I.—VOGT’S CATARACT


Gjessing, an ardent worker and one of the most promising ophthalmic surgeons in Norway, contributes a long and careful paper regarding his laborious studies of the lenses of nearly five thousand eyes, with the view of clearing up questions relating to that form of cataract which has been known to some as Vogt's, or coronal. He employed complete mydriasis and the most precise methods of investigation, by means of Gullstrand’s lamp and Zeiss’s corneal microscope. Originally described by Harald Philipsen in 1874, this form of “cataract” was really first investigated thoroughly by Vogt, who emphasized its frequency even in youth, its characteristic situation, and its typical appearance. Under powerful illumination, as seen on magnification twenty times, and still more beautifully with yet higher magnification, the aspect is that of shagreen, the tiny rounded areas of deeper haze arranged as it were in a careful and regular fashion. The appearance must not be mistaken for that presented by the physiological “sutures” in the lens, nor for that of striae. It gives the impression that the little areas reflect more light than do the elements which lie alongside; and the question arises: Where precisely is the site of this shagreen-like material? Hess expressed the view that it is produced by the epithelium of the anterior lens capsule, and employs both the changes in it and in Purkinje’s images in the explanation of the altered state of the lens during accommodation, but Vogt would include also the anterior fibres of the lens itself. He founds his opinion upon the form of the formation and upon its grouping in relation to the course of the lens fibres as well as upon the manner in which its image is thrown upon the posterior capsule. Gjessing was not himself able to confirm this view, at least in a number of his cases, and as there is no epithelium on the posterior surface, he is, perhaps, right in regarding this as a crucial point. Further, it can be seen sometimes on the fragments of capsule removed by capsulotomy, and it is fairly certain that at any rate it is the
epithelium which plays by far the more important rôle. The shagreen appearance is best made out when one investigates a case of commencing cataract under the Nernst lamp with a moderately dilated pupil at an angle of about 40°. With this arrangement the sub-capsular portions of the lens are strongly brought into view against the falling shadow; but when the light is allowed to fall more directly, and the corneal microscope is focussed upon the situation of the shagreen, the aspect comes and goes rapidly. It then becomes certain that only the very superficial portions are in any way involved in the formation.

In addition, there may sometimes be observed the so-called shagreen globules, to be found usually in elderly persons and in lenses which have become cataractous; to bring these into view it is best to throw upon the shagreen area not too sharp illumination. Their situation is in the intermediate zone of the lens, and they are rare in children. The globes are rather "large"; they are arranged in groups, but never become confluent; they are invisible with the ordinary loupe. In certain other cases similar, but slightly varying, appearances are observed, and regarding the whole matter, the author considers that Shürmann's estimate of their occurrence in 33 per cent. of all the eyes he examined is rather too high; he himself would put it at 15 to 20 per cent. But, as he says himself, since his results in their essentials agree with those of the Swiss observers Vogt and Lüssi, it may well enough be the case that the variation in incidence is due to racial differences. As other instances of variations, he mentions that he observed the globules or rounded formations in the shagreen much less frequently than the Swiss, and the same applies to the "watershed" or "roof-ridge" form of irregularity of lens surface, and to the "hump" or wheal. For all that, he finds that quite apart from formation of cataract, the surface of the lens of the aged Norwegian is rarely quite smooth; a formation resembling fir-twigs or needles was moderately frequent.

The author does not quite agree with Vogt in his views as to the closeness of relation between inspissation of the nucleus and increasing yellowness or brownness of the nucleus, on the ground that some really old people have cataract with the nucleus almost free of any colour, while relatively young patients may have deep tinting of the nucleus. Of the red and green iridescence of the anterior layers, and, indeed, in complicated cataract of the posterior layers also of the lens, the author has not found any typical instance among his cases.

In regard to etiology, he has not discovered any support for the theory that cataract is caused by the presence of indican or other abnormal contents in urine or in alimentary tract. In a paragraph dealing with the structural changes occurring with advancing years and commencing cataract, he warns us against being too ready to decide that the refractive state of the different lens-portions is
in excess of the normal, for much depends in a case such as this upon the personal equation, to say nothing of variations in the same lamp on different occasions. The refractive index increases with age, and there occurs along with, or even prior to, the first formation of lens opacities a diminution in the fluid content of the lens fibres, so that they become more strongly refracting. It is possible that the false opacity seen occasionally after an injury may then have its origin in a temporary diminution of the fluid content of the anterior lens fibres.

It is in the age period, 46-50, that the fluid-containing fissure (Wasserspalte) first is in evidence, and it occurs with increasing frequency in the more advanced periods; while these are most usually to be seen in the superficial layers, they are found also in the nucleus. They are a fairly reliable, but not a certain, indication of a tendency to the formation of cataract. His observations corroborate those of Vogt, that the typical cataract (Kranzstar) never begins immediately subcapsularly, but is always separated by a definite interval from the anterior surface of the lens. Punctate cerulean cataract he regards as being usually congenital and non-progressive. He is inclined to regard both the onset and the period of cessation or decline of sexual life as having a slight but distinct influence in the development of cataract.

