An unusual form of hereditary congenital cataract occurring in several members of a family / by Burton Chance.

AN UNUSUAL FORM OF HEREDITARY CONGENITAL CATARACT OCCURRING IN SEVERAL MEMBERS OF A FAMILY.

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(With five drawings on Text-Plate XI.)

IN this report I intend briefly to describe the case of a family in which five members are affected by a very definite and peculiar variety of congenital cataract. The family consists of a man, his wife, five sons, and one daughter; the persons known to be affected are the father, the third, fourth, and fifth sons, and the daughter.

The man has no recollection of his parents having disease of their eyes, though he remembers that they wore glasses in his youth. His father lived to be fourscore; his mother was already a widow with one child when she and his father married. By this union there were three sons. The step-sister had bad sight, and one of her five children, a girl, had eye troubles. His two brothers had good sight, but as he has been separated from all his family for many years, nothing positive as to their history can be given. His wife, the mother of all his children, has good sight, and her history is negative.

The first member of this family I saw was the sixth child, a boy of eleven, who came for the treatment of a black eye. The father said he had noticed that this boy at six could not see as well as the other children could at that age; later he got glasses for him at a jeweler's.

[1] Read before the American Ophthalmological Society meeting at Washington, D. C., May 8 and 9, 1907.

Except for an attack of measles and of scarlet-fever his health had been good. He was not as tall as boys of his age usually are, neither was he as robust mentally. He made but little progress at school.

In bright light the boy appeared dazed, and when wishing to examine objects around him he peered at them. The vision of each eye equalled $\frac{5}{45}$, but with $-1.75 - 4.$ ax 180 V = 5. The eyeballs were well formed and free from external anomalies, while the corneas were clear and the pupils round and mobile. In the centre of each lens was an unusual opacity. This opacity had the form of a sharply defined circular disk; it was very thin, and placed deep in the lens, apparently between the nucleus and the posterior pole. These disks were about the size of the pupillary spaces, being placed symmetrically, of the color of boiled sago, and of a minutely granular consistence. In the right one there were clumps of opacities which reminded me of mitotic figures; in the left there was an indefinite star in the centre, in the sections of which, arranged in a radiating manner, there were the same kind of denser masses as were seen in the right. (Fig. 1, Text-plate XI.)

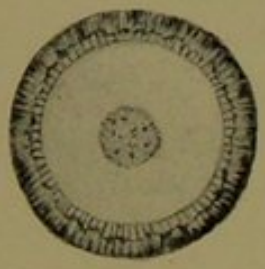
While the disks were translucent, no details of the fundus could be made out through them, though beyond their circumference the funduses could be studied perfectly, for the peripheral portions of the lenses were quite clear. The retinas and choroids were well preserved for so marked a grade of myopia. No uveal anomalies were seen and no evidences of rachitis found.

I noticed that the boy's father also peered about while finding his way in the darkened room. He allowed me to examine his eyes and to my surprise I saw opacities in the lenses similar to those found in his son's. He is a railway engineer, and he rather resented the suggestion that his sight could be defective. He is moderately myopic and wears glasses when reading.

The cataract in his right eye was reniform, with the

Illustrating Dr. Chance's Articles on Congenital Cataract

Fig I



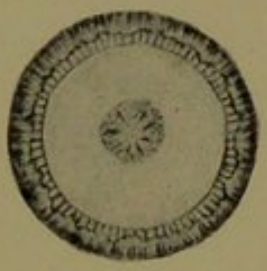
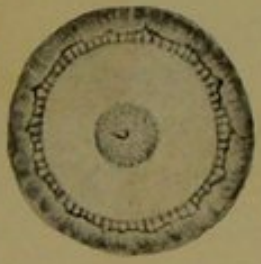


Fig II

Fig III

Fig IV



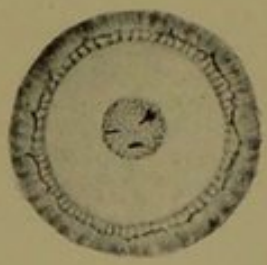
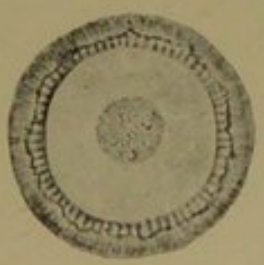


Fig V



hilum on the lower border; that in the left was almost circular having a flattened base. Each was as though a film of sago-like substance had been placed behind the pupil, which on magnification was seen to be homogeneous and finely granular. (Fig. 2, Text-plate XI.)

The third son, aged twenty, is a machinist, and has good sight. Deep in his right lens was a dense, opaque clump in the nasal half of a faint circular disk; while in the left there was a disk of such extraordinary thinness as to be scarcely detected—it might have been likened to a simple condensation of the crystalline substance. (Fig. 3, Text-plate XI.)

The daughter, a healthy rosy-cheeked girl of sixteen, also had disks in her lenses; that in the right was studded with tiny dots, and in the centre was a dense opacity. In the left one were several clumps with fine dots about them. (Fig. 4, Text-plate XI.) Her vision was only $\frac{4}{60}$, in the right, and $\frac{5}{30}$, in the left eye, but this was due to a general myopia of four dioptres.

The fourth son, a boy of thirteen, a myope whose vision was $\frac{5}{15}$ in the right and $\frac{5}{30}$ in the left, also had disks in his lenses. In his case they were dot-like in consistence, but irregularly arranged; in each were six distinct circular vacuoles. (Fig. 5, Text-plate XI.)

These cataracts were partial and circumscribed and they could be seen only by using strong lenses in the ophthalmoscope. They were of the same kind in every case and they were large enough to block the usual pupillary spaces. When the pupils were dilated the opacities shown out and measured about four millimetres in diameter. In each person they were double and without exception accurately symmetrical in the two eyes. They appeared to be stationary.

The exact position of the opacities was hard to define. They were not polar, neither were they nuclear, but they seemed to lie between the nucleus and the posterior

pole. The disks were almost without thickness,and I can only conjecture as to their nature.

The visual acuteness was below normal in every case, for myopia was defined in each, varying from less than one dioptre, in the case of the father, to five dioptres of compound astigmatism in the youngest child.

The father was a tall muscular man, and the members of the family seen, including the mother, were apparently healthy. The teeth of the mother, of the daughter, and of the fourth son were badly decayed, though in none of the family were there signs of rhachitis. (At present the branches of the family cannot be reached, for they are lost in Germany, so that it is neither possible to know how many other persons are affected with cataract, nor to ascertain from which stem the defect had descended. It is probable that it was transmitted from the mother of the man, for she had to use glasses early, and her daughter had defective sight and so had that daughter's daughter.)

The cataracts in this series are so remarkably like those described by Nettleship and Ogilvie, in their paper, "A Peculiar Form of Hereditary Congenital Cataract," read before the Ophthalmological Society of the United Kingdom on June 14, 1906, that one might think this paper a special chapter of their report. These authors found in four generations of a family whose pedigree extended for seven generations, nearly twenty instances of a form of cataract quite like that in these cases which I have described. To these writers the cataract was unique.

I have never seen any cataracts like these and I venture to present this report because of the rarity of their form, and because of their occurrence in so many members of one single family.