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LONDON MEDICAL

CRITICAL REFLECTIONS

ON SEVERAL

IMPORTANT PRACTICAL POINTS

RELATIVE TO THE

*C A T A R A C T :*

COMPREHENDING,

AN ACCOUNT

OF A

NEW AND SUCCESSFUL METHOD OF COUCHING  
PARTICULAR SPECIES OF THAT DISEASE.

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By SAMUEL COOPER,

Member of the Royal College of Surgeons in London.

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LONDON:

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1805.



CRITICAL REFLECTIONS

IMPORTANT PRACTICAL POINTS

C. A. T. A. R. A. C. T.

AN ADDRESS

NEW AND SUCCESSFUL METHOD OF TEACHING  
PARTICULAR SPECIES OF THAT CLASS

BY SAMUEL COOPER

Master of the Royal College of Physicians, London

LONDON

PRINTED BY J. BARNARD, ST. PAUL'S CHURCH-YARD

ROBSON, WRIGHT, HENRY, AND ORR, PRINTERS, NEW

AND GARRICK, COURT AND TEMPLE, LONDON

1802

TO

THOMAS RAMSDEN, Esq.

*Assistant Surgeon of St. Bartholomew's Hospital,*

*Surgeon of the Foundling Hospital,*

*&c. &c.*

THESE SHEETS

ARE GRATEFULLY INSCRIBED,

BY

HIS MOST OBEDIENT SERVANT,

AND RESPECTFUL FRIEND,

SAMUEL COOPER.

October 1, 1805.

37, Golden Square, London,



THOMAS RAMSDEY, Esq.

Assistant Surgeon of St. Bartholomew's Hospital,

Surgeon of the Foundling Hospital,

THESE SHEETS

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SAMUEL COOPER.

London, 1. 1807.  
W. Fisher, Printer, Strand.



## PREFACE.

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WE ought not to be surprised, if we sometimes find the knowledge of particular subjects rated at an exaggerated pitch, in consequence of their having long been objects of indefatigable attention, and repeatedly attracted the eye of the public through the medium of the press: nor can we justly wonder, that the natural vanity, indolence, and credulity of mankind,



kind, should often lead them to mistake an advanced gradation of improvement for the summit of excellence.

In no subject, is the justness of these observations more peculiarly illustrated, than in that, which is to engage the Reader's consideration ; the generality of surgeons seem blind to the clouds, which impend over, and darken some of its most interesting parts ; and all attempts to perfectionate the view of it, are, at this period, very likely to be slightly received by many, because the false conceit of all-sufficient information, generated by the above-mentioned causes, and fostered by a certain degree of practical



practical success, becomes immediately blended with indignation, at even the most distant allusion to the prevalence either of errors, or defects.

To be hastily accused, therefore, of ignorance, temerity, and arrogance, for venturing to deliver my sentiments on what has already given birth to a superabundance of publications, will not exceed the discouraging anticipations of my own mind. However, as I am confident, that nothing retards our steps to perfection more, than a premature belief in the attainment of it, I should feel guilty of the most abject baseness, were the apprehension of censures, equally precipitate  
and



and unsupported, to avert me from the undertaking.

Beyond a doubt, the multitude of authors, who have published on the Cataract, have, collectively, presented the world with a large volume, that contains much intelligence of the highest utility, and of the most irrefragable authenticity. But it is equally undeniable, that it comprehends, at the same time, a large proportion of matter, either merely suppositious, or palpably and demonstrably false. The violent opposition amongst the writers in question, has too often proved subversive of moderate investigation; and the enthusiasm of those in particular, who have given the preference to Extraction,



traction, has tended prodigiously, in latter times, to create assertions equally destitute of candour, and experimental validity. To expose the futility of some important tenets, advanced by the promoters of Extraction, is one object of the present work: but there are, also, others of not inferior moment: several facts, corroborative of the unexcelled efficacy of Couching, now lie so scattered in an immense variety of surgical books, and are so involved in unsettled controversies, that nearly as much difficulty is thrown in the way of a perspicuous comprehension of them, as there formerly was tardiness in the evolution of them, from the recesses of obscurity: to bring these truths



truths under revisal, is likewise another very principal aim of this publication.

That the beneficial influence of harmony and decision, two qualities, which are, in every department of knowledge, at least, presumptive emblems of its soundness, and usefully creative of augmented confidence, does not expand itself over the whole subject of the Cataract, is very obvious, not less from the questionable state, in which many points concerning it yet continue, than from the currency of opinions the most repugnant to each other, and the diversity of practice, adopted even by surgeons of such exalted rank and reputation,  
that



that their distinguishing approbation, confers a kind of professional sanctity on every form of theory and practice, that happens to be stamped with it.

When I contemplate a Pott, a Callisen, a Scarpa, &c. giving the preference to one method of curing the affliction alluded to; while I know, that several of the most eminent surgeons in this metropolis, are in the habit of recommending, and some few, of practising another; am I not warranted in suspecting, that there is yet, in this subject, a fertile field for inquiry and observation, and, that our ideas of sundry circumstances, connected



nected with it, are still immersed in error, and indetermination? For, how improbable it is, that two different operations, destined for the remedy of the same disease, should both be so equally advantageous and commendable, that either of them may be promiscuously practised with precisely the same degree of benefit to the afflicted; and that surgeons, who extol the practice of Extraction of the Cataract, should have exactly the same degree of support for their praises, as others, who confer their commendations exclusively on Couching! A belief of this sort, can only spring from the most silly credulity.

The



The tenor of the subsequent pages, is decidedly in favour of the old operation, in its present state of refinement. If the least merit shall attach itself to the argument that I have adduced, the honour of it is chiefly due to the illustrious men, from whose labours I have derived very material assistance. If, on the contrary, what I have written shall be found fallacious and nugatory, I am ready to bow before the altar of truth, and shall disdain to screen myself under the shelter of any authorities, however high, with which I may have coincided.

Scarpa's method of Couching particular species of Cataract, of which  
I have



I have given a concise description, must be found remarkably interesting, as being quite novel to the generality of surgeons in this country, extremely successful, and recommended by a name that will never fade, as long as the cultivators of the useful arts, shall obtain the admiration and gratitude of posterity.

The Couching-needle, used by the Italian Professor, possesses much eligibility, and, no doubt, will soon have that trial afforded it by British surgeons, which its appearance, and successful employment abroad, urgently bespeak.

It is incumbent on me to mention,  
that



that Mr. Long has in his possession a curved Couching needle of his own invention, which is not very unlike that described in this book; it chiefly differs from it, in not being quite so slender; in being less curved, an improvement that I have particularly recommended; and in being designed to depress the Cataract with its concave surface, on which there is ingeniously contrived a small circular cavity, by means of which the lens is prevented from easily slipping from beneath the instrument. I think, a superficial excavation of this sort, were it not to weaken too much so slender a needle, as Scarpa's already is, might be advantageously formed

in a



in its convex surface; though, when we remember, that, in the particular method of operating, which I have undertaken to explain, the convexity of the instrument is only employed to depress the opaque body a little, in the first instance, and that the depression is afterwards completed in a peculiar manner, even this contrivance, ingenious as it is, and useful as it must prove in the customary plan of Couching, cannot be productive of equal utility in Scarpa's method of operating. Mr. Long employed the above-mentioned needle with success, and found it answer his expectations. As it somewhat resembles the one subsequently recommended by the Italian



Italian professor, it is only justice to its inventor to make mention of it.

This little work is greatly enriched by every observation of importance, relative to the Cataract, published by the above-mentioned eminent master; and I am inclined to flatter myself, the Reader will agree with me in thinking, that the following encomium, conferred upon him by Monsieur Levéillé, is, by no means, greater than his deserts, or, in any way, disproportioned to his genuine merit:

“ Le Professeur Scarpa a sans doute  
 “ étendu, sur ce point, le domaine de  
 “ la Chirurgie, puisque par d’heu-  
 “ reuses applications sagement com-  
 “ binées, il arrache d’un injuste oubli,

“ une



“ une méthode qui semble ne le céder  
 “ en rien par ses avantages à celle par  
 “ extraction.” \*

Nor will the luminous remarks, for which I am indebted to the experienced Richter, fail to communicate useful instruction.

If, as sparks of fire are elicited by the collision of flint and steel, I have succeeded in producing any additional light in this matter, by effecting a collision of the incongruous opinions of various authors; and if, also, I have succeeded in presenting the English  
 Reader

\* Vid. *Traité Pratique des Maladies des Yeux*, par Scarpa, traduit par Lèveillé. Tom. II. p. 131.

Reader with an unpurverted account of a new, and feasible method of operating on certain cases of Cataract, my design is fulfilled to the utmost of my wishes.

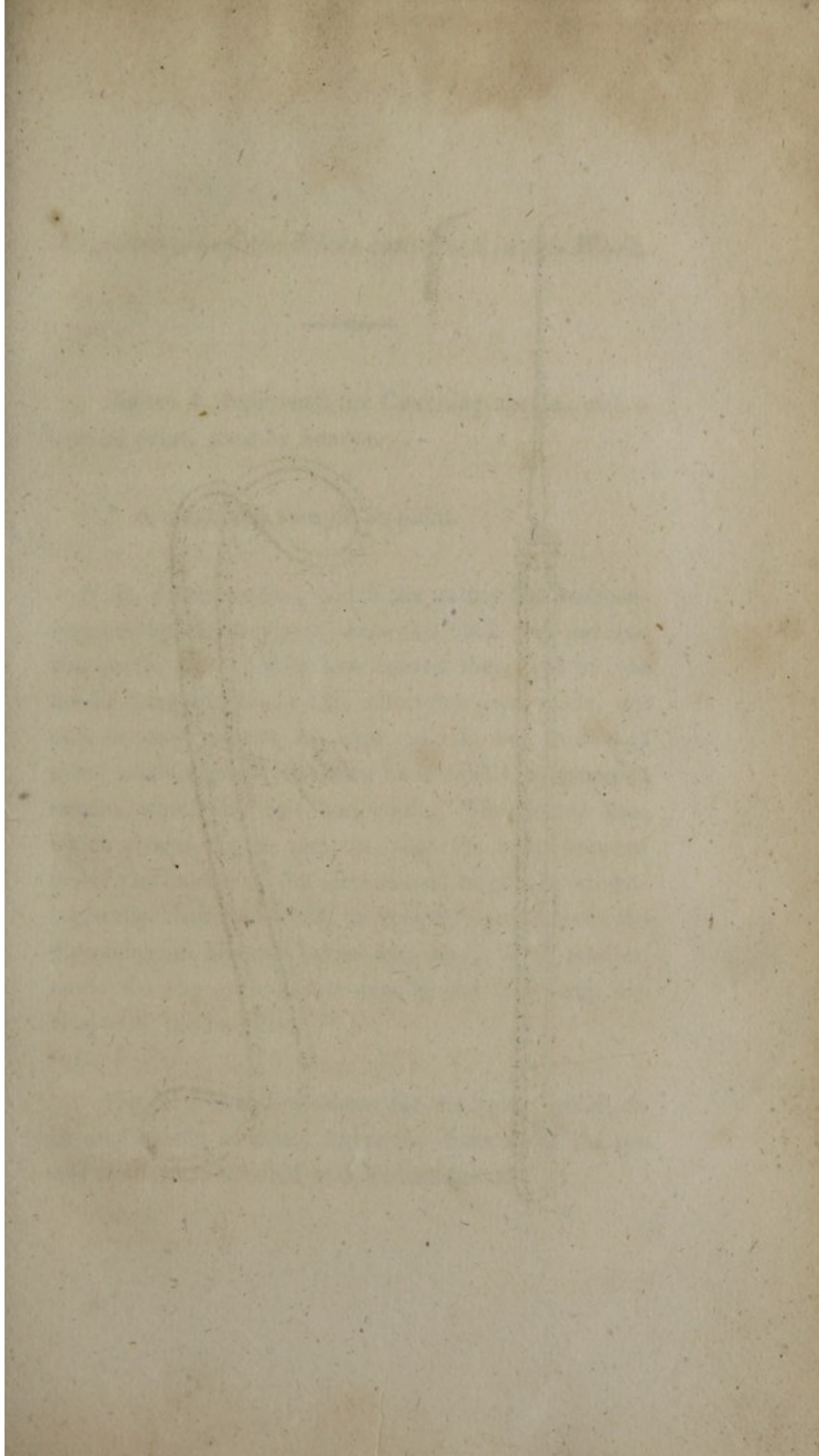
SAMUEL COOPER.

October 1, 1805,  
*Golden Square.*

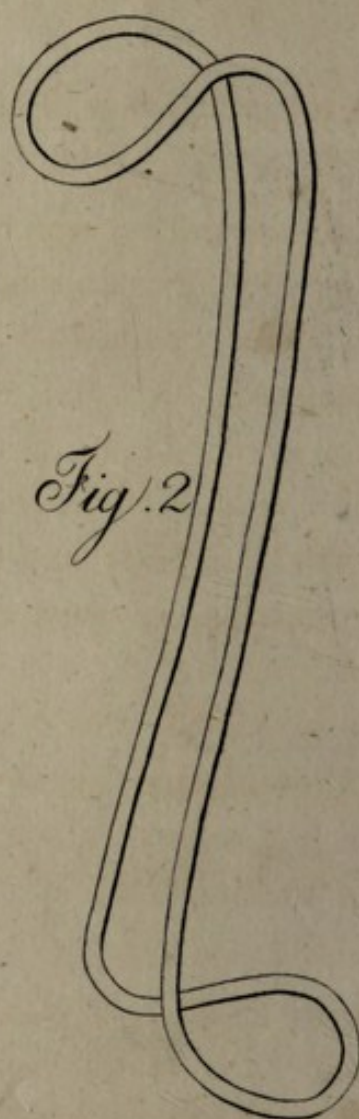
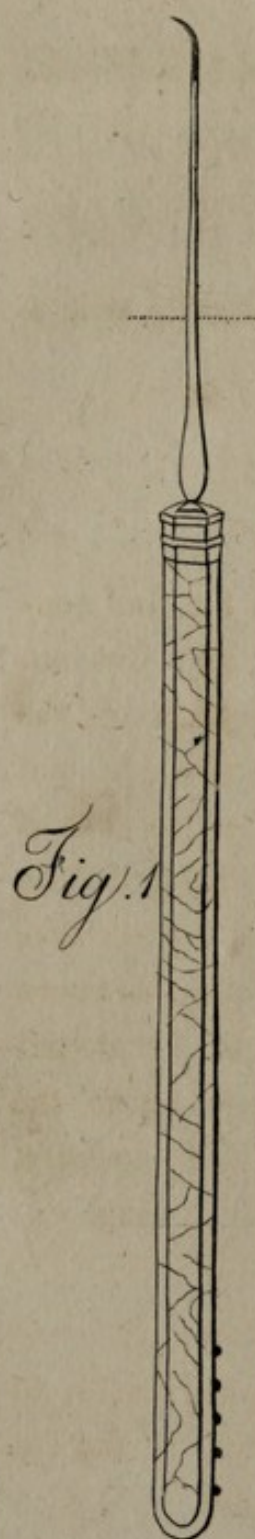
*Explanation*











*Explanation of the Plate contained in this Work.*

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Figure 1, represents the Couching-needle, with a curved point, used by Scarpa.

\* A magnified view of its point.

N. B. Some needles, which the author has had constructed by Mr. Savigny, since this book was put into the press, have points less curved than that of the needle here engraved: this alteration was made, not only in conformity to his own opinion, but to that of many able surgeons, to whom he shewed the Couching needle, which he first had made. The dotted line, which crosses Fig. 1, denotes, that the part, between it and the handle of the instrument, might be advantageously deducted from its length, agreeably to the directions of Messrs. Lucas and Hey. The needles, made for the author, are exactly one inch long, exclusive of the handles.

Fig. 2. Pellier's elevator for the upper eyelid, to be used chiefly in cases, where the muscles of the eye and eyelids are affected with violent spasms.



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# CRITICAL REFLECTIONS

ON SEVERAL

*IMPORTANT PRACTICAL POINTS*

RELATIVE TO THE

CATARACT,

&c.

---

UNFORTUNATELY, the strong influence of fashion, prejudice, and novelty, does not confine itself to mere matters of taste, or to such as are only of minor importance to society; we behold it perniciously intruding into the doctrines of science, and interfering with the exercise of the most indispensable arts. New modes of thinking and acting often become prevalent, fashionable, and renowned, rather from a principle of variety predominant in human nature, than

B

from



from their nearer conformity to truth, or their superior utility to the world.

