopted, of introducing my needle into the anterior chamber, for the purpose and certainty of removing the latter, and the occasional mortification I have met with,

in finding opacity two or three months after the operation, is a proof too conclusive: that the posterior capsule must have become the seat of opacity, admits of but little doubt. This is further confirmed by extensive opportunities of operating within the last four years, where the accident in no individual case has occurred. When the lens is conducted backwards and downwards, lacerating and injuring the posterior capsule, the natural consequence is inflammation and opacity of that membrane.

I would ask the most minute anatomist, how he could possibly distinguish the difference betwixt an opake anterior or posterior capsule, after the former had been removed with the lens, and buried in the vitreous humour? It is evident that the posterior capsule, which in general remains by couching, now becomes anterior, and is nearly in contact with the iris, and, we may add, occupying the situation of the anterior capsule, prior to its removal with the instrument. When the lens and anterior capsule

are carried backwards, and buried in the vitreous humour, the latter with the posterior capsule advance.

This being admitted, we have no difficulty in accounting, why glasses are so inadequate to supply the place of the ordinary lens. When the posterior capsule remains transparent, it no longer exists in its original position, being, as it were, in a concave bed in the vitreous humour: this advances, when the lens is forced backwards; the consequence is, that the posterior capsule and front part of the vitreous humour change, more or less, their situations; having nothing in front to oppose or support them, the natural effect is, that the posterior capsule, in many cases, presents an uneven surface or forms a fold, and, from being transparent, not visible to the operator; which nevertheless must render vision imperfect: for the rays of light, passing through on their way to the retina, and meeting with this surface, become refracted and broken; a defect therefore is

produced in vision, altogether irremediable by glasses, and which must take place occasionally in every method recommended and practised for the removal of cataract, and only avoided by hyalonyxis. What further causes exist are, perhaps, difficult of explanation; but the fact is, that patients have a better and more perfect vision from this operation, than from either extraction or depression.

The vitreous humour is an insensible substance, and suffers no injury from the movements of the instrument; at least, I have never met with a case in practice, even from the most extensive use of the needle within its body, where any disorganization or change took place. We have also the authority of Mr. Hey, a most able surgeon, who says: « The vitreous humour does not appear to suffer the least injury by the passage of the needle or cataract through it. If there was any tendency in this humour to become opake, we should frequently see this consequence ensue from the operation of couching.

But no such consequence, I believe, was ever known to ensue ; on the contrary, this humour seems to be in as proper a state for the transmission of light, after the operation, as it was before (1).»

Treatment after the Operation.

The total seclusion from light is of the first importance; therefore, however well bandaged the patient may be, it is desirable to avoid taking any candle into the chamber, but it should be left in an adjoining room. A purgative should be given the patient the morning succeeding the operation. Food cannot be too light for the first three days: barley water, with biscuit, tea, etc.: on the fourth day, the patient quits his bed, and unless any symptoms of uneasiness should be felt, should be allowed chicken broth, etc.: the sixth day, solid food, and living as usual: the twelth day, the patient should be examined by the surgeon, and never before.

(1) Hey's Practical Observations on Surgery, page 78, third edit.

With the precaution of wearing a shade, the light should be gradually admitted into his chamber, and increased to the twenty-fifth day, when the patient may resume with safety his occupations abroad. In fifteen cases out of twenty, I have found the patients required no other treatment. When any inflammatory symptoms are apprehended, by pain in the eye or temple, three or four hours after the operation a decoction of poppies should be prepared, and the bandage taken off; the eye, forehead, and temple should be well fomented, or bathed, with this tepid decoction, and should be repeated every three or four hours, until the pain and irritation cease; an opiate draught should be given, consisting of thirty drops of the tincture (which consists of one grain and a half of opium) at bed-time, in a glass of water: this has been found in the great mass of casses sufficient to tranquillize all irritation, and to remove every disposition to inflammation.

When inflammation takes place, you would

have recourse to leeches, and the fomentation already described, with the further use of the lancet, if indicated by increased inflammatory action.

Regarding the period of the patient's going abroad after the operation must depend altogether upon the sensibility of the retina. I have had some country patients, who have left town without my knowledge, seven or eight days after the operation, without inconvenience. A lad I operated on for cataract, at the clinical ward of the university of Naples, quitted the hospital fourteen days after, walked home, a distance of eighteen miles, exposed to the powerful rays of the sun in that climate, and suffered no ill effects. I saw him with several other professors of Naples, four months after the operation, perfectly cured.

A patient however cannot be too guarded: I am persuaded, that light, admitted to the retina too early after the operation, has been the ruin

of many patients; and I think it is an error that generally exists in practice. I have the painful and unpleasant recollection of one case of a gentleman (a nobleman), who filled one of the highest diplomatic situations at the court of Vienna; who, from the third day of the operation to the end of the treatment (prolonged by a constant state of irritation), kept up, would satisfy his curiosity and pleasure by examining objects, opening the window, etc., notwithstanding all remonstrances. It is needless to add, he nearly lost all that he had acquired by the operation; the iris became inactive, with all the other indications of local debility and derangement.

