

**A probationary surgical essay on amaurosis : submitted ... to the examination of the Royal College of Surgeons of Edinburgh, ... / by Alexander Tweedie.**

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A  
PROBATIONARY  
SURGICAL ESSAY  
ON  
AMAUROSIS :

SUBMITTED

BY THE AUTHORITY OF THE PRESIDENT  
AND HIS COUNCIL,

TO

THE EXAMINATION

OF THE

*Royal College of Surgeons of Edinburgh,*

WHEN CANDIDATE

FOR

ADMISSION INTO THEIR BODY,

IN CONFORMITY TO THEIR REGULATIONS

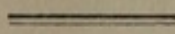
RESPECTING

*The Admission of Ordinary Fellows.*

BY

ALEXANDER TWEEDIE, M. D.

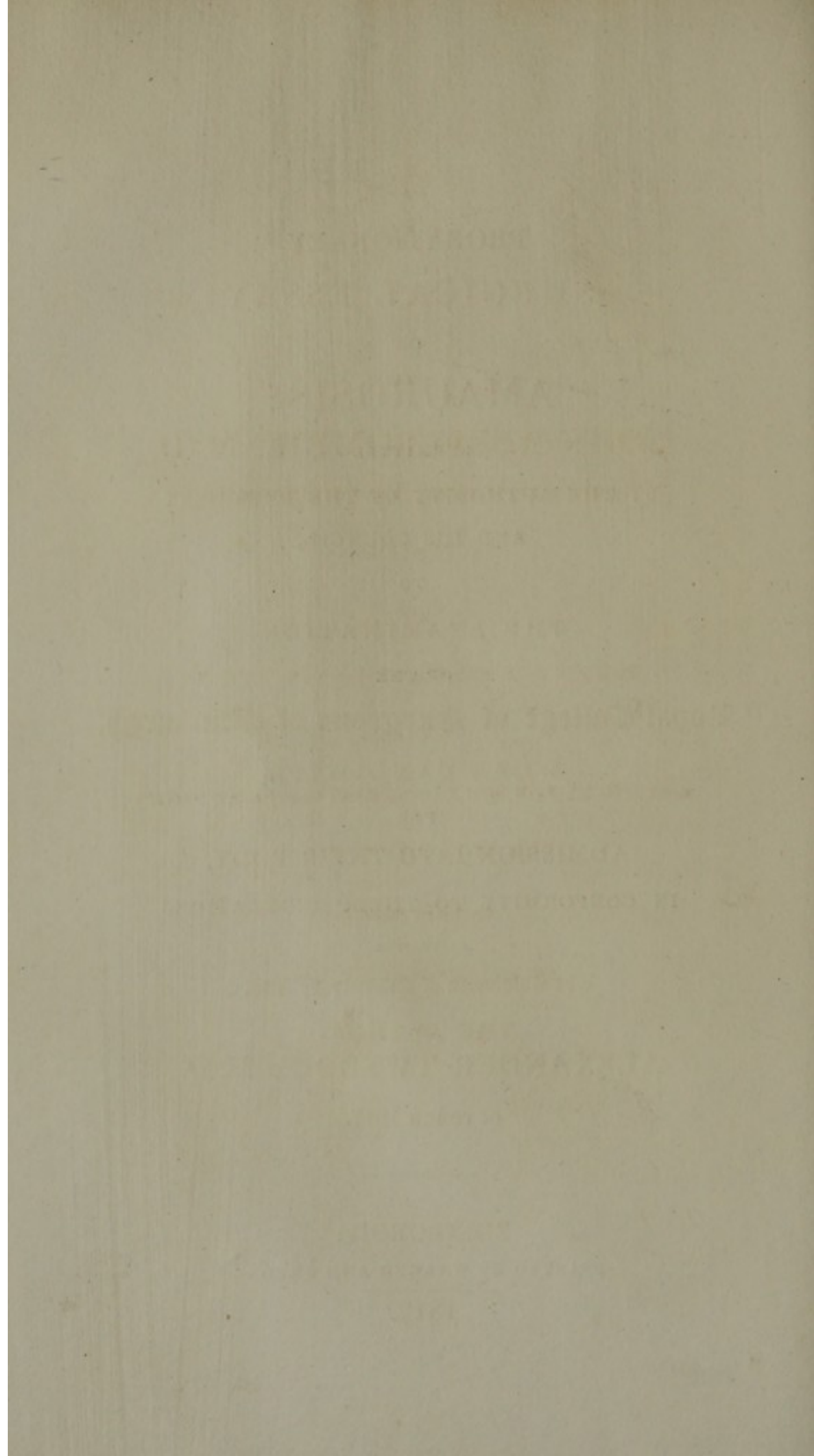
OCTOBER 1817.



