INTRODUCTORY LECTURE

TO

THE COURSE OF CLINICAL OPHTHALMOLOGY AT ST. THOMAS'S HOSPITAL.

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GENTLEMEN,—Ophthalmology was formerly considered a subordinate branch of surgery. By its astonishing progress, however, during the last twenty years, it has risen to the rank of a separate science. The most eminent physiologists, surgeons, and physicians, have, by persevering study and attention, developed the science and practice of ophthalmology until they have given it a scientific independence. Special studies and special training have become a necessary consequence of its high development.

The treasurer, the governors, and the medical staff of this hospital and medical school have promptly recognised the importance of the subject. With the greatest care and liberality, the governors have fitted up a special department for the treatment of the diseases of the eye, and for instruction therein. The completeness of all the arrangements of this institution justly entitles us to indulge the pleasant expectation that it will not turn out inferior to similar departments of other general hospitals, nor even to any special eye infirmary.

I hope, gentlemen, you will be anxious to derive all possible benefit from those favourable circumstances. For some time, however, there will, no doubt, be some difficulties arising out of my incomplete command over the English language; but I trust they will soon be diminished. Indulgence on your part, and my best intentions, assisted by long experience in teaching, will speedily help us over these difficulties.

The teaching of ophthalmology aims at two widely different objects. The one is merely to give the student a concise view over this part of medicine, and to impart to him as much knowledge of the subject as every practitioner ought to have, whatever branch of medicine he may take up afterwards; the other purposes to educate ophthalmologists.

The relation of our department to this hospital and medical school requires that our principal attention should be directed to the first object—namely, to impart a general knowledge of the treatment of diseases of the eye. I hope, however, that those who may take special interest in this branch of study, and may intend devoting themselves entirely to it, will have every opportunity of doing so, and they will always find me ready to assist them in their pursuits. The laboratory attached to this department will afford them the means for original researches, and my ample pathological collection, which I have brought over from my *cliniques* in Paris, will give them material for microscopical investigations.

A systematic course will be given in the summer session. During the winter I purpose giving clinical lectures twice a week on cases in the out-patient department. On Mondays we will analyse cases of more medical interest, and practise the use of the ophthalmoscope; on Thursdays we will take surgical cases, and perform the necessary operations.

Now, before I enter into the nature, the course, and the treatment, of an individual case, I shall have to draw your attention to the best method of examining your patients. I shall first try to teach you what you ought to learn by looking at a patient before you ask him a single question—how to examine his eyes in ordinary daylight, how to examine them by lateral illumination, and how to use the ophthalmoscope.

In subsequent meetings we shall have to complete this by examination of the refraction, accommodation, acuteness of vision, field of vision, binocular vision, and so forth, for which we require answers from the patient to our questions. I shall bring before you first three patients—one we will examine together by ordinary daylight, a second by lateral illumination, the third by the ophthalmoscope.

In examining a patient in broad daylight, I warn you, before all, not to adhere to the wide-spread practice of taking hold simultaneously of both his eyelids and drawing them asunder, in order to see at once as large a surface as possible. It is, if done by one, already disagreeable for the patient; and it will certainly be insupportable if done by a larger number of students. But the chief bad consequence is, that the irritation produced by thus handling an inflamed eye increases the hyperæmia, and gives an erroneous impression of the actual state. In inflamed and irritable eyes a similar mode may even prevent you from a successful examination. I advise you, therefore, first to look at this eye at a distance, and then close to it, without touching it, and then to observe the different parts of the surface of the eye by making the patient move the eyeball in the different directions—namely, upwards, downwards, to the left, to the right. During these examinations you

may gently draw alternately on the upper and on the lower eyelid; only, after having examined the surface of the eyeball in the way just described, you may then evert the eyelids, if necessary, in order to see their inner surface.

