

Observations on the blindness occasioned by cataracts shewing the practicability and superiority of a mode of cure without an operation / by Henry Barry Peacock.

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OBSERVATIONS
ON THE
BLINDNESS
OCCASIONED BY
CATARACTS.

SHEWING THE *PRACTICABILITY* AND
SUPERIORITY OF A MODE OF CURE
WITHOUT
AN OPERATION.

By HENRY BARRY PEACOCK.

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BY MISS B. B. B. B. B.

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PRINTED FOR J. J. J. J. J.

IN THE CITY OF LONDON;

BY

J. J. J. J. J.

A D V E R T I S E M E N T,

IT was thought that the following almost verbatim copy of a series of letters to a friend of the Author might be of use to the publick, by affording a means of relief to the Blind, and by inciting the Faculty to a more diligent investigation of the proximate cause of the Cataract; for the latter purpose, also, it is the Author's intention to publish, at some future period, the opinion of every Author, and of such of the Faculty as will favour him with their opinions on the theory of this and other little-known disorders of the eye.

York,
March 28, 1792.

ADVERTISEMENT

I have thought that the following
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C A T A R A C T S.

 L E T T E R I.

THERE are, certainly, no people more deserving of our pity than the blind; deprived as they are of the chief source of happiness, and for ever at the mercy of a world not over-stocked with benevolence, every moment of theirs must be infinitely more miserable than the unhappiest of ours. It is shocking, too, to observe that the greatest part of them are overwhelmed with poverty; being such, for the most part, as have been under the sad necessity of earning their bread by employments hurtful to vision. Few, very few, are possessed of a competence that can in any measure supply the want of sight. Still fewer are blest with friends of rank, or children that like Milton's

can expose to the mental eye the charms of pictured poesy. The greatest part of them, poor in money and friends, pass their dreary hours under the care of a parish officer, or are obliged to ramble round the world for the scanty pittance that supports them, seeking in a dog that friendship they are unable to find in man.

It is with the greatest pleasure, therefore, that I announce to you the discovery of remedies for the relief of the most general cause of this misery, viz. *the cataract*; and those, too, within the reach of the poorest of these people, and independent of the scalpel of the surgeon. It is true, indeed, that when the medical gentleman looks into his library he will find many remedies proposed for this disorder, by practitioners as far down as CELSUS himself; but on none of these is he able to prescribe with any degree of confidence, being such for the most part as have been proposed for people who could easily mistake the efforts of nature for the works of art. The present remedies, however, are announced by modern and living authors; the one a physician of great respectability, and the other a surgeon of equal respectability and of the greatest repute as an oculist. The remedies of the former are internal and external. The internal ones are *calomel, antimony, and evacnants*; the external ones, *cinnabrine fumigations*
and

and what he calls the lotio penetrans; being a solution of a grain of the corrosive sublimate in eight ounces of water. Those of the latter are the application to the globe of the eye of one or two drops of ether once or twice in the course of the day, and the occasional rubbing over the lid with the point of a finger first moistened with a weak volatile or mercurial liniment.

So easily attainable, and of so easy application as these remedies are, the discovery is surely of the utmost importance, and classes the discoverers with the greatest luminaries that have enlightened the medical world. It is therefore to be lamented that there exist medical people so ignorant of, or wanting in, their duties to society, as to abridge the extensive use these remedies might be of, by not only not making use of them themselves, but on every occasion depreciating them as the artifice of the fraudulent, or the dreams of the ignorant. And I am sorry to say, that this is the case with the greatest part of the professional gentlemen with whom I am acquainted; but especially those of the greatest fame as operators, and whose interest it is to vilify every mode of cure but that in which they are such considerable gainers. We have a right to expect from them their arguments in proof of their assertions.—It is seldom, however, that they favour us with them; but wrapping

themselves in the garb of self-sufficiency, think a dogmatical *ipse dixit* sufficient answer to every demand. I have more than once, however, been favoured with the reasons for their dissention, which it shall be the subject of a future letter to reply to, that you may be able to oppose every obstacle to their utility within the circle of your acquaintance, and contribute to render them a truly great public benefit. If I should be the means of giving sight to but one person, that would otherwise have remained in blindness, I shall certainly be very largely rewarded.

L E T T E R II.

BEFORE we proceed to examine the arguments used by the faculty against the cure of the cataract without an operation, as it is next to impossible to avoid using technical terms, it will be necessary to make you acquainted with the anatomy of the eye. If you please, I will now proceed upon it, hoping that, if I avoid prolixity, you will not consider it an unuseful or unentertaining digression.

