tension of the eyeball, without the slightest permanent benefit to the patient.

Mr. Hancock's operation.

I may mention in this place Mr. Hancock's operation for the division of the ciliary muscle, which he recommends in cases of glaucoma.

Mr. Hancock* thus describes his operation:—"A Beer's cataract knife is introduced at the outer and lower margin of the cornea, where it joins the sclerotica. The point of the knife is pushed obliquely backwards and downwards, until the fibres of the sclerotica are divided obliquely for rather more than one-eighth of an inch; by this incision the ciliary muscle is divided, whilst if there be any fluid accumulated, it flows by the side of the knife."

Posterior Staphyloma.

Posterior Staphyloma, or Sclero-choroiditis Posterior.—In the majority of cases of myopia the fundus of the eye presents the following appearances:—If the observer's attention be directed towards the entrance of the optic nerve, he will there remark a white figure enclosing the outer margin of the nerve. In the early stages this figure is sickle-shaped, its concave margin in a certain degree coincident with the margin of the nerve-disc, while its convex margin looks towards the posterior pole of the eyeball.

A white crescent borders the papilla.

Extends irregularly.

As the disease progresses the white figure continually increases, so that its outer border extends farther from the nerve, and the whole patch changes its sickle-shaped outline in various ways; sometimes extending itself outwardly, and assuming the aspect of a horizontal band proceeding from the papilla; sometimes spreading upwards and downwards, and appearing as a white figure of very variable outline surrounding the outer border of the nerve, and separated from the surrounding fundus by an angular and indented margin. Lastly, the degeneration may also encircle the inner side of the nerve-entrance, so that the latter appears as an island enclosed in a white, or sometimes a bright green-coloured surface, the outer part of which, however, is always more developed and broader than the inner. The light reflected from the diseased surface exceeds every other ocular reflex in its intensity, and

Reflects brightly.

* *Ophthalmic Hospital Reports*, vol. iii. p. 18.

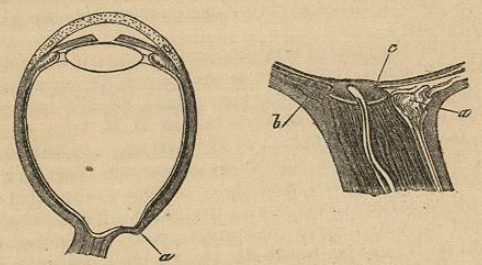
is much brighter and whiter than that from the optic nerve; so that the latter appears comparatively less illuminated, and of a dull grey or reddish tint.*

Pathological Anatomy.—The pathological changes which induce this condition of the parts have long been a subject of controversy, and in attempting to explain them we must in the first instance refer to the anatomy of the structures involved. We may, however, remark that posterior staphyloma is frequently a congenital, and also an hereditary affection.

Anatomy of optic sheath.

Some thirteen years ago Professor Donders pointed out the fact that the sheath of the optic nerve is divided into two parts (Fig. 33); the outer (*b*) runs

Fig. 33.



into the sclerotic, and the inner (*c*) envelopes the trunk of the nerve as far as the choroid; the two are separated by loose connective tissue (*a*). Professor Donders considered that the choroid becomes atrophied to a certain extent round the optic disc, and that the inner layer of the sclerotic, bulging backwards at this point, gives rise to the appearances above described.†

Eyeball elongated backwards.

This explanation was confirmed by the fact that eyeballs affected with posterior staphyloma, after removal, were observed to project backwards at the part corresponding to the white crescent seen with the

* Carter's translation of Zander on the Ophthalmoscope, p. 179.
† "Archiv. für Ophthal.," B. i. Abth. ii. p. 82, 1855.

ophthalmoscope, and the choroid lining the staphyloma was found atrophied and destroyed, the sclerotic itself being attenuated at this spot; but it remained for future observers to throw additional light on the cause of these changes.

Causes of the elongation.

Dr. Giraud-Teulon appears to have done much towards unravelling the mystery. We may assert generally that among myopics, accommodation and convergence of the optic axes are called into play to a greater extent than in emmetropics; the latter action is especially augmented. In its normal condition the globe of the eye is kept in a state of equilibrium, and its spherical form maintained by the recti and obliqui muscles. When the eye is turned in any direction, the opposing muscle relaxes in exactly the same proportion as the other set of muscles contracts, and in this way injurious pressure on the globe is prevented.

Muscular pressure during convergence.