EDINBURGH :

PRINTED BY WALKER AND GREIG.

1817.



TO  
JOHN ABERCROMBIE, M. D.

FELLOW OF THE ROYAL COLLEGE OF SURGEONS, &c.

IN TESTIMONY

OF

ESTEEM FOR HIS PROFESSIONAL TALENTS

AND OF

GRATITUDE FOR HIS DISINTERESTED FRIENDSHIP,

THE FOLLOWING ESSAY

IS INSCRIBED

BY HIS SINCERE FRIEND,

THE AUTHOR.

JOHN ARBUTHNOT

OF THE CITY OF LONDON

IN PARLIAMENT

AND IN THE HOUSE OF COMMONS

AND

IN THE HOUSE OF LORDS

THE FOLLOWING

IS ENACTED

BY THE PARLIAMENT

IN PARLIAMENT

ASSEMBLED, THAT THE SEVERAL

ACTS OF PARLIAMENT

ESSAY  
ON  
AMAUROSIS.

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By the term *Amaurosis*, or *Gutta Serena*, is usually understood a partial or total loss of vision, generally accompanied with dilatation of the pupil, and originating in a diseased state of the retina or optic nerve. It is an affection of comparatively frequent occurrence, and, like all those affecting so important an organ as the sense of sight, is highly interesting to the medical practitioner.

The symptoms of this disease in its incipient stage are somewhat obscure, and often falla-

cious, as little information can be derived from the general appearance of the eyeball itself, no very obvious deviation from its natural structure being perceptible. The disease is sometimes confined to one eye, but both are generally affected at the same time. At first the patient experiences some degree of dimness of vision, as if objects were not sufficiently illuminated, or as if viewed through a cloudy medium; black spots, films, and sparks of fire appear occasionally to float in the atmosphere; and in advanced cases, the outlines of large objects or bright colours only are perceptible. In some cases these symptoms are accompanied with double vision, and in other instances, only one-half or part of an object is observed by the patient. These symptoms are often combined with sensation of stricture in the eyeball, more or less of general headach, and pain about the forehead and temples.

When the eye itself is examined, the pupil in the majority of cases appears larger than usual,

and contracts slowly on exposure to the light ; it varies from its natural size to the greatest degree of dilatation of which this aperture is susceptible. In some instances, however, which generally prove unfavourable, the pupil remains either of its natural size, or is considerably diminished ; and sometimes it is observed to retain the power of motion as perfectly as in the sound state of this organ. In general it exhibits its natural black colour ; but we often observe an opaque whitish grey appearance in the bottom of the orbit, arising from a morbid alteration of structure, causing the luminous rays to be reflected when they strike the retina or optic nerve.

There are few diseases with which Amaurosis is likely to be confounded. In its incipient state, however, it somewhat resembles opacity of the chrystalline lens or its capsule, and hence an accurate and minute diagnosis between these affections becomes of essential consequence, with a view to regulate our practice in this dis-



ease. From cataract it may be readily distinguished by attention to the appearance of the pupil, with respect to its colour, state of contraction or dilatation, and the effect which luminous bodies exert over its moving fibres. In Amaurosis, the pupil is generally of a deep black colour, more or less dilated, and insensible; although we cannot always depend on this as a diagnostic mark, as the pressure of a soft cataract may so impede the motion of the iris, that even Belladonna does not exert its usual influence in dilating the pupil.

The previous history of the disease will materially assist our judgment, as in every case where there is a dilatation of the pupil with appearance of opacity deep in the orbit, we shall find that the degree of opacity is insufficient to cause so great diminution, or almost total loss of vision; that the disease has come on suddenly, and has proved very rapid in its progress, accompanied with more or less head-

ach and pain of the eyeball, and general disturbance of the constitution. We sometimes meet with a combination of Cataract and Amaurosis in the same individual, in which case the symptoms of both are so complicated, that the surgeon feels at a loss what line of practice to adopt, as the removal of the diseased lens will not probably restore the power of vision. Hence the propriety of explaining fully to the patient the precise nature of the disease, when there is a probability of both the retina and chrystalline lens being found in a morbid state.