In the second patient, you will easily recognise in daylight a cataract of his left eye. But in order to distinctly recognise the nature, the consistency, the maturity of this cataract, it is necessary to examine him by lateral illumination. In a dark chamber, we will, by means of a convex lens of two inches focus, concentrate the luminous rays of a gas-flame, placed at the side of the patient, upon the point which we wish to examine. This method allows us to look through the anterior part of the crystalline lens, even if it be not perfectly transparent, to the nucleus, and even to the posterior surface.

After having shown you an instance of each of these three methods, I shall now treat more explicitly of lateral illumination. For a long time the illumination of eyes by means of a convex lens has been occasionally resorted to. But the idea of introducing it into practice, as a systematic method of examination, was conceived by myself after I had become acquainted with Helmholtz's treatise on "Accommodation." One of his experiments showed so clearly the substance of the cornea and the crystalline lens, that I concluded that it must equally well, if not better, show even the slightest cloudiness in the refracting media. The practical application verified my conclusion, and I then combined this method of illumination with a strong magnifying power, a pocket lens, and even a microscope. I finished the first communication I made, seventeen years ago, on this subject, with the following words:—"Such an intense illumination, directed upon a single point by means of a light which can be freely regulated, allows us the minutest investigations. The most practised observer could only in a very imperfect manner recognise, by the most attentive examination, in daylight, such details as the lateral illumination shows with the greatest facility and clearness."

Yet this very clearness is not without the danger, for an inexperienced observer, of overestimating the alterations so easily observed. Thus, for instance, one who for the first time sees, by dilated pupil and lateral illumination, a senile crystalline lens, may think it to be a cataract. The somewhat lessened degree of equal transparency which is proper to the crystalline lens of everybody in advanced age is sufficient to make its substance very distinctly appear of bluish-grey colour, even if it seem absolutely transparent by daylight, and by the ophthalmoscope. To get a correct idea of the effect of lateral illumination, let us compare it with a beam of sunlight entering a dark room through a hole in the shut window-blinds. In the bluish-grey stripe which indicates the passage of the luminous ray we can see even the finest particles of dust, and thereby recognise to what illusions common daylight leads us in regard to the purity of the air which we respire. In an analogous way, and even in analogous colour, the cornea, as well as the crystalline lens of the normal eye, are seen by lateral illumination. It is necessary, therefore, to begin observing normal eyes of the different periods of life before studying any pathological changes.

In observing the cornea, it is easy to combine lateral illumination with a strong magnifying power. Here, the slightest changes can be recognised with the greatest certainty. The different kinds of cloudiness which, by common daylight, appear of quite identical nature, are easily distinguished; and we are able to state whether they belong to the superficial or to the deeper layers of the cornea. Very extensive opacities in the cornea may prevent us from observing the iris and the pupillary region; but we can overcome this obstacle by concentrating the light upon the iris without illuminating the opacities of the cornea. Of the utility of this process, I shall show you to-day an example. In one patient, with extensive central cloudiness of both corneæ, you will, by concentrating the light upon the crystalline lens, be able to see extensive opacities in the latter, if you look through the non-illuminated part of the cornea. This would be impossible by daylight.

Of the two convex lenses usually given with the small ophthalmoscope, you will do best to use the stronger one to illuminate the eye, the other to regard the illuminated part. You are holding the latter before your eye, and about one inch and a half to two inches before that of the patient. It will be better, however, to begin with simple illumination without any magnifying power. The cornea and pupillary region must be illuminated quite from the side, whilst the observer is looking from the opposite side. The equatorial part of the crystalline lens is also to be illuminated from the side, but it is to be observed nearly in the same direction. For the posterior pole of the crystalline lens, and the neighbouring parts of the vitreous body, it is necessary to have the light fall a little more from the front. Very different effects of illumination are obtained by somewhat approaching or removing the lens, by shifting it forwards or backwards, and by letting the light fall in a more or less oblique direction. By practice only you can learn how to profit in a special case by the variety of the luminous effects.