That an operation practised from the days of Celsus, easy of accomplishment, applicable to every species of the Cataract, should have fallen into disrepute; and that a comparatively modern one, far more difficult to perform, and, I feel no hesitation in adding, less generally successful, should have been substituted for it; certainly seems, at first glimpse, only referrible to the blindest passion for innovation, and the inconsiderate rejection of a valuable means of relieving a common, and a distressing malady. But powerfully as these, or similar causes, may now actuate many, who peremptorily decide in favour of Extraction of the Cataract, I am very far from meaning to extend the censure to those eminent men, who were particularly instrumental in promoting



moting its original introduction into practice. If we look back to past times, and remember, that our ancestors practised Couching, when they were totally ignorant of the particular nature of the disease, which it was intended to relieve, our astonishment must rather be excited to find, that even partial success encouraged them to continue the performance of the operation, than to learn that its issue was commonly unfortunate. Hippocrates and the ancient Greeks\*, it is true, described the Cataract as a disease of the crystalline lens, under the name of Glaucoma; but no sooner had Galen promulgated the doctrine of the lens being the immediate organ of sight, than the correct opinion of the ancient founder of medicine, began gradually to decline into oblivion, and, for many ages

B 2

after-

\* Sharp on the Operations. Ch. 28.



afterwards, had no influence in practice. In fact, the seat of the Cataract seems to have been entirely forgotten till about the year 1656\*, when first Lasnier, and afterwards Borel, Bonnetus, Blegny, Geoffroi, &c. began to revive the spark of truth, that apparently had been so long extinct, and they, with a few others, believed, that the disease was situated in the crystalline lens; a fact, which the bulk of practitioners remained ignorant of even as late as 1713, or, in other words, until the several publications of Mery, Maitre-Jan, Brisseau, and Heister, combined to render the truth universally known †.

Improve-

\* Vid. Mem. de l'Acad. Royale de Chirurgie, Tom. II. p. 349. Sabatier mentions Quarré, as having first revived this important information, and that Lasnier communicated it to the College of Surgeons at Paris before 1651. De la Medicine Operatoire, Tom. III. p. 2.

† " Cette verité n'étoit pourtant encore connue que d'un petit nombre de personnes au commencement de ce siècle," &c. Sabatier, loco citato.



Improvements are generally slow in their progress, and still slower in becoming widely diffused among mankind: hence it happened, that the public disclosure of the real seat of the disease in question, was immediately followed by no important alteration in the method of treating it; and even near the middle of the last century, a period when Monsieur Daviel rendered Extraction of the Cataract a matter of public attention\*, the failure of Couching yet continued so frequent, notwithstanding the light then thrown upon the seat of the disease, that, as Heister and Sharp confirm†, few recovered their sight after this operation, and most surgeons were deterred from undertaking it. Hence, the several able men of the

\* Primam epistolam de suo artificio edidit in *Mercurie de France*, 1748. Vid. Biblioth. Chirurgicam. Creutzenfeld, p. 1306.

† Observ. Anat. Chir. et Med. Treatise on the Operations of Surgery. Ch. 23.



the French academy, Garengot, De la Faye, Poyet, Morand, &c. \* who were early patrons of Extraction, had, in their time, a very substantial reason for such conduct, but which, unless I am greatly deceived, cannot be valid in the present state of surgery.

It is not essential to the main design of these pages, that I should enter into a minute investigation of the causes, which were formerly productive of such ill success; suffice it to state, that the cultivated condition of anatomical knowledge, has now not only shewn, what parts should be particularly avoided in the operation, at what place the puncture can be made with most safety, and what course the instrument should take when introduced into the eye; of

\* Vid. Mem. de l'Acad. de Chirurgie, Tom. II. p. 352, 563.



of all which requisite information many of our predecessors seem to have been utterly destitute; it has also detected one very erroneous and mischievous opinion, entertained by the old surgeons, respecting the anterior and posterior chambers of the aqueous humour. These practitioners, more bigoted to the chimerical dreams of fancy, than solicitous to take the right road to accurate information, conceived that, behind the uvea and pupil, there was a space, occupied by the aqueous humour, at least equal in capacity to the space betwixt the cornea and iris, and that the couching needle might be passed directly across it with the most innocent effect. Woolhouse, a famous English oculist at the commencement of the eighteenth century, even maintained, in a presumptuous manner, that the posterior chamber was of larger dimensions than the anterior. Fr. Petit, Morgagni, Heister, Winslow,



Winslow, St. Ives, Zinn, and Haller, supported the opposite sentiment, and numerous experiments, not necessary to be noticed here, were undertaken to prove its accuracy. Lieutaud went so far as to deny altogether the existence of the posterior chamber; and he has some reason on his side, when he observes, that he is unable to conceive, how a space can exist between a soft flaccid membrane, like the iris, and a surface that is somewhat convex, like the front of the lens\*. Whoever will impartially reflect upon the mischief, that must inevitably have resulted to the Ciliary processes, when an operator, so deficient in these indispensable points of information, so destitute of a clear idea concerning the relative position of the iris, the Ciliary processes, and

\* Vid. Tableau Chronologique des ouvrages et des découvertes d'Anatomie et de Chirurgie, par M. Portal, Tom. VI. p. 443, 444.



and the Cataract, plunged such an ill-constructed instrument into the eye, as was generally used in former days for the purpose of couching, must allow, that no conclusions, deduced against the operation from its ancient inefficacy, can be applicable to it in modern times. Let us refer to what that immortal surgeon, Fabricius ab Aquapendente, writes upon this subject, and his venerable authority will convince us, that, in his days, the success of Couching depended almost upon chance, and that the rudeness of the style, in which it was then for the most part executed, was only equalled by the injury which the eye sustained, and the train of bad consequences which ensued.

*“ Primum igitur vidi chirurgos hujusmodi*

*“ operationem privatim profitentes, quos*

*“ merito oculos appellamus interdum*

*“ bene et feliciter operatos fuisse, sæpe-*

*“ numero etiam infeliciter, quia interdum*

*“ ab*



“ *ab ipsis uvea tunica nimium diduceba-*  
 “ *tur, interdum rumpebatur, ex quo vel*  
 “ *admodum amplificatum, vel distortum*  
 “ *etiam pupillæ foramen redditum est,*  
 “ *cum visus læsione, interdum sub opera-*  
 “ *tione oculus universus intus conturba-*  
 “ *batur cum cæcitate ejusdem oculi, non*  
 “ *raro succedebant postea magnæ inflam-*  
 “ *mationes similiter cum ipsius visus ab-*  
 “ *latione, nonnunquam si nihil apparebat*  
 “ *in oculo, tamen male omnino homines*  
 “ *videbant, neque causa ulla patebat.*  
 “ *Propter hos omnes eventus credidi Chi-*  
 “ *rurgos propositos potius casu, quam*  
 “ *arte operari, et fortuito eventus pro-*  
 “ *venire,” &c.\**

To say any thing more upon this head at present, would be entering prematurely into many particulars hereafter to be noticed.

Any

\* De Chirurgicis Operationibus, p. 23.



Any one, who candidly peruses what is about to follow, must spontaneously discern, that many essential circumstances are now familiarly known, which the ancient professors of surgery were either not in the least aware of, or not duly impressed with the importance of. When Mr. Samuel Sharp published on the operations of surgery, as I have already noticed, Couching rarely had a salutary effect, and its ill success, assignable to unskilfulness and imperfections in the method of performing it, had given rise to considerable dissatisfaction; the surgeons of that time, who, like the contemporaries of Fabricius, trusted more to chance than skill in doing the operation, became disposed to resign an unsuccessful practice into the hands of empirics. Things were in this faltering state, when the rival plan of extracting the opaque body through an incision in the cornea, attracted



attracted attention; at a crisis the most propitious to its first establishment; at a moment when extreme exigency urged, either that alterations should be effected in the manner of accomplishing the old operation, or that an entirely new one should be put to the test of experiment: the almost universal disgust, which the inefficacy of Couching had diffused, greatly facilitated the introduction of Extraction, and might even have extinguished, for a while, any emulative spirit to improve a method, that had been so long ineffectual; the difficulties of Extraction were, also, partly surmounted by the skill of its first promoters, the most expert surgeons of the age; and such great examples, added to the plausibility, and seemingly eradicated nature of the proposal, could not fail to bias the profession at large in its favour.

But



But of late years, the right principles of Couching, the best method of executing it, and the cautions necessary to be observed, having been more thoroughly comprehended, an improved practice, attended with such striking success, has resulted, that the balance of respectable modern authorities, has turned unequivocally in commendation of the needle in preference to the knife, as the writings of Mr. Pott, Callisen, Professor Scarpa, Mr. Hey of Leeds, &c. sufficiently demonstrate. “ Ces craintes dans  
 “ la réascension du cristallin déprimé, ces  
 “ accidens grossis, multipliés surtout depuis  
 “ les travaux de Daviel, Lafaye, et de tous  
 “ les oculistes Francais qui ont écrit *ex pro-*  
 “ *fesso*, n'ont cependant pas intimidé les  
 “ praticiens étrangers. Les écrits de Stoll,  
 “ ceux de Richter, nous assurent que les  
 “ Allemands dépriment encore les cristal-  
 “ lins opaques. Acrell a Copenhague, Cal-  
 “ lisen



“ lisen en Suède, nous rendent certains que,  
 “ dans le Nord, on ne connoit que la mé-  
 “ thode par abaissement, qui étoit aussi  
 “ celle adoptée par Pott, et encore aujour-  
 “ d’hui par le plus grand nombre des prati-  
 “ ciens Anglais\*.” Richter, the most con-  
 summate surgeon that ever wrote professedly  
 in favour of Extraction, has no longer, in his  
 later publications, betrayed that ungrounded  
 partiality, which he formerly evinced for this  
 method of treatment.

Conceiving that Baron Wenzel, who may  
 be regarded as the chief modern champion  
 of Extraction, has had recourse to misre-  
 presentation in the statement of his ob-  
 jections to Couching, I shall beg the indul-  
 gence of a few minutes, to examine how far  
 his

\* Traité pratique des Maladies des Yeux, par A.  
 Scarpa, traduit par J. B. F. Lèveillé. Translator’s  
 remark.



his observations coincide with those of other experienced men; and, as the efficacy of this operation will be conspicuous in the subsequent part of this production, it only seems necessary to investigate here, what are termed, accidents produced by it.

This author writes\*, that “the pain is severe during the operation:” Scarpa, on the contrary, remarks†, that the little pain experienced from it, and the consequent tranquillity of the patient’s mind, may be one reason, why the ophthalmy is always milder after a repetition, than after the first time of Couching. How little foundation there is for this objection, must also appear from the patient’s spontaneous acknowledgment-

\* Wenzel on the Cataract, p. 34.

† Vid. Saggio di osservazioni e d’esperienze sulle principali malattie degli occhi, di Antonio Scarpa, p. 255. Venez. 1802.



knowledgment\*, and from the voluntary promptitude, with which he generally submits to a repetition of the operation. Mr. James Lucas remarks, “ that a Cataract would very frequently be cured by one operation (alluding to depression), but the pain from a repetition of it is so tolerable, that many wish it to expedite their cure †.” Mr. Warner, in making mention of a case, observes, “ I was in hopes, from this appearance, that the Cataract might in time have subsided, &c. but, on account of the little pain the patient had suffered from these operations, he insisted upon a third ‡;” and it was even repeated a fourth time, at the same person’s instigation, before the cure was complete. From the comparative experi-

\* Hey’s Practical Observations in Surgery, p. 63.

† Medical Observations and Inquiries, Vol. VI. p. 256.

‡ Description of the human Eye, and its Diseases, p. 88.



experiments made by Poyet, Morand, and De la Faye, it would seem, that the pain of Extraction and Depression is about equal\*.

Wenzel next objects, that "the vomiting, which frequently comes on at the distance of some hours after the operation, and the pain produced by the puncture of the Retina and Ciliary nerves, are apt to produce a collection of matter in the eye †." Mr. Hey has practised Couching rather frequently for thirty-three years; he has also seen it frequently performed by his colleagues at the Leeds Infirmary, but has never yet seen an instance of suppuration in the eye after the operation ‡. If suppuration should sometimes, in particular constitutions, follow the wound inflicted in Couching, and no doubt, it may occasionally ensue from

c

this

\* Vid. Mem. de l'Acad. de Chir. Tom. II. p. 572.

† Wenzel on the Cataract, p. 34, 35.

‡ Practical Observations in Surgery, p. 101, 102.



this injury, it can furnish no argument against the operation, since it appears to be an uncommon circumstance, and Extraction is not exempt from the same consequence\*.

The Baron also remarks, that “those, who have been Couched, sometimes feel violent pains in the eye as long as they live†;” on the contrary, the experienced gentleman last cited, never knew this effect happen after the operation; besides, we cannot but notice, that Wenzel offers no authority for such an assertion but his own naked opinion. I am still not unaware, that Heister speaks of the torment formerly experienced by many after Couching‡, and, if

\* Mem. de l'Acad. de Chir. Tom. II. p. 581, 582, &c. Wenzel on the Cataract, p. 232, &c.

† Treatise on the Cataract, p. 35.

‡ Read the reflections annexed to his fifth observation.



if Wenzel should chance to make allusion to what this writer has stated, as a foundation for the objection in question, I believe, it cannot be fairly made to answer that purpose. Every novice in the subject before us, must often have read and heard, that a Cataract, which presents a good prospect of relief from any kind of operation, ought neither to have been preceded by, nor to be accompanied with pains in the eye and its vicinity: what particulars are detailed in Heister, by which it can satisfactorily be made out, that, in the examples alluded to, such pains did not precede the operation? and, as shooting pains in the eye do sometimes take place before, and independently of any operation, why may they not, in a few rare and solitary cases, happen after it from other distinct causes?



Wenzel also objects, that, "in introducing the Couching needle, the blood-vessels of the Choroides and Retina are liable to be wounded, and the extravasated blood not only confuses the sight of the operator, but, unless speedily absorbed, is apt to produce a suppuration of the whole eye\*." How little reason there is to apprehend the latter part of the objection, must be evident from what has been already delivered; that blood may possibly be effused into the Aqueous humour, and obscure the Iris and pupil, no one will deny; but, it is a well-known truth, that it is neither a frequent, nor, on account of the mere extravasation, a serious event. Wenzel is entirely mistaken in the source of the hemorrhage under consideration; it is impossible to conceive how blood, effused from the vessels of the Choroides and Retina, should rather find

\* Treatise on the Cataract, p. 35, 36.



find its way into the Aqueous humour than out of the wound externally; at least during the operation, the period when it is alledged to happen; for the only track, through which it could then possibly insinuate itself into this fluid, is absolutely occupied and filled by the Couching needle. As Richter more accurately represents\*, the blood extravasated from the Choroides and Retina is either voided externally, or, if that be impossible on account of the smallness of the wound, it probably finds its way into the Vitreous humour; he confirms, that this sort of hemorrhage is seldom considerable; the blood is usually absorbed without further accident; and, when a round needle is employed, the extravasation rarely occurs at all. The fountain of that hemorrhage, to which Wenzel draws our regard,

\* Anfangsgründe der Wundarzneykunst. 3 Band. p. 247. Göttingen, 1795.



gard, is totally different from what he would lead us to suppose; it is not in the vessels of the Choroides or Retina, but, undoubtedly, in those of the Ciliary processes and Iris. In this case the inflammation and suppuration of the eye, were they to occur, would not be so much the effect of the extravasation, as of the unskilful and unnecessary injury of those important parts. Every one is aware, that, in couching Milky Cataracts, the white contents of the crystalline capsule are often suddenly blended with the Aqueous humour, so as entirely to conceal the pupil; yet, so simple of accomplishment in this operation, that several modern surgeons\* do not even postpone its completion on account of this event; they continue to lacerate the capsule, and the opaque fluid, extravasated into the two chambers of the Aqueous humour, is very soon

\* Latta, Scarpa, &c.



soon absorbed : neither can the case be considered in a different light, in regard to consequences, when blood is effused into the same situation. By what is here stated, I would by no means have it interpreted, that my opinion coincides with those, who may judge proper to continue the operation in this last circumstance ; far from it,—I am too strongly convinced of the propriety of the advice, inculcated by Messrs. Lucas and Hey, that a repetition of so mild an operation is always preferable to attempting too much at one time\*. I have myself seen a rapid effusion of blood take place beneath the Cornea, on making the incision of this membrane to extract the Cataract ; and it evidently proceeded from an injury of the Iris.

Another

\* “The principal cautions required in Couching are, not to wound the Iris and Ciliary processes, and not to attempt too much at one operation.” *Med. Observations and Inquiries*, Vol. VI. p. 256. Also *Practical Observations in Surgery*, p. 71, 72.



Another futile objection is, "that the Ciliary processes, which surround the crystalline, are liable to be wounded in the different movements of the needle \*." In the performance of the operation, the needle may, undoubtedly, be used, so as to do considerable mischief; but then it must be from unskilfulness; ignorance of the anatomy of the eye; or from bad construction of the instrument employed; and, as it is easy to achieve Couching in the best style, it cannot justly be chargeable with ills deducible merely from its having been ill executed.

Wenzel asserts, "that an opacity of the posterior layer of the capsule of the crystalline lens takes place much oftener after Depression than Extraction †." Why he should

\* Wenzel on the Cataract, p. 39.

† P. 24.



should fix upon the posterior part of the capsule I know not; an opacity of the front portion is much more common\*, and may now and then happen after the usual manner of Couching; but, in the method (which I shall presently explain) in imitation of the celebrated Scarpa, this kind of secondary membranous Cataract will hardly ever follow the operation of Depression. Callisen, who has enjoyed ample opportunities of estimating in his own experience the advantages and disadvantages, both of Extracting and Depressing the Cataract, states, in his comparative conclusion in favour of the latter, "*A Depressione rarius surgit Cataracta Secundaria, visus perfectior*†." The reason, why the Secondary Membranous Cataract so seldom happens

\* According to Mr. Ware's opinion. See note, p. 25, of Wenzel's Treatise, translated.