Amaurosis is frequently found to arise from organic disease of the brain or optic nerves, connected with caries and exostosis of the cranial bones;\* various kinds of tumours of the encysted, steatomatous, strumous, or bony character, which occasionally occur in the substance of the brain, and are sometimes found

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\* Bonetus Sepulchretum Anatomicum, Lib. 1. Sect. 18.

situated near the origin of the optic nerves. This disease not unfrequently originates either in a general plethoric state of the system, or in a topical congestion within the head, and it has also been observed to succeed to an inflammatory affection of the internal tunics of the eye or of the retina itself, in which case the patient has previously been affected with general headache, deep-seated pain of the orbit darting to the occiput, increased on the least exposure to light, and accompanied with smart irritative fever. The conjunctiva, though somewhat inflamed, is by no means so vascular as in cases of simple Ophthalmia, and when the inflammatory symptoms go off, the patient experiences dimness of vision proportionate to the degree of inflammation which had previously existed in the eyeball. Accumulation of blood in the cerebral vessels, arising from various causes, may produce a degree of Amaurosis by its pressure on the optic nerves, and Mr Ware has mentioned a dilatation of the anterior portion

of the *circulus arteriosus* as a probable cause of this disease, especially in such cases as are accompanied with an inability of moving the upper eye-lid.\* He also takes notice of a dilated state of the *arteria centralis retinae*, as another probable cause, which he suspects to give rise to Amaurosis in those instances where it has come on suddenly, and where the objects, when placed immediately opposite the eye, were quite invisible, although some slight perception of them still remained when viewed from either side.†

Blows upon the eyeball, and severe injuries of the head, which have been followed by extravasations of blood or of serum around the optic thalamus, or in the course of the nerve, have produced Amaurosis.‡ In such a case,

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\* *Chirurgical Observations relative to the Eye*, Vol. ii. p. 428.

† Ware, L. C. p. 434.

‡ Morgagni *de Sedibus et Causis Morborum*, Epist. 9. Sect. 20. and Epist. 13. Sect. 12.

if the lesion of the substance of the brain be of great extent, the patient is generally cut off, although cases may occur in which the blood-vessel injured is so small, that its rupture will be productive of a very trivial effusion, and where the absorption of the coagulated blood will be followed by restoration of the power of vision. Wounds, in which the supra-orbital nerve has been divided, have been mentioned by surgical writers to have been followed by insensibility of the retina.\* It may however be remarked, that in cases of Tic Doloureux affecting this nerve, and in which it has been necessary to have recourse to a complete division of it, no affection of the optic nerve has followed the operation.

Under another set of causes, which by their operation on the general system, affect the organ of vision chiefly by nervous sympathy,

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\* Hey, in the Medical Observations and Enquiries, Vol. v. Morgagni, Epist. 13. Art. 5.

and thus produce insensibility of the retina, may be comprehended all those which debilitate the system in general:—hence great depletion for the removal of other diseases, and long continued evacuations, whether natural or artificial, have been followed by this affection. It has also been caused by the continued examination of minute objects, exposure to brilliant light, flashes of lightning, the suppression of accustomed evacuations, repelled gout, &c.

Disorders of the gastric and biliary system are a frequent cause of Amaurosis, and when it is symptomatic of such affections, it is generally capable of being speedily and effectually removed, as will be noticed when treating of the cure.

Our prognosis must in a great measure depend on the cause of the disease, and hence the intelligent surgeon will investigate minutely every symptom which may lead to the nature of the affection, as much with the view

of forming a proper judgment of the disease, as of regulating his practice in the treatment.