The exclusion of light I consider, therefore, as a point of essential importance; and the surgeon should suspend his curiosity until the tenth or twelfth day, when he will be well repaid for the deprivation.

It must be remarked, that whenever irritation

is produced, absorption is almost at a stand, or at all events goes on very sluggishly; and nothing is so injurious, and so likely to produce it, as the sudden and repeated admission of light.

CASES,

WITH

CRITICAL AND PRACTICAL REMARKS.

SIENA, 1820.—Lucia Salamoni (from the neighbourhood of Grosetto), æt. 58, of a weak and relaxed habit, with an enlargement of the liver, and other organic affections, the effect of intermittent fever, so general in the Maremma, consulted me for two cataracts of seven years standing: the operation of hyalonyxis was performed on both eyes the same morning, contrary to my usual practice; the cataracts were solid. I think that in all cases only one at a time should be removed; that there should be always an interval of fifteen days, excepting under very pressing circumstances. Having previously taken the usual purgative medicine, nothing remarkable occurred; the morning succeeding the operation, half an ounce of the suphate of magnesia was ordered in nearly a pint of water, which produced the desired effect; no irritation nor uneasiness took place, so as to require the use of the fomenting or bathing with decoction of poppies, or opiate draught. On the morning of the eighth after the operation I called at her lodgings,

where I was informed that some of her relations had come for her the day before, that her sight was perfectly restored, and she had left town without her bandage; I apprehended some mischief would naturally ensue; her friend however, who resided in Siena, informed me two years after, that he had seen her twelve months after the operation, perfectly well. I merely state this case to prove the insensibility of the retina in some people.

Remarks. Those cataracts, on the introduction of the needle, were found solid, and are always the most satisfactory, both to the patient and surgeon; the latter removes the opake body from the axis of vision with its capsules; and before absorption even takes place, the former has all the enjoyment of its success: whereas when the lens is curdy or fluid, it requires frequently six weeks or more before the patient has the pupil clear, and divested of all broken portions. The result however ultimately is equally the same, where the latter are absorbed, without having recourse to a second operation, or any interference on the part of the surgeon.

J. Bandini, æt. 45, appearance emaciated, applied to me, from the convent of Saint Francesco, for a cataract in the right eye; the left was wasted (*atrophy*) from inflammation, etc.; which had succeeded the operation of couching, performed on it eighteen years previously by a celebrated surgeon of his day, the late Nanoni of Florence. He told me, he was extremely apprehensive of an instrument, having suffered for nearly five

years, in the eye and head, very acute pain after the operation. Nanoni wished to perform on the other, to which he would not consent, but quitted Florence, and became an inhabitant of the convent, where he remained a pensioner of the charity. The usual preparation of taking saline purgatives having been gone through, I operated with one of Scarpa's needles, which I found inconvenient, having sent my own to Florence as a model to an instrument maker. The case was a simple milky cataract. On entering the anterior chamber to perform the necessary movements, the aqueous humour became turbid; the capsules being removed from the front of the pupil, were in great part conveyed into the vitreous humour, and it is not improbable some transparent portions might have passed into the anterior chamber; for in all cases the opake matter, whether fluid or curdy, should be encouraged or assisted with the point of the needle in its passage into the anterior chamber, where absorption is more active. Four hours subsequent to the operation, this man was seized with vomiting, a circumstance which rarely occurs in hyalonyxis; on inquiry however it appeared the nurse had, with a very good intention, given him a double portion for his breakfast, as she expressed, «to give him courage;» the stomach was therefore overloaded and distended, and from the anxiety and apprehension of the patient, it was very improbable that digestion should take place. This vomiting however brought on some pain and irritation in the eye, which was relieved by the poppy fomentation, and an opiate draught; the fol-

lowing morning the pain, though diminished, was still troublesome; I ordered three leeches to be applied to the eyelid and its vicinity, and gave him a smart purgative; the fomentation was repeated every three or four hours; he slept well the second night, and all irritation ceased; low diet was strictly adhered to; he continued without any symptoms of uneasiness, irritation or pain, and in twenty-five days was perfectly cured. I met him within the month of the operation (with the precaution of wearing a shade) two miles distant from the city, having gone abroad alone to see some of his friends.

Remarks.—This patient frequently told me, that he was unconscious that my needle had penetrated the eye-ball: for Nanoni had given him excessive pain, probably from wounding the iris, in order to introduce his needle into the posterior chamber, or from wounding the ciliary processes. Mr. Angeloni, one of the leading surgeons of the city, was so obliging as to assist me at the operation; also Baron Brown Mill, a physician of great respectability, residing in Bath; the marquis Angelo Chigi, one of the most humane gentlemen of the city; count Bergali, a rising advocate of France; and the late professor Bartolini (whose death has been a public loss), one of the most celebrated natural historians in Tuscany, and professor in the university of Siena.