To take the case of simple convergence: if the action of the internal rectus were unopposed, the eye would be drawn inwards, but the action of the external rectus and superior oblique causes it to turn on its axis, producing abduction of the cornea. At the same time the insertion of the obliqui is carried from behind outward and forward, and those muscles compelled to describe a larger circle round the globe: hence in proportion to the degree of convergence, the globe, by reason of its shape, tends to stretch the obliqui; an action that must manifestly be attended by an equal reaction on their part, increasing internal pressure. The simple physiological movement of convergence in a horizontal plane necessarily produces a tendency to increased intra-ocular tension.†

Aggravated in myopics by habitual near sight.

Evidently, therefore, myopics are subject to increased intra-ocular pressure, in consequence of the excessive convergence they are obliged to use in order that they may see clearly; and in consequence of this increased tension, venous congestion of the choroid is established, and so softening and extension of the tunics of the eyeball at the point of least resistance. The choroid being stretched at this point undergoes consecutive atrophy, and in many instances inflammatory action is set up,

* *Ophthalmic Hospital Reports*, vol. v. p. 383.

producing choroido-retinitis, and complications involving the vitreous.

Two classes of cases.

Cases of posterior staphyloma may be divided into two classes; the first, in which the disease is stationary, and the second, in which it is advancing.

1. Stationary. Myopia; overlooked in children.

1. *Stationary Form.*—In this form, the patient suffers from myopia, which may not have been noticed until he reached the age of twelve or fifteen years. I have seen several cases in which the defective vision was first discovered upon a boy's attempting to decipher words or figures on a blackboard at a distance of thirty or forty feet; his fellow students could probably readily make them out, but they appeared hazy and ill-defined to him, unless he went up to within a few yards of the board. Under these circumstances, on examining the eye, we discover that it generally appears to be more prominent than is natural, in consequence of its being elongated from before backwards. The posterior segment of the eye when inverted is perhaps of a slightly bluish colour; and the patient complains of a feeling of fulness and pain in the eye after long-continued work.

Choroid wasted around papilla.

With the ophthalmoscope, in a well-marked instance of this kind, we shall be struck by the appearance of the optic disc, which at first sight seems to be distorted in shape and altered in size, in consequence of the formation of a crescent of a brilliant white colour, which has formed at the outer side of the disc. This crescent is due to thinning and atrophy of the choroid over the part affected, so that the glistening sclerotic shines through it, producing the appearance above described. The small retinal vessels can be traced over the white background formed by the sclerotic. The outer border of the crescent is well defined by a rim of black pigment, beyond which, again, the fundus of the eye appears healthy. In these cases the choroid and sclerotic project backwards at this crescentic spot, forming a posterior staphyloma. (Fig. 3, Plate VII.) If Professor Von Graefe's test, of the existence of binocular vision by means of a prism (chap. xiv.) be employed in these cases, we shall find that an insufficiency of the internal rectus exists.

Black border.

Sclerotic projects backwards.

Treatment.

Treatment.—The abnormal condition above described may remain stationary for years, and in fact for life; but, on the other hand, active changes may at any

While stationary.

time be set up, and we should explain this fact to our patient, informing him that if the eye begins to trouble him, if he gets an aching pain over the brow after exerting it, or if the glare of the sun is felt to be particularly dazzling and uncomfortable, the sight becoming somewhat hazy—that these symptoms indicate advancing mischief, and should be at once attended to. Supposing, however, no such complications occur, we may content ourselves with simply ordering a pair

Concave glasses.

of concave glasses to correct the myopia, and that in reading and writing he has the advantage of a good light, and is not allowed to stoop over the object he is

Rest and protection.

working at. It will be well also to order him a pair of blue-tinted glasses, which he should wear when exposed to the glare of the sun.

2. Progressive form.

2. *Progressive Form.*—The symptoms which characterize progressive posterior staphyloma are as follows:—We may notice the same deficiency of the

Deficiency of internal rectus.

internal rectus, and the patient suffers from myopia,

Myopia.

but he usually consults us on account of general impairment of vision, which increases after over-exerting his eyes. At such times he complains of an aching

Recurring attacks of pain;

pain in the orbit, extending to the temple, and also of more or less intolerance of light; the glare of the sun is trying, and induces not only an uncomfortable aching feeling in the eye, but even photophobia. He may have suffered from repeated attacks of this kind, lasting for a month or six weeks, and then passing off,

after work.

reappearing, however, after unusual exertion of the eyes, or derangement of the general health. Each

Sight fails.

attack causes the sight to become more impaired, and the myopia increases, often rapidly.