The eye, then, is a hollow sphere, filled, chiefly, with an exquisitely transparent fluid called
the

the *vitreous humour*. This sphere is composed of different juices. The outer one is called *the sclerotic*, and becomes transparent in its interior part in order to admit the rays of light reflected from every object to the bottom of the eye.

This transparent part is called *cornea* from its resemblance in many respects to horn.

The rays of light pass through the cornea to the *retina*, which is the expansion of a large nerve called the *optic nerve*, and there forms, as in the *camera obscura*, a beautiful and correct moving miniature picture, of whatever passes before it, the sensation of which is conveyed to the brain.

The retina lines all the inside of the eye as far as the edge of the cornea; is whitish, and rather transparent.

That the rays may be able to make a more forcible impression on the retina, they are conveyed by means of a lens called the *crystalline humour*, situated in a sinus on the anterior parts of the vitreous humour.

The crystalline humour is attached to the vitreous humour by means of the vitreous tunic, and to the edge of the cornea by means of the *ociliary processes*. It is enclosed in a perfectly transparent tunic called the *capsula*.

It being necessary, according to the laws of optics, that in looking very near an object the crystalline humour should move forwards, the cornea is made to project like the glass of a watch from the case, forming almost an hemisphere filled with a limpid water called the *aqueous humour*.

The aqueous humour also performs the office of defending the crystalline humour from many wounds that it would otherwise receive.

It also acts the office of a lens.

The construction of these two lenses (the crystalline humour and the aqueous humour) is such that the retina is precisely the focus of the rays passing through them.

As the rays emitted from very luminous bodies would be so intense as to become painful, a membrane, called *the iris* from the variety of its colours in different persons, hangs between the crystalline humour and the cornea, by the contraction of a perforation in which (called *the pupil*) a great quantity of the rays may be excluded.

The iris arises from, and some say makes, a part of a membrane situated between the sclerotic and the retina, called the *choroides*. It divides the aqueous humour into two little chambers, called from their situations the *anterior* and *posterior chambers*.

The

The quantity of rays admitted into the eye may also be decreased by means of the eyelids and eyebrows.

It being necessary for distinct vision that the cornea be preserved perfectly clear, a fluid is for this purpose secreted from the arteries of *the conjunctive* (a membrane that covers the fore part of the eye and lines the lids), as also from a gland called the *lachrymal gland*, placed in the sinus on the outer edge of the orbit.

The ducts that conduct this fluid to the surface of the eye open on the inside of the eyelid above the cartilaginous edge of it called *the tarsus*. The fluid itself is called *the tears*, and is every moment spread over the cornea by working. After having performed its office, it is determined into *two orifices* on the edge of the eyelid in the internal angle of the eye called the *lachrymal points*, by means of the *femilunar valve* and *lachrymal caruncle*; from whence it is conveyed to the internal surface of the nose, and is there absorbed. The femilunar valve is a reduplication of the conjunctive; its two corners answer to the two points. The lachrymal caruncle is a red fleshy substance seen in the inner angle of the eye.

A row of unencreafing hairs (called the *eye-lashes*) is fixed to the edge of each eye-lid, to brush away any insect, or other offending matter, that approaches the eye. When any offending matter enters the eye, it is washed away by an encreafed fecretion of tears; and is prevented paffing to the back part of the orbit by the reduplication of the conjunctive.

That the eye may perform its motions as eafily as poffible, it is lodged in an orbit lined with fat. For this purpofe, too, its mufcles are numerous and long, arifing, for the moft part, at the very bottom of the orbit, and inferted by very broad tendons upon the forepart of the eye to the edge of the cornea.

Befides the optic nerve, the eye receives many other nerves, fo as to make every part of it exquisitely fenfible.

When we confider the great complication as well as the extreme delicacy of this minute machine, we fhall no longer wonder at the frequency and number of its difeafes.

If the two lenfes in the fmalleft degree approach to, or recede from, each other; if they in the fmalleft degree alter in fhape; or if the retina be the fmalleft diftance imaginable too near or too far from them; if the humours, or the coats of the humours, the cornea of that part of the conjunctive

tive tunic that covers the cornea, be in the smallest degree changed from a perfectly transparent state; if the muscles of the eye, but especially the fibres of the iris, do not exactly counteract each other; or if the retina be too sensible or insensible; in all these disorders (which may be effected by an infinite number of causes) the sight either becomes imperfect, or a total blindness ensues.