Siena.—Gaspero Ruspini, or Rossi, æt. 50, farmer, a stout, athletic man, consulted me for what he conceived and was led to believe was gutta serena in the left eye; the right had been destroyed many years prior by an acci-

dent. On examining the eye, I found the pupil black, but preserving its natural circumference, and not insensible to the sudden admission of the rays of light. I cannot however say, that activity was as distinctly marked as in common cases of cataract; the black, however, when examined minutely, appeared to be nearer the iris than usual, and somewhat coarser than the pigment at the bottom of the eye: the vicinity of the black however appears to me the most distinguishing mark. I recommended this man to undergo the operation, which was performed some days after, assisted by Falleri's young man. I found the lens nearly solid; no symptoms particularly occurred to require any applications, and nothing but a purgative was administered the following morning, with the usual strict adherence to the antiphlogistic plan. On examining this patient the twelfth day after the operation, I was astonished to see the lens, etc., buried in the vitreous humour, a very light colour, the black had disappeared, the patient was restored to sight, and could distinguish objects as well as individuals usually do soon after an operation. He quitted the city twenty-five days after the operation; but I cannot say that his vision was as perfect as those who are operated on in ordinary cases. He was however well satisfied, and required no assistance to perform the ordinary duties of his situation in life.

Remarks. This was the first case of black cataract I had ever seen; indeed until of late its existence has even been doubted. If however we limit our definition of cataract to be either an opacity of the lens or its cap-

sule, the former opinion may still hold good; but, on the contrary, if we define the term cataract in a more extensive and liberal sense, by which we admit that any opake body, intervening between the aqueous and vitreous humours, constitutes a cataract, we then must admit that black cataract does exist. No opinion, as yet, has ever been offered by any author, to my knowledge, as to the cause of this singular disease, which is rarely met with. If we are allowed however to reason from effects, we can only conclude, that the black appearance is a diseased secretion of the ciliary processes, forming a layer or coat on the anterior capsule of the lens: if the body and substance of the latter were black, it is highly improbable it would disappear before the lens was altogether absorbed; the black matter being a thin coat, when disturbed and mechanically divided, is dissolved and quickly absorbed. I recollect the case of a gentleman, in Rome, with black cataract, which was connected with amaurosis, or great debility of the retina, on whom the operation was performed with a faint hope of its succeeding: the twelfth day, the cataract was nearly of a white colour, the black had entirely disappeared: this effect was also noticed by professor Andreoli, who assisted me in the operation. Absorption in this case did not go on, and it was found prudent not to repeat the operation, the patient having been subject to apoplectic fits. Until we are presented with some pathological facts, we may consider the black appearance as the effect of diseased secretion of the ciliary vessels: I do not believe the lens is ever found black. The same re-

markable circumstances took place in both cases after the operation.

Rome.—Padre Bora (one of the inspectors of the Nazarene college, and formerly professor of natural philosophy), æt. 71, temperament sanguineous, consulted me for a cataract in the left eye, of seven years existence, with daily diminution of sight of the left, which he attributed to fatigue, etc., in reading. This was however an incipient cataract: opacity was evident and advancing; so that I recommended him, without loss of time, to have the operation performed on the cataract of the eye in which he had no vision. The patient was accordingly prepared, and the operation performed, assisted by Mr. Andreoli. The lens was soft, and in part fluid; so that the object in view was the removal of as much from the axis of vision as possible, into the vitreous and aqueous humours. The patient retired to bed; no irritation supervened, excepting what arose from the effects of imagination. I employed the poppy decoction twice during the day, gave my patient an opiate draught with a saline purgative the following morning: he slept well, the medicine had its desired effect, and he continued the usual time confined to his bed (three nights); the fourth day, dressed himself, sat up, and continued perfectly well. On the twelfth day I examined him, and found no absorption had taken place; the pupil was nearly white, the lymphatics remained sluggish and inactive; and finding my patient was apprehensive and uneasy, on the twenty-fifth day, no apparent change

having taken place, I introduced the needle a second time, mechanically divided all the small portions in front of the pupil, and removed them as much as possible from the axis of vision. Absorption took place rapidly after the second operation, and I had the satisfaction of restoring my patient to sight; his vision daily improved, and the incipient cataract or opacity in the right eye totally disappeared. To use his own words: «My dear doctor, your operation on my left eye has completely cured my right; as I see better with it than I have done for some years.» In this operation I was assisted by Dr. Clark, resident physician in Rome; Dr. Kennard, ately of London; Drs. Kissock, Baily, a french physician, now established in Paris; Mr. Albites, a roman surgeon; and Mr. Andreoli.