Alterations round papilla.

If an eye affected with this disease be examined with the ophthalmoscope in its early stages, the fundus appears healthy, with the exception of a portion surrounding more or less of the disc, where, usually on the outer side, a patch of choroid will be observed of a lighter grey colour than normal, the vessels of the part being congested (Plate VII., Fig. 3). The alteration in the colour of this spot will be most marked near the disc, from thence, passing outwards, a number of small white patches are noticed in the choroid, these

Gradually shading off.

gradually coalesce into the glistening white crescent surrounding the outer part of the disc. Irregular spots of black pigment will be seen scattered over the external border of the diseased patches, but the strongly marked rim of pigment, pathognomonic of stationary posterior staphyloma, is seldom seen. In fact, the difference between the two forms of disease consists in this, that in the progressive affection, owing to the active changes which are going on in the part, the line of demarcation between the diseased and sound tissue is broken through, and the degenerative pro-

No defined border.

cess is extending outwards, or more probably in every direction.

Process degenerative.

The process appears to be essentially one of a degenerative nature, the stroma of the choroid, and the corresponding portions of the sclerotic become inflamed and degenerate; and as the latter loses its power of resisting the intra-ocular pressure, a posterior staphyloma results. This condition having once commenced, the protrusion increases in dimensions, until it often becomes of considerable size.

Often followed by fluid vitreous

This accident, however, is by no means the only ill-effect likely to follow progressive posterior staphyloma; opacity, and fluidity of the vitreous, and detachment of the retina are unfortunately too frequently the direct result of this form of disease. The former affection will be recognised at once; on examining the eye with the ophthalmoscope, a number of black, flocculent-looking shreds will be noticed floating in the vitreous, and will be best observed by the direct method of examination; they are to be seen whisking about in all directions upon the slightest movement of the eye, causing the patient the greatest annoyance. The state of the choroid may often be observed, even at this stage of the disease, through the fluid vitreous, and the history of the case will indicate the nature of the disease; we may also examine the eye least affected, and the chances are that a posterior staphyloma will be detected in it, and thus we may be able to form a safe conjecture as to the cause of the fluid vitreous in the diseased eye.

and detached retina.

During the progress of this affection, detachment of the retina is likely to take place; for, as the staphyloma projects backwards, one of two things must occur: either the retina will be stretched and torn across in following the sinuosities of the choroid; or else, bulging backwards into the staphyloma, it will be dragged away from its attachments, either at the optic

foramen or ora serrata. If the dioptric media are sufficiently transparent, we may watch these changes with the ophthalmoscope; frequently, however, the vitreous becomes so hazy that the retina cannot be seen, though we may be pretty well assured of its disorganized condition, by the almost complete loss of vision from which the patient suffers. And, lastly, secondary glaucoma may supervene at any stage of the disease, either in the inflammatory form or as glaucoma simplex, and unless an iridectomy is performed will end in blindness; for, as a rule, both eyes are sooner or later affected in this way. In cases of this description we shall have symptoms of glaucoma supervening on those of advancing myopia, or sclero-choroiditis posterior.

Treatment.

Endeavour to arrest the disease.

Treatment.—It is absolutely necessary, therefore, that we should do all in our power to stop the progress of the staphyloma, and the degenerative changes going on in the choroid in its early stages, in order to prevent the occurrence of these unfortunate terminations. I have already described its leading symptoms and ophthalmoscopic appearances; if, therefore, we meet with a case presenting these features, and learn that there has been any recent aggravation of the symptoms, we should make careful inquiries regarding the patient's employment, habits, and general state of health, with the view of correcting whatever may be wrong. Overwork is almost always the exciting cause of these changes; under any circumstances we must enforce absolute rest of the eye. The cold douche may often be used with advantage, morning and evening.

Promote the general health.

Enforce rest.

Purgatives, leeches, low diet, in active stages.

In addition to these general measures, if active changes are going on in the eye, apply two leeches to the temple for three consecutive nights, fomenting the part well afterwards. The patient should be kept in a dark room until all symptoms of pain and intolerance of light have passed away; he may then be permitted to take exercise in the open air, wearing a pair of blue glasses when exposed to the glare of the sun or lamp-light; but he must not be allowed to resume his work until the congestion of the choroid has disappeared. Small doses of bichloride of mercury, continued for some time, are useful if inflammatory changes are advancing in the choroid.