The disorder which is the subject of our present correspondence is a want of transparency in the crystalline lens.

L E T T E R III.

THE arguments used by the opponents of these remedies in general turn on our ignorance of the theory of this disorder, and of the remedies' mode of action; a reason, that, from its peculiar puerility, seems to render any reply to it totally unnecessary; for can any thing be more childish than to deny the possibility of any thing's happening because it cannot be accounted for?

Nothing is more true than the assertion that the proximate or immediate cause of this disorder is
totally

totally unknown to us ; but the inference that is drawn from it seems to be wrong in the extreme. Before the blood-vessels were discovered, the cause of an inflammation was scarcely guessed at, as before the nervous and the lymphatic systems were discovered the world was ignorant of the cause of a palsy and a dropsy ; but it can never be said, that, before their discovery, an inflammation, a palsy, and a dropsy, were never relieved. Thus, a certain set of vessels, or a certain something, may at one time be found, that will fully explain to us the nature of cataracts ; but it can never be said, that before the arrival of that period the cure of them is impossible.

By the same rule, they will doubt the efficacy of innumerable remedies of undoubted efficacy, because they are prescribed at hazard, and under an ignorance of their mode of action ; and such will every day be prescribed, till medicine has gained its greatest height of perfection ; an æra, that, if it continue to make the same slow progress that it has hitherto made, is no nearer than five to a hundred.

Medicine, indeed, is now in its infancy, and amuses itself with blowing up theoretical bubbles that are burst as soon as formed. It is a rugged road, where we, indeed, here and there meet with a path leveled by the industry of a Cullen or a Pott ;

Pott ; but which in general is totally inaccessible. It is a science whose theories are sand, and whose practice is a tottering edifice that every succeeding age rebuilds.

In proof of the present infantile state of medicine, I might enumerate to you all the different disorders that now withstand the curative attempts of the faculty ; I might mention the differences of opinion amongst us, and expose to you our ignorance of the fundamental principles of medicine, physiology, and even *anatomy* : but I need not, I think, produce a stronger proof of it than the deference which is paid, on many occasions, to the opinions of the ancients ; of ARISTOTLE, GALEN, and HIPPOCRATES ; men, who if a superior being had not guided their scalpels, and counteracted their poisons, must have increased every disorder they undertook to relieve.

It is not unusual to hear a physician say, " On the credit of Hippocrates I ventured in this and other similar cases to prescribe" so and so ; of Hippocrates ! who once mistook one of the sutures of the head for a fracture ; who believed, that the cause of the stone in the bladder was the boiling of the water ; and who recommended, when a patient had broken one leg, the breaking the other, as the only means of putting them on an equality. It is not at all wonderful that such absurdities as these

these should arise from one who practised so long ago as 200 years before the coming of Christ ; but that we should look up to him as to an oracle is wonderful indeed, and will admit of no other reason than the very little improvement made since his time in the science of medicine. When every other science is flourishing around it, that of medicine is still in the bud ; in nearly the very same state in which it existed almost two thousand years ago.

I may conclude this letter with a saying of *Rousseau's* ; but which might very easily have come from a person of inferior ingenuity, viz. “ a true philosopher has frequent occasion to say *J'ignore*, but very seldom ventures to pronounce *C'est impossible*.” He will confess it very difficult to say by what means a cataract should be cured, but will never assert the impossibility of such a cure being done.

L E T T E R IV.

GALEN had very few opportunities of dissecting any thing but animals. Unwilling, however, to have it said that he had built his theory on so erroneous a foundation as that of the anatomy
of

of animals alone, he gave out that his anatomical figures were taken from the human subject. Vesalius had the credit of detecting him. The moderns, however, have detected Vesalius himself; and who can say that posterity will not do the same for the moderns that we have done for Vesalius? It certainly is not impossible. Such is my opinion of our present scanty knowledge in anatomy that I do not think it improbable.

You express your surprize at, and unbelief of, what I said in a former letter on this subject, and seem to think that anatomists have arrived at their *ne plus ultra*. So it was thought before the discovery of the blood-vessels; so it was thought before the discovery of the nerves; and some were of the same opinion before the discovery of the absorbents; yet in every case the opinion was erroneous: Alps continually rise on Alps, and no one can say when we have reached the summit. Of all parts of the body, however, the anatomy of the eye is the least known. If it should even be allowed, that in the other parts, having found the blood-vessels, the nerves, the lymphatics, the absorbents, and the mucous follicles, we have found all, still our ignorance of the anatomy of the eye is sufficiently evident; for those of the eye, their situation, their origin, their termination, &c. are almost totally unknown to us. But if we go farther and
 4 suppose,

suppose, which is very likely, that there are other vessels and other parts besides those which I have mentioned, far out of the reach of the knife or the injection, our acquaintance with the eye must be very trifling indeed. Notwithstanding its extreme complexity, the anatomist can now do little more than point out the situation of the humours and juices; the physiologist little more than observe that the chrySTALLINE humour is a lens, and that the retina is the focus of its rays.