In the cure of Amaurosis, our first indication must therefore be directed towards the removal of those causes in which the disease apparently originates ; for if it depend on such as are incapable of being removed, no benefit will result from our efforts. In cases connected with plethora, or with congestion of blood in the head, the abstraction of blood will be necessary, as it proves the most powerful means of depleting the vascular system. After general, topical blood-letting by the application of leeches, or the more effectual operation of cupping on the temples, or opening a branch of the temporal artery, will prove an useful auxiliary. The quantity abstracted, and the necessity for repetition, will depend on a variety of circumstances connected with the age, sex, and peculiarity of constitution of the patient, and the degree of vascular excitement under which the system is labouring. The complete evacuation

of the bowels is the next object of attention, and such purgatives are to be administered as tend to unload the intestines, and, by increasing the serous exhalation, to diminish the quantity of circulating fluid in the system. Should headach, and other symptoms denoting action within the cranium, still continue, the scalp should be shaved, and the continued application of cold recommended, after which a blister to the head or to the nape of the neck will be found useful. Issues and setons have been recommended in this disease, and from their beneficial operation in many affections of the head originating in topical congestion, may be advantageously employed in conjunction with other remedies.

Mercury has proved beneficial in some forms of Amaurosis, and particularly in those where it probably originates in effusion either upon the surface or within the cavities of the brain. It has also been used with apparent advantage in some anomalous cases, where other means



had been employed without success. The form of the preparation to be employed may be left to the choice of the practitioner. Calomel and the blue pill have been most generally adopted, and may be continued till the mouth is a little affected, principally with the view of procuring its alterative operation on the system. Mr Ware speaks highly of the efficacy of the corrosive sublimate,\* but I am not aware that it possesses any great advantage over the other preparations of this metal.

When Amaurosis proceeds from suppression of evacuations, our attention must be directed to restoring them by suitable means, and afterwards stimulating the retina, and invigorating the general system.

Affections of the biliary system have been proved to have given rise to this disease, the organ of vision being only sympathetically affected. Schmucker and Richter were the first

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\* Ware, vol. ii. p. 435.

surgeons who brought this observation into notice, and have accordingly pointed out the principal indications of cure in Amaurosis depending upon these causes, viz. to unload the stomach and primæ viæ, and afterwards to strengthen the gastric organs and promote digestion; to invigorate the nervous system, and particularly to stimulate the retina and optic nerves.

The first indication we are directed to fulfil by emetics, of which class the antimonium tartarisatum is generally to be preferred, from its more speedy and effectual operation. After the stomach has been completely evacuated, Scarpa\* recommends the use of resolvent powders, composed of small and divided doses of this medicine;—one ounce of the super tartrate of potash, and one grain of the tartrate of antimony, are to be divided into six equal

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\* Practical Observations on the Principal Diseases of the Eye, p. 486.

parts, of which one may be taken three times a-day for eight or ten successive days. This medicine will generally produce nausea, evacuation of the bowels, and probably vomiting, in which case, should symptoms of irritation in the stomach remain, the emetic may be repeated. With the view of strengthening the stomach, tonics of various kinds, with a gently stimulating and nutritive diet, will be found beneficial, and to excite the languid action of the nerves of the eye, the vapours of the aqua ammoniæ may be employed.

In some forms of Amaurosis, electricity has been recommended, and has been followed by apparently good effects in such as have been produced by lightning, or in which there is paralysis of the retina without organic disease in its structure. It may also be employed in instances where the disease has followed excessive evacuations, and seems to depend on impaired energy of the retina or optic nerve; but

its use in cases connected with general or topical plethora will prove highly injurious.

Sternutatories have been employed, and seem to act by promoting the mucous secretion, and stimulating the nerves of the internal nostrils, and thus sympathetically those of the eye. Mr Ware recommends the subsulphate of mercury, of which ten grains may be mixed with any stimulating powder, as the pulvis asari compositus; a small pinch of this snuff will excite sneezing, and a copious discharge of mucus from the nostrils, which is generally followed by an increased secretion of tears.

After what has been said of the causes and treatment of this affection, it must be confessed that they are involved in much obscurity; and in many instances we shall have occasion to observe the inefficacy of our remedies, and to lament the imperfection of our art, in a disease which too often deprives the unfortunate patient of the most wonderful and important of the senses.

CHAPTER I

The first part of the book is devoted to a general survey of the subject. It begins with a definition of the term 'philosophy' and a discussion of its history. The author then proceeds to a consideration of the various branches of philosophy, including metaphysics, epistemology, ethics, and political philosophy. He concludes the chapter with a summary of the main points and a list of references.