† Vid. System. Chirurgiæ Hodiernæ. Partem. Poster. p. 637. Hafniæ, 1800.



happens after Couching, depends on the circumstance of the capsule being commonly depressed into the Vitreous humour at the same time with the opaque lens; a fact, to which I shall have occasion to advert again. It is very certain, that, as the advocates of Extraction acknowledge their process to be inadequate to remove with safety the species of Cataract situated in the posterior layer of the crystalline capsule\*, and which, undeniably, does sometimes take place†, it must be a principal object with them to impute the evil, whenever it does happen, to the effect of Couching.

The

\* Wathen on the Cataract, p. 138. Ware, in a note, p. 264 of Wenzel's Treatise, and his Enquiry into the Causes preventing the Success of Extraction, &c. p. 40.

† La Peyronie et Morand firent voir a l'Academie des Sciences des Cataractes vraiment membraneuses qui avoient leur siège dans la capsule Ant<sup>re</sup>. et Post<sup>re</sup>. du Crystallin. Tom. III. p. 2. Sabatier.



The total closure of the pupil, alledged to happen rarely after Extraction, more frequently after Depression, suffice it to state, Mr. Hey has never seen, as a consequence of Couching, in the course of his long and extensive experience\*.

Here I shall introduce a short extract from Richter's Elements of Surgery, to shew how much this eminent surgeon has changed in favour of the old operation, in its present improved state.

“ With respect to the defects and inconveniencies, with which the operation of Couching has been upbraided, it has been said ; that the same only effects a palliative cure, as the Cataract is merely depressed, and is always liable to re-  
“ ascend,

\* Hey's Practical Observations in Surgery, p. 109.



“ascend, and occasion a fresh blindness;  
 “that it can only be advantageously put  
 “into practice when the Cataract is hard;  
 “not well when it is soft; and not at all  
 “when it is fluid; that it is difficult to as-  
 “certain with certainty before the operation  
 “the consistence of a Cataract; that the  
 “result of this operation is also very uncer-  
 “tain; that, in doing it, all the coats of  
 “the eye are constantly pierced; that the  
 “body of the Vitreous humour is always  
 “lacerated by the depressed lens; that the  
 “aponeurosis of the Abductor muscle, the  
 “Ligamentum Ciliare, and Nervi Ciliares  
 “are frequently injured; and lastly, that the  
 “lens, at the time when it is depressed,  
 “may easily be forced (without the con-  
 “sciousness or least fault of the operator)  
 “against the Choroidea and Retina, so as  
 “to contuse, or even lacerate them.

These



“These various defects and inconve-  
 “niciencies are (says Richter) partly, or en-  
 “tirely without foundation. Experience  
 “evinces, that the laceration of the Vi-  
 “treous humour by the Cataract is unat-  
 “tended with any bad consequences; it  
 “appears from the preceding account, that  
 “every sort of Cataract, both the soft and  
 “fluid, may easily and successfully be ope-  
 “rated on with the needle; and that the  
 “lens, when it has been properly depressed,  
 “seldom or never re-ascends; that it often  
 “dissipates, and is quite absorbed in the  
 “Vitreous humour, by which the patient  
 “is completely secured from any secondary  
 “blindness; and that, if the lens should  
 “happen to rise again, it may always be  
 “again easily depressed. Besides, it is  
 “much in favour of Couching, that the  
 “capsule is, probably, in most cases, de-  
 “pressed with the lens, so that the patient  
 “continues



“ continues in no danger of a secondary  
 “ membranous Cataract; that the eyesight  
 “ afterwards is, as experience declares,  
 “ commonly more acute than after Ex-  
 “ traction; that the inflammation is less  
 “ vehement, than in consequence of the  
 “ other operation; that, upon the whole, it  
 “ is much easier than it; and, lastly, that  
 “ the two parts of the eye, upon the inte-  
 “ grity of which sight afterwards principally  
 “ depends, namely, the Cornea and pupil,  
 “ commonly suffer no injury\*.”

Having thus been as brief as possible in  
 attempting to shew the invalidity of some  
 objections urged against Couching, I might,  
 perhaps usefully, devote a small portion of  
 these pages to consider particularly the in-  
 conveniences of Extraction; especially as  
 the

\* Anfangsgründe der Wundarzneykunst. Dritter  
 Band. p. 359, 360.



the great exigency for this disquisition would fully acquit me of any spirit of retaliation; and, although it is also very certain, that the smooth side of this method has been solicitously held up to public view, while all its roughnesses and inequalities have been as industriously concealed; yet, since nothing but comparative experiments, instituted upon an extensive and impartial scale, can extricate various questionable points from their present mysterious state, and since men of my own age never command sufficient opportunities for this decisive undertaking, all that I can do is, to reflect a little on what others have made out; to exhort surgeons of large hospitals to put both operations to the test of comparison; and earnestly to invite them to give a faithful detail of the particulars and result to the Public. To contrast two rival methods of  
practice



practice is the only fair and infallible way of ascertaining the best.

On the continent, it appears, Callisen and Scarpa have, like our eminent Pott, built their reflections in favour of Couching, not merely upon the firm ground of having themselves successfully and repeatedly practised it, but they have drawn their conclusions, after having with their own hands both extracted and depressed Cataracts to that immense extent, which the office of surgeon to a large hospital permits; after having been eye-witnesses of the advantages and disadvantages of each method; and, after exemplifying in the theatres of surgery the comparative practice, upon which their observations and opinions were founded. *Omnibus tamen rite perpensis, tentaminumque ab idoneis chirurgis institutorum eventibus invicem comparatis,*



*comparatis, facile apparebit, DEPRES-*  
 SIONEM IN UNIVERSUM PALMAM PRÆ-  
 RIPERE EXTRACTIONI, QUOD QUOQUE  
 PROPRIA NOSTRA AC CENTENORUM  
 ÆGRORUM EXPERIENTIA, IN QUIBUS  
 OPERATIONEM CATARACTÆ INSTITU-  
 ISSE NOBIS CONTIGIT, CONFIRMAT.\*  
 Such is the declaration of Callisen.

The Italian professor, after mentioning the advantages of Couching; the facility of accomplishing it; its applicableness to every species of Cataract; its producing subsequent symptoms far less severe and dangerous, than those which frequently happen after Extraction; and, the power of successfully repeating it, when any incidental circumstance has rendered the primary attempts fruitless; observes, “ *Mosso da*  
 “ *queste verità di fatto, egli è da molto*  
 “ *tempo che, posto a parte il metodo di*  
 D “ *curare*

\* Syst. Chirurg. Hodiernæ. Pars. Posterior. P. 637.



“ *curare la cateratta per estrazione, io  
 “ mi sono appigliato onninamente alla  
 “ pratica di quello per depressione, ed ho  
 “ continui e grandi motivi d’ esser con-  
 “ tento della presa risoluzione.*” \*

A fair comparison is the grand, and, indeed, the only standard of superior merit in any mode of practice; if it will not bear this test, then its adoption can only be attributed to the arbitrary influence of such causes, as I have mentioned at the commencement of these remarks. Have they, who so deservedly have acquired fame and honour, for the inimitable skill, with which they surmount the difficulties of an arduous operation,

\* Saggio di osservazioni, &c. sulle principali Malattie degli occhi. P. 231. Venezia, 1802.

“ Induced by these facts, I have, for a considerable  
 “ time, abandoned the method of curing the Cataract  
 “ by Extraction, and adhered altogether to the prac-  
 “ tice of Depression, and I find continual and great  
 “ reason to be satisfied with my determination.”



operation, have they, in their own experience, contrasted the two operations of Extraction and Depression? Have they proved to the world, that there is a case of Cataract, remediable by the former, that is not so by the latter process? Have they satisfactorily demonstrated, that their method, backed, as it may be, with considerable adroitness, is more frequently efficacious and successful, than Couching properly performed? Have they, in short, proved any thing more, than that they are men of surpassing dexterity, to which are assignable their evasion of the dangers of Extraction, and their successful career in practice? Careful, as Baron Wenzel has been, to depict to the public only a series of prosperous cases, yet, the veil is not so dense, but that we may still discern through it many disastrous casualties, to which Extraction is exposed: division of the Iris;



protrusion of the Vitreous humour; separation of the Iris at its outer margin from the Choroid coat; prolapsus of the Iris; irregularity of the Pupil; irremediable opacity of the lower half of the Cornea, &c.

That to Couch is an easier thing, than to extract the Cataract, all men of great experience in both ways universally agree, and, from the frequent failures in the very attempt to go through the latter operation, no slight argument might be deduced against it; for if it be true, that want of skill ought to throw no discredit upon any operation whatsoever, it must, at least, be granted, that one so difficult as to baffle the ordinary dexterity of surgeons at large, and that is seldom well performed, except by a few professed oculists, has little to recommend it, even supposing it were, what it in fact is not, productive of superior efficacy and advantages.



advantages. “ *Depressio haud adeo difficilis est quam extractio, quæ consummatam dexteritatem, vix a multis chirurgis expectandam poscit, si nitide et omnimode ad regulas artis instituetur.*” \*

It is not a little remarkable, that Mr. Sharp should, at so early a period of its reign, as when he published his Critical Enquiry, have made the following observation:—  
 “ Now, after some trials, it seems rather to have fallen into disrepute, and I apprehend will be entirely discarded in favour of Couching. To be candid, (he continues), I perceive that the difficulty of performing the operation is too great to be universally practised.” Neither is Extraction, in any respect, more applicable to the various kinds of Cataract, than Depression, which is now found by men of the

\* *Systema Chirurgiæ Hodiernæ. Pars Posterior.*  
 P. 637.



the greatest experience, \* by men, whose professional emolument, and reputation, have not depended upon the adoption of this, or any other individual operation; by practitioners of the most unbiassed opinions, and worthy of implicit confidence, to be adequate to the removal of every species of the Cataract, whether in the substance, or the capsule of the Crystalline Lens; whether of a solid, or fluid consistence. But, besides being more easy of accomplishment, freer from accidental inconveniences, and, at least, equally efficacious, it possesses an unrivalled advantage over the opposite method in the practicability of its being successfully repeated, when the first attempts prove inadequate to the perfect restoration of sight, a circumstance almost completely inadmissible after the first

\* Cusson, Pott, Callisen, Lucas, Scarpa, Hey, Latta, &c. &c.



first failure of Extraction. It is true, Baron Wenzel relates two or three cases, where the operation was repeated with advantage, but, who will contend, that such reiterated sections of the Cornea would not, in a great number of examples, destroy its transparent texture? But, why need I specify any particular cause of failure? It is enough to mention the result of experience. “*Depressio, si ex voto non successerit absque damno iterum iterumque repeti potest, inutilibus hisce tentaminibus haud impeditentibus, quo minus ad Extractionem demum cum successu recurri queat; quod ipsi pluries comperimus; quum e contrario Extractio, si visum non redat, omnem fere eum recuperandi spem excludat.*” \* To Callisen’s I shall add the authority of Scarpa upon this head. “*Per-*” *che*

\* System. Chirurg. Hodiernæ. Pars Posterior. P. 637, 638.



*“ che a motivo di qualche incidente rius-  
 “ cendo alcuna volta infruttuosa la de-  
 “ pressione, si puo, senza correre alcun  
 “ rischio, ripetere due e tre volte la stessa  
 “ operazione sopra il medesimo occhio : la  
 “ qual cosa non ha luogo ogni qual volta  
 “ l' estrazione non ha avuto il desiato  
 “ successo.”\**

Difficult as Extraction is upon a favour-  
 able eye, it becomes exceedingly more so  
 when it is to be done on the right one;  
 when the Cornea is at all defective in point  
 of convexity; when the anterior chamber  
 of the Aqueous humour is diminutive; when  
 the muscles of the eye and eyelids are af-  
 fected

\* Saggio di Osservazioni, &c. P. 231. “ Should  
 “ any incident sometimes render Depression fruitless,  
 “ one can, without running any risk, repeat the same  
 “ operation two or three times upon the same eye;  
 “ which cannot be done when Extraction has not had  
 “ the desired success.”



fectured with spasms; when the Cataract is large, and the pupil small and contracted; and, when the surface of the eye is more than ordinarily sunk in the orbit.

When the Cornea is flat, the blade of the knife may easily pass between its layers, and not at all into the anterior chamber; if it should have passed deeply in this manner, an opacity of the Cornea is to be apprehended.\* A gentleman, professedly in favour of Extraction, has affirmed, that because the Couching Needle is always entered into the Sclerotica, that is, farther back in the eye than the knife in Extraction, it must be evident, that the elevated margin of the orbit is a greater impediment to Couching, than it can possibly be to Extraction.† This statement is, for the following

\* Richter's Anfangsgründe der Wundarzneykunst. 3 Band. p. 277.

† Wathen on the Cataract, p. 111.



lowing reasons, inaccurate: the knife, in Extraction, must absolutely be directed transversely through the anterior chamber; the safety of the Iris prescribes this as an invariable rule; but in Couching, the surgeon may, if he chuses, (and Callisen directs this plan in every case)\* introduce the needle in a direction towards the centre of the Vitreous humour, by which the inconvenience, that would otherwise arise from the prominent margin of the orbit, may be completely eluded. In Extraction, the difficulty would only be augmented by attempting to cut the Cornea in any other direction than the common one; for, it is evident, that the projection of the superciliary ridge of the Os Frontis above; of the Nose internally; and the Os malæ below; would create

\* Systema Chirurg. Hodiernæ. Pars posterior. P. 616.

Per omnia bulbi involucra in medium humorem vitreum, &c.



create an additional source of embarrassment to any such attempt.

Wenzel proposed to pass the knife into the Cornea, so that it should take a direction from above, downward and a little inward, and make its exit from the Aqueous humour below, rather toward the inner angle of the eye, and cut, not the lower, but the external segment of the Cornea; he proposed this with an idea of diminishing the hazard of an escape of the Vitreous humour. Richter, in taking notice of the inutility of this plan, on account of the Vitreous humour not being protruded merely by its gravity, but some other cause, observes, that it is attended with many difficulties; the prominent Os Frontis above absolutely hinders the knife from passing through the Cornea in such a direction, as possibly to come out again below; should it even  
be



be conducted out, its point would certainly injure the lower eyelid, or cheek. In persons, whose eyelids are but little asunder, the knife can hardly be passed from above downward, without cutting both the upper and lower one; and how, continues this author, can the knife be directed from above downward, without being impeded by the fingers of the assistant who holds the upper eyelid?\*

In fact, the common manner of cutting the Cornea is the most practicable, and no variation in doing it will obviate the great inconvenience, arising from the prominent margin of the orbit in particular subjects.

The great difficulty in cutting the Cornea with that accuracy, which the circumstances of Extraction require, will ever form a great obstacle

\* Anfangsgründe der Wundarzneykunst. P. 266.  
3 Band.



obstacle to the universal practice of this operation: when the edge of the knife is turned too much forward, the wound is made too small, and, in a situation, where the cicatrix may impede vision; when it is turned perpendicularly downward, or a little inward, the Iris will inevitably be cut. In altering the edge of the knife either a little inward or outward, when it has once been introduced inaccurately into the anterior chamber, it is evident, that the form of the instrument can no longer correspond to the wound which it has previously made, and, consequently, the Aqueous humour must be very liable to a premature escape. \*

In making the incision of the Cornea, it sometimes happens, that the pressure of the knife causes the eye to turn towards the inner

\* Richter's Anfangsgründe der Wundarzneykunst. 3 Band. P. 279, 280.



ner angle, and, of course, the wound in the Cornea cannot, as long as the eye continues in this posture, be properly perfected. I have no hesitation in asserting, that no means of remedying this inconvenience have hitherto been, or are likely to be devised: to endeavour to bring in the aid of an instrument to fix the eye, when once the knife has pierced into the anterior chamber, must be particularly dangerous and unavailing. They, who have had most experience in the practice of this operation, acknowledge, that all contrivances to fix the eye are, by reason of the pressure which they occasion, extremely pernicious and dangerous; and how can the eye be turned outward again without withdrawing the knife? how can the knife be withdrawn without the Aqueous humour escaping? how can the instrument be again introduced without injuring the Iris? and, if the incision should be enlarged with



with scissars, what occasion will there be for any contrivance to prevent the eye from rolling toward the inner canthus, an effect that results from the transverse pressure of the knife? Richter confesses, that to make the eye revolve outward, by means of the knife itself, when introduced, requires a circumspect hand; indeed, it must be too hazardous to attempt, because, should the knife be in the least retracted, the Aqueous humour would instantly escape, and the Iris would fall forward beneath its edge, so as almost inevitably to be cut; and, the moment the knife ceases to fill completely the wound that it has made, it must manifestly lose all power of moving the part, in which it is introduced. In this dilemma the preferable, though objectionable resource, is what Richter advises; to carry the knife perpendicularly downward, so as to cut about one fourth of the circle of the Cornea, and afterwards



afterwards to enlarge the incision by scissors. The knife, when it has entered far into the anterior chamber, cannot be withdrawn without great hazard of injuring the Iris, before it is completely out of the eye, and as soon as the Aqueous humour begins to escape. But, even to carry the knife directly downward, when you are in the dark with respect to the precise position of the Cornea, cannot be free from risk; either of the Aqueous humour escaping too prematurely over the back of the knife; or of the wound being made too high in the Cornea, so that its cicatrix may afterwards obstruct vision, and its size be too diminutive for the easy passage of the Cataract; or, lastly, of the wound being carried too much inward toward the Iris, so as to injure it. The pressure necessary to extract large Cataracts, when the incision in the Cornea is not sufficiently extensive, is commonly the  
source



source of much mischief: violent inflammation, says Richter, and perpetual blindness are the inevitable consequences of forcible and long-continued pressure on the eyeball. The eye endures nothing so badly as strong pressure of this kind: he observes, when the wound is much too small, and one ventures to extract the lens through it by making considerable pressure, the Vitreous humour starts forward, the pupil closes, and the patient remains for ever blind \*." When we consider, that these observations come from one, who has had unlimited opportunities of observation; who once wrote so decidedly in favour of Extraction; they claim the sincerest confidence.