Remarks. This case we may regard as one of the most interesting that could have occurred in practice, and tends to establish the opinions we have already inculcated, of operating in all cases, when only one eye is affected. This case however is remarkable, inasmuch as it tends to prove, as far as a single instance or example (supported by St. Ives' case) can do, that we not only prevent the formation of a cataract in the sound eye, by the removal of the opake lens in the other, but that there is even a probability of dissipating an incipient cataract by the operation, from the great sympathy existing between those organs. The gentleman, whose case we have now related, is a living instance of the fact; and I am happy so many gentlemen of the profession had an opportunity of seeing it. Dr. Baily saw this

venerable and respectable man with me twelve months after; when the concave glasses he made use of became the subject of conversation. I accompanied my patient to an optician's, where he chose glasses of a different focus, which he made daily use of in reading, etc. Upon an average I have repeated the operation in every fifteenth case; but I am persuaded, that in many cases it has been unnecessary. As however the pain is but trifling, and the patient and his friends are generally very urgent to have the cure terminated, I have often, contrary to my own sentiments, disturbed it a second time; and in no instance have I ever seen any inflammatory symptoms result from a second operation: the eye is, as it were, accustomed to the stimulus; the absorption in some people is extremely slow, and in others equally active. I recollect the cases of two men, Joseppo Rotini and Francesco Barni, on whom I operated the beginning of May, for two soft cataracts; in the commencement of June (the usual period when all strangers quit Rome on account of its insalubrity), I discovered the pupil of each patient covered, without any change or absorption having taken place. Being at that period on the point of leaving the city, I refused repeating the operation, being unwilling to leave them immediately after it, without having my own personal attendance; and therefore requested them to remain quiet until my return in October, when the operation should be repeated. On my return, I saw both those patients with the lens completely absorbed, and of course restored to perfect sight. I think, therefore, the

operator should defer as long as possible, at all events two months, before he repeats it; not from any apprehension of inflammation; but a fresh wound or puncture should always be avoided if possible. In the above two cases, and no doubt in many others, absorption would take place after the first operation, without any interference on the part of the surgeon: nature frequently performs more than we are willing to allow her. I think, therefore, a second operation should not be too soon urged; for it can always be repeated with the same advantage three months after as one. The proportion of cases however, where I have operated a second time in hyalonyxis, has been one in fifteen; but, I am persuaded, not one in twenty requires it.

Cataract with Ossification of the Capsule of the Lens.

Rome.—A. Cinli, æt. 28, of an irritable habit, poulterer in the Pantheon market, applied to me for a cataract in the left eye (the right was perfectly sound); this had existed about two years. The patient informed me he had received a blow with a stick on the eye, which was followed by slight inflammation, and soon after discovered that he had lost all vision in it, excepting the distinction of day and night, There was no external visible appearance on examining the eye, to indicate any osseous matter within the globe. On introducing my needle three lines from the cornea, and advancing its point, I discovered the lens to be perfectly soft, and on advancing to introduce the

instrument into the anterior chamber, I found an unusual resistance; on moving the point of the needle could distinctly feel a solid substance, which was also rendered more clear by a sort of crepitation; I persevered however, broke down the opake body, and conveyed it into the vitreous humour; there was also adhesion to the iris, which was removed. More than usual irritation attended this case, the patient complained considerably three or four hours after; fomentations were employed every three hours, an opiate draught was administered at bed-time, and a smart purgative the following morning, consisting of the infusion of senna, Epsom salts, and some tincture of jalap. During the day he still complained of some pain, which was always relieved by the poppy fomentation; the following morning three leeches were applied to the vicinity of the eye, the evacuating and depleting system was kept up for five days, when all irritation ceased. What annoyed this man more than any other circumstance was a friend of his, J. Fumi, from the neighbourhood of Villetri, who had been operated on the same morning, and who slept in the same chamber, had never complained of one moment's uneasiness; his cataract was fluid, his case required no care after the operation, and two and twenty days after he quitted Rome perfectly cured, I received a letter from him within a month of the operation, in which he informed me he was re-established in the situation he had formerly held in the custom-house. I saw Cinli, the poulterer, twelve months after the operation, and could perceive a very minute por-

tion of the bony capsule still remaining in the vitreous humour, it did not however in the slightest degree prevent him from seeing. In this case Mr. Andreoli assisted me; there were present, Dr. Gatti, a physician, in Rome, with some other professors, the British consul-general, Mr. Park, the late Mr. Tempest of Yorkshire, etc.

Solid Cataract united to its Capsules, forming one Body.

