

goes, not simply atrophy, but fatty degeneration; and in proof of this, I mention the following fact. In April of last year, Mr. Fletcher showed at the Medical Society a knee-joint with the muscles connected with it, which joint he had removed from a patient in the Workhouse Hospital. The limb, in consequence of the joint-disease, had been fixed in one position for a considerable time. During this time, the action of the muscles of the calf had been more or less in abeyance. The gastrocnemius had all the appearance, to the naked eye, of fat. The soleus was slightly red, but in appearance somewhat fatty. I secured pieces of both muscles for microscopical examination. I found the gastrocnemius almost entirely made up of fat-globules; in fact, it was in a very advanced stage of fatty degeneration. The soleus was also fatty, but not to so great an extent as the other muscles; and this difference in the two muscles is not without its interest. The gastrocnemius, from its connections and from the flexion of the limb, was probably deprived of action altogether; whilst the soleus was still brought into play, to a certain extent, in the extension of the foot.

Now, these muscles were not dead; they were regularly supplied with blood; they were simply at rest; their physiological action was in abeyance; but yet a process went on in them by which they became converted into fat; by which their highly organised tissue was changed into one of a less complex nature, one approaching more nearly to the inorganic world, and which, instead of having a mechanical power—a power of making the limb serviceable for the purposes of active life—was utterly useless, utterly powerless; in fact, physiologically dead.

And has not a knowledge of this fact important practical bearings in reference to some of those disorders to which I have just referred? Just as the muscles of the limbs will undergo fatty degeneration, so do we know that the muscular fibres of the heart will undergo a like process; and a knowledge of the causes which give rise to the former affection, should lead us to a consideration of the means by which the latter may be averted or controlled.

All the researches which have been made into this subject of fatty degeneration, tend to show that it is the result of impaired nutrition. It is, undoubtedly, a frequent consequence of the diminished vitality, if I may use the expression, which characterises old age; but it may also result, and does very frequently result from an old age which is premature.

We know little, at present, of the question of hereditary predisposition to fatty disease; and to this point it would be well if future pathologists would direct their attention; for if we knew that a predisposition to fatty heart could be transmitted from parent to offspring, we might endeavour to anticipate the disease, to check or retard its development.

[To be continued.]

**A STRONG MAN.** The last lift by Dr. Windship, of America, was 2,600 lbs., which is about the weight of seventeen men of ordinary size. The strongest European we ever heard of or saw was one Becka, a porter of Mayence, who would get under a cask weighing 17 cwt. and lift it up with his back. (*American Paper.*)

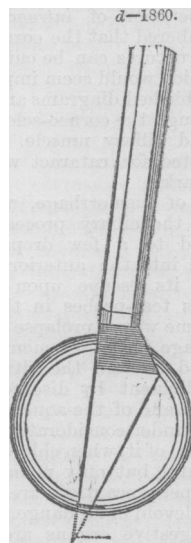
## Original Communications.

### SOME ACCOUNT OF THE OPERATIONS PRACTISED IN THE NINETEENTH CENTURY FOR THE RELIEF OF TENSION OF THE EYEBALL, GLAUCOMA, Etc.

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[Continued from page 579 of last volume.]

*Intraocular Myotomy.* I entered upon a clinical investigation of the value of incision of the ciliary structures in certain diseases of the eye and disorders of the optical accommodation, on March 1st, 1860. During the first three months, I always pursued one method, which was as follows. The patient being seated, or in the recumbent posture, I entered a small Beer's cataract-knife (Sichel's) at the corneo-sclerotic union, and then pushed it through the pillars of the iris into the ciliary muscle, making an incision in the latter of about one-sixth of an inch, on a line parallel with an equator of the eye. (See Diagram.)



The employment of chloroform is not necessary; but I recommend it whenever it can be conveniently applied.

The operation should be done slowly, and the knife cautiously withdrawn, so as to avoid a sudden escape of the aqueous humour or prolapse of the iris, or the entrance of vitreous humour into the lips of the wound, which is apt to excite ciliary vascular irritation. Moreover, the more sudden the escape of the humours of the eye, the greater likelihood will there be of the occurrence of hæmorrhage from a diseased choroid or retina.

Such an incision as I have described, causes a division of some of the radial and other fibres of the ciliary muscle in a transverse direction; also of branches of the nerves which are distributed to the part from the ciliary ganglion (ciliary and third pair). It is scarcely necessary to remark, that the ciliary are vaso-motor as well as sensory nerves. And I am in-

formed by Dr. Argyll Robertson, that Dr. Struthers considers it to be highly probable they are also musculo-motor nerves.

My observations incline me to the opinion that, in some if not in all subjects, a branch of the cervical sympathetic is distributed to the ciliary region opposite the insertion of the external rectus tendon; and, therefore, section of this part should be carefully avoided.

By intraocular myotomy the anterior chamber is penetrated; and although the diagrams contained in the works of Bowman and Nunneley\* do not countenance the opinion, I believe, from repeated observation, that the posterior aqueous chamber is either entered by the knife, or its outermost wall so much weakened that it ruptures, and so gains communication with the external wound.