In consequence of this ignorance in the fundamental principles, our theories must fall to the ground. They are the baseless fabrics of a vision: ærial castles, without foundation or support. It would be easy to fill up reams of paper in bringing forward objections to them, and exposing their fallacy. I shall mention, however, one piece of theory, which is now universally agreed to; but which seems to be peculiarly ill-founded, viz. *that topical bleedings in inflammatory cases are of use, by discharging the over-distended vessels.*

That in every inflammation there exists an over-distension of the vessels, cannot be denied; but that topical bleedings have any effect in decreasing it, seems to be very doubtful.

There is a law in the animal œconomy, and to be accounted for on the common principles of hydraulics, that the blood received into a vessel is
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in proportion to its number of outlets; so that an artery with three branches will receive half as much more blood than one with only two. If this was not the case, its branches would not be equally filled. Seeing this, making an additional outlet in an artery does not decrease the quantity of blood sent into its branches, because the artery receives an additional quantity by this means.

In the operation of blood-letting on the arm, it sometimes happens that the artery situated immediately beneath the vein is wounded with the point of the lancet; in which case the arterial blood flows ever after into the vein, constituting a disorder called the *aneurismal varix*; in this case the vein becomes an additional branch to the artery, and consequently the blood received into it is considerably increased.

In the case of a discharge by the uterus, as in the time of menstruation and utero-gestation, the arteries of the uterus are much distended.

Dr. William Hunter has described a fleshy tumour of the head, the vessels leading to which were enlarged by the same cause; and observes, that "in the living body an artery will as certainly become larger when the resistance to the blood is taken off, as it will become smaller when it is compressed, or as it will shrink and become a
solid

solid cord when the blood is not allowed to pass through it at all."

The situations for topical bleeding, in the case of an inflammation of the eye, are :

- 1st, In the vessels on the surface of the eye.
- 2d, In the temporal artery which conveys part of the blood to the eye.
- 3d, In the jugular vein, which receives the blood that has flowed through it.

In the first case, if the truth of the above be admitted, the distension between the puncture and the extremity of the vessels will not be lessened, while the distension from the origin of the vessel to the puncture will be increased. In the second case the distension will be just the same; but in the third case must be increased; because, as the veins are continuations of the arteries, every discharge from them must increase in proportion to the quantity of blood flowing through the arteries.

As the watery fluid discharged by blisters, and the application of opium is part of the blood, what I have advanced extends to them also. Neither these nor blood-letting can be serviceable in inflammation by discharging the over-distended vessels. Indeed, the impossibility of such a fact being so very evident to any person of common sense, and especially to one in the least acquainted with

with hydraulics, it is wonderful how such an opinion should be in being. It is evident that *nothing but a general bleeding could have the effect of lessening the distension of vessels whose contents are not in a state of stagnation.*

Another opinion, as generally admitted as the preceding, but the truth of which seems equally questionable, is, the pulse's being a certain criterion for judging of the state of the sanguiferous system.

A patient, labouring under a fever, applied to Mr. SEAGRAM, an eminent apothecary of *Warminster, in Wilts.* From the state of the pulse of her left hand, which was weak and low, it was thought to be of the nervous kind, and stimulants were consequently prescribed. Afterwards, however, on feeling that of the other, it was found of an exactly opposite kind; and, from a closer attention to the other symptoms, the fever was found to be of the inflammatory species, and consequently indicated medicines of a directly opposite quality. The artery of one hand, whether from the smallness of the veins of that arm, from its depth, or from some other cause, was found to be considerably smaller than that of the other.

Whoever has seen a similar instance will use the precaution of feeling the pulse on both hands before he prescribes. But even in this case, as both pulses may be preternaturally small or large, he

cannot prescribe with confidence till he has attended to more certain symptoms.

LETTER V.