In regard to the loss of the Vitreous humour, unattended, as it undoubtedly has  
E been

\* Richter's Anfangsgründe der Wundarzneykunst.  
 P. 262—263. 3 Band.



been, in certain instances, with any serious impairment of sight, it is justly considered as a cause very frequently preventing the success of Extraction; nor can this objection be got rid of by referring the accident to want of skill in the operator: how human invention shall prevent its escape is difficult of conception, when we consider the nature of those causes, by which it is produced, and the variety of periods, at which it may happen; when we reflect, that it may take place even before the Cataract itself is expelled, or immediately afterwards; that it may occur some hours, or some days after the operation; that unforeseen, and uncontrollable spasm of the muscles of the eye; coughing, vomiting, sneezing, inadvertent friction, or pressure of the eye during sleep, fright, and other emotions of the mind, &c. may occasion it. If the evidence of experience unequivocally proves, and



and there is now no reason to doubt it, that a considerable, and even the greatest portion of the Vitreous humour, has been protruded without the restoration of sight being prevented, we must refer the common fatality of the occurrence, not simply to the subsequent state of this humour, but to the effect, which its deficiency and sudden exit must have, in changing the condition of other more essential parts of the eye. Did the derangement of the Vitreous humour itself, abstractedly considered, create the cause of failure, the effect would then follow as invariably as the accident takes place, which experience contradicts; and Couching would, for the same reason, always prove an unsuccessful operation. I shall refer the ill effect, arising from the exit of the Vitreous humour, to two other effects, which this event produces, and which operate as the immediate causes



of failure. 1st. The unnatural condition, into which the Retina must fall when deprived of the support of the Vitreous humour. This change must always take place to a considerable degree, when much of this humour is lost. In the singular case, related by Wenzel\*, where three-fourths of the whole quantity of the Vitreous humour was lost, and yet the success of the operation was not prevented, to what must we ascribe the good fortune? Was it that some accidental circumstances prevented the flow of the Aqueous humour (which we know to be secreted very rapidly) through the incision of the Cornea, and consequently, that it occupied the place of the Vitreous humour very speedily, and thus afforded a timely degree of support to the Retina? At all events, no inference can be drawn from so solitary an example, and the success

\* Wenzel on the Cataract, p. 169.



cess must be attributed to some extraordinary circumstance. 2dly. The considerable injury, perhaps laceration, which the soft and delicate structure of the Retina must frequently suffer, when the Vitreous humour is suddenly protruded, offers one very rational explanation of the manner, in which the accident so often, and so seriously mutilates the eye.

I shall not dwell here upon wounds of the Iris; no skill can regularly prevent their occurrence. No sooner does any instrument penetrate the eye, than the muscles of this organ usually contract in a spasmodic manner, so as to make great pressure upon the part, and to urge forward the Cataract and the Iris. In this circumstance, we cannot wonder, that the latter should, now and then, be injured by the edge of the instrument. Who can credit that, in the case of  
the



the Iris being entangled against the edge of the knife, it can be so invariably disengaged without injury, as Wenzel describes, by gently touching the Cornea with the finger? Richter justly observes, that this manœuvre is, also, not without risk of pressing out the Aqueous humour; especially, if the irritation of touching the eye with the finger, should cause it to move; or, if the operator should, in the least, disturb the knife \*.

It is unnecessary to enter into an argument against the slight importance, which Richter attaches to the escape of the Vitreous humour, and wounds of the Iris. They must ever be considered as the two chief dangers, to which Extraction is exposed.

Much

\* Anfangsgründe der Wundarzneykunst. 3 Band. p. 334—335.



Much as they, who espouse the side of Extraction, have dwelt on the eradivative nature of that operation, it is an undeniable fact, that large fragments of soft Cataracts frequently remain unobserved, at the time of operating, about the circumference of the capsule; a few days afterwards, glide into the centre of the pupil, and continue to impede vision, until the same process takes place to remove them, which takes place in consequence of Couching, and renders this latter operation, in reality, quite as productive of a radical cure as the former. It is also a well-known thing, that in extracting a Cataract, the principal and almost sole aim of the operator, consists in endeavouring to extract an opaque lens from its capsule; no attempt is, or can safely be made to avert the occurrence of the secondary membranous Cataract. This is the practice of Wenzel, Ware, and I believe



lieve of almost all the eminent patrons of Extraction. Richter was well convinced, how uncertain the relinquishment of the capsule always rendered the result of the operation ; he, therefore, directs its anterior layer to be broken, and pierced very freely with the instrument employed to make an opening into it ; he also saw the advantage, that would proceed from extracting the capsule together with the lens ; but, he likewise perceived the impediments to the accomplishment of so desirable an object\*.

I am bold enough to presume, that the most fertile genius will never be able to suggest any means, that will serve to obviate the accumulated danger, when the Cataract is large, the Iris very irritable and contracted, consequently the pupil small : and how much

\* Anfangsgründe der Wundarzneykunst. P. 330, &c. 3 Band.



much real cause there is to fear, in this case, a sudden, but imperfect exit of the Cataract, with protrusion of the Vitreous humour, and such distension of the Iris, as to create future irregularity of the pupil, it is superfluous to dwell upon. It is a more important reflexion, inasmuch as soft Cataracts, of various descriptions, are as frequently met with as firm ones, generally of large size, and the Caseous kind\*, to which I particularly allude, not unfrequently even of twice the ordinary dimensions of a healthy lens.

I shall conclude this part of my observations with a passage from Richter's Elements of Surgery. "The principal advantages of Extraction consist in its in-  
"juring

\* "Es ist nichts ungewöhnliches, dass der weiche Staar noch einmal so gross ist, als die gesunde Krystallinse." Richter's Anfangsgr. der Wundarzn. P. 178. 3 Band.



“juring none of the more sensible parts of  
 “the eye, only the insensible Cornea, and in  
 “its radically curing the Cataract, that is,  
 “taking it entirely out of the eye. But it  
 “may, with reason, be objected; that the  
 “cure of the Cataract by Extraction, ought,  
 “on no account: to be called radical, while  
 “the capsule, the seat of the possible, and  
 “not unfrequent secondary membranous  
 “Cataract, remains behind in the eye; that  
 “far more important accidents are to be  
 “dreaded after Extraction, than Couching;  
 “opacity of the Cornea; closure of the  
 “pupil; prolapsus of the Vitreous humour  
 “and Iris; and that Extraction is much  
 “more difficult, and more subject to con-  
 “sequent inflammation, than Depression\*.”

This author, except at one place, † where

he

\* Anfangsgr. der Wundarzn. P. 360—361. 3 Band.

† P. 316—317.



he would induce one to believe, that the loss of part of the Vitreous humour is rather advantageous, inasmuch as it renders the sight more acute afterwards, and the disposition to ophthalmia less, than when no such accident has happened, constantly enumerates it in the train of dangers, and takes great pains to inculcate how it is to be avoided. The inference to be drawn from this ambiguity is too conspicuous to require mentioning.

Some little attention is necessary to distinguish those cases of Cataract, which afford a reasonable prospect of benefit from an operation, and to discriminate them from others, either less promising, or absolutely prohibitory of relief.

When, in the incipient state of the disease, the patient discerned objects, as it were,



were, through a mist, which increasing in density, at length became a complete impediment to vision ; when the opacity of the crystalline lens has supervened gradually, and has not been preceded, and is not accompanied by a chronic ophthalmia peculiarly affecting the interior of the eye ; when no particular head-ach, nor pains in the eye and eyebrow have been experienced ; when the pupil, notwithstanding the Cataract, preserves its circular figure, and the faculty of varying its dimensions in the different degrees of light ; when the patient can distinguish a brilliant light from total darkness ; and, especially, if in a moderate light, where, usually, the pupil is not too much contracted, he should be able to distinguish bright colours, and the shadows of objects before him ; there is every reason for performing, and expecting success from, an operation.

The



The power of distinguishing light from darkness, is much more satisfactory, than motion of the Iris. I saw, the summer before last, in St. Bartholomew's Hospital, a case of complete Gutta Serena in both eyes, in which there was the freeest contraction and dilatation of the pupils; it is obvious, that, had this patient been, at the same time afflicted, with Cataract, (a complication by no means unfrequent), and a surgeon, induced by the moveable state of the Iris, had undertaken an operation, how unavailing it must have proved, 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

\* Richter on the Cataract, translated. P. 16.

† Treatise on the Cataract, p. 52.



immediate organ of sight, is constituted entirely by another distinct nerve. This interesting fact can scarcely fail to remind us of the sentiment of that great physiologist, Haller, who believed, that the Iris was not muscular, and that its motion took place in some specific manner, and depended upon the impulse of light on the Retina as an essential cause. Does it not stagger this opinion, and tend to shew, that we can no longer consider motion of the Iris as an infallible criterion, according to several authors\*, that the Retina is endued with sensibility? Relating to this subject, is a curious remark by Mr. Lucas in the Medical Observations and Inquiries: † he attended, in conjunction with Messrs. Hey and Jones, his colleagues of the Leeds' Infirmary, five children of a clergyman at Leaven, near  
Beverly,

\* Wathen's Dissertation on the Cataract, p. 36.

† Vol. VI. p. 263.



Beverly, 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."

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 very impression of the rays of light upon one eye, sensible to this stimulus, is known to be often sufficient to produce corresponding motions of the  
 Iris



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.\* There are, however, two circumstances, 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; it must be a difficult thing to discriminate the nature of this case, by merely observing, as Richter directs, † the distance between the Cataract and pupil; inferring, that when the space, between the pupil and opaque lens, is inconsiderable, such an adhesion has happened; and, that when the Cataract does not seem particularly close to the pupil, and yet the patient cannot discern light from

\* Wenzel on the Cataract, p. 53.

† On the Cataract. Translation, p. 6.



from darkness, it is 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 I have remarked, that the power of distinguishing light from darkness 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. Dilatation of the pupil is, also, a deceitful criterion to ascertain 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

the

pupil



pupil often continues not in the least dilated in the most perfect Gutta Serena.\*

From all this it must be manifest, 1st, 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; 2d. 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

\* Richter's Anfangsgründe der Wundarzneykunst. 3 Band. p. 188, 189.



the defect of the Iris arising from other causes; the *certainty*, that the opaque body *must* be removed from the axis of sight, (even were the disease of the Retina cured), ere sight could be restored; and the *improbability*, that an operation to cure the Cataract, would render the other complaint at all less remediable; fully justify the attempt. 3dly. That, should the patient have been free from particular pain in the head and eye; should he, in a previous stage of the Cataract, have been able to distinguish light from darkness, and then suddenly have lost that power, in consequence of inflammation affecting the eye, and depriving the Iris of motion; in which case there is ample reason to conclude, that adhesions between the Iris and Cataract have taken place; and should there be ground to suspect, from the appearances which I shall hereafter notice, that the Cataract is of



exceedingly large dimensions ; notwithstanding the incapacity to feel the stimulus of light, there is yet sufficient foundation to entertain a little hope, and to vindicate the practice of the only effort that can be availing, and, excepting a trivial and a temporary pain, one that cannot be materially injurious to the patient. The concurrent testimony of almost all writers upon the subject confirms, that the restoration of sight has sometimes been effected in the most hopeless cases, and I am, therefore, of opinion with Mr. Lucas, that it is proper, in all doubtful cases, to try Couching, as a remedy by no means violent, or hazardous.\*

As it not unfrequently happens, that Cataracts, produced by external violence, spontaneously disappear, the operation should never be too hastily recommended for such instances.

\* Med. Observations and Inquiries, Vol. VI. p. 257.



instances.\* How far it is right and judicious to reject the operation, when there is only one Cataract, I have never had an opportunity of ascertaining from actual observation; one reason, assigned for this precept in very modern books, that the use of one eye is sufficient for the necessities of life†, is but of a frivolous description; and, the other, that the patient would never be able to see distinctly after the operation, by reason of the difference of the focus in the eyes, is (I have grounds for believing) only a gratuitous supposition, blindly transmitted from one writer to another. In support of what I have here advanced,

\* Pott's Works, Vol. III. p. 194, note. Hey's Practical Observations in Surgery, p. 52. Med. Observations and Inquiries, Vol. VI. p. 252—264.

† Parceque l'autre suffit au besoin, et que le foyer de la vision devenant différent des deux côtés, &c. le malade ne verroit jamais d'une manière bien distincte. Sabatier, de la Med. Operatoire. Tom. III. p. 5.—Wathen, p. 37.



vanced, and to prove, that success does sometimes, probably in general (if no other causes of failure exist), attend the practice of Couching and Extraction, when only one eye is affected with a Cataract, I shall first adduce a fact from Maître Jan.\*

“ Le 17 Octobre de l’année 1685. J’allai  
 “ à Saviere pour abaiser une Cataracte  
 “ dans l’oeil gauche d’un jeune garçon ap-  
 “ pellé Nicolas Very valet de Sebastien  
 “ Coutan, laboureur. Cette Cataracte me  
 “ paroissoit d’une bonne couleur, la pu-  
 “ pille se dilatoit lentement, et beaucoup,  
 “ et se resserroit de même, quand je passois  
 “ la main entre l’oeil et le grand jour, *le*  
 “ *sain étant fermé,*” &c. After describing  
 the operation, he continues: “ Quelques  
 “ jours après je retournai le voir, et je  
 “ trouvai

\* Traité des Maladies de l’Oeil. Edit. Paris, 1741,  
 12mo. Obs. sur une Cataracte laitense, p. 196.



“trouvai que l’humeur aqueuse étoit fort  
 “éclaircie, et qu’il *distinguoit toutes sortes*  
 “*d’objets* : je le vis encore sept ou huit  
 “jours après en passant par son village, et  
 “je le rencontrai faisant son ouvrage, et  
 “entièrement guéri, sans qu’il parût qu’il  
 “eût jamais été incommodé de Cataracte.”

Baron Wenzel was in the habit of extracting Cataracts with the most successful result, when only one eye was affected with the disease, as may be learnt by referring to the cases specified in the margin.\* It will only be necessary to quote here two cases, related by this eminent oculist.  
 “Madame Harvey, a tobacconist, at Châlons sur Marne, presented a complicated  
 “case similar to the preceding. She had a  
 “Cataract in the right eye, combined with  
 “an

\* Cases 6, 13, 16, 19, 22, 25, 29, 30, 31, 34, &c.  
 Treatise on the Cataract.



“ an opacity in the anterior portion of the  
 “ capsule, as appeared by the white spots  
 “ and inequalities, of which I have spoken  
 “ above, in the surface of the Crystalline.  
 “ *Her left eye was sound.* I operated on  
 “ the right eye in the year 1782, &c. The  
 “ patient suffered some pain in consequence  
 “ of the operation, but it was soon removed  
 “ by bleeding her in the foot; and, notwith-  
 “ standing this obstacle, the sight was soon  
 “ recovered to as great a degree of perfec-  
 “ tion as was possible after such an ope-  
 “ ration.”\*

The following case is as explicit as pos-  
 sible on the point under consideration. †  
 “ A poor woman, de la Ferté sous Jouarre,  
 “ who had a Cataract in the right eye up-  
 “ wards of ten years, came to consult me  
 “ in

\* Wenzel on the Cataract, p. 138, Case 16.

† Vid. Case 22, p. 166.



“ in the year 1780. I found all the symp-  
 “ toms of the case favourable to an opera-  
 “ tion,” &c. (after describing the manner  
 of doing it, he continues); “ I immediately  
 “ bound up, not only the eye that had un-  
 “ dergone the operation, but the *sound one*  
 “ also; a precaution, which it is necessary  
 “ to use after all operations on the eye, even  
 “ the most simple; it being almost impossi-  
 “ ble, that one eye should not follow the  
 “ motions of the other, &c. In a fortnight  
 “ she was perfectly cured; and, though the  
 “ pupil remained larger than it was before  
 “ the operation, or than that in the left  
 “ eye, and had much less motion, yet this  
 “ eye, as well as the other, perceived ob-  
 “ jects very distinctly.”

I next proceed to notice what Richter  
 has remarked upon this head. He was for-  
 merly convinced, that the advice not to  
 operate,



operate, when only one eye is affected with a Cataract, ought, for several reasons, to be disregarded; he reminds us of the wonderful consent between the eyes, so that one is seldom diseased without the other, sooner or later, falling into the same state; and hence he questions, whether it may not be possible to prevent the loss of the sound eye by a timely operation? \* He adverts to the remarkable 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 gradually became blind in the left, but soon recovered his sight in it, after the Cataract had been extracted from the right one. Here let us notice, that St. Ives † makes no mention of any confusion in vision, in consequence of

\* Au non caveri possit jactura integri oculi tempore extrahendo Cataractam prioris? Obs. Chir. Fascic. I.