Count A. Zelli (of Viterbo), æt. 43, temperament sanguineous, had from his early youth followed the profession of arms, and accompanied the french army in the various campaigns of the last war. About eight years however since, he gradually lost the sight of the left eye, which he attributed to violent rheumatic pains in the head, etc., exposure to the powerful beams of the sun by day, and to the damps and fogs by night. The cataract in the right eye was succeeded by another in the left, twelve months after: he was always of a constipated habit. Soon after his arrival in Italy, he went to Pavia, and consulted professor Scarpa, who recommended him to have an operation performed, which was immediately, or soon after, done by one of professor Scarpa's pupils, at Como, by couching. He received no benefit from the operation at the period of its performance, which was attended by acute pain, and succeeded by violent inflammation; the pain in the eye and head continued for nearly three years; he was

confined a considerable length of time to his bed. He came to Rome, nearly seven years after this operation, to consult me for the cataract in the other eye; had been at Naples, and various other places, to get advice. The right eye was wasted, the humours within the globe absorbed, cornea opake (*leucoma*), and all other visible effects of inflammation. On examining the left eye, I found the lens adherent to the iris on the nasal side, or internal canthus, and about one third the circumference of the pupil; the contractions of the iris were only visible in the temporal part, a tremulous iris (*un mauvais signe*) always an unfavourable symptom; he could distinguish however day from night, but not the light and shade of a candle: periodical pains in the head, and occasionally in the eye which had formerly been operated on, derangement in the chylopoetic viscera, with great determination of blood to the head. Notwithstanding so many unfavourable symptoms, I undertook the operation: having previously well prepared my patient, in removing all local congestion by smart purgatives, pediluvium, etc.; correcting the secretions, equalizing the circulation, etc., so as to prevent, as much as possible, inflammation, which in all amaurotic dispositions is to be dreaded, and guarded against: I introduced my needle, and advanced immediately to the pupil, endeavoured to remove the lens, but withou success; I found the adhesion extremely firm. I then employed the cutting part of the needle, and detached nearly two thirds from the iris, made a second attempt to depress, but without success; indeed I used as much

force as prudence would permit. Conceiving therefore it was better not to effect too much at one operation, I determined to desist for that day; but before I withdrew my needle, I penetrated its point into the centre of the lens, by turning the handle round between the thumb and forefinger, and made a sort of hole in its substance; withdrew my needle with an intention of finishing the operation another day. Very little irritation ensued, but the eye which had formerly been operated upon became extremely painful, and our fomentation and attention was directed principally to that; he took thirty-five drops of laudanum at night, slept well, and the following morning a laxative medicine; slight irritation continued in the wasted eye, but not the least pain in the one operated on the day before, from low diet, etc. All irritation terminated on the third day, and the fourth morning my patient sat up in his bed: on the twelth day I examined the eye, and what was my surprise and pleasure to see nearly a fourth of the lens absorbed by the perforation which had been made with the instrument: part of the pupil was uncovered (my patient could distinguish the outlines, or features, of his lady, whom he had never seen, being married after having lost his sight); part of the lens had been dissolved by the aqueous hnmour, and was absorbed. We had now no hesitation what practice to follow; a second operation was for the moment suspended, the case continued doing well; about three months after, half the lens had disappeared, the whole circumference of the pupil was nearly visible. I was

then on the eve of leaving Rome for Venice, in the month of June; the count urged me to remove the remaining part before my departure; it would however have been the height of madness to have coincided with his wishes, when every thing went on so favourably. On my return to Rome, in the October following, there remained only a small portion of capsule attached to the inferior margin of the iris, but altogether removed from the axis of vision; and at the end of the winter, or some months after, when the count quitted Rome for his native city, no vestige of it was apparent. It must be remarked here, that vision was but imperfect, he could distinguish all living and moving objects by day, scarce any thing by candle light, the nerve was in part paralysed, but he gained more than could have been expected from the operation. Mr. Andreoli and Dr. Quinn of Naples assisted me, and saw regularly the progress of the case.

Remarks. Perhaps no case in surgery could exist more interesting than this gentleman's. Without hopes of ever being relieved, he had retired for seven years, and submitted to his hard fate. I believe it is the first case on record, where such a practice has been pursued. Instead of cutting, tearing, or separating the adherent lens from the iris, which is extremely sensible, we find that we are enabled to effect our cure, and remove the most solid cataract, firmly united to its capsules, without moving its position: that it becomes dissolved and absorbed in front of the pupil by puncture alone. This sufficiently justifies our observations, in recom-

mending in all doubtful cases an operation, as a point of humanity, where nothing can be lost, but much may be gained. He employed electricity, etc. Lately, I recommended him the use of the phosphoric application, consisting of two grains of phosphorus, increased gradually to six, in two ounces of olive oil, as an external application and stimulant; a small portion of which is rubbed on the eyebrows every night. What effect it has produced I am unable yet to relate; but it frequently succeeds in giving tone to the nerve, where all other means fail.