ONE reason brought against the use of external applications, in the cure of this malady, is *the distance of the parts*. “One might as well expect,” they say, “that applications to the skin of the abdomen should cure a disorder of the viscera, as that medicines, dropt on the surface of the eye, should cure a diseased crystalline humour. But these people are wounded with their own weapons, it being a fact, that applications to the skin of the abdomen can and have cured diseases of the viscera. Witness the vermifuge plaister; witness the use of topical applications for the cure of internal inflammation. These, and *many other facts*, are evident proofs, that an application to one part may cure a disorder of another, though it be very difficult to point out any the least communication between them.

The existence of an unknown connexion between one part and another, as between the bladder and

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the stomach, the teeth and the intestines, the liver and the shoulder, is very well agreed upon, and known under the name of *sympathy*. And I see no reason why the same sympathy that exists between the parts just mentioned should not have an equal chance of existing between the cornea and the crystalline humour; and why the pouring of a certain liquid on the surface of the eye should not be as likely to affect its internal parts, as that certain fluids poured on the stomach should have an immediate effect on the lungs or the kidneys.

But we may lay aside probability, having certain and undoubted evidence of the existence of such a connection; opiate applications to the cornea having produced a palsy of the retina, and one species of the cataract being generally produced by an affection of the outward surface of the eye. By what means this may be brought about is not so certain; but it is not unlikely that the ciliary processes may be instrumental in producing the effect, as they evidently connect the crystalline humour with the cornea.

The impossibility of affording such relief to the cataract is also inferred from *its hardness*. From the opinion, however, of a person of the greatest eminence as an operator and anatomist, the late Mr. Pott, we are led to disbelieve the existence of such an hardness; and of course this argument

falls to the ground. It is true, indeed, that the Baron de Wenzel is of a contrary opinion; but, as the two instances he has given are of a species that very rarely occurs, viz. the black cataract, they add no weight to the argument. Admitting the truth of it, however, in its fullest extent, I doubt whether it would have any tendency to the discredit of the remedies, the very same having been found extremely serviceable in the cure of a disorder occasioned by a matter very analogous to that of the cataract, viz. the inspissated extravasation of lymph between the lamina of the cornea; a disorder that constitutes one species of the nebula or film.

Some will not deny the possibility of external applications having an effect on the crystalline humour, nor doubt of the disappearance of cataracts during the application of the above-mentioned remedies; yet give all the credit of the cure, not to them, but to NATURE. That this has ever happened, can never be affirmed with any degree of certainty: it may, and it may not. The latter, however, is by far the most probable. That the human body has the power of affording itself relief from many disorders incident to it, is undeniable; but, as this power is always exerted early in the disorder, whenever it has continued a considerable time without shewing any signs of this exertion,

exertion, and begins to give way on the application of a remedy, the relief is to be attributed to the remedy, and not to nature *. This is more evidently the case, when, from a continuance of the application, there is an immediate stop put to the progress of the cure, and a renewal of this on the renewal of the remedy. And this has frequently been the case in the application of topical remedies for the cure of the cataract.

* Mr. Ware thus speaks of the dispersion of the nebula, a disorder very similar to one species of the cataract. "It must be allowed that Nature has been known to work its own cure, without the aid of any foreign assistance whatsoever; but it is as true, that some applications have, from their own specific quality, so direct a tendency to disperse any matter which may be the cause of obstruction, as must render it in all cases extremely disagreeable that Nature should be assisted, both for the sake of facilitating and forwarding the cure. And to such assistance it is to be very much attributed, that, in some instances, specks, *which had remained long after the inflammation was gone off*, have been removed, but which, probably, had Nature been left to itself, would have remained there always."

L E T T E R VI.

CELSUS, in enumerating the qualities necessary to constitute a surgeon, mentions, “ *an intrepid mind, void of all tenderness and pity, and entirely deaf to the shrieks and outcries of the suffering patient.*” I would hope, for the honour of our profession, that this temper is neither required of, nor found amongst, us; for it is classing the surgeon with the assassin, who, in making use of the knife, is actuated by no better a motive than that of enriching himself.

The charge of cruelty, however, stands heavily against a certain set of medical people, who, in every case of a cataract that comes under their care, have always recourse to an operation, without ever attempting relief by more lenient means. An operation, but especially a severe one, seems to be always inadmissible where a great and immediate danger is not threatened. Where this is not the case, but where at the same time the symptoms are extremely distressing, the cure is to be attempted by every other means, and these are to be
peristed

persisted in as long as there is the smallest possibility of affording relief. In the case of a cataract, the whole *Materia Medica* should be exhausted before the operation is thought of. It seldom happens, however, that any means is attempted less severe than the operation.