† Maladies des Yeux. Ch. 15. Art. 3.



of the different refracting powers of the two eyes in question. Another reason, judiciously assigned by Richter,\* for disregarding the above precept, is, that in waiting until a Cataract forms in the other eye, the existing one, which is at this moment, perhaps, in the most favourable state for the operation, may soon change so much for the worse (for instance it may contract such close adhesions to the Iris), as either to destroy all prospect of relief, or, at most, afford but a very precarious and discouraging one.† I am surprised that Richter should latterly have inculcated a contrary opinion, and, not given the particular facts, that have induced him to revoke, as it were, his former sentiments. The principal reason  
stated

\* *Observationum Chirurgicarum, Fasc. I.*

† The length of time necessary to wait is, moreover, quite indefinite; I saw a man in St. Bartholomew's Hospital, about four years ago, who had had a Cataract in one eye, while the other was perfect, for fifteen years.



stated by him is, that the patient, not only does not see much more acutely with the two eyes after the operation, than with one before it, but he frequently sees more confusedly; because the eye, that has been operated on, cannot see well without the aid of a glass, which, perhaps, the sound one does not require.\*

When I remember, that no cases are adduced by this author to contradict the rationality of his former sentiments; when I also reflect upon the facts recorded by Maitre-Jan, St. Ives, and Wenzel; when I contemplate, that Callisen mentions, as the feeble ground of his adopting the common opinion, that, in one single instance  
of

\* Er sieht nicht allein nach der Operation mit zwey Augen nicht viel schärfer, als vor der operation mit einem Auge, sondern er sieht auch oft undeutlicher, da das operirte Auge nicht ohne Brille, das gesunde aber vielleicht ohne Brille scharf siehet. Anfangsgr. der Wundarzn. Dritter Band. p. 199.



of this description, he was unsuccessful, without particularizing from what immediate cause the failure arose; there appears to my mind strong cause to believe, that the advice, not to operate, when there is only one Cataract, and the other eye is perfect, rests upon the false basis of prejudice and plagiarism. Warner's objection is similar to that specified by Richter: he writes, "the eye, from which the Crystalline Lens "is removed, cannot be restored to a degree of perfection at all equal to that of "the sound eye, without *the assistance of* "a convex glass :"\* but, is not the power of using both eyes at the same time, even with the inconvenience of being necessitated to employ a glass for the purpose, preferable to being blind of one? The cases, which I have quoted, at least prove, that confusion in vision, is not always the result of the practice which I contend for: whether

\* Description of the Human Eye, and its Diseases, p. 85.



ther the fact is concordant with the modern theory of vision, is entirely another consideration; if it should be found inconsistent with it, we must infer, that our knowledge of optics still continues imperfect; not that such well-attested examples, as some alluded to, are unworthy of belief.

When there are Cataracts in both eyes, most authors are of opinion, that there is no reason, why one should not be couched immediately after the other; and, it must be confessed, that, in general, the simplicity and mildness of the operation, will admit of this method without the least evil resulting from it. But it must also be confessed, that the ophthalmia after Couching sometimes attains a greater height than is agreeable, either to the feelings of the patient, or the wishes of the surgeon. The excitement of violent inflammation, is what

we



we ought to endeavour to avoid in performing all operations. Will it not inevitably happen, by reason of the mutual sympathy between the two organs of sight, that the ophthalmia after Couching will, *cæteris paribus*, be more severe when it is done at the same time on both, than when performed on each at separate periods? Inflammation in one eye almost constantly kindles the same process in the other. Scarpa's experience establishes the truth of these reflections, and, what reason might anticipate, an appeal to practice confirms.\*

The majority of surgeons imbibe an opinion, that no operation should be undertaken

\* “Ne' malati di cateratta in ambedue gli occhi, la esperienza mi ha insegnato che non è punto vantaggioso l' operarli immediatamente uno dopo l' altro; ma che giova aspettare la guarigione d' uno prima d' intraprendere l' operazione dell' altro.” Saggio di Osservazioni, &c. P. 255.



taken for the Cataract, before the patient has attained the age of docility and reason, and, in a point of view, abstractedly surgical, there can be no doubt of the rectitude of such advice; but, when it is further considered, how essential sight is to the acquirement of education; that youth is the condition best adapted for this indispensable pursuit; that Couching is a very easy operation; that, to perform it conveniently, nothing more is required, than to have the child's head steadily fixed; that, with the aid of an assistant, this object can more effectually be accomplished; that, in delaying the operation, the Cataract may acquire adhesions; that persons have, not only had Cataracts successfully depressed at a very early age, but have, with the assistance of a *speculum oculi*, even had them extracted,\* which is universally acknowledged to be a far

\* See Mr. Ware's note, p. 90, of Wenzel's Treatise.



far more difficult process ; and that the pupil of the eye, in a young subject, is nearly as large as in an adult ;\* I cannot help thinking with Mr. Lucas, that, after a child is old enough to bear an operation, *Couching may be proper* at any age. This gentleman (we may infer from his observations) was in the habit of Couching children ; for he states, that the reason for his not operating on the five children born blind (mentioned above), was the insensible state of the Retina : not their youth.

Here Couching seems to be more applicable than Extraction ; for, although it is very practicable to fix a child's head very securely, it is not so to prevent (without the use of a speculum, by which Extraction is rendered doubly dangerous) that

G

rolling

\* Warner's Description of the Human Eye and its Diseases, p. 34.



rolling motion of the eyes from taking place, peculiar, almost without exception, to children, and which would, undoubtedly, make it too arduous to cut the Cornea with the due precision, necessary for the success of the more modern operation. Surgeons do not refuse to operate for the hare lip, as early as two years of age; they do not wait for docility and reason in the patient, to make him manageable, and sensible of the propriety of submitting quietly to the performance of the operation; they render him tractable by force, and thus they wisely succeed in making, perhaps, with more certainty, than reliance upon the fortitude of any human being would afford, a very precise incision, such as the nature of the operation demands; and, why should they refuse to Couch children, I will not say of two, but of five or six years of age, when the motives are more urgent, and it is equally in the  
the



the power of art to substitute means, quite as effectual as docility and reason in surgical patients. What experienced operator would trust to these qualities, when he undertakes any grand operation, even on the most rational and firm adult?

There are no certain criteria, by which it can be ascertained previously to an operation, whether a Cataract is soft or hard; of a caseous or fluid consistence; or whether, together with an opacity of the crystalline lens, the membranous capsule, in which it is contained, may not have lost its natural transparency: those formerly mentioned by Richter, and other similar ones proposed for consideration by Mr. Pott, cannot be sufficiently confided in to form a guide in practice. \*

G 2

such

\* Tutto cio ch' e stato scritto ed insegnato fin' ora su questo



such infallible indications, does not materially influence the result of the operation, for, the surgeon ought constantly to be prepared to adopt the method of Couching, most suited to the particular circumstances which he may encounter.

I think it right, however, to state to the reader, in as concise a manner as possible, the symptoms and appearances, which Richter has more recently explained, and, for a long series of years, found generally to portend the truth; and I shall confine myself to the hard, the fluid, and the caseous or soft Cataracts.

The harder the Cataract is, the thinner and smaller it becomes. In this case, the disease

questo proposito, non ha per anco quel grado di certezza che possa servire di guida nella pratica. Scarpa, *Malattie degli occhi*, p. 232.



disease presents either an ash-coloured, a yellow, or a brownish appearance. The interspace, betwixt the Cataract and pupil, is very considerable. The patient very distinctly discerns light from darkness, and can even plainly perceive large bright objects. In the dilated state of the pupil, a black circle surrounding the lens is very perceptible. The motions of the pupil are free and prompt. The anterior surface of the Cataract appears flat without any degree of convexity.\*.

The fluid, or milky Cataract, has usually a white appearance, and irregular spots and streaks, different in colour from the rest of the Cataract, are often observable on it. These are apt to change their figure and situation, when frequent and sudden motions of

\* Richter's Anfangsgründe der Wundarzneykunst. P. 177. 3 Band.



of the eyes occur, or when the eyes are rubbed and pressed; sometimes, also, these spots and streaks vanish, and then re-appear. The lower portion of the pupil seems more opaque than the upper, probably, because the untransparent and heavy parts of the milky fluid, sink downward to the bottom of the capsule. The crystalline lens, as it loses its firmness, commonly acquires an augmented size. Hence, the fluid Cataract is thick, and the opacity close behind the pupil. Sometimes one can perceive no space between the Cataract and margin of the pupil. In advanced cases, this aperture is usually very much dilated, and the Iris moves very slowly and inertly. This happens because the Cataract touches the Iris, and impedes its action. The fluid Cataract is sometimes of such a thickness, that it protrudes into the pupil, and presses the Iris so much forward, as to make it assume  
a convex



a convex appearance. Patients, who have milky Cataracts, generally distinguish light from darkness very indistinctly, and sometimes not at all; partly, because the Cataract, when it is thick, lies so close to the Iris, that few or no rays of light can enter between them into the eye; partly, because the fluid Cataract always assumes, more or less, a globular form, and therefore has no thin edge, through which the rays of light can penetrate. \*

Sometimes the opaque lens is of a middling consistence, neither hard, nor fluid, but about as consistent as thick jelly, curds, or new cheese. Cases of this description are termed soft or caseous Cataracts. As the lens softens in this manner, it commonly grows thicker and larger, even acquiring a  
much

\* Richter's Anfangsgründe der Wundarzneykunst. 3 Band. P. 174, 175.



much greater size than the fluid. It is not unfrequent to meet with caseous Cataracts of twice the ordinary size of a healthy crystalline lens. It impedes the motion of the pupil more considerably than the fluid Cataract, because it lies closer to the Iris. It is accompanied by all the symptoms of fluid Cataracts, except that the spots and streaks, sometimes also observable on this kind of Cataract, do not vary their situation and figure\*.

The firm Cataract (it being understood, that the most solid is seldom so firm as the crystalline lens in its natural state, though there are instances of the lens having been converted into cartilage and bone†), is certainly

\* Richter's Anfangsgründe der Wundarzneykunst. P. 178. 3 Band.

† "Zuweilen wird sie härter als natürlich, hornartig, ja steinern, und knöchern." Richter.



tainly the one, which most readily admits of being moved out of the axis of sight; nor will it re-ascend to its former situation, when the surgeon, in removing it from behind the pupil, takes care to bury it deeply in the Vitreous humour: but even soft, membranous, and milky Cataracts, may be removed from the pupil, be rent and broken with the same needle, without the least occasion for the introduction of other instruments into the eye.

In Couching a firm Cataract, it deserves particular notice, that the term Depression, used in the schools of surgery to denote the direction, in which the opaque crystalline lens

St. Yves, Maître-Jan, Gendron, Heister, Ronnow, and Wenzel, afford examples of very hard Cataracts. See likewise "*Observations Anatomiques sur un alteration singuliere du Crystallin et de l'Humeur Vitree.*" Par Morand. Mem. de l'Acad. des Sciences, 1730. Also Pellier Mem. sur. l'Œil, and Janin, Mem. sur l'Œil, &c.



lens is moved from the passage of the rays of light to the Retina, may easily convey to a student's mind the erroneous idea, that this operation merely consists in pressing the Cataract downward, below the pupil: the word Depression carries here a different signification from what it has in common language; it implies a movement of the needle, made at once in a direction downward and backward, both to depress the opaque lens, and to immerse it in the Vitreous humour. With this precaution, the rising of the Cataract will be prevented, and, in this sense, and no other, ought the term Depression to be understood. Scarpa, in his observations on the principal diseases of the eyes, \* quotes a passage from Ambrose Paré, † in which this old surgeon inculcates

\* P. 233.

† Livre II. Chap. 22. " Et étant ainsi abaissée, la lui faut laisser, la tenant sujette de l'aiguille par l'espace



inculcates the propriety of directing the patient to turn his eye upward, after depression, and before withdrawing the needle from the eye, in order that the opaque body, upon which the instrument is yet placed, may be pushed deeper into the Vitreous humour: but, I am much surprised that the Italian Professor, should also judge this proceeding necessary, for the movement of the needle backward as well as downward, which he so judiciously recommends, completely supersedes any occasion for it, and, every one knows, that the moment an instrument has pierced the coats of the eye, the patient loses all voluntary command over the motions of this organ.\* The lens neither

espace de dire une paternostre, ou environ, de peur qu'elle remonte, et pendant faire mouvoir vers le ciel l'oeil au malade."

\* Sobald sie eingestossen ist, wird das Auge gemeinlich sogleich ganz unbeweglich. Anfangsgr. der Wundarzu. Dritter Band. P. 214.



neither can, nor must be pressed perpendicularly downward; partly, because there is in that direction such little room for the Cataract, that, even were it depressed as deeply as possible, when it is at all large, it would not be quite below the pupil; and, when small, it could only just be depressed below the inferior edge of this aperture. But, in all cases, it would continue so near its former natural seat, that, at the earliest opportunity, it would re-ascend there, and occasion a recurrence of blindness: partly, because the operator, when he, with a view of preventing this rising of the opaque body, presses it deeply downward, runs hazard of contusing, and lacerating, the Retina and Choroides. One can only attribute to this rude and unskilful way of operating, the lodgment of the lens betwixt those two membranes.\*

Besides

\* Anfangsgründe der Wundarzneykunst. 3 Band. p. 217, 218.



Besides the precaution to bury the Firm Cataract in the Vitreous humour, there is another circumstance to be observed, not less conducive to the perfect success of the operation, and which, I am sorry to remark, is both overlooked by the generality of practitioners, and unnoticed by the most respectable writers: in the performance of the operation, the anterior layer of the crystalline capsule should always be freely lacerated, so that, whether it be opaque or transparent, it may not afterwards become an impediment to vision. I have already mentioned, that the whole capsule is generally depressed, together with the lens; and, were this an invariable occurrence, there would be less occasion for observing the plan just mentioned. But as it now and then happens, that the Couching needle pierces and depresses the body of the opaque lens, while it leaves the front portion



tion of the capsule untouched, and entire in its natural situation, which is apt to become so opaque shortly after the operation, as to render a repetition of it essential for the removal of the consequent blindness: the above attention is necessary for its complete prevention. M. Hoin, Baron Haller, Morand, &c. have, very pertinently, denominated this species of the disease the Secondary Membranous Cataract. The method by Extraction, in almost every instance, leaves the capsule behind,\* and hence, membranous Cataracts are much more frequent after this, than after the other operation.

Nothing can be more contradictory, than the writings of Scarpa and Richter upon this

\* Quater inscius, saltem inopinatus, extraxi lentem capsulâ sua obvolutam. Richter. Obs. Chir. Fasc. 2. p. 96.



this part of the subject; and it is much to be lamented, that authorities of such high stamp, should differ upon points so easy of determination. Scarpa asserts, that, in consequence of the close attachment of the crystalline capsule to the body of the Vitreous humour around the Petition Circle, the separation of this membrane, and its depression together with the lens, cannot be expected.\* Richter, on the contrary, maintains, that if not always, at least in most cases, the capsule is removed, in the operation of Couching, from the axis of sight. I believe, upon mature reflection,

Richter's

\* Ma codesta fortunata occorrenza è assai rara; poiche il piu delle volte la zona ciliare lega ed unisce tanto strettamente la cassula del cristallino al corpo vitreo, &c. Saggio di osservazioni, &c. p. 235.

Es ist höchst wahrscheinlich, dass durch die Umlegung jederzeit, und durch die Niederdruckung, &c. wo nicht jederzeit, doch mehrentheils die Staarlinse sammt ihrer Kapsel in den Boden des Auges gedruckt wird. Anfangsgründe der Wundarz. P. 231. 3 Band.



Richter's opinion will be found to approach nearest the truth. That the capsule is not always depressed, at the same time with the crystalline lens, is certain from the occasional occurrence of the Secondary Membranous Cataract after Couching: that it must, in most instances, be depressed, is as certain, as that in the greatest number of cases, it is deprived of its natural transparency as well as the lens itself; consequently, did it remain in its natural situation, the blackness of the pupil, for which every operator looks, as for the test of the operation being complete, would not be visible. However, it must be confessed, that the capsule is not always so altered, when the lens is opaque, as to lose its transparency; and, that the Secondary Membranous Cataract, now and then, a consequence of Couching, proves, that sometimes the capsule, especially its anterior portion, remains undepressed



undepressed by the needle. But, notwithstanding, it seems manifest, that Richter's sentiment upon this matter should be, with certain restrictions, adopted, as that most conformable to truth; yet the practice, inculcated by Scarpa, in consequence of the opposite opinion, is, in every respect, advisable; particularly, because it utterly prevents the possibility of the Secondary Membranous Cataract taking place, even in those rare instances, where the capsule retains its transparency, and might continue unnoticed behind the pupil, at the time of Couching; and also because, as I shall presently notice, it tends to insure the absorption of the depressed Cataract.

Another not less important fact to be known, and which expressly relates to the depression of a firm Cataract, is, that the opaque lens, when removed from the axis

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of



of vision, exposed to the influence of the Vitreous humour, by the laceration of its capsule, and immersed in this fluid, in the course of time diminishes in size, and at length entirely disappears. This striking occurrence, confirmed by a series of observations, might be denied by a Wenzel, \* but is now acknowledged, even by the most sanguine patrons of Extraction, † so that “*radicitus tollit*,” which we have pointed out as not being strictly applicable to Extraction, since it does not eradicate the seat of the Secondary Membranous Cataract, ought, perhaps, now to be transferred to the ancient operation in its present improved state. In an example of a very firm Cataract, Mr. Pott had an opportunity of ascertaining by dissection, fourteen days after Couching, the condition of the depressed lens. “The Cataract lay just below, and  
“behind

\* Treatise on the Cataract, p. 15—36.