In many instances, however, attention to the state of the general health, together with the cold douche and rest, will be the chief curative means at our disposal. An issue may be opened in the skin of the temple. By a judicious plan of treatment of this kind, the symptoms indicating active changes in the choroid will gradually subside, and the patient may then be allowed to use his eyes, though he cannot be too careful not to overwork them.

Issues.

If these precautions are strictly observed, we may with confidence hope to preserve our patient's sight; taking care, whenever the uneasiness or pain in the eyes returns, to have recourse to a system similar to that above described, so as to prevent the destructive changes from making further progress. But I need hardly remark, that when degenerative changes have taken place in the choroid, retina, or vitreous, our prognosis must be very guarded; we can only expect to preserve the amount of vision that exists, and not to restore that which is lost.

Treatment hopeful.

Lastly, it is above all things necessary to supply the patient with proper concave glasses, so as to correct the defective refracting power, and thus prevent the increased convergence of the eyes which myopia renders necessary. As a means to this end, the patient must not attempt to read when in the recumbent position, or to write with his head bent close down over the paper.

Concave glasses essential.

But more than this may be required. It has been demonstrated by Dr. Giraud-Teulon that this progressive myopia is due to an insufficiency of the internal rectus, and both he and Professor Von Graefe therefore recommend tenotomy of the external rectus in cases of extreme progressive posterior staphyloma. The former learned doctor lately observing that he had then a case of extreme myopia under his care, in which intermittent strabismus had commenced, and where tenotomy of the external rectus suddenly diminished the myopia by $\frac{1}{13}$, or from $\frac{1}{5}$ to $\frac{1}{8}$. Dr. Derby has published an interesting series of cases, in which the curative effect of dividing the internal rectus in cases of advancing myopia, is well demonstrated.* In three

Tenotomy of external rectus.

* "Progressive Myopia and its Operative Cure," by R. H. Derby, Ophthalmic Surgeon to the Demilt Dispensary.

instances of this kind under my own care, this operation has been followed by marked, and up to the present time favourable results.

Tubercle in the Choroid.

Tubercular Matter in the Choroid.—The formation of tubercular matter in the choroid has been noticed amongst persons suffering from phthisis. If in a case of this description the patient's eye be examined with the ophthalmoscope, circumscribed rose-coloured spots may be seen, usually situated near the optic disc; and as the tubercular matter increases it forms nodules, pushing the pigment-cells of the choroid on one side; their outline is consequently marked by a border of black pigment, and their raised and uneven surface can hardly be mistaken for any other condition of the parts. As the disease advances, the functions of the choroid become impaired, and the vitreous passes into an opaque condition, rendering all further changes in the structures posterior to it very indistinct. It does not appear that the tubercular masses themselves excite irritation in the choroid, nor do they induce any pain in the eye.*

Raised patches with dark borders.

No pain.

Sight impaired by hazy vitreous.

If impairment of vision exists in these cases, it is probably due to disease of the choroidal vessels. The coats of the vessels being infiltrated with earthy matter, which greatly interferes with the nutrition of the tissues, hence arise atony of the ciliary muscle, and a hazy state of the vitreous. No doubt if the tubercular matter were formed directly in the axis of vision, it might, by displacing the retina, destroy its functions to a great extent; but cases of the kind are extremely rare.

Wound of Choroid.

Wounds and Injuries of the Choroid.—It is evident from the protection the choroid receives from the parts around it, that it cannot be wounded unless the sclerotic or other external structures of the eye are injured.

Hernia cannot occur.

In incised wounds through the sclerotic, hernia of the choroid seldom occurs, in consequence of the intimate connexion which exists between these structures; in fact, the wound of the choroid is generally a very small

* Carter's translation of Zander on the Ophthalmoscope, p. 169.

matter compared with the lesion likely to be inflicted on the retina and other structures contained within the eyeball.

Retina may suffer.

Blows or similar injuries inflicted on various parts of the eye are by no means unfrequently followed by a rupture of some of its bloodvessels. If the effusion of blood is considerable, it bursts through the retina, and infiltrates the vitreous body, probably finding its way into the anterior chamber. Cicatrices of wounds in the choroid, following contusion of the eyeball, have been noticed during life by means of the ophthalmoscope.* In less severe injuries a small clot of blood may form in the choroid, where it may be seen with the ophthalmoscope, the retinal vessels crossing over it.

Sight lost for the time.