Eckers, in his *Icones Physiologicæ*, gives a depth to the floors of the two chambers which is corroborative of my views. The relative sizes of some of the other parts in the same plate are very far from accurate. Indeed, the chief object of those who have published plates of the parts concerned in accommodation would appear to have been rather to give a magnified view of the minute structural anatomy of the tissues—especially of the cornea, sclerotic, and ciliary muscle—than an accurate representation of their comparative size and relative position.

In estimating the direction which the knife would take in the operation of *intraocular myotomy*, it should be remembered that the cornea is elastic, and, consequently, structures can be cut without difficulty in a direction which would seem impossible, if we take up one of the published diagrams and draw a perfectly straight line through the corneo-sclerotic union pillars and the iris and ciliary muscle. Those who have frequently operated for cataract will appreciate the force of this remark.

The amount of hæmorrhage, when the eye is not inflamed or the ciliary processes congested, is generally limited to a few drops. Whatever the quantity effused into the anterior chamber, it will generally make its escape upon the introduction of one of Anel's tear-probes in the line of the incision. In the same way, a prolapse of the iris—which, as with hæmorrhage, is an infrequent occurrence—may be easily reduced. When the vitreous humour has been rendered diffuent by disease, a very efficient paracentesis of it and of the aqueous may be effected by the operation under consideration.

The performance of it, when chloroform has not been used, is not painful, but only momentarily disagreeable. And if proper precautions are taken, before and afterwards, it is devoid of all danger.

Where the digestive organs are deranged, from causes quite independent of the ophthalmic disorder, or when there is evidence of constitutional syphilis, intraocular myotomy is not advisable. But if the eye be in a state of acute inflammation, the operation may be done. Upon a healthy state of the digestive organs I lay great stress.

The *after treatment* of intraocular myotomy is very simple. It consists of complete rest of the eyes and exclusion of strong light, the use of an abstemious diet, and mild aperient medicine. The operated eye should be kept closed for five or seven days with plaster, and cool with a wet linen shade. In the early period of my experience, I was induced to prescribe

for the out-patients, as a preventive of inflammation, a blister behind the ear; and although I am far from believing such treatment to be an essential element of success, I am sufficiently prejudiced in its favour to advise the adoption of it as the rule rather than the exception.

In the event of ciliary vascular irritation (*cyclitis*) succeeding the operation, it must be treated as an acute iritis; and if it become *subacute* or chronic, a section of the ciliary structures at a right angle with the cornea (*phlebotomy of the choroid*) will prove curative. I consider this plan is almost a specific when the inflammation is subacute or chronic, and not the result of an escape of vitreous after a cataract extraction by a full section of the cornea. In the acute stage, it is less certain; and where there is extensive synechia posterior, iridectomy should be preferred, provided the patient can obtain a proper after treatment.\*

*Physiological Effects of Intraocular Myotomy.* I have already explained my reasons for believing that one of the effects of the operation under consideration is upon the ganglionic nerves of the eye, and, therefore, need not here repeat the same arguments. The *ophthalmoscope* has shown a decrease of congestion of the veins of the retina, and an increase in the size of its arteries, to follow the operation, when performed for the relief of myopia, and glaucoma. The subsidence of red flashes and the appearance of white stars is commonly remarked upon by patients in a day or two after treatment, indicating that the choroid and retina are resuming a more healthy condition. *Muscae volitantes* are also noticed to disappear or diminish, and the vision to be clearer.

An improved intraocular secretion is proved by the turbid vitreous humour regaining its transparency, and a tense globe its normal elasticity. I have never employed the operation for the relief of asthenopia or presbyopia, as has been stated in Mr. Haynes Walton's work on the *Surgical Diseases of the Eye*.

[To be continued.]

\* We possess in paracentesis of the cornea a certain amount of antiphlogistic power; the increased secretion of aqueous humour probably unloads the gorged ciliary processes; but, according to my experience, it is far less effective in *cyclitis* than *choroid phlebotomy*, and, moreover, is liable, if great care be not observed, to induce irritation by pressure of the lens on the iris, and consequently an augmentation of the ciliary congestion.

**A MEDICAL PORTRAIT.** Dr. Sampson is the very extraordinary portrait of a London physician—a Scotchman who has fought single-handed with the medical faculty, and has promulgated under the name of *chronothermalism* a theory of disease. Dr. Sampson speaks a strong Scotch dialect, denounces the medical profession in no mincing terms, and has written against them both in prose and verse. He is perfectly well known; it is impossible to mistake the author of the theory of *chronothermalism*. The doctor is a very clever man, a man of character, whom any writer of fiction would like to study for one of the personages of his tale. Mr. Reade has taken him and given him a very prominent place in *Hard Cash*. How far it was right or in good taste socially for Mr. Reade to draw such a portrait which would be instantly recognised, we do not stay to inquire. Dr. Sampson's theories may be right or wrong, but it serves no good end to make a novel the means of sustaining a medical polemic. Every profession has its quackery, and in the medical profession, which is a scientific one, quackery must be more discernible by reason of its antagonism to science than in any other. Be it so; but we are convinced that a novel is not the place in which one can best expose quack medicine. (*The Times*.)

\* I believe that the difficulty of obtaining an exact representation of the relative extent of the two chambers, arises from the cornea and offshoots of its elastic lamina to the iris and ciliary muscle undergoing but little contraction after *post mortem* section and preparation for the microscope, while the soft tissues (iris and ciliary processes) which bound the posterior aqueous chamber must suffer considerable contraction and alteration of form.