† See Ware’s note, p. 36 of the above work.



“ behind the Uvea, toward the external  
 “ Canthus. It was become small, irregular,  
 “ and manifestly in a state of dissolution.”\*  
 Scarpa affords three additional proofs of  
 this fact: the first, occurred in a gentleman,  
 sixty years of age, who died a year after  
 having had a Cataract depressed in the right  
 eye; the second, in a woman forty years of  
 age, who died three years after the same  
 operation; and the third, in a man, aged  
 fifty-seven, who died three years and a half  
 after being Couched. In the first example,  
 he found the crystalline deeply imbedded  
 in the Vitreous humour, and reduced to  
 about one-third of its original size; and in  
 the other two subjects, of the whole crys-  
 talline, strictly speaking, nothing remained  
 but the mere nucleus, not larger than a pin’s  
 head.† It is not pretended that this ab-  
 sorption

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\* Pott’s Chirurgical Works, Vol. III. p. 202. 1783.

† Saggio di Osservazioni, &c. p. 237.



sorption is completed almost as soon as the operation is finished; every case on record, to prove the indissolubility of the lens (except one, which will be directly mentioned,) is, as far as my reading extends, quite ineffectual from omission of dates; but, I can credit, that, when the opaque lens has not been properly, and completely removed from its natural connexions, or when its capsule continues entire, not having been at all wounded in the operation, \* it may not only be apt to re-ascend, but remain for years unabsorbed. A case in Richter's Second Fasciculus, where ten years after Couching, the lens rose again, and passed through the pupil into the anterior chamber, I can only explain,

\* Cataractam autem depressam, capsula vasisque destitutam, lente consumi, nullumque ad postremum sui vestigium relinquere compertum est. Callisen. Syst. Chirurg. Hodiernæ. P. 619. Pars posterior.



explain, by regarding it in the above point of view.

When the crystalline lens has degenerated into a pappy, caseous, or milky consistence, after being disturbed by the needle, it may even be absorbed in the short space of a few weeks; and when divided, broken piecemeal, and blended, as it may be, with the Aqueous humour, it is invariably absorbed with this fluid, which, like every other secretion retained in the animal body, is continually undergoing a renovation. In short, the absorption of Cataracts was always so obvious a fact, that it could not fail to attract the notice of very old writers: our countryman Banister, near two centuries ago, was wont to press down soft Cataracts, by which, to use his own language, "he found sometimes the grossest part of the Cataract to fall away, and  
"become



“ become lower, the thinner part to be  
 “ loosed and consumed, and in the end the  
 “ party has recovered his sight.” \*

Barbette, another old surgeon, has, together with many moderns, recorded the absorption of the crystalline lens,† a fact that decidedly tends to establish the integrity of what I previously have advanced, that

\* Banister's Treatise of the Eyes. 1622. Also Sir W. Read's Treatise of the Eyes, p. 7. 1706. All that Morgagni has written on the diseases of the crystalline, would suffice to prove the same thing. Vid. Encyclop. Méthod. Art. Cataract. Note 6.

† Licet Cataracta non satis intra pupillæ regionem sit depressa, dummodo in particulas sit divisa, perfecta visio intra sex aut octo septimanas sæpissime, licet tota operatio absque ullo fructu peracta videatur; quod aliquoties experientia edoctus loquor.—Chir. Barbetiana. Cap. 16. Pars. I.

Vid. Ant. Deidier in Consultations, &c. Palucci Méthode d'abattre la Cataracte. Paris, 1752. M. Hoin lettre concernant quelques observations sur diverses espèces de Cataractes. Merc. de France, 1759.



that there is no species of Cataract, which cannot be remedied by Couching.

This absorption takes place, not only in regard to the crystalline lens itself, but extends also to the tattered fragments of the capsule, when detached from all connections with the surrounding parts, and broken piecemeal by the needle, so as to float like membranous flakes in the Aqueous humour, or sink to the bottom of the two chambers, in which this fluid is contained; so circumstanced, they finally disappear, and leave the eye in a perfectly transparent state. In cases of Membranous Cataracts, these flaky portions of the capsule, have often been pushed through the pupil, into the anterior chamber of the Aqueous humour, and, in such quantity, as to fill this space as high as the inferior edge of the pupil, and to occasion the appearance of  
Hypopium ;



Hypopium; yet Scarpa has oftentimes noticed, that such an artificial collection of membranous fragments, confined between the Iris and concave surface of the Cornea, has never occasioned pain, inflammation, or the least inconvenience to the patient; and that in the course of a month, sometimes a little sooner, sometimes a little later, it has constantly been removed by the action of the absorbents.\* M. Leveillé has justly remarked, that *displacement* would be a more applicable term, than *depression*, for this method of treating Cataracts. †.

Another fact, issuing from the no less respectable source than Scarpa's experience, intimately connected with the subject before us, and therefore claiming particular attention,

\* Saggio di Osservazioni, &c. p. 238, 239.

† See his additions to the French translation of the preceding work, Tom. II. p. 187.



attention, is, that the absorption of the above membranous flakes happens more quickly in the anterior, than in the posterior chamber of the Aqueous humour; whether, by reason of the larger quantity of fluid in the one, than in the other space, rendering the particles of membrane more apt to be taken up by the absorbents; or whether, by reason of the lymphatics being more numerous and active in the one, than in the other situation; or whether, by reason of such fragments of the capsule being more certainly detached from all their natural connections in the anterior, than in the posterior chamber; is difficult of absolute decision: Scarpa\* attributes the fact to one of the former circumstances; I have taken the liberty to suggest the latter as more satisfactory; but, let the cause be whatsoever it may, the truth is the same, that the Membranous Cataract, when broken

\* Saggio di Osservazioni, &c. p. 239.



broken into several fragments by the needle, and pushed into the anterior chamber, is removed by a natural process, in the same manner as the crystalline lens, when deeply depressed into the Vitreous humour, and that its particles are taken away by the lymphatics sooner in that situation, than they would generally be behind the pupil. And, to prove how vigorously absorption goes on in the anterior chamber, should even a firm, entire Cataract, accidentally slip through the pupil into this situation, as sometimes happens in attempting to depress it, it will, in the generality of cases, dissipate gradually without any further operation.\* How unfounded

\* Berryat, in *Hist de l'Acad. des Sciences*, 1749, mentions an instance, where the crystalline in each eye slipped into the anterior chamber, and gradually disappeared. See also *Medical Observations and Inquiries*, Vol. VI. p. 255—259. *Pott's Chirurgical Works*, Vol. III. p. 200, 201.

“ The Cataract always dissolves in the Aqueous humour,



unfounded then, are those assertions, which contend, that the Secondary Membranous Cataract is completely out of the reach of Couching.

There are two cases, one mentioned by Richter;\* the other by Mr. Ware;† in which, most violent ophthalmy, and even blindness, are stated to have proceeded from the passage of the crystalline lens, into the anterior chamber: to that of Richter I can make no objection, and must refer the consequence to some peculiar, and extraordinary irritability in the eye, or constitution at

mour, and finally disappears without any injury to the eye.—Hey's Practical Observations in Surgery, p. 59.

This experienced author, has seen the whole opaque nucleus fall into the anterior chamber, six or seven times.

\* Observ. Chirurg. Fasc. II. p. 76.

† On the Causes preventing the Success of Extraction, &c. p. 77.



at large, of the patient alluded to: to Mr. Ware's case it might be objected, that the mischievous adhesions which, in this example, formed betwixt the Iris and inner surface of the Cornea, and betwixt the Iris and crystalline, took place rather in consequence of the lens repassing, as it did, through the pupil backward, and that had it continued in the anterior chamber, it probably would have been taken away by the absorbents.

Before describing what kind of an instrument is best calculated for Couching, it seems right just to offer a brief statement of the different purposes it may be required to fulfil, in operating for the various kinds of Cataract; for, after being aware of these, we shall be better judges of its aptitude, than if we merely had in idea the depression of a firm opaque lens. Cataracts of  
a firm



a firm kind are, indeed, the only cases, where there is any positive advantage derived from immersing the opaque body in the Vitreous humour; in all other instances, as soon as the nature of the disease manifests itself, the surgeon is not necessarily called upon to persist in this attempt; a free laceration of the capsule, and pushing the opaque matter through the pupil, seems to be an easier, and a more effectual plan for adoption; and, as I have before remarked, even in cases of firm Cataracts, the capsule of the crystalline lens, whether opaque, or transparent, ought, for the greater insurance of success, to be purposely lacerated, and not left neglected, so as perhaps to remain in its natural situation, and to be capable of constituting afterwards the Secondary Membranous Cataract. The Couching needle ought, consequently, to be of that construction, which at once adapts



adapts it for depressing a firm opaque lens ; for lacerating the anterior layer of the capsule ; and, for pushing the fragments of soft, membranous, and caseous Cataracts into the anterior chamber. If we had no other view in Couching, than to remove a firm diseased lens out of the axis of vision, without troubling ourselves about the anterior half of the capsule ; without being called upon to push the fragments of soft and membranous Cataracts forward through the pupil ; and without sometimes being necessitated to detach small portions of the opaque capsule, adhering in their natural situation ; I should say, that a small round needle, made flat towards the extremity, by grinding two opposite sides, and ending in a sharp semicircular edge ; in a word, the instrument employed by the famous Baron Hilmer, and subsequently used and recommended by Messrs. Lucas and Hey, would  
be



be preferable to, and less dangerous than, other Couching needles commonly used. But, as the perfect success of the operation depends upon the destruction, if I may so express myself, of the anterior layer of the capsule, as well as upon the removal of the opaque lens itself out of the axis of sight, and, as no straight-pointed needle can be made to accomplish the former object, without risk of running directly against the Iris and Ciliary processes in the attempt, the instrument, lately so much recommended by Mr. Hey, however superior it may be to others generally employed, does not appear so convenient a needle as might be contrived: besides, not having an acute point, but a semicircular edge, it must be little adapted for seizing those triangular portions of opaque capsule, which sometimes continue attached at their bases to the Membrana Hyaloidea, are not easily removed  
from



from their situation. Couching needles, with broad spear-shaped points, ought, on every account, to be abandoned; they bring no particular advantages, and are attended with several inconveniences; when introduced into the eye, they do not fill the wound made by the spear part, consequently some of the Vitreous humour may escape during the operation, and, on account of their unnecessary breadth, their sharp edges are very likely to wound the Iris. In short, a Cataract of sufficient firmness does not require the resistance of a broad surface for its depression; a soft one need not be depressed at all; and, we may infer from the testimonies of very experienced men, that, when the disease is of this description, a free laceration and disturbance of the Cataract answers every desirable purpose, with less injury to the internal structure of the eye, than would result



sult from the repetition of a number of vain movements, to immerse it in the Vitreous humour. Scarpa's experience moreover confirms, that it is both much easier, and much more effectual, to push the particles of such Cataracts forward, into the anterior chamber, than to endeavour to bury them in the back part of the eye.

According to these reflections, it is best to employ a slender needle, possessing sufficient firmness to enter the eye without hazard of breaking, and having a point slightly curved, such as Scarpa has used with considerable success for some time past. The curved extremity of the needle, to which I allude, is flat upon its dorsum or convexity, sharp at its edges, and has a concavity, constructed with two oblique surfaces, forming in the middle a gentle eminence, that is continued along to the very point of the instrument:



strument: there is a mark on the side of the handle, which corresponds to the convexity of the point.\* The surgeons of the Leeds Infirmary have had one advantage in the needle, which they have used in imitation of Baron Hilmer; I mean, having it made of no greater length than the purposes of the operation demand. A Couching needle is sufficiently long, when it does not exceed, at most, an inch in length: this affords the operator a greater command over the motions of the point, and enables him to judge more accurately, how far it has penetrated the globe of the eye, before he has an opportunity of seeing it through the pupil.† To the needle, therefore, so much recommended by Scarpa, and so successfully used by him, and Doctor Morigi, principal surgeon

\* Saggio di Osservazioni, &c. p. 242.

† See the plate, Fig. 1. The one, which I have had constructed by Mr. Savigny, has exactly the same handle as that of Mr. Hey's needle.



geon of the hospital at Piacenza, and one of the most expert operators of the present day in Italy, it seems proper to unite the improvement of having it made no longer than is necessary. The needle here described, will penetrate the sclerotic coat as readily as any straight one, of the same diameter, and, by reason of its slenderness, will impair the internal structure of the eye less in its movements, than common Couching needles.\* When cautiously pushed in

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\* *Depressio leniora et minus ominosa secum vehit symptomata sæpissime quam extractio; præcipue si acu rotundâ utitur Chirurgus, aut plana, latitudinem unius lineæ haud excedente. Callisen. Syst. Chir. Hod. p. 637. Pars. Post.*

Freytag's father employed a curved needle to depress membranous Cataracts; and the son (probably in a fit of exaggeration) states, that he was also in the habit of extracting them from the eye with it. Haller. *Diss. Chir. T. II.* Bell, in his *System of Surgery*, Vol. III. Pl. 32, has given the representation of a curved Couching needle: so has Brambilla. *Vid. Instrumentarium Chirurgicum Militare Austriacum. 1782. Fol. Tab. 10. Fig. 5 and 6.*



a transverse direction, till its point has reached the upper part of the opaque lens, it becomes situated with its convexity towards the Iris, and its point in an opposite direction; and, upon the least pressure being made by its convex surface, it removes the Cataract a little downward, by which a space is afforded at the upper part of the pupil, between the Cataract and Ciliary processes, through which the instrument may be safely conveyed in front of the opaque body and its capsule, which it is prudent to lacerate in the operation. In cases of caseous, milky, and membranous Cataracts, the soft pulp of the crystalline may be most readily divided, and broken piecemeal by the edges of its curved extremity; and the front layer of the capsule lacerated into numerous membranous flakes, which, by turning the point of the instrument towards the pupil, may be as easily pushed



pushed through this aperture into the anterior chamber.

I am astonished that so many writers, \* some of whom, at least, must have been familiar with the anatomy of the eye, should have fallen into the error of directing the Couching needle to be passed transversely through the posterior chamber of the Aqueous humour, or, in other terms, at once in front of the Cataract; a thing, that manifestly cannot be accomplished without injuring the Ciliary processes; for these vascular membranous folds, which are continued from the outer margin of the Iris to the

\* Warner on the Human Eye and Diseases, p. 94. Sharp, in his Treatise on the Operations of Surgery, p. 163. Edit. 3. Benj. Bell. Syst. of Surgery, &c.

“Then strike the needle through the tunica conjunctiva, something less than one-tenth of an inch from the Cornea, even with the middle of the pupil into the posterior chamber.” Chandler on the Diseases of the Eye, p. 168, 169.



the very edge of the crystalline lens, so completely encircle the space in question, as to forbid this method of operating.

In ordinary cases, there is not the least occasion for any preparatory treatment previous to the operation; all that prudence requires is, that the patient should abstain from animal food, and fermented liquors, for a few days before submitting to it, and should take one dose of a gentle purgative.\* But this, like every other general observation, is liable to particular exceptions. Hypochondriacal men, hysterical women, and patients subject to affections of the stomach and nervous system, should take, for two or three weeks before the operation, tonic bitter medicines, particularly the infusion of quassia, either with, or without a few drops of the æther vitriolicus to each dose: or, in other cases, ʒj of Peruvian bark,

\* Hey's Practical Observations in Surgery, p. 54.



bark, with ℥j of Valerian, may be administered two or three times a day with particular benefit. It is observed by the most accurate writers upon this subject, that in such persons the symptoms consequent to operations upon the eyes, are often much more violent than in common cases; and it therefore seems proper to endeavour, previously, to meliorate their constitutions. When the patient is timid, it is very advisable to give him, half an hour before the time of operating, about fifteen drops of the *tinctura opii*, with a little wine.\*

Some patients, besides being afflicted with Cataracts, have the edges of the eyelids swollen and gummy, with relaxation, and chronic redness of the conjunctiva. Before  
under-

\* Wenn er furchtsam ist, eine halbe Stunde, vor der operation 15 tropfen Sydenhamsches Laudanum mit etwas Wein, geben, &c. Richter's Anfangsgr. der Wundarzn. 3 Band. p. 204.



undertaking to Couch, it is, in this case, advisable to apply a blister to the nape of the neck, and to keep it open for two or three weeks, by means of the Savin cerate, and to insinuate every morning and evening, between the palpebræ and globe of the eye, a small quantity of the unguentum hydrarg. nitrat. mitius, prepared according to the pharmacopeia of St. Bartholomew's Hospital,\* increasing its strength gradually. In obstinate cases, when this ointment does not produce the desired effect, an ointment, recommended by Janin, † should be substituted: it consists of ℥ss of hog's lard, ʒij of prepared tutty, ʒij of armenian bole, and ʒj of the white calx of quicksilver. At first, care should be taken to use it lowered, with twice or thrice its quantity of lard. In the day-

\* R. Unguenti hydrargyri nitrati, ℥iv.

Adipis Suillæ, ℥viij.

Olei Olivæ, ʒij.

† Memoires sur l'Oeil,



day-time, a collyrium, composed of  $\text{℥iv}$  of rose water,  $\text{℥ss}$  of the mucilage of quince seeds, and  $\text{gr. v}$  of the sulphate of zinc, may also be frequently used with considerable advantage. By such means, the morbid secretion from the Meibomian glands, and membranous lining of the eyelids, will be checked, and the due action of the vessels, and natural flexibility of the eyelids, will be restored. \*

I shall next explain what seems to be the best method of Couching some different kinds of Cataracts, according to the preceding principles; and I shall take the liberty of interspersing a few incidental remarks, which may further illustrate the subject.