In more severe cases, the patient will completely lose the sight of the injured eye from the instant the accident has occurred, though he may suffer from little or no pain in it. On examining the eye, we shall find, very probably, that the anterior chamber is full of blood; or it may happen that the hæmorrhage has not reached so far forwards, but that on dilating the pupil and examining the eye with the ophthalmoscope, we find the vitreous opaque, and infiltrated with blood. But in the less severe cases, where the hæmorrhage is limited, the patient may only complain of haziness of vision, depending upon a displacement of the retina forwards by a clot of blood in the choroid.

Blood in the anterior chamber or vitreous.

Prognosis.—This will vary according to the apparent nature of the lesion. I say apparent, because if the hæmorrhage has been considerable, it is impossible to ascertain the extent of the damage done to the eye until the blood has become absorbed; but it rarely happens that extensive hæmorrhage of this kind takes place within the eye without breaking down the attachments of the retina, or otherwise damaging the eye as an organ of vision.

Prognosis must be guarded.

Retina often detached.

In the less severe cases, the clot of blood may be absorbed in the course of a few days, and the functions of the eye will be perfectly restored.

Hæmorrhage from the choroidal vessels is evidently

* See cases reported by Dr. P. Frank, *Ophthalmic Hospital Reports*, vol. iii. p. 84.

far more apt to follow an accident if the part is diseased. We meet with instances of the kind among persons suffering from myopia, consequent on extensive posterior staphyloma. The imperfection of vision from which such patients suffer is a cause of their being more liable to blows on the eye than other persons; for they are less able to guard it, and, at the same time, the globe is often prominent. Moreover, the diseased state of the choroid renders its vessels likely to be ruptured by a blow on the eye. I have met with several instances of this kind, where the accident has been followed by hæmorrhage into the vitreous; and it has been subsequently discovered that extensive detachment of the retina had occurred. Even where the retina escapes, the blood in these cases, oozing into the choroid, may damage its structure to such an extent that it subsequently atrophies; and this is quickly followed by opacity of the lens and vitreous.

Liability of myopics.

Unfavourable termination.

Treatment.—If the accident has only recently occurred, it will be advisable to apply ice to the eye, and keep the organ at perfect rest, so as, if possible, to stop any further hæmorrhage. But if the accident has taken place some time before we see the patient, we may simply keep the eye at rest with a pad and bandage until the effused blood has become absorbed.

Treatment. Cold to eye.

Rest.

We occasionally meet with cases of hæmorrhage into the choroid resulting from an engorged state of its vessels, as in glaucoma, or after over-exertion of the eye. The effused blood presents a uniform dark crimson appearance, varying in shape and size, the hæmorrhage being on a plane posterior to the retina. The retinal vessels passing over the clot can be clearly recognised with the ophthalmoscope. The extent and situation of a clot of blood will, under these circumstances, lead us to form a prognosis; small spots of hæmorrhage, if near the ora serrata, may become absorbed and leave the eye uninjured, and this may be the case even with large effusions in the axis of vision, but scotoma more commonly result; and the hæmorrhage depending on some local disease is apt to return.

Hæmorrhage into choroid may result from disease.

Detachment of Choroid.

Detachment of the Choroid from the sclerotic may occur as the result of an injury or from disease, as for

instance, the growth of a tumour in the choroid.* With the ophthalmoscope, we may observe the rent made in the choroid, and through it the white and glistening sclerotic can be seen. In these cases the retina is of course detached with the choroid, and the sight of the eye is therefore irrevocably lost at the seat of injury.

Loss of sight.

In some rare cases the choroid is only partially detached from the sclerotic, by a collection of blood or serous effusion forcing its way immediately within the sclerotic, tearing the choroid from its attachments and bulging it forward together with the retina into the vitreous chamber: the most characteristic symptom is the appearance of the choroidal vessels and intravascular spaces lying close beneath the retina.† The protuberance thus formed may be seen by transmitted light, and might be mistaken for a malignant tumour springing from the choroid; but in instances such as I am describing, the history of the case and the absence of increased tension of the eyeball, or other symptoms indicative of malignant disease, will lead to a correct diagnosis.

Partial detachment.

Sympathetic Irritation of the Choroid.—I have already described (p. 347) the symptoms of irido-choroiditis, which, as I then remarked, is by no means uncommonly induced by wounds or injuries involving the ciliary body or the choroid. The phenomena of sympathetic irritation of the choroid are those of irido-choroiditis.

Sympathetic Choroiditis.

Symptoms as in irido-choroiditis.

