"WHITE RINGS" IN THE CORNEA

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GEORGE COATS was the first in this country to describe two cases "showing a small superficial opaque white ring in the cornea." Later he wrote about a third case which presented two rings and a group of white spots in the right cornea and four rings and an incomplete one in the left.

In the *Brit. Jl. of Ophthalm.*, Vol. XVII, 1933, Ballantyne has given an account of six cases of this condition under his care and Mayou has written about one case. The comparative rarity of white rings in the cornea is my excuse for placing on record the notes of a patient whom I examined recently.

S. R., a schoolboy, aged 17 years, presented himself for ophthalmic examination on account of left frontal headaches. There was no history of injury, inflammation and corneal ulceration; lotion or drops containing the salts of lead had never been applied to his eyes. The patient's relatives and friends had not noticed any ocular abnormality.

The eyes were in every way quite normal except for a minute broken oval ring of white dots approximately 2 mm. by 0.15 mm. situated in the upper temporal quadrant of the right cornea about

2 mm. inside the limbus. The disposition of these dots is well shown in the illustration. The ring is formed by a row of white dots some of which coalesce and appear to form a continuous line with small constrictions and irregularities in its contour, whilst at other sites there are gaps or breaks of various distances. The outline of the ring is better defined above and at the edge nearest the centre of the cornea. At the outer and lower part of the ring the dots are irregularly disposed and do not form a well-defined line. In the oval centre there are some white spots of irregular sizes and shapes some of which are aggregated at the upper and lower poles whilst others show an attempt to form an oblique line across it. They resemble spots of white-lead paint and are superficial to Bowman's membrane. The overlying corneal epithelium is smooth. There is no evidence of any pathological disturbance in the surrounding cornea.

Coats, by excluding such aetiological factors as injury, inflammation and degeneration, believed that these white rings in the cornea were congenital. Mayou is inclined to agree with this view while Ballantyne regards their aetiology as obscure and criticizes the conception of their congenital cause because it is arrived at only by the process of elimination of other factors. There is to date no record of either a histological or a biochemical examination of this interesting condition.

In the cases reported by Coats, Ballantyne and Mayou the rings were round, oval and pear-shaped; the majority were situated in the periphery of the cornea, but a few were present near its centre.

In two of Coats' cases, five of Ballantyne's and Mayou's case one eye was affected and one white ring present. Two rings were present in one eye of one of Ballantyne's cases, and in Coats' third case both eyes were affected with multiple white rings.

Details of these cases are well described in Ballantyne's article in the *Brit. Jl. of Ophthal.*, Vol. XVII., pp. 336, 1933, and in Mayou's paper that follows this in the same volume. The literature is reviewed in Ballantyne's paper and a list of 16 references is given at the end of it.

REFERENCES

- Ballantyne, A. J.—*Brit. Jl. of Ophthal.*, Vol. XVII, p. 336, 1933.
 Coats, G.—*Trans. Ophthal. Soc. U.K.*, Vol. XXXII, p. 52, 1912; *Proc. Roy. Soc. Med.*, Vol. VII, p. 3, 1913.
 Mayou, M. S.—*Brit. Jl. of Ophthal.*, Vol. XVII, p. 342, 1933.