There are two operations by which this malady is attempted to be relieved; by the one the *cataract* is couched; by the other it is *extracted*.

In couching the cataract, a flat needle is pierced about one-sixth of an inch from the edge of the cornea, through the conjunctive coat, the sclerotic, the choroides, and the *retina*, into the posterior chamber of the eye, with the flat side towards the cataract, which it endeavours to depress; tearing it from its connexion with the vitreous tunic, and with the fore part of the eye, and violently forcing it into the inferior part of the vitreous humour.

Whoever considers how exquisitely sensible are the different coats of the eye (so sensible that the smallest particle of extraneous matter gives them exquisite pain), but whoever especially considers the sensibility of the *retina*, must shudder at the terrors of this operation.

But, whatever are their feelings on this occasion, they must be infinitely more shocked at the infinitely more terrible operation of *extracting* the cataract; an operation, than which it is hardly possible to conceive one more horrid.

A knife, being passed through the cornea on one side, through the anterior chamber and through the cornea on the opposite side, is carried forwards in such a manner, as to divide half the cornea from its connection with the sclerotic coat. If this flap is not found sufficiently large, it is now enlarged on each side with a pair of scissars. An instrument is then introduced to wound the capsula, and the crystalline humour is forcibly squeezed out.

You will be still more thoroughly convinced of the cruelty of using the operation before any other means are attempted, when I inform you, that the patients are in many cases ever after subject to a violent and immediate pain in the eye; but particularly if I convince you of the *uncertainty*, the *danger*, and even very often the *inefficacy*, of the operation.

That the operation of couching is *uncertain*, must be allowed by every person that considers the extreme smallness of the posterior chamber *. The person who attempts to penetrate it must have the

* Dr. Priestley, if I remember rightly, makes the posterior chamber the largest of the two. On the other hand, a late writer denies that such a chamber exists at all, the iris being, according to him, close to the lens. The Baron de Wenzel is probably most in the right, who informs us that it is sometimes small, and sometimes large.

most perfect command of his hand; for, if it be unsteady with age, fear, or any other cause, it is hardly possible he should not wound the *iris*, which would occasion such an hæmorrhage as must put an immediate stop to the operation.

“Some cataracts are almost uniformly soft, and admit the needle through them like water, consequently are immoveable*.”

But supposing the needle has actually *entered the chamber*, and *that the lens is actually depressed*; the operation is yet so far uncertain, that the cataract often foils all the attempts of the most skilfull operators *to preserve it in a depressed position*, often immediately following the instrument, but oftener arising some time after, when the eye has received a shock from any exertion; it has often risen some years after, and of course the patients have been obliged to submit to a second operation.

These operations are *dangerous* in the highest degree.

* Pott is, notwithstanding, of opinion, that this species of cataract admits of relief by the needle; the opaque fluid escaping from the capsula being dissolved by the aqueous humour. The Baron de Wenzel, however, denies the existence of such a dissolution; and even from Pott we are led to expect little relief by it, as by his own confession the capsula is liable to an opacity from the puncture.

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The iris is often so far affected (in couching by a wound of the instrument, and in extraction by the cataract passing through it) as to be rendered ever after useless, or at least less useful than before.

A synchisis, or collapſion, of the humours is sometimes caused.

From the vomiting which generally comes on soon after the operation of couching, a collection of matter is produced in the eye, which is always dangerous. The same may ensue from the hæmorrhage caused by wounding the iris.

From the escape of the vitreous humour, which often happens, the eye sinks to the bottom of the orbit.

The inflammation arising from the operation always endangers the eye, and sometimes the life of the patient. The danger arising from it is indeed so great, that it is allowed, by even one of the first operators in Europe, "that if, notwithstanding this, the operation proves successful, the success can only be attributed to the singularly happy constitution of the patient."

But let us suppose that the operation has been skilfully and luckily performed, and that no very alarming inflammation has arisen, what are the effects?

After having undergone the many previous preparations; after having patiently borne the binding

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ing to the feat, and the other concomitant terrors of the operation; after having endured its indescribable pain; and after having afterwards kept in bed for several days or weeks, in a dark chamber, industriously avoiding any the smallest exertion, and in the strictest observance of the lowest regimen; in short, after having patiently submitted to all the pain and disagreeableness of the operation; the patient often finds, THAT NOT THE SMALLEST RELIEF HAS BEEN AFFORDED HIM.