Carolina Balistini, æt. 60, of an irritable habit, had been subject to violent headachs many years, accompanied with great torpor and constipation of the bowels. This patient had two cataracts: with the left eye she could distinguish the light, the iris was active and regular in its motions: in the right eye the pupil preserved its natural circumference, the iris was tremulous, and not susceptible to any change on sudden exposure to light. Having prepared my patient by medical treatment, I operated on the left eye one month after: the cataract was solid, removed below the margin of the iris with its capsules into the vitreous humour. She experienced immediately the good effects of the operation; and twenty days after could perceive the most minute objects. The operation having so admirably succeeded, without irritation or any other unpleasant symptom having been produced, she was anxious to try the experiment on the hopeless eye: accordingly I performed it

on the twentieth day after the first operation: the cataract was curdy or semisolid. Some irritation succeeded this second operation, which was speedily relieved by fomentation, etc., already described. The pupil preserved its natural appearance, lens was absorbed, but vision was not restored in this eye. The same morning I operated on

Vincenzo Corsani, whose case has nothing remarkable, excepting the circumstances which attended it. It was a common case of nearly fluid cataract, with opacity of the capsule. This man had been operated on, by couching in the right eye, at St. James's hospital, in the Corso, twelve months before: the eye was soft, sunk in the orbit, the whole of the vitreous humour absorbed from the effects of inflammation, which succeeded the operation. I operated in the left eye; removed the lens and the capsules, he was instantly restored to sight. I bandaged my patient and sent him to his lodgings. He did not send me his address that day; at which I felt much annoyed; the surgeon should invariably visit his patient three or four hours after the operation, and attack any symptom which occurs, before any inflammatory action has time to establish itself. The following morning I received a note from the landlord of an hotel, near the Trajan column, informing me, my patient was very ill. I called immediately, and found the poor man with a violent symptomatic fever. My first question naturally was, have you any pain in your eye and head? He informed me, that he had not the

slightest irritation or pain in the eye, but it was from his leg he suffered: that on coming to my house, to have the operation performed, he had tumbled over a block of marble, near the forum, and hurt himself dreadfully; that he did not wish to say any thing on the subject, fearing I would not perform the operation, though he was in great pain at the time. I examined the limb, and found one third of the tibia laid bare, with inflammation and considerable swelling: I ordered fomentations and poultices immediately. He was, however, so neglected at the inn, that the following morning I took a coach for him, and had him conveyed to the hospital, where he had been a patient twelve months before. He was humanely received, and taken charge of by one of the young men: I occasionally visited him. No applications were necessary to the eye operated on; absorption went on, and his vision was perfect long before he was able to quit the hospital; where he remained nearly three months on account of the accident.

Remarks. In Carolina Balistini's case, the operation on the eye affected with amaurosis was altogether unnecessary; because the eye which had been previously operated on was restored, the lens removed, and could therefore never be exposed to those occurrences which take place from sympathy: when one lens becomes opake it cannot be too early removed; for sooner or later the other will be affected. In this case, however, the cataract was removed in the eye not affected with amaurosis; the opake lens in the other, therefore, must altogether be a matter of indifference, and should be allowed

to remain, provided the physician is convinced that the retina is not susceptible of impressions. It is however here to be perfectly understood, that the cataract in an eye affected with amaurosis, where the other has its lens transparent, or even where an opacity has commenced, the operation should be performed on the eye affected with amaurosis, without loss of time, to prevent if possible the opacity forming in the other; as it may, as we have remarked in the case of Padre Bora, dissipate an incipient cataract, and therefore altogether prevent an operation. I saw this woman occasionally during eighteen months after the operation: she was able to re-establish herself in business, being engaged in the fur-trade. She was extremely grateful, and felt a pleasure in showing her needlework, and was humanely employed by many English ladies to make tippets, muffs, etc., of the fine furs, so cheap in that country.

Vincenzo Corsani's case has another circumstance which I omitted relating: after the operation he walked for three hours, during a very hot day, in search of an apartment or lodging; notwithstanding all those concomitant circumstances, having been previously operated on unsuccessfully, receiving a considerable injury, fever, exposure after the operation, etc., the case succeeded perfectly without inflammation, irritation, or any symptom to which all other methods are more or less subject.

In these cases Mr. Andreoli assisted me with some other professional men. Present also his grace the duke of Hamilton, and the marquis Anchiani, the most scien-

tific of the roman nobles; he subsequently visited this patient with me in the hospital to see the ultimate effects of the operation.