Speaking of the precise situation of the opacities, Gjessing agrees that the lower quadrant is most usually the first affected, and that opacities much more rarely are confined at first to the posterior than to the anterior portion of the lens, but he does not consider that there is sufficient evidence to attribute cataract to the injurious influence of the ultra-violet rays acting on the albuminous substance.

The possible influence of certain general diseases in the incidence of cataract was investigated, but his results among the cataractous and the cataract-free persons do not show any convincing discrepancies. He remarks that among 387 women with cataract 48 per cent. had passed through complete pregnancies (from one to fifteen times) and 13 per cent. had had one or more miscarriages, while among those with clear lenses 15 per cent. had borne children, and 3 per cent. had had miscarriages. He naïvely observes that from motives of propriety he refrained from questioning his unmarried patients as to pregnancies and miscarriages! It is known that when the ovarian function is in abeyance there comes a rise in the calcium and cholesterin content of the blood, and it is quite possible that this alteration during pregnancy and lactation may have at least some little influence in the incidence of cataract. The proportion of women patients with cataract under 50 relative to men of the same age is somewhat higher, but he does not say whether he has collated these results with the numbers of the two sexes in the population.

After discussing some other points of minor moment, including
the question of the influence of errors of refraction, Gjessing expresses the view that it is not so much high myopia itself which tends to be the cause of cataract in such an eye, as the choroidal changes which occur along with and accompanying the myopia. He mentions with approval the theory (so far as his cases will take him) that central senile choroiditis, so far from tending to cause cataract, seems to protect from it, but that this is emphatically not the case in other forms of irido-choroiditis. Further, whenever the margin of the iris showed marked degeneration, then cataract was sure to be observed also.

He interested himself further in the question of coloration of the eye as related to the incidence of cataract; but, as might have been expected, comes to no certain conclusions there anent; the same remark applies to "colour" and visual acuteness, and to the greater or less visual capacity as between male and female patients—apart from such complicating occurrences as pregnancy and lactation.

In regard to the urinary condition, it is well known that sugar tends to the formation of cataract even when the actual amount present is in itself trifling. Among his cataract patients Gjessing found 13.5 per cent. with albumen in the urine; unfortunately, he was unable to examine systematically for tube casts.

W. G. SYM.

II.—SYMBLEPHARON


Wilder describes how the condition of total symblepharon, which was regarded as hopeless by the earlier ophthalmologists, is capable of much improvement, if not complete cure, by means of tissue-grafting and mechanical preservation of the culs-de-sac.

Deformity is due to the development of constricting bands of fibrous tissue, and plastic interference should take place as early as possible in the course of healing. As soon as the wounded surfaces are clean and granulation has begun, suitably prepared plates are inserted in the conjunctival sacs. These plates consist of very thin block tin coated with a thin layer of paraffin of high melting point (130° F. or over). These plates prevent adhesion of the lids to the eyeball, and the coating of paraffin protects the cornea from injury in cases in which the globe is intact. When the healing process is satisfactory this graft tissue is placed on the plate, being held in position, if necessary, by means of sutures. The graft
tissue ought to consist of mucous membrane, but thin Thiersch grafts from the less hairy parts of the skin may be employed.

If the cornea have been denuded by the injury, time should be allowed for the corneal epithelium to repair before application of the graft in this region.

In simple cases conjunctival flaps may be possible with which to cover the raw surface after division of the symblepharon, but in the more severe cases mucous or epidermal grafts will be required, and these must be held in position by conforming plates. In severe injuries with loss of eyeball, dermal grafts may be used, and the external canthus may have to be divided.

Grafts should be much larger than the area to be covered. In dissecting the eyelid from the eyeball, it is necessary to keep the lid as thin as possible, and dissect deeply in the fornix. In the case of preparation of the socket for a prosthesis, the lids must be dissected free from the underlying tissues of the orbit and the whole cavity lined with epithelium.

Dealing with the work of others on the subject, Wilder mentions the device of Poulard and Réal for dilating the cul-de-sac and preventing the formation of obliterating fibrous bands. The apparatus consisting of a plate fashioned from a wax model of the orbit is kept in place by means of a metal arm attached to a forehead strap.

Morax, after detaching the lids in this form of flaps stitches them to the skin above and below the orbit. He covers the everted surface with epidermal graft-tissue. At the end of three weeks these flaps are brought together and united by suture over a plate of enamel or lead. They remain thus for at least six weeks, when the socket is ready for the prosthesis. Pedunculated flaps of skin from the adjacent parts have been employed to clothe the orbital surfaces, and restore the culs-de-sac; in all these methods Wilder recommends the use of a conforming plate to keep the flap in position. The paraffin-covered plate forces the graft into every part of the cavity, and the cavity can be irrigated through the openings in the plate.

During preparation for a prosthesis some form of plate should be worn for several weeks after grafting is complete, in order to retain the shape of the socket as desired. Special artificial eyes must be made to fit irregular sockets, in order to avoid undue pressure at certain points.

Note.—The author does not mention the valuable work of Valois, as embodied in "Les Borgnes de la Guerre." Valois employs an olive-shaped body for the preservation of the newly-made socket. He is emphatic on the point that there must be no forcible dilatation of the cavity by mechanical contrivance.

J. Hamilton McIlroy.