After having extracted the crystalline humour, it is often found that the opacity is really not in the crystalline humour, but in the capsula, which is always left in the eye. Sometimes it arises from an opacity of the vitreous humour; sometimes from an opacity of that part of the vitreous tunic which lines the bed of the crystalline humour; and sometimes from inspissated matter in the posterior chamber; all which cases are very difficult to discriminate from the real opacity of the crystalline humour.

Sometimes small parts of the crystalline humour, being left in the eye, form a secondary cataract; or the cornea or the capsula are affected with such opacities as render them totally impervious to the rays of light, and consequently the eye is still useless; or there happens such a contraction of the pupil that the rays are inadmissible till the performance of an operation.

The GREATEST POSSIBLE BENEFIT the patient can receive is, that he can, *at certain distances*, see tolerably well of the eye with the help of a convex glass.

Seeing, then, the uncertainty of these operations as to their consequences, the probability of success must in every case be very small indeed. There are certain cases, however, where it is impossible that any good effects should be produced, and where, in consequence, an operation is never ventured upon: if the subject be young, or be not in other respects healthy; if the other parts of the eye be not in exactly their natural state; if the eyelids are not free from swelling; or if the eye be too watery or too dry; in such cases the operation cannot be advantageously performed, and the patient is left to languish in an irremediable blindness: even a hiccup, or a cough, forbid the use of the instrument.

Let us congratulate ourselves, therefore, on the acquisition of remedies, that in every case may be put into practice, that give little pain, and that can never endanger the patient.

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L E T T E R VII.

DIFFICULT as it must be, from our present ignorance of the physiology of the eye, to give the pathology of the cataract, I shall nevertheless offer some hints on the subject, especially as I conceive the remedies I am speaking of to be particularly indicated; and of consequence you will be strengthened in your resolution of recommending them.

From the dissections of eyes affected with this disorder, we find that there are two species of them; the one is an opacity of the capsula, the other of the crystalline humour itself.

As the former is produced by the same cause as, and is often even an attendant of, an opacity of the cornea called the nebula or film, it may be presumed to have the same pathology. The following reasons still further induce us to suppose so.

1st, Like the nebula, it will often disappear after the disappearance of the cause that produced it, without the use of any medical means whatever.

2d, The appearance is exactly the same.

3d, When acted upon by medical means, it gives way in the same manner; the least opaque parts, as may be supposed, being dispersed

pered a considerable time before the dispersion of the rest.

4th, It is curable by the same means ; not only medicines of the same class, viz. stimulants, are used for both these disorders, but even the same individual medicine, viz. the corrosive sublimate.

The causes of an opacity of the crystalline humour are perhaps no more difficult to give than those of the opacity of the capsula.

It must first be premised, however,

1st, That it is a mucus ; which needs no proving.

2d, That this humour is in a constant state of secretion and absorption, which seems to be proved,

1st, By analogy, as we know of no fluid in the human body that is in a state of stagnation.

2d, An artery called the *central artery*, passing through the vitreous humour, is divided into many branches on the back part of the capsula ; many of which are sent into the interior parts of the crystalline humour, for no other purpose, that we can suppose, than that of affording it nourishment.

The opacities of the crystalline humour seem to be of two species, the one being only incident to persons advanced in years, the other to persons of all ages.

To explain the probable cause of the former, it is necessary to observe,

1st, That late in life the extreme branches undergo a collapſion, occaſioned by a want of power in the larger branches to propel the blood through them. This muſt neceſſarily occaſion a ſlower ſecretion of every ſecreted fluid in every part of the body, and conſequently of the cryſtalline humour; of courſe this muſt produce a comparative ſtagnation, which is a likely means of rendering it turbid. HEISTER ſeems to have held the ſame opinion. "To explain," ſays he, "in what manner the cryſtalline becomes obſcured, we muſt conſider that when the juices are too thick and glutinous to paſs freely through the very minute ſerous veſſels of this body, they ſtagnate and obſtruct thoſe veſſels, which afterwards are contracted and dried."

2d, This ſlow abſorption muſt expoſe it to the action of the aqueous humour, which, from its ſpirituſous nature, we know from experiment muſt contribute to encreaſe its opacity.

The probable cauſe of the latter ſpecies I conceive to be an acrimony in the maſs of humours, which, by irritating the veſſels that ſcrete the cryſtalline humour, by this means deſtroy its tranſparency.

What induces me to be of this opinion is,

1st, That such patients have often many other very evident signs of such an acrimony.

2d, That, when these have been taken away, the cataract has always followed.