Naples.—Gasparo Ingenito di Gragnano, æt. 18, temperament sanguineous, having cataracts, was admitted into the clinical ward of the hospital, called *Incurabile*, forming a part of the university. Dr. Quadri, one of the directors, and one of the best operators in Italy, and particularly successful in artificial pupils, requested me to perform on this lad, to demonstrate the new method, Hyalonyxis. It was performed in the presence of many professors of the city, and all the gentlemen attending the university. I operated on the left eye, and found the cataract semisolid; it was however, by the movements of the needle, in great part removed from the axis of vision, and after withdrawing the instrument, I asked him if he could see, his answer was: *Oh chi! ci vedo bene.* Oh yes! I see well. The patient retired to his bed, and occasionally I visited him; nothing occurred to require any medical treatment, and on the evening of the seventh after the operation, being obliged to return to Rome on business, I examined my patient, and found every thing going on well. On the fourteenth day, this lad suddenly disappeared, no one knew where; on my return to Naples, two months after, I heard with some surprise, that the operation had not succeeded; I called upon Dr. Quadri, who informed me that the lad, in all probability, would return, not having been cured. He lived near Castelamare. I wished

to see the baths, erected by professor Assalini, in that quarter, and requested professor Condorelli, who had seen the operation at the university, to accompany me; we discovered the lad perfectly cured, he could see the most minute objects. He had had the operation performed on the other eye, by a surgeon in the country, by couching, without much success; there was a secondary membranous cataract formed. I requested the lad would go into Naples, which he did, and presented himself to professor Quadri, doctors Milne, Kissock, Roskelly, etc., who were highly pleased to see an unsuccessful case, with so perfect a vision, there was not a vestige of the lens nor capsule remaining, a fine black eye, pupil clear, iris active, in short a more successful or satisfactory case could not have existed.

Remarks. This lad informed professor Condorelli and myself, that he walked home without any guide, that he knew his friends immediately on arriving, that he had suffered connsiderable pain from the operation in the last eye operated on; the mark was still visible, where the gentleman entered with his needle, about a line and a half from the transparent cornea, and the operation appeared to have been performed with all the precision imaginable, and agreeably to the rules laid down by Scarpa and others; but as we have frequently observed, the capsule must, in the general run of cases, be left behind by couching, and unless the needle pass into the anterior chamber, as in the operation of hyalonyxis, the patient must always be subject to secondary membranous cataract. I met this lad two months

after, when I found the capsule had diminished, and was in part absorbed; he assured both professor Condorelli and myself, that he was quite unconscious, when the the first operation was performed, that the instrument was in the eye. The retina is decidedly insensible to touch, and there exists near the iris, etc., nerves which cannot be avoided in couching, that the wounding of which produces not only pain during the operation, but frequently long suffering after (1). As the operation of hyalonyxis now became popular in the university, arising from the great facility and ease with which it is performed, and the complete success attending it, the gentlemen were anxious I should demonstrate the method more fully on the subject, and explain by dissection, etc. its advantages. This I had the pleasure of doing; and a short period after, notwithstanding the hot season, when all operations in every part of Italy (excepting those arising from accidents) are suspended, from an apprehension of their proving unsuccessful, I had a further opportunity of demonstrating on the living, the great advantages of the operation, and of performing the same morning on.

Antonio Steano of Meta, Giovan Vittore Steano Piano of Sorrento, and Giuseppe Anastasio of Sorrento, the two former were brothers, with bereditary cataracts and amaurotic dispositions. The two first cases were in all respects so similar, both in their symptoms and progress,

(1) See the cases of count Zelli, etc.

that I shall give a joint account of them. They had been subject to violent headachs for many years, great constipation of bowels, rheumatic affections, had been blind sixteen years. Antonio had lost his right eye from inflammation, and had been a patient in the hospital Saint Spirito, in Rome. Antonio, æt. 44, and Vittore, 42, were engaged in a silk manufactory at Meta; their grandfather died with cataracts, their father had cataracts, the two unfortunate men had cataracts, and the daughter of Antonio, a girl of 16, had two incipient cataracts: these are therefore decidedly marked hereditary cataracts. The medical treatment of both those cases was long and tedious: we succeeded however in ultimately removing nearly all their chronic complaints: and although much was to be apprehended from the uncertain state of health of both those individuals, I undertook the operation. The cataracts were removed without difficulty; and Antonio, from having a solid lens, was immediately sensible to all its good effects: Vittore's cataract was nearly fluid. In both cases, as we naturally looked forward to, great irritation ensued: we met every symptom however as it occurred; fomentations were employed, leeches applied, and on the third day bleeding from the arm, and smart purgatives. They were attacked with rheumatism in the thighs and loins, which shifted to the head and eyes. We had recourse to the pediluvium, antimonials, Dover's powders, etc. Low diet was prescribed, and strictly attended to for twenty days; on the twenty-fifth, both patients went on well; Antonio could see objects tolerably distinct. Very little

absorption had taken place in Vittore's case, in consequence of the irritation; a small part of the pupil however was open, through which he could distinguish objects. The cases continued doing well, and on the thirty-fifth day Antonio could perceive, nearly the distance of a mile, a female opening the shutter of a window. Absorption was going on in the brother; and I had the satisfaction of restoring two men to vision and good health, whose cases were nearly hopeless, both complicated and difficult, and who must have been lost altogether by the common and ordinary treatment; there was every predisposition to inflammation, and nothing but a rigid preparatory regimen, etc., could have prevented it; they were cases which gave me great satisfaction. The temperature in their room was never below 80° of Farhenheit, and in the middle of the day frequently 93°. Naples, during summer, has the climate of India, dreadfully hot; and when accompanied by the cirocco, or wind that blows from Africa, is insupportable. Hereditary cataracts have been noticed by many authors; Janin, Richter, Beer, and more recently by sir Wm. Adams.