TUMOURS OF THE CHOROID.

Sarcoma of the Choroid, like similar abnormal growths in other parts of the body, is characterized by a preponderance of cellular elements, of a stellate, spindle-shaped, or roundish form, resembling those of connective-tissue cells, and containing numerous nuclei. These cells differ, however, very materially from those of connective tissue, in that they are incapable of passing into the stage of perfect connective tissue. They are prone, however, to combine with

Sarcoma: its characteristics.

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* *Ophthalmic Review*, vol. i. p. 79.

† A Treatise on the Diseases of the Eye, by Soelberg Wells. Third Edition, page 511.

intercellular substances, and thus form a relatively firm vascular and coherent structure. In these respects sarcoma presents a different growth from epithelial formations, and also from cancer. In sarcoma we often find the cellular elements not only preponderating, but containing a quantity of dark pigment assuming the medullary or melanotic form. This is especially the case when the disease springs from a structure already containing much pigment, as is the case with the choroid.

Cells often contain pigment.

Symptoms.

Symptoms.—Sarcoma of the choroid commences as a slight elevation or patch in the choroid, which may be seen with the ophthalmoscope; the base extends, and at the same time the tumour advances forwards upon the retina, inducing changes in its delicate structure, so as to render its nervous matter opaque. At the same time a collection of fluid takes place between the advancing sarcoma and the opaque retina, the latter therefore forming an undulating projection vibrating with every movement of the eye, and clearly recognisable in the vitreous chamber by aid of the ophthalmoscope.

As a general rule, the disease does not take long to grow, but may be interrupted by periods of inactivity. As the sarcoma increases, involving more of the choroid, the lens and vitreous become opaque, preventing our watching its subsequent growth within the eye. During the early stages of the disease irido-choroiditis most frequently complicates the other symptoms, and at a later period the cornea becomes hazy and ultimately opaque. The intra-ocular tension is much increased, and the patient usually suffers intensely from pain in the eye and over the corresponding side of the head.

Advanced stage of disease.

As the disease advances, staphylomatous bulging may appear in the ciliary region, from degeneration of the sclerotic. The cornea or sclerotic is perforated, and the tumour protrudes through the opening, presenting the appearance of sarcoma as seen in other parts of the body. It sometimes happens, however, that while still intra-ocular, the sarcoma degenerates into a fatty mass and becomes atrophied, the eyeball at the same time shrinking up to a small button over the remains of the morbid growth, which we have too much reason to fear will, sooner or later,

May atrophy.

again put forth its latent energies and grow with increased rapidity. In some few instances sarcoma of the choroid has been known to invade the sheath of the optic nerve, and growing backwards has filled the apex of the orbit so as to thrust the eye outwards, protruding it from between the eyelids, before the nature of the tumour behind could be exactly ascertained.

May invade sheath of optic nerve.

Carcinoma differs in its anatomical relations from sarcoma in that it consists of a meshwork or stroma, the interspaces being filled in by groups of cells, often of a spindle-shape, with fine processes as their poles. The alveolar spaces formed in the stroma of carcinoma are readily seen on a section of the tumour, and slight pressure applied to the specimen is sufficient to squeeze out the cellular elements from the meshwork in which they are contained. These cells often include a large quantity of pigment matter.

Carcinoma: its characters.

Carcinoma is most malignant; it invades tissues with little difficulty, even those as hard as bone, and much more a fibrous structure such as the sclerotic. The lymphatic glands in the neighbourhood of a cancerous growth are soon involved, and cachexia is a prominent symptom of the disease. The patient usually suffers severely from pain in the part affected by cancer. Carcinoma of the choroid is, however, a rare form of disease, but is occasionally met with both in the medullary and melanotic forms.

Malignant.

Glands involved.

Cachexia, pain.

Treatment.—In the early stages of both sarcomatous and cancerous affections of the choroid, and before the morbid growth has invaded the orbit, we should certainly attempt to remove the disease by excising the globe of the eye. Subsequently, when the tumour has burst through the sclerotic and involved the parts around, we are not justified in attempting to remove it with the knife.* We may diminish the patient's suffering by means of anodynes, and the vapour of chloroform applied to the surface of the growth; but beyond attempting to relieve pain, little can be done.

In first stage remove the eyeball.

Later, relieve pain.

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* "A Practical Work on the Diseases of the the Eye," by F. Tyrrell, vol. ii. p. 165-187: Dalrymple, "Pathology of the Eye," Pl. XXXIII. (letter press.)