3d, A stimulus is known to decrease the transparency of every mucous discharge; as may be instanced in the case of a discharge from the lungs, occasioned by an inflammation of the mucous membrane in the catarrh; also in the case of the discharge from the urethra in the gonorrhœa; but more particularly in the purulent eye of new-born children.

From whichsoever of the above mentioned causes, however, the cataract may arise, the medicines we are speaking of seem to be particularly indicated. Nothing is more likely than stimulants to increase the energy of the blood-vessels; and the likelihood of their correcting the effects of acrimony is allowed by every practitioner, and the truth of it confirmed by every day's experience.

L E T T E R VIII.

YOU will perhaps expect that I should not be forgetful of Mr. *Bell's* remedy for this disorder, especially as I had once spoken very highly
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in its favour. Hearing, about a twelvemonth ago, of the success which he had experienced in the cure of a cataract without an operation, I resolved to make the truth of the report the subject of a strict investigation; especially as at that time it was the only known remedy for that disorder, neither Dr. Rowley's, nor Dr. Ware's, having yet been heard of. The consequence of the enquiry was, that from the cases which I was witness to, but especially from the solemn declaration of himself and patients, I was led into the firm belief of the efficacy of the remedy; and regretting that the existence of so valuable and much-wanted a one was not more universally known, made public the discovery by means of the London news-papers. I have only now to add, that, though the remedies since discovered take off very much from its singularity, yet I have still no reason to doubt of its efficacy.

As to the charge of empiricism brought against him, though it does not in the least take off from the possibility of his possessing such a remedy; yet, as some may from thence infer its comparative inefficacy, I shall just make a remark or two on that subject: if by empiricism is meant the not receiving an education in the ordinary routine of a professed surgeon, he pleads guilty to the charge; not so, if by the term is meant an absolute ignorance as

well of the structure and natural history of the eye, as of such of its disorders as he professes the cure of. I am well convinced of his acquaintance with the anatomy of the eye; and, in so far as I have had an opportunity of judging, have no reason to doubt of his abilities, either in the cure or discrimination of its disorders.

As his reasons for not making his remedies known to the publick are only known to himself, I have little to say on that head; perhaps he is of opinion, that his duty to himself and family takes place of that to mankind in general; perhaps he supposes his remedy to be more powerful than those of Rowley or Ware: but, whatever may be his reasons for this conduct, it is evident they can add no weight to the charge of empiricism, it being easy to produce a long list of medical people of the first rank in knowledge, who keep their remedies a secret.

I have entered thus freely into a vindication of Mr. B. as I conceive my own credit in some measure dependent on that of him. I wish it, however, not to be thought that, though I cannot censure his conduct, I would follow his example; my opinion on this head being very different from that of Mr. B. and of many others. I would in no case have a remedy kept from the publick, and believe that every argument brought in favour of its superiority is an additional reason for its publication.

It is remarked by Dr. Freind, that, "however credulous the antient physicians* were in imagining a more than ordinary force in what they called specifics, and magnified them beyond what they deserved, yet they never made any secrets of them; they took pains to be thoroughly acquainted with their own art, and by that means were led into a sense of the general good it was designed for; and therefore being above any little private views of little private interest, and acting up to the character of their profession, whatever they could find out by their own experience, or collect from the observations of others, which might relieve

* Pope and Dr. Johnson, who were ignorant of the true cause of the deference paid to the antient physicians, thus forcibly ridicule it: "While the professor of anatomy was demonstrating to his son the several kinds of intestines, Cornelius affirmed that there were only two, the colon and the aichos, according to Hippocrates, who it was impossible could be mistaken. It was in vain to assure him this error proceeded from a want of accuracy in dividing the whole canal of the guts; say what you please, he replied, this is both mine and Hippocrates' opinion."

MART. SCRIBLERUS.

"We think the fever quite gone. I believe it was not an intermittent, for I took of my own head physick yesterday; and Celsus says, it seems, that, if a cathartic be taken, the fit will return *certo certius*. I would bear something rather than Celsus should be detected in an error."

LETTER TO MRS. THRALE.

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the distempers incident to their fellow-creatures, they generously and freely made it public. This, he adds, was their practice, and ought to be a perpetual model for their successors, who would imitate them either in their knowledge or their virtue."

But Mr. B. perhaps is possessed of unconfutable reasons in support of this conduct; as well as for that supineness in all his proceedings in this business, that in the eyes of the unthinking reflects a dishonour, not only on the invaluable possession he has had the fortune to obtain, but on those who attempt his patronage.

F I N I S.