Ginseppi Anastasio, æt. 56, by profession a sailor, had been operated on for cataract in the right eye, at the Incurabile, on the 4th of May previously; considerable inflammation followed, the eye wasted, and in a state of atrophy, the vitreous humour had been absorbed, the eyeball soft, and sunk in the orbit. He applied to me for a cataract in the left eye, which had

existed about two years; he had no symptoms to indicate any thing more than the ordinary treatment, and accordingly three saline purgatives were given him. The operation was performed, the cataract removed, and the patient retired to his bed; he slept in the same room with the two others operated on. No pain, irritation, nor any symptom followed to require any treatment; he had a most voracious appetite, nothing could satisfy him, and it was with difficulty he was restrained from going out four days after the operation: the twelfth day, however, he quitted this apartment, nearly the whole of the fluid lens was absorbed: on the twentieth day, he was abroad (with the precaution of wearing a shade) vision perfect. This was the twenty-fifth case, where I operated on one eye after the destruction of the other, either from accident or the effects of unsuccessful operations by extraction, couching, etc., of which twenty-four out of the twenty-five succeeded. The one case was connected with amaurosis, and therefore we cannot attribute the want of success to the operation. The gentlemen who assisted me at these last operations were, Mr. Gaulter of London, surgeon; Dr. W. Theveny of Hamburgh, and several of the university: those who were zealous and enthusiastic in their professional pursuits were doctors Mario Condorelli of Syracuse, Giovanni Giuseppi Pinto, of Putignano, in the province of Bari; Nicolo Giotta, of the same place; G. Amabile of Avellino, etc. Those patients were subsequently visited by professor Assalini and the marquis Anchiani, of whom we have before made mention.

In concluding, I should not omit thanking the abbey Scarpalini of Rome, professor of natural philosophy, whose humanity and attention to many of my patients, labouring under amaurosis and paralysis, that required electricity, galvanism, etc., were only what he has manifested throughout life.

CONCLUSION.

I have very lately seen one of the most expert operators in France perform by extraction at the Hôpital de la Charité, in Paris, Mr. Roux, whose merits are too well known to the public to require any eulogium. The calculation at the Charité is, a loss of three out of ten; and that extraction has been adopted, finding it more successful than couching: the latter operation however is universally practised at the Hôtel-Dieu, by baron Dupuytren, who is the sir Astley Cooper of France. Here then is a loss of three patients in ten, in the most able hands; not from the operative or mechanical part of making a section of the cornea and extracting the lens, but from the consequences arising out of it—inflammation, procidentia iridis, etc. I have heard some men argue in favour of extraction by saying, the surgeon is free from blame, when he takes the lens out, and shows it to the friends of the patient; it is visible, and although the case should

not succeed, he has apparently done his duty. I must confess, such an argument would not satisfy my mind; as I think we are bound conscientiously to look forwards to the ultimate result of our case; for the advantages gained by or during the operation of extraction are often merely temporary.

I have above stated, that in the most able hands, where there is every address and dexterity, there is a loss of three out of ten by extraction, which has been calculated from perhaps five hundred cases or more.

In the operation of Hyalonyxis, admitting the case of the gentleman, who exposed himself too early after the operation, etc., to have been completely unsuccessful, the loss is only one in twenty-six; or in other words, in one hundred and sixty cases, one hundred and fifty-four were restored to sight by the operation and ultimately succeeded. Five of the cases were connected with weakness of the nerve or amaurosis; hope-

less when they were undertaken: there was only a loss of one case from inflammation: not however the consequence of the operation, but the too early exposure of the retina to the rays of light; which case has already been noticed under the head of *Treatment after the Operation.*

I now quit with regret the country which gave birth to Horace, Virgil, Tasso, Dante and Raphael, and it is a gratifying circumstance to me to state, notwithstanding religious prejudices, although a foreigner and a protestant, in Italy, I have received the greatest support and liberality from some of the first characters in that classical country; from the inhabitants of Siena *universally*, and from the great majority of the Romans, by whom I was professionally extensively consulted; amongst whom I may mention the present Pope Leo XII, then cardinal della Genga, vicar of Rome, a man of a most enlightened and liberal mind, in whose choice and election to the papal chair the catholic world have been peculiarly fortunate. I should fail in gratitude,

were I not particularly to mention his excellency the count Appony, the Austrian ambassador to the court of Rome, one of the most amiable characters in Europe; whose friendship and support I received during the latter part of my residence in that interesting city.

FINIS.