FIRM

\* Scarpa. Saggio di Osservazioni, &c. p. 244.



## FIRM CATARACT.

In the operation, the patient should be seated rather low, opposite a window, where the light is not too vivid, and in such a manner, that the rays may fall laterally upon the eye about to be couched. The other eye, whether in a healthy or diseased state, ought always to be closed, and covered with a handkerchief, or any thing convenient for the purpose; for, so strong is the sympathy between the two organs, that the motions of the one constantly produce a disturbance of the other.\* The surgeon should sit upon a seat rather higher than that upon which the patient is placed; and, to give his hand a greater degree of steadiness

\* Quin etiam ipse oculus qui curabitur immobilior faciendus est, super alterum lanâ imposita, et deligata. Celsus. Lib. 7. cap. 7.



steadiness in the various manœuvres of Couching, he will find it useful to place his elbow upon his knee, which must be sufficiently raised for this purpose, by a stool placed under the foot. The chair, on which the patient sits, ought to have a high back, against which his head may be so firmly supported, that he cannot draw it backward during the operation. The back of the chair must not slope backward, as that of a common one, but be quite perpendicular, in order that the patient's head may not be too distant from the surgeon's breast. \*

The propriety of supporting the patient's head rather upon the back of the chair, on which he sits, than upon an assistant's breast, must immediately strike every impartial

\* Richter's Anfangsgründe der Wundarzneykunst. P. 207, 3 Band.



partial mind ; for, as Bischoff\* has observed, the least motion of the assistant, even that necessarily occasioned by respiration, causes, also, a synchronous motion of the part, supported on his breast, which cannot fail to be disadvantageous, both in the operation of Extraction, and of Couching. † Hence Callisen and Richter have recommended the same method of supporting the patient's head, as I have here submitted to public consideration.

In certain cases, where the muscles of the eye, and eyelids, are incessantly affected with spasm ; or, where the eye is peculiarly diminutive, and sunk, as it were, in the orbit, the elevator for the upper eyelid, invented by Pellier, and approved by Scarpa,

\* Frederick Bischoff's Treatise on the Cataract.

† Nam levi motu eripi acies in perpetuum potest. Celsus. lib. 7. cap. 7.



Scarpa,\* may possibly prove serviceable: in operating upon young subjects, I think it might contribute much to facilitate the operation.

I lately assisted Mr. Maul, an ingenious surgeon at Newbury, in the performance of Couching. The patient was a very timid, and hysterical subject, and the muscles of her eye and eyelids were affected with such spasmodic action, whenever we made an attempt to open the eye, that, though we waited for a considerable time, and gave the patient a good deal of brandy to quiet her alarm, we could never get a fair view of the eye, on account of the retracted state of the organ, and its being obscured by the descent of the swollen membranous lining of the upper eyelid. Not having Pellier's elevator with us, we bent a common probe, so as to make it answer the purpose of this

\* Saggio di Osservazioni, &c. p. 239.



instrument; and so much did it facilitate getting a clear view of the eye, that Mr. Maul, as well as myself, was perfectly convinced of the utility of always having Pel-lier's instrument, in future, ready at hand.\*

The Couching needle is to be held with the convexity of its curvature 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 not less than two lines 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

\* It is made of silver, and may be had at Mr. Savigny's. See the plate, Fig. 2.

† See Chandler's Treatise of a Cataract, Sect. VIII. p. 45. Richter's Anfangsgründe der Wundarzn. 3 Band. p. 214, &c.

“Tantum



and some even at the minute distance of  $\frac{1}{16}$  of an inch\* 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 two lines, or two and a half, from the margin of the Cornea,† must, in all cases, be sufficiently manifest.

Richter, who prefers a straight two-edged needle, offers a good reason for not introducing it further from the Cornea, than what he has recommended; and I shall mention it here, because it shews, in a striking manner, the superior advantage of using

“Tantum recedendum a Cornea quantum specilli cuspis spatii contineat.” Albucasis.

\* Hey's Practical Observations in Surgery, p. 57.

† As advised by Petit, Platner, Bertrandi, &c.



using a curved pointed needle : he says ; the further back the instrument is introduced into the eye, the more forward, towards the Iris, its point becomes situated, when directed over the Cataract ; and it can then hardly be moved downwards, without injuring this membrane : he adds, that the lens is also, in this circumstance, more likely to be pushed unintentionally forward into the anterior chamber. \* This objection, it is obvious, cannot apply to the needle with a curved point.

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,

\* Richter's Anfangsgründe der Wundarzneykunst. 3 Band. P. 215.



eyeball, between the sclerotic and choroid coats; and hence, in order to avoid this vessel, it is prudent to introduce the instrument about one line below the transverse diameter of the pupil, as Duddell,\* Guntz, † Bertrandi, ‡ Scarpa, § &c. 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 opaque lens, and its capsule :

\* Duddell on Diseases of the Horny Coat of the Eye and Cataracts. 1729.

† Guntz. *Dissertatio de Suffusionis natura et cura animadversiones*. Lips. 1750. Haller. Coll. Dissert. Chir. 2. N. 35.

‡ Bertrandi. *Traité des Operations de Chirurgie*, p. 333.

§ Scarpa. *Saggio di Osservazioni*, &c.



sule: 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 repeating my dissent 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 opaque 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 the point of the needle will be in an opposite direction to the Iris, and will come into contact with the



the diseased body, and the membrane binding it down in the fossula of the Vitreous humour. \* Having done this (supposing it to be 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 backward. The operator is then to incline the handle of the instrument towards himself, by which its point will be directed through the capsule, into the substance of the opaque lens; and, on making a movement

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\* Indi l' operatore condurrà la convessita dell' ago sulla sommità del cristallino Caterattoso, sulla quale sommità premendo dall' alto al basso, farà discendere alcun poco la lente, e a un tempo stesso farà passare diligentemente la punta uncinata fra il corpo cigliare, e la cassula del cristallino, finche comparisca a nudo avanti la pupilla fra la convessità anteriore della cassula della lente e l' Iride. Vid. Saggio di Osservaz. &c. Anton. Scarpa, p. 246.



ment 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.

It happened, unfortunately for the credit of the operation of depression, that M. Petit admonished surgeons to beware of wounding the anterior layer of the crystalline capsule: he had an idea, that, in observing this caution, 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 might thereby be considerably obviated. But, we are now apprized, that the relinquishment of this very membrane, from which M. Petit anticipated



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 promulgated; 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 opaque lens has been said to have risen again, nothing more has happened, than the disease in question. Therefore, notwithstanding the whole capsule may be, in the majority of cases, 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



in the same operation, and, in imitation of the celebrated Scarpa, the only one who, as far as my information reaches, has put sufficient stress upon 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 opaque or transparent state. That I am only influenced by impartial reflections on this subject, deduced from the rationality of the thing, and from the successful result of Scarpa's practice; and, that I retain an unbiassed judgment, in spite of this great authority, must be evident, from those circumstances, wherein I have ventured to deviate from his mode of thinking.

It seems to be admitted, that the capsule of the crystalline lens may retain its usual transparency, while the lens itself is in an opaque



opaque state.\* In this case, an inexperienced operator might, from the blackness 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 relinquish 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

\* J. G. Agricola. sur la siège de la Cataracte. *Commerc. Norimb.* 1735. Scarpa. *Saggio di Osservazioni*, &c.



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.

### FLUID, or MILKY CATARACT.

When the case is of this description, the operator frequently finds, that, on passing the point of the Couching needle through the anterior layer of the capsule, its white milky contents instantly flow out, and, spreading like a cloud over the two chambers of the Aqueous humour, completely conceal the pupil, the Iris, and the instrument, from his view; who, however, ought never to be discouraged at this event, In a preceding page, I have dissented from continuing the operation, when, in its commencement, blood is effused into the Aqueous



ous humour; I have there adverted to the effusion of the milky matter of Cataracts, into the same situation; and, I have said, that the two cases are not to be considered in a different light; but, I only alluded to the consequences of these occurrences; for I shall now take the opportunity to observe, that, although it seems to me most prudent, to postpone the completion of the operation, in the example of blood concealing the pupil, in the first step of Couching, and not to renew it, before the Aqueous humour has recovered its transparency; yet, I am inclined to adopt this sentiment, chiefly because the species of Cataract is, in this circumstance, quite unknown to the operator, consequently, he must be absolutely incapable of employing that method of Couching, which the peculiarities of the case may demand. It is very different, when a milky fluid blends itself with the Aqueous humour, and



and prevents the surgeon from seeing the Iris and pupil: this event is itself a source of information to him, inasmuch as it gives him a perfect insight, into the nature of the Cataract, which he is treating; and instructs him what method of operating, it is his duty to adopt. The surgeon, guided by his anatomical knowledge of the eye, should make the curved point of the needle describe the segment of a circle, from the inner, toward the outer Canthus, and in a direction backward, as if he had to depress a firm Cataract.\* Thus he will succeed in lacerating, as much as is necessary, the anterior layer of the capsule, upon which, in a great measure, the perfect success of the operation

\* Non si perderà d' animo per tutto questo il chirurgo; il quale guidato della notomia farà percorrere all' uncinetto l' arco di cerchio dall' angolo interno dell' occhio verso l' esterno, e dall' avanti all' indietro come se avesse a deprimere una Cateratta solida, &c. Scarpa. Saggio di Osservazioni, &c. p. 249.



tion depends; and, not only in the milky, but almost every other species of Cataract.

In regard to the extravasation of the milky fluid, into the two chambers of the Aqueous humour, numerous observations, from the most creditable authorities, prove, that it spontaneously disappears, very soon after the operation, and leaves the pupil of its accustomed transparency. “In twelve  
“cases of a dissolved lens, on which I have  
“operated,” says Latta, “the dissolution  
“was so complete, that, on entering the  
“needle into the capsule of the lens, the  
“whole was mixed with the Aqueous hu-  
“mour, and, all that could be done, was  
“to destroy the capsule as completely as  
“possible, that all the milky matter might  
“be evacuated. In ten of these cases, vi-  
“sion was almost completely restored in  
“four



“four weeks from the operation.”\* Mr. Pott, in treating of this circumstance, viz. the effusion of the fluid contents of the capsule, into the Aqueous humour, observes, that so far from being an unlucky one, and preventive of success, it proves, on the contrary, productive of all the benefit, which can be derived from the most successful Depression or Extraction, as he has often and often seen. † But as this point is, I believe, no longer made an objection to Couching, it would be superfluous to enlarge, in confirmation of what has been stated concerning it.

SOFT,

\* System of Surgery, Vol. II. p. 243.

† Pott's Chirurgical Works, Vol. III. p. 192, 193.  
Edit. 1783.



## SOFT, or CASEOUS CATARACT.

When the Cataract is of a soft, or caseous description, the particles, of which it is composed, will frequently elude all efforts made with the needle to depress them, and will continue behind the pupil in the axis of vision. This has been adduced as one instance, that baffles the efficacy of Couching, and may really seem, to the inexperienced, an unfortunate circumstance. It often happens, that, in the operation of Extraction, fragments of opaque matter are unavoidably overlooked, and left behind; yet Richter,\* who once so strenuously signalized himself in favour of the new operation, confesses, that such matter is removed by the absorbents. Supposing a caseous

\* Observationum Chirurgicarum Fasciculus I. p. 53, 54. Gottingæ, 1770.



seous Cataract should not have been sufficiently broken, and disturbed in the first operation, and that, consequently, the absorbents do not completely remove it, such a state may possibly require a re-application of the instrument; but this does not generally occur, and is the worst that can happen. It is quite impossible to determine *a priori*, what effect will result from the most trivial disturbance of a Cataract; its entire absorption may, in some instances, follow, while in others, a repetition of an operation becomes necessary for the restoration of sight. Even where the whole firm lens has re-ascended behind the pupil, as Latta and Hey confirm,\* the absorbents have superseded the necessity for Couching again. The disappearance of the opaque particles of Cataracts was, in all times, and

\* System of Surgery, Vol. II. p. 244.

Practical Observations in Surgery, p. 67.



and in all ages, a fact of such conspicuity, that, as appears from the authorities already quoted, it was recorded, even previous to the discovery of the system of lymphatic vessels in the body. Indeed, the modern observations of Scarpa, and others, so strongly corroborate the account, which I have given, of the vigorous action of the absorbents, in the two chambers of the Aqueous humour; and, particularly, in the anterior one, that, from the moment the case is discovered to be a soft, or caseous Cataract, it seems quite unnecessary to make any further attempt to depress it into the Vitreous humour. Mr. Pott sometimes, in this circumstance, made no attempt of this kind, but contented himself with a free laceration of the capsule, and, after turning the needle round and round, between his finger and thumb, within the body of the crystalline, left all the parts in  
their



their natural situation, where he hardly ever knew them fail of dissolving so entirely, as not to leave the smallest vestige of a Cataract.\*. This eminent surgeon even practised occasionally, what Scarpa so strongly inculcates at this day; he even pushed the firm part of such Cataracts through the pupil, into the anterior chamber, where it always disappeared, without producing the least inconvenience: we must, at the same time, add, that he thought this method wrong; not on account of its inefficacy, but an apprehension, that it would be apt to produce an irregularity of the pupil, one of the worst inconveniences attending the operation of Extraction. But the deformity of the pupil, after Extraction, seems to proceed, either from an actual laceration of the Iris, or a forcible distension of the pupil, by the passage of large Cataracts through

\* Pott's Chirurgical Works, Vol. III. p. 197, 198.



through it; a kind of cause, that would not be present, in pushing the broken portions of a caseous lens into the anterior chamber; therefore, it does not seem warrantable, to reject this very efficacious plan of treatment, for which the curved pointed needle is, undoubtedly, the best calculated. It is very deserving of notice, that Mr. Hey, who has several times seen the whole opaque nucleus, and very frequently small opaque portions fall into the anterior chamber, makes this remark: "Indeed, if the  
 " Cataract could, in all cases, be brought  
 " into the anterior chamber of the eye,  
 " without injury to the Iris, *it would be the*  
 " *best method of performing the opera-*  
 " *tion.*" \* What the same author also observes, in the subsequent part† of his work, is strikingly corroborative of the efficacy of  
 L Scarpa's

\* Practical Observations in Surgery, p. 59, 60.

† P. 61, 62.



Scarpa's practice. The practice of the Italian professor consists in lacerating the anterior portion of the crystalline capsule, to the extent of the diameter of the pupil, in a moderately dilated state; in breaking the pappy substance of the diseased lens piecemeal; and, in pushing the fragments through the pupil, into the anterior chamber, where they are gradually absorbed. \*

### MEMBRANOUS CATARACT.

It has been already stated, that one great advantage, in favour of Couching, depends upon its generally removing the capsule, at the same time with the lens, from the passage of the rays of light to the Retina. Sometimes, however, this desirable event, by which the patient is extricated from the danger of a Secondary Membranous Cataract,

\* Scarpa. Saggio di Osservazioni, &c. p. 249.



ract, does not take place, even in the operation of Depression; and, when the lens included in its capsule is extracted from the eye, by the other method, it may always be considered as rather an uncommon circumstance. What most frequently constitutes the Secondary Membranous Cataract, is the anterior half of the capsule, which, not having been removed, or sufficiently broken, in a previous operation, continues more or less entire in its natural situation, afterwards becomes opaque, and thus impedes the free transmission of the rays of light to the seat of vision. Sometimes, the Secondary Membranous Cataract presents itself beyond the pupil, in the form of membranous flakes, apparently floating in the Aqueous humour, and shutting up the pupil: at other times, it appears in the form of triangular membranes, with their bases affixed to the *Membrana Hyaloidea*, and



their points directed towards the centre of the pupil. When there is only a minute membranous flake suspended in the posterior chamber, it is, on no account, necessary for the patient to submit to another operation; vision is tolerably perfect, and the small particle of opaque matter will, in time, spontaneously disappear. But, when the Secondary Membranous Cataract consists of a collection of opaque fragments of the capsule, accumulated so as, either in a great degree, or entirely, to close the pupil: or, when the disease consists of the whole anterior half of the opaque capsule, neglected in a prior operation, and continuing adherent in its natural situation, it is indispensable to repeat an operation; for, although in the first case, there may be good reason to hope, that the collection of membranous fragments might, in time, disappear, yet, it would be unjustifiable to detain



detain the patient, for weeks and months, in a state of anxiety and blindness, when a safe and simple operation would restore him, in a very short space of time, to the enjoyment of this most useful of the senses. In the second case, it is absolutely indispensable; for while the capsule remains adherent to its natural connections, the opacity seldom disappears, and may even expand itself over a larger portion of the pupil. The operation should be performed as follows: when the aperture in the Iris is obstructed by a collection of membranous flakes, detached from the Membrana Hyaloidea, the curved needle should be introduced, with the usual precaution of keeping its convexity forward; its point backward; until arrived behind the mass of opaque matter: the surgeon is then to turn the point of the needle towards the pupil, and is to push through this opening, regularly



larly one after another, all the opaque particles into the anterior chamber, where, as we have before noticed, absorption seems to be carried on more vigorously, than behind the pupil. All endeavours to depress them into the Vitreous humour, Scarpa has found to be vain; for, scarcely is the Couching needle withdrawn, when they all re-appear at the pupil, as if (to use his own phrase) carried thither by a current.\* But, when forced into the anterior chamber, besides being incapable of blocking up the pupil, they lie, without inconvenience, at the bottom of that cavity, and, in a few weeks, are entirely absorbed.

When the Secondary Membranous Cataract consists of the whole anterior layer of the

\* Perchè ritirato appena l' ago dall' occhio, si vedono tutte quelle particelle membranose, come fossero condotte da una corrente, affacciarsi di nuovo alla pupilla. Scarpa. Saggio di Osservazioni, &c. p. 251.



the crystalline capsule, or of several portions of it connected to the Membrana Hyaloidea, the surgeon, after cautiously turning the point of the needle towards the pupil, is, to pierce the opaque capsule; or, should there be any interspace, he is to pass the point of the instrument through it; then, having turned it again backward, he is to convey it, as near as possible, to the attachment of the membranous Cataract, and after piercing the capsule, or each portion of it successively, and sometimes carefully rolling the handle of the instrument between his finger and thumb, so as to twist the capsule round its extremity, he will thus break the Cataract, as far as it is practicable, at every point of its circumference. The portions of membrane, by this means separated from their adhesions, are next to be cautiously pushed, with the point of the Couching needle turned forward, through  
the



the pupil, into the anterior chamber. In these manœuvres, the operator must use the utmost caution not to injure the Iris, and Ciliary processes, for, upon this circumstance, depends having no bad symptoms after the operation, notwithstanding its duration may have been long, and the necessary movements of the needle numerous reiterated. If a part of the Membranous Cataract should be found adherent to the Iris, (a complication, that will be indicated, when, upon moving it backward or downward with the needle, the pupil alters its shape, and, from being circular, becomes of an oval, or irregular figure), even more caution is required, than in the foregoing case, so as to make repeated, but delicate movements of the needle, to separate the membranous opacity, without injuring the Iris.

Nor



Nor will it be necessary to vary the plan of operating already explained, if occasionally the Cataract should be formed of the posterior layer of the capsule.

The same plan also succeeds in those rare instances, where the substance itself of the crystalline wastes, and is almost completely absorbed, leaving the capsule opaque, and including, at most, only a small nucleus, not larger than a pin's head. Scarpa terms it, the *Primary Membranous Cataract*; he describes it, as being met with in children, or young people, under the age of twenty; as being characterized by a certain transparency, and similitude to a cobweb; by a whitish opaque point, either at its centre, or circumference; and, by a streaked and reticulated appearance: he adds, that whosoever attempts to depress such a Cataract, is baffled, as it re-appears behind the



the pupil soon after the operation ; he recommends breaking it freely with the curved extremity of the Couching needle, and pushing its fragments into the anterior chamber, where they are gradually absorbed in the course of about three weeks. \*

No other topical application is generally requisite, after the operation, than a small compress of fine linen ; the patient ought to be kept in a quiet, dark room, and in bed. A dose of some mild purgative salt, such as the *natron vitriolatum* ; *magnesia vitriolata* ; *soda phosphorata*, &c. may usually be administered, with advantage, on the following morning. I shall not enlarge upon the method of treatment, when the inflammation, subsequent to Couching, exceeds the ordinary bounds ; in hypochondriacal, hysterical, and irritable constitutions,

\* Scarpa. Saggio di Osservazioni, &c. p. 253.



tions, this is more frequently met with; and I have already touched upon the propriety of some preparatory measures, before undertaking to Couch these unfavourable subjects.

To confirm the purport of the preceding statement, I have subjoined a translation of six very interesting cases, related by Scarpa; but I cannot conclude, without once more repeating, how judicious it is never to attempt too much, at one time of Couching. It happens in this, as in most other branches of operative surgery, that celerity is too often mistaken for skill: the operator should not only be slow and deliberate in atchieving his purpose; he should be taught to consider, that a repetition of Couching may, like the puncture of a vein, be safely and advantageously put into practice again and again; and with far greater security, than

if,



if, for the sake of appearing expeditious, or avoiding the temporary semblance of failure, a bolder use of the Couching needle should be made, than the delicate structure of the eye warrants. We read, in Mr. Hey's *Practical Observations in Surgery*,\* that he Couched one eye seven times, before perfect success was obtained; had he been less heedful, and struggled to effect, by one or two rough applications of the instrument, what he atchieved by seven efforts of a gentler description, it is highly probable, that the structure of the eye would have been so impaired, as well as the consequent ophthalmia so violent, as to have utterly prevented the restoration of sight.

\* Vide Case 2. Soft Cataract, p. 78.



*Six Cases of Secondary Membranous Cataracts, successfully treated upon a new Plan, by A. Scarpa, Professor of Anatomy, and Practical Surgery in the University of Pavia; Head Surgeon of Austrian Lombardy, &c. &c.*

### CASE I.

“ A countryman, fifty years of age, in whose left eye I had, three years before, successfully depressed a Cataract, wished to have the operation also performed on the right one. The Cataract of this eye promised to be of a favourable sort; that is, firm and consistent beneath the needle, as the former had been; the motions of the pupil were prompt, and the patient, notwithstanding the Cataract, could discern, with the eye affected, the shadows of objects. The anterior chamber of the Aqueous humour



humour was, in each eye, so spacious, that I have never, or very rarely, seen the like. The palpebræ of the eye, on which the operation was about to be done, being somewhat swollen and gummy, I applied a blister to the nape of the neck, and prescribed the frequent use of a vitriolic collyrium during a fortnight. With the help of these remedies, the eyelids recovered their natural state.

“I undertook the operation, and though, contrary to my expectation, I found the crystalline rather soft, yet, with a good deal of care, I removed it completely out of the axis of vision, and immersed it deeply in the Vitreous humour, so as to free the pupil, at least, as it seemed to me, from every obstacle to sight.

“No remarkable symptom ensued after the operation;



operation; but, on the eleventh day, the period when I permitted the patient to get out of bed, and to begin to use the right eye, he told me, that he was then unable to see so distinctly with it, as he had done for the first few days after the operation. I examined it in a clear light, and found the pupil really more than half occupied by a whitish, irregular, evidently membranous body. The Iris of the eye in question was, in the following respect, very singular; at every motion of the eyeball, it undulated backwards and forwards, in a peculiar manner.

“Without further delay, I introduced the needle into the right eye again, and having, with its point, raised the white membranous mass, I discovered, that it was more voluminous, than it had appeared to be through the pupil. As it was quite free from adhesions,



sions, I had no sooner collected it with the point of the instrument opposite the pupil, than I pushed it forward, and caused it to pass gradually through this aperture, into the anterior chamber, which, as I have described, was, in this subject, exceedingly capacious; it instantly fell to the bottom, so as to leave the pupil quite unobstructed. The whole of this membranous substance equalled a grain of corn in size; nevertheless, in the course of five-and-twenty days, it entirely dissolved, and was absorbed, without producing, during its continuance in the anterior chamber, any inconvenience to the patient, or any impediment to vision.

From the size and shape of this membranous body, I am inclined to think, that it was wholly, or principally, composed of the capsule of the crystalline lens, which,  
by



by a rare \* combination of circumstances, had been detached from the Ciliary zone, but which, when I moved the Cataract, in the manner of a segment of a circle, in order to bury it in the Vitreous humour, slipped from beneath the needle, remained behind, and at length re-appeared beyond the pupil."

## CASE II.

"A poor, meager, hysterical woman, came to this practical school, † to be cured of two Cataracts, which, for several years, had affected her eyes. The colour of the opaque lens, in each eye, was blue; but it seemed unequal, and interrupted here and there with whitish lines; nor could one per-

M ceive,

\* This remark is contrary to Richter's opinion, and that adopted by the author of these pages.

† At Pavia.



ceive, behind the pupil, that convex appearance, which the opaque crystalline usually presents.\* The pupils were moveable, and the patient could distinguish the outlines of objects before her. In this case, the most unfavourable circumstances for the operation were, the extraordinary smallness, and sunk state of the eyes, and, especially, the want of capacity in the anterior chamber of the Aqueous humour; for, as to the general morbid irritability, I flattered myself to be able to calm it, by the continued use of bark with valerian, and by the allowance of more nourishing and strengthening food, than this poor woman had previously been accustomed to. After a month's preparation, I undertook to operate on the left eye, and, having conducted the instrument

\* A convex appearance of the front surface of Cataracts is, perhaps, limited to those, which are of the large soft, or fluid description; the smaller kinds of Cataract are not characterized by it. S. C.



ment between the posterior surface of the Iris and the Cataract, I perceived, on pressing and introducing the point of the instrument into the anterior convexity of the capsule, that the membrane wrinkled, and folded under the needle; in a word, that, in lieu of the crystalline, there only remained its membranous capsule, including but a small quantity of a glutinous fluid, which, when diffused, was not sufficient to render the Aqueous humour turbid enough to prevent my continuing the operation. Some might have termed this disease *atrophy* of the crystalline. As the lens was wanting, I only endeavoured to lacerate the capsule into several pieces behind the pupil, through which I forced as many of these fragments, as I was able, into the anterior chamber. I could not succeed in placing them all there, on account of the diminutive size of that cavity.



“Immediately after the operation, and it is common to observe it in hysterical patients, the woman was seized with a violent spasmodic affection of the head; but a clyster, made with a decoction of chamomile, and two grains of opium, was no sooner administered to her, than all painful sensations ceased, and the eye did not inflame much in consequence.

“On the fourth day, the patient could distinguish things very well; but, her sight afterwards diminished daily, so that, on the eighteenth day after the operation, she could discern nothing, on account of the pupil being entirely blocked, and shut up by a white membranous body, \* consisting of the particles of capsule, which I had not been able to push into the anterior chamber, on account

\* Da un turacciolo biancastro. Scarpa. Bouchon blanchâtre membraneux. M. Leveillé.



account of its above-mentioned want of capacity. I waited another week, until the particles and flakes of membrane, with which I had before filled the anterior chamber, were almost dispersed, so as to make room for the rest; then I again introduced the needle into the eye, and immediately cleared the pupil, by pushing all the membranous portions into the anterior chamber, which they occupied, as high as the inferior edge of the pupil.

“ An invariable fact, meriting here some reflection, is, that such membranous fragments as, in the first operation, cannot, on account of their plianthood, be taken hold of by the point of the needle, after being macerated, for a time, in the Aqueous humour, swell, and admit of being moved forward by the point of the instrument with the greatest facility.



“The operation was, as before, followed by a spasmodic affection of the head, which an opiate clyster once more relieved.

“In about twenty-eight days, after this second operation, the patient could distinguish all objects very well; the membranous flakes and fragments, with which I had, a second time, filled the anterior chamber, were entirely dispersed, leaving the pupil, to the full extent of its ordinary state of dilatation, black, clear, and rid of every obstacle to the passage of light.”

### CASE III.

“Bartholomew Zucchi, of Calvairate, a robust man, forty-five years of age, who had a Cataract in each eye, was operated on at this school of surgery, April 18, 1793. His eyes were rather small, and sunk, as it were,



were, in the orbits. I operated on the left eye, in which I found a soft caseous Cataract.\* After breaking the pultaceous substance of the crystalline to pieces, I freely lacerated the capsule to the extent of the pupil, through which I forced all the flaky portions of membrane, into the anterior chamber, which they filled, as high as the inferior margin of the pupil. The operation was followed by no remarkable symptom, and, on the fourteenth day, the above fragments were diminished by more than half, and the patient could see distinctly with his left eye.

“The operation was next performed on the right, in which, finding a sufficiently firm Cataract, I was enabled to lacerate the

\* Strictly speaking, Scarpa ought not to have termed all these cases, Secondary Membranous Cataracts, merely because there was a membranous capsule to be lacerated in the operation.



the anterior layer of the capsule precisely, and to immerse the lens deeply in the Vitreous humour. - A fortnight after the operation on the right eye, all the membranous particles, deposited in the anterior chamber of the left, had entirely disappeared, and the right eye was able to bear the light. The patient went from the hospital, soon afterwards, perfectly cured in both eyes."

#### CASE IV.

"Maria Spigoletti, aged forty, had a Cataract, of two years standing, in the left eye; and the crystalline of the right was growing more and more opaque. The eyelids were swollen and gummy. I purged her with the sal amarus,\* applied a large blister to the nape of the neck, and directed the edges of the eyelids to be anointed every morning and evening with Janin's ophthalmic ointment.

"After

\* *Magnesia vitriolata.*



“ After three week's preparation, I set about depressing the Cataract of the left eye, and found it in consistence not unlike mucus. Therefore, after breaking the anterior layer of the capsule, and, at the same time, all the membranous sack of the crystalline into many pieces, and, as far as the circumference of the pupil, I accomplished so much, as to put the whole through this aperture, into the anterior chamber, and thus succeeded in freeing it from every impediment to vision. The consequence was a slight ophthalmy, chiefly affecting the eyelids, which, by applying, at its commencement, little bags, filled with emollient herbs, and, latterly, the *Aqua vegeto-mineralis*, subsided in the course of a week.

“ In the space of a month, all the membranous fragments, deposited in the anterior chamber, and which had occasioned  
the



the appearance of Hypopium, dissolved, and totally dispersed; and, when the woman went from the hospital, she had recovered her sight."

### CASE V.

"Giovanni Alberti, a countryman, sixty-six years of age, had a Cataract in each eye, and came to this school of Practical Surgery, to undergo the operation. I began with the left eye, in which I met with a lens, sufficiently firm, to be conveyed with ease out of the axis of vision, and immersed in the Vitreous humour. This being done, I perceived, before the needle was withdrawn, that a portion of opaque membrane, or a considerable part of the anterior layer of the capsule, which had not been properly rent, floated opposite the pupil. I carried the point of the needle  
again



again forward, and carefully broke the membrane, as far as the limits of the pupil permitted, and pushed all the fragments through this foramen, into the anterior chamber. No bad symptoms ensued, and the patient saw with this eye very well.

“Twelve days afterwards, I did the same to the right eye, which presented to me precisely the same circumstances. I was easily able to displace the opaque lens; but, there remained behind, opposite the pupil, a portion of the anterior layer of the capsule: I wish to imply, that the capsule was lacerated by the needle, but not sufficiently for the removal of this membranous veil from beyond the pupil. Therefore, as in the preceding example, by directing the point of the instrument against the membrane, I broke it piecemeal, and, as its particles became detached, I pushed them regularly through



through the pupil, into the anterior chamber, until the whole compass of this opening was clear. A month after the operation on the second eye, there was no vestige of the membranous particles in the anterior chamber of either eye, and the patient perfectly recovered his sight.

#### CASE VI.

“ Paola Guagnini, of Sale, aged forty-five, weak, and subject to violent attacks of hysteria, had had, for some years, a Cataract in the left eye, and saw indistinctly with the right, on account of an incipient opacity of the crystalline in it. This woman had also a degree of relaxation, in the tunica conjunctiva of each eye, and the eyelids were in a swollen and gummy state. I applied a blister to the nape of the neck, and, during a fortnight, frequently instilled  
into



into the eyes the vitriolic collyrium. By these means, the swelling of the eyelids decreased, and the immoderate viscid secretion from them was stopped.

“For the relief of the constitutional debility, and accumulated irritability of the patient, I directed her to take, for the above space of time, ʒij of bark, and gr. xx of valerian, every morning and evening.

“She underwent the operation Nov. 21, 1795. Immediately, when I pressed the point of the needle on the Cataract, in order to remove it from the axis of vision, it burst like a vesicle, and diffused a milky fluid, which rendered the two chambers of the Aqueous humour quite turbid. Notwithstanding this accident, I could discern, as it were, through a mist, the opaque nucleus of the crystalline, which I conveyed  
deeply



deeply into the Vitreous humour; then I re-conducted the point of the needle towards the pupil, detached and lacerated the front half of the capsule into several portions, and pushed the membranous fragments, one after another, through the pupil, into the anterior chamber. The patient expressed no sign of acute pain during the operation, and passed the three following days quietly. On the fourth, she was seized with a violent fit of hysteria, attended with a sense of suffocation, twitches of the whole body, restlessness, and delirium, which made me apprehend irremediable mischief in the eye that had been operated upon. Yet, contrary to my expectation, the day after this attack, I found the pupil clear, and that the patient could distinguish the smallest objects. On the tenth day after the operation, she was in a condition to get up, and to begin to use her right eye in a moderate light.



light. The mass of membranous flakes, precipitated into the anterior chamber of the Aqueous humour, and which resembled an Hypopium, began to be absorbed, and, in the space of thirty-two days, the lymphatics had completely taken away all the filmy sediment.

The patient went from this surgical school quite cured. The continued use of bark and valerian, with the daily exhibition of a few spoonfuls of an infusion of chamomile, conjoined with the spir. ammon. succin. and aq. cinnam. rendered the hysterical attacks less frequent and violent, than they were previously wont to be.

FINIS.

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light. The mass of membranous flakes precipitated into the anterior chamber of the aqueous humor, and which resembled an hyaline, began to be absorbed, and in the space of thirty-two days the patient had completely taken away all the filmy sediment. The patient went from his original school quite cured. The continued use of bark and valerian, with the daily exhibition of a few spoonfuls of an infusion of chamomile, conjoined with the spirit annuus, eucalin, and ad. chloral, rendered the hysterical attacks less frequent and violent than they were previously